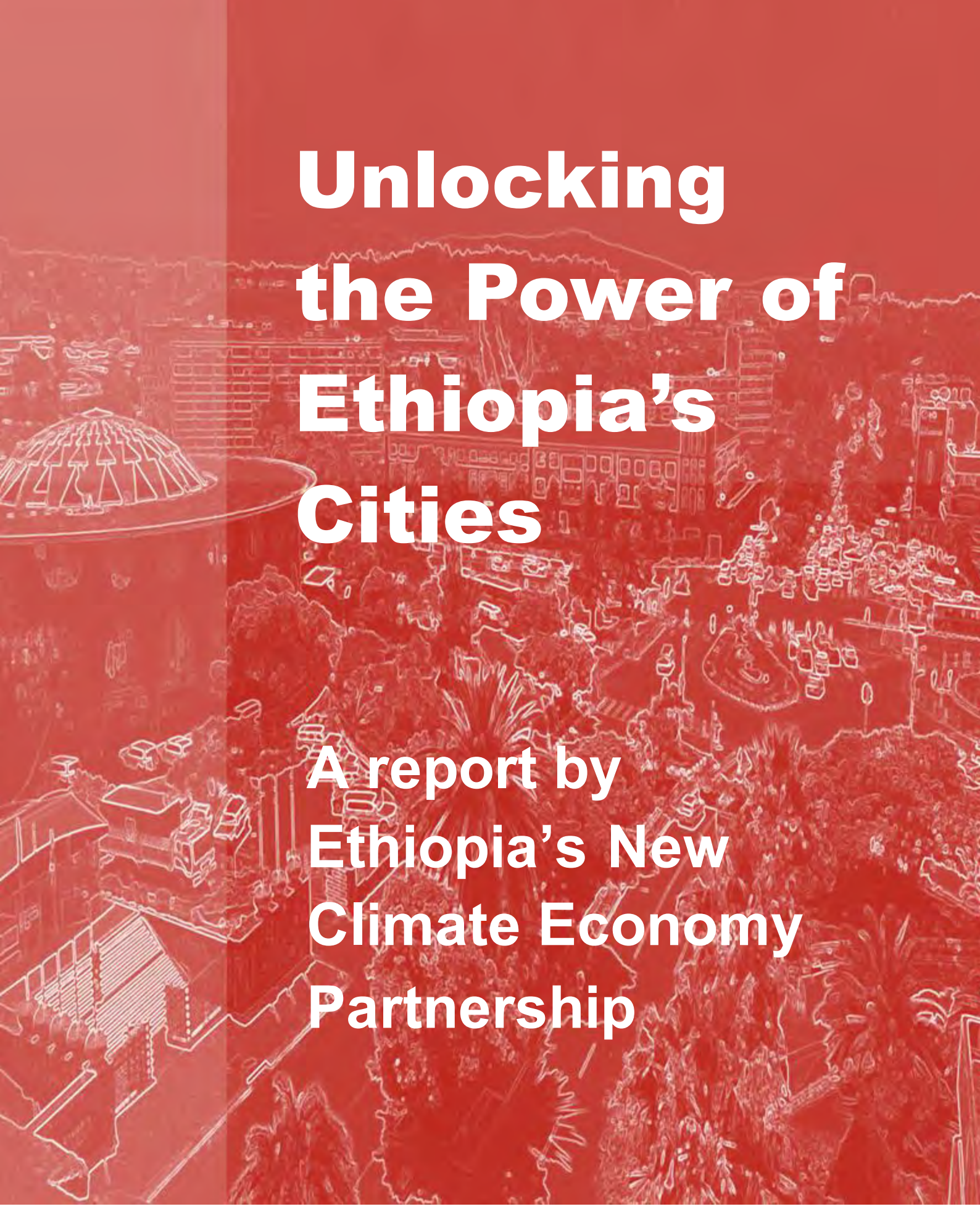

Unlocking the Power of Ethiopia's Cities

A report by Ethiopia's New Climate Economy Partnership

The New Climate Economy
The Global Commission on the Economy and Climate

EDRI

Global Green Growth Institute

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This paper was a collaborative effort between the Ethiopian Development Research Institute (EDRI) and Global Green Growth Institute (GGGI) as key partners of the New Climate Economy (NCE). The work was led by Firew Woldeyes (EDRI) and Russell Bishop (GGGI). The report benefitted from extensive discussions with Nick Godfrey (NCE) and Daniel Yeo (GGGI). Technical input was provided by PricewaterhouseCoopers LLP UK (PwC).

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Foreword

Our nation faces a unique window of opportunity. By embracing a better model of urbanisation, we will accelerate growth, sustain our environment and create increased wealth and quality of life for all Ethiopians. Creating a sustainable national urban system is central to growing a climate resilient green economy that delivers rapid growth and transformation.

Of course we already have an ambitious economic vision, a robust economic development planning process and evidence of strong and consistent growth. But urbanisation will increasingly play an important role in realising our ambition to achieve lower middle-income status by 2025. Less than one in five of our people currently live in urban areas, but this is projected to rapidly increase in the coming years and decades. We need to make important choices about how we manage this, drawing on experiences elsewhere, but also taking our unique national identity into account.

Achieving our economic vision means we will live in a different Ethiopia. More Ethiopians are moving to the city. Our Capital, Addis Ababa is already feeling the pressure of this growth. The decisions we make today about where and how we grow our cities and invest in key infrastructure will fundamentally shape the future economic geography that engages our young and rapidly growing working population. Capturing the potential of these people in a country on the threshold of rapid development means that Ethiopia is well placed to harness urbanisation as a positive force for the Government's growth strategy.

The country's national urban system can and should support a number of the building blocks of the Growth and Transformation Plan (GTP), and the Climate Resilient Green Economy (CRGE) initiative already adopted by government, thus helping to drive economic growth, reduce poverty and manage climate risk.

This report from the New Climate Economy is a distinctive and complementary contribution to this ongoing work and the development of the GTP II. The Government of Ethiopia and UN Habitat developed the Ethiopian Cities Prosperity Initiative (ECPI) and the World Bank is finalising its Urbanisation Review. The Ministry of Urban Development Housing and Construction is also developing a National Urban Development Spatial Plan to which this work makes a contribution. The report does not focus on specific development plans for individual cities, but instead targets how to enhance our core macro-economic development strategy to ensure it unlocks the power of urbanisation as a force for achieving our economic, social, and environmental objectives.

The report presents a clear and repeatable five-step framework to help inform the choices we make around urbanisation. The recommended scenario outlined by this work shows how the potential of our other great regional cities can be unlocked to aid growth and transformation. It also stresses that agglomerating economic activity strengthens growth and enhances competitiveness of our industries and services. Finally it argues that building compact, well-connected and environmentally responsible cities along strategic economic corridors will drive economic growth, reduce friction in the urban system and reduce short and long term capital and operating costs.

The implementation of these choices need to be complemented by parallel action on improving governance, unlocking finance for urban infrastructure, and building capacity at both national and local levels. These critical enablers should be the subject of continued efforts and partnerships. We encourage Ethiopian policy makers to read this report carefully and adopt this model, placing urbanisation at the heart of the GTP II process and the National Urban Development Spatial Plan, to ensure that the country's development vision for 2025 and beyond is realised.

Newai Gebre-ab

Director, with rank of Minister, Ethiopian Development Research Institute and Chief Economic Adviser to the Prime Minister

Executive summary

Introduction

Most urban development globally has been a consequence of growth; Ethiopia has a unique opportunity to shape it. Ethiopia has recognised the critical role that well-managed urbanisation will play in realising its ambition to achieve middle income status by 2025. Given the extended lifecycle of urban infrastructure a small number of key decisions over the next five years will shape and lock in Ethiopia's urban future for many decades to come. If Ethiopia gets these decisions right, it could unleash a considerable 'urban dividend' from the economic benefits that arise from both engaging an educated and youthful workforce and creating employment opportunities and innovation in new city-related products and services.

This report offers a process to help align economic planning and rapid urban development to accelerate growth. The report outlines a new framework for assessing and maximising the contribution that cities can make to achieving our economic, social and environmental objectives, including outlining and assessing a range of alternative urbanisation pathways. This sets out an approach for the Government to bring together Ethiopia's Growth and Transformation Planning (GTP) process with a national spatial structure into a coordinated and mutually supportive strategy that optimises the country's economic development pathway.

The Global Commission on the Economy and Climate has demonstrated that taking the right decisions about urbanisation can deliver positive outcomes for all. Macro planning decisions – particularly around urban planning and transport connectivity – are not only good economic policy, but also provide the foundation for a more inclusive, greener, climate resilient economy that delivers rapid growth and structural transformation. In short, economic, social and environmental objectives are not in conflict, but instead are mutually reinforcing.

In Ethiopia, policy makers need to link the GTP II with a range of critical urban development choices that define what urbanisation means for the economic geography of Ethiopia. Key decisions relate to a number of areas: explicitly linking Ethiopia's economic and spatial strategies; the identification of strategic growth corridors linked to targeted economic functions; the number and hierarchy of urban centres; the infrastructure demands that support this, including power, water, information and transportation; and how to deliver these in a national urban system that is competitive, socially and economically inclusive, climate resilient and environmentally efficient.

The report outlines a new integrated framework for assessing and maximising the contribution that cities can make towards achieving our development goals. This involves identifying and evaluating a range of alternative urbanisation scenarios that are informed by comprehensive geo-spatial mapping of the suitability and core drivers of urban demand such as natural resources, planned special economic zones and transport infrastructure. The report also draws on the lessons learned from urbanisation experiences elsewhere including Vietnam, Colombia and South Korea. For other countries, elements of the framework outlined in this report may provide a reference case or guidance template on the process for the more effective management of their own urbanisation challenges and opportunities.

The analysis outlined in this report has been guided by strong and coordinated engagement at the Ministerial level. This includes input and guidance from the Ministry of Urban Development, the Ministry of Housing and Construction, the National Planning Commission, the Prime Minister's Chief Economic Adviser as the head of the Ethiopian Development and Research Institute, the Ministry of Environment and Forest and the Ministry of Finance and Economic Development. This engagement and diverse range of perspectives helped the work to form a vision that could promote urbanisation as an engine of greener growth by supporting a network of integrated and well-designed cities.

This study acts as a starting point and stimulus for Ethiopia's policymakers to link Ethiopia's economic and urban development goals in the National Urban Development Spatial Plan (NUDSP). The potential benefits of urbanisation demonstrated by the preferred scenario pose interesting challenges to the Government about the level and distribution of urbanisation that should take place, what the principles of economic

distribution might be and whether Ethiopia should more aggressively target sustainable urbanisation as a core pillar of its economic strategy.

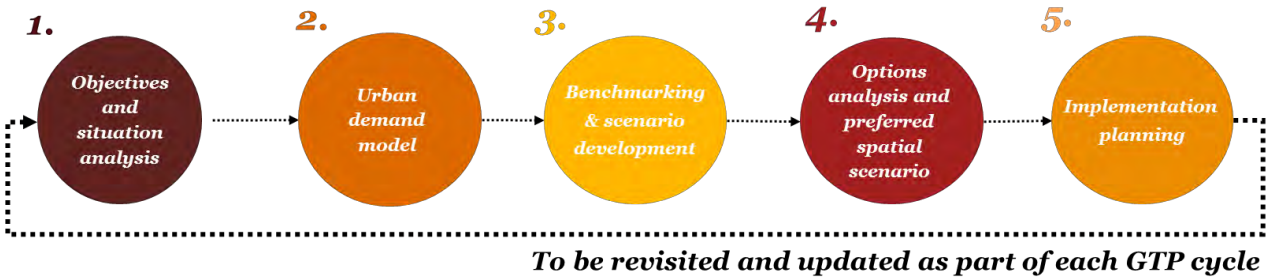
The spatial economic framework

The work outlines a five-stage process to help guide the development of Ethiopia's spatial economic framework. The framework works through five stages of analysis and planning that can be repeated or refreshed on a five-year cycle in line with GTP II, then GTP III.

The framework is designed to inform existing urban plans by presenting new and important choices for decision makers. These might include the setting of urbanisation targets; how to phase or sequence growth; and the identification of the number, distribution, hierarchy, role and function of key urban centres and development corridors.

- **Stage 1:** An assessment of the current macroeconomic context within which urbanisation is taking place in Ethiopia, including a review of existing development goals, economic growth and urbanisation patterns and urban policy.
- **Stage 2:** Provides a geo-spatial mapping of the drivers of urban demand in Ethiopia and sets these against physical constraints to growth including resource availability and climate risks.
- **Stage 3:** Benchmarks Ethiopia's urbanisation against the historical experiences of a range of successfully urbanising countries to determine lessons learnt.
- **Stage 4:** Uses Stages 1-3 to identify and assess a range of urbanisation scenarios based on their economic, social and environmental performance, including recommending a preferred scenario.
- **Stage 5:** Outlines a range of governance, finance and capacity enhancing measures which could support the implementation of the preferred scenario.

Figure A: The 'spatial economic framework' for determining the most effective urbanisation strategy



Stage 1 – Objectives and situation analysis

The Government of Ethiopia has outlined a vision for the country to double its GDP per capita and achieve lower middle income country (LMIC) status by 2025. In present values this would reflect an increase from today's GDP to $1,045 per capita.

In addition, the Government has set a medium-term development goal of eradicating poverty through broad based, equitable and sustainable economic growth. The Growth and Transformation Plan (GTP), overseen by the National Planning Commission (NPC), is the key economic planning instrument that outlines the Government's key economic growth objectives over a five-year period. GTP I covers 2010-2015 and is therefore coming to an end. This work focuses on building on this success by informing the GTP II (2015-2020) and subsequent phases.

In delivering its economic plan, Ethiopia also needs to increase its access to international and regional markets, build and diversify export partner links and develop and expand competitive industries and services beyond the agriculture sector. Ethiopia's national urban system needs to exhibit certain characteristics (or 'critical success factors') to support and maximise the economic growth and structural transformation that the economic strategy is seeking. These include:

- Building key national infrastructure, including links between rural and urban areas, mass transit, trade and logistics
- An ability to absorb economic migration to urban areas and improving the accessibility of public services to the population
- Promoting the specialisation of key economic hubs or clusters that improve competitiveness and attract Foreign Direct Investment (FDI)
- Further educating the workforce with targeted skills development to support this planned growth.

Without effective management, Ethiopia's urbanisation will be reactive. Urbanisation of this type, if unchecked, can result in an urban structure that is dysfunctional in design and inefficient, unsustainable and unequal. This results in a number of challenges, including

- A failure to keep up with demand for housing, services and infrastructure.
- A failure to take advantage of the natural economies of agglomeration in cities due to congestion, overcrowding and a lack of connectivity.
- Sprawling and inefficient city structures reducing access, driving inequality, reducing competitiveness and significantly inflating the capital and operating costs of core infrastructure and service delivery.
- Environmental degradation and resource depletion.
- The diversion of scarce economic resources needed elsewhere to mitigate urban problems.

This study seeks to explore how planned and managed urbanisation on a national scale, combined with good city planning, can offer considerable benefits and accelerated growth for Ethiopia. Demographic change and plans for industrialisation mean that Ethiopia's urbanisation will happen, and this brings challenges. There is the risk of not fully capturing the benefits for urbanisation for development and instead increasing the burden on the Government and society more broadly. The development of a national urban growth strategy can link urban issues, priorities, challenges and opportunities to the wider macroeconomic development process and external opportunities.

Stage 2 – Modelling the drivers of demand and suitability for urban development

Using Geographical Information Systems (GIS) and local data sources, the report provides a spatial analysis of urban demand and suitability. The 'spatial economy' of a country is expressed through the location, arrangement and agglomeration of urban economic functions. Determining how this pattern evolves requires an understanding of a number of urbanisation demand drivers and the physical constraints to urban development. This part of the analysis is conducted through 35 different GIS layers (from topography, groundwater availability and mineral resources to planned special economic zones, proposed rail systems and universities).

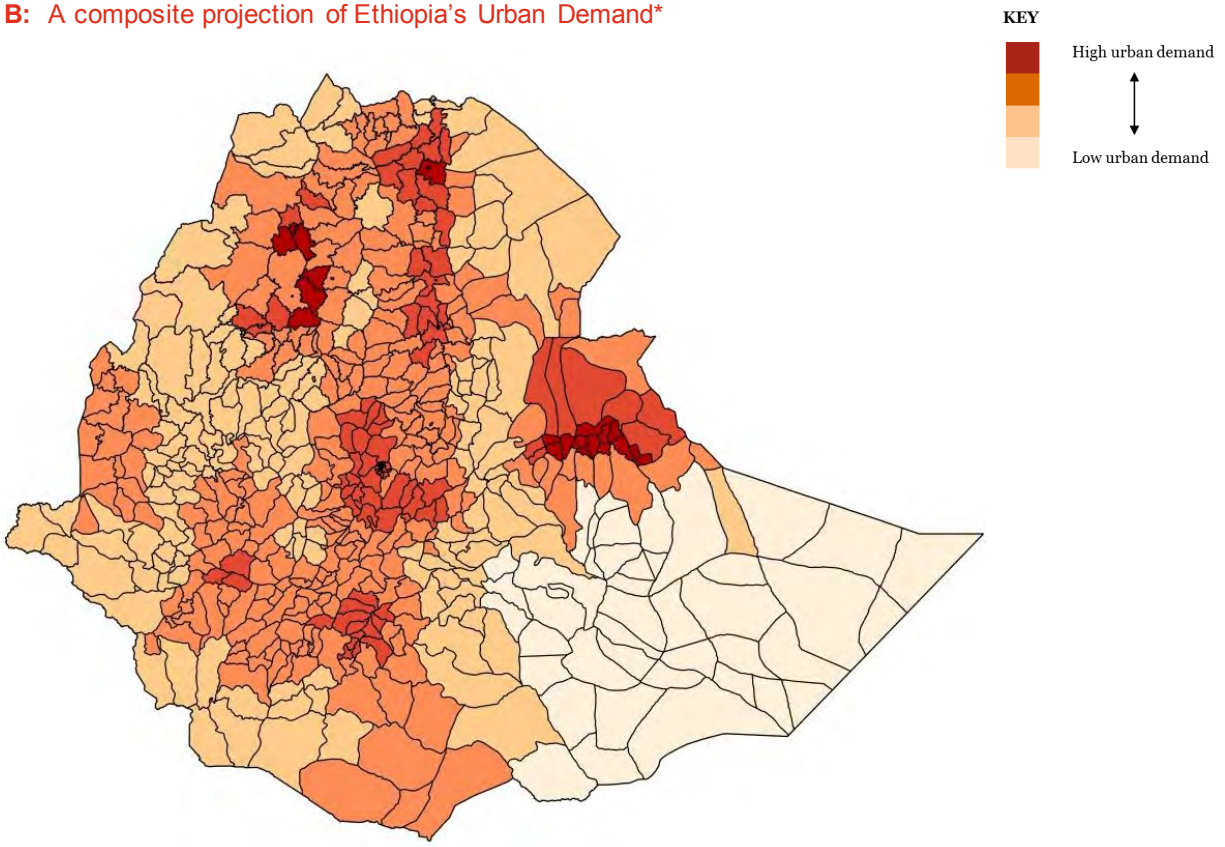
These datasets are combined and weighted to project future urban demand and suitability. This is by no means comprehensive and could be built upon, but this does help to inform how best to plan and manage future urbanisation, including the provision of urban infrastructure. Key drivers and physical constraints include the location of existing settlements, environmental carrying capacity, water resources, physical and topographical constraints, natural economic resources and minerals, climate vulnerability and planned core economic infrastructure, all of which shape the conditions for national urban growth.

The model outlined in this report recommends that enhanced attention should be placed on unlocking the potential of a series of economic growth corridors serving national and regional interests. These include the emergence of a strategic East African Rift Valley corridor that links Ethiopia to international markets through port cities to the East, and with the growing regional economies of Uganda, Rwanda, Kenya and South

Sudan to the West. Case study experience and spatial urban demand mapping suggest that a natural hierarchy of cities will develop in and around these corridors.

This demand model is used in Stage 4 to inform the spatial development options and key infrastructure requirements that will provide the foundation for a successful urbanisation strategy. The analysis presented in the report illustrates how existing settlements have historically developed in-line with climate and physical constraints. However, the new economic opportunities set out by the GTP will encourage the southern and western regions to become more economically active, and thus create demand for existing towns to grow or new urban centres to develop. This development appears to be encouraged to form around regional clusters which would support Ethiopia's constitutional mandate to seek balanced and equitable growth.

Figure B: A composite projection of Ethiopia's Urban Demand*



* Composite map of 35 weighted datasets showing areas where urban demand and physical suitability is high. See main report for individual layers.

Stage 3: Benchmarking and lessons from other rapidly urbanising countries

Stage 3 benchmarks Ethiopia's urbanisation against national urban development experiences elsewhere and uses these to formulate alternative scenarios. This helps to inform the development of a range of alternative urbanisation scenarios outlined in Stage 4 and based on the spatial strategy and growth patterns experienced and lessons from elsewhere. This report reviews the experiences of 11 countries selected on the basis of similarity of their development trajectories with present-day Ethiopia, including high levels of agricultural dependency prior to rapid growth, large and growing populations, devolution policies and low initial urbanisation rates.

The work then focuses on a deep-drive analysis into three comparator countries: the Republic of Korea, Vietnam and Colombia, which have transitioned to urbanised economies and can thereby provide important lessons to draw from. Implications of this analysis concluded that:

- Ethiopia should embrace the rise of Addis as a focal city for the country, provided it is supported by a broader urban network. Addis may be a focal point for economic growth, but experience from other countries suggests that a network of cities (polycentric growth) is needed to provide back-up to Addis and reinforce economic growth and development.

- The model of a primary city and supporting cities has worked in both the Korean and Colombian contexts with an example of a larger primary city (Seoul) and smaller primary city (Bogota). Supporting cities provide buoyancy to the wider economy by providing a large, active domestic market and focus areas for tertiary manufacturing. The conglomeration of urban centres also provides a platform for a later shift from a resource driven economy to a knowledge-driven one.

- The correct selection and designation of growth poles to counterbalance Addis is critical. A sufficient number or size of centres is needed to counterbalance the projected power of Addis. Selecting too few growth poles throughout the country or those that are already well developed may limit the ability to divert growth away from Addis. Spatial and hierarchical distribution of designated growth poles must be considered.

- Similar urban functions to those in Addis need to be developed in regional cities if balanced growth and development goals are to be achieved. Smaller cities and towns need to be able to take on some of the same urban functions of larger cities if their growth is to succeed.

- Rural-urban linkages are also critical to consider. Simultaneous rural development can drive and reinforce the success of urban development and minimise regional income and wealth disparities. Access to markets and agricultural sector value addition are examples of the benefits of building relationships between cities and their hinterlands.

- To promote regional cities, Ethiopia could consider the potential role of state sector industry, public-private partnerships, investment in infrastructure and the establishment of favourable conditions for foreign investment to drive growth in these new urban centres. The balance between foreign investment and small or medium enterprise (SME) – and indeed microenterprise – activity should be considered to ensure that growth is inclusive and reaches the poorest sections of society. Creating an enabling environment for both foreign and local investment is also important.

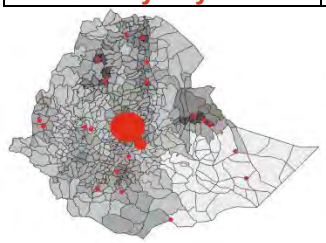
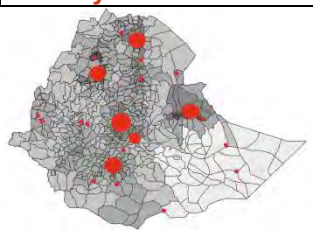
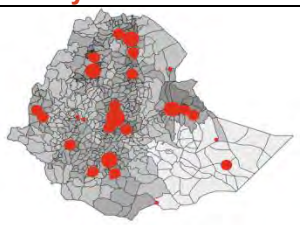
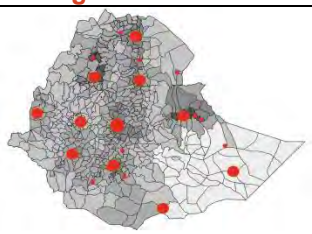
- Stimulating economic growth in new centres has appeared more successful than policies seeking to limit growth in large, dynamic and growing cities such as Addis. These policies (e.g. greenbelts, growth management plans) have generally been less effective and led to wider implications, including increased congestion, rising house prices, and outflows of industrial activity to where cheap labour and land can be guaranteed.

- The development of integrated national transport infrastructure, particularly to connect growing urban areas, is important. The connectivity of urban centres by high capacity road or rail networks encourages the efficient and effective movement of goods and labour.

- National and municipality governments need to work together to address urban development. To facilitate this, municipality and local governments may require more and stronger channels of information, coordination and control from the national government.

Combining the benchmarking and the urban demand model, the study then builds four spatial development scenarios that illustrate how urban growth could be guided in the future (i.e. 2025 and beyond). These include options to decentralise urban growth from Addis Ababa and release the pressure on the capital. The scenarios test the hypothesis that faster and higher quality growth, plus wider development potential is possible through more distributed growth patterns. In addition to a business-as-usual trajectory, alternative spatial scenarios were developed that include an Addis-focused 'primary city' model, a network of 'polycentric' urban centres, a 'clustered economic nodes' scenario and a 'regionally distributed' scenario that involves smaller but more numerous regional service nodes.

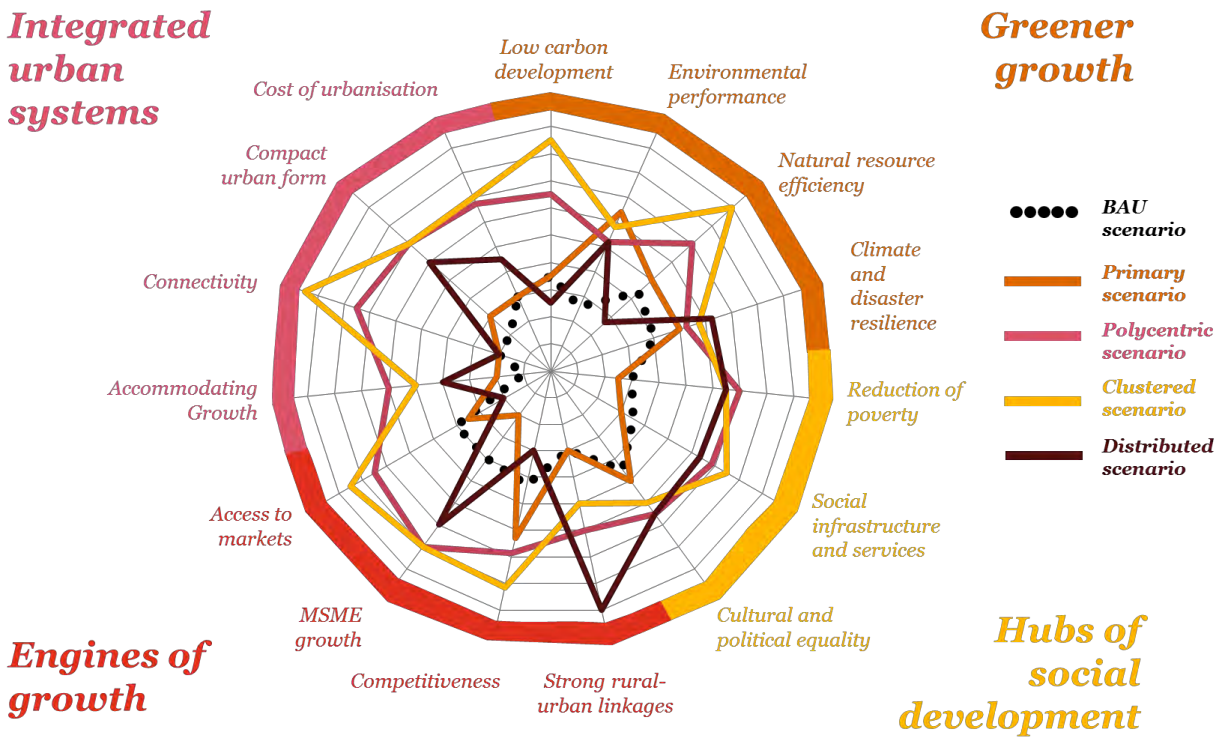
Table A: Four alternative spatial economic growth scenarios for Ethiopia

A: Primary City	B: Polycentric network	C: City Clusters	D: Regional Distribution
			
Addis Ababa continues to grow into a dynamic, multi-functional and cosmopolitan megacity. The GTP is still delivered but largely driven by industry and services based in Addis Ababa, as well as foreign investment directed into the city and special economic zones surrounding it. Addis Ababa is seen as an international city and an attractive place to do business. It delivers all the national political and administrative functions and is home to internationally renowned universities and education. There is a high level of pull migration from rural Ethiopia into Addis Ababa and regional income disparities become more pronounced.	A network of regional secondary cities emerges to support Addis Ababa. Addis Ababa retains national political and administrative duties and remains the largest urban area in the country, but the other cities appear as dynamic and growing cities on the international scene. These cities are relatively diverse - some more focused on a specific sector or industry - but all drive a substantial portion of the country's GTP and economic growth. These cities build a strong domestic market in Ethiopia and encourage broader development across the country. SMEs and microenterprises become more engaged and active in these cities and urban-rural linkages are strong.	Large and dynamic metropolitan areas develop in two clusters: one in central Ethiopia around Addis Ababa and one in the north of the country. The Addis Ababa cluster is more service focused, e.g. finance and banking services, IT and communication services. This cluster also retains national, political and administrative functions within Addis Ababa and is seen as the more international hub. The northern cluster is more industry intensive, focused on natural resource extractive industries and processing for export trade growth. Transport infrastructure in the regional areas around these hubs is good and the two clusters are connected by reliable and quick rail and road networks.	Addis Ababa devolves greater power to the regions and regional capitals take on many of the urban functions that Addis Ababa formerly held. Political and administrative functions are delivered by regional cities and industrial and service activity can be found in all these cities. Operating relatively independently of each other, there is limited specialisation with all cities performing similar functions. Economic growth is relatively well balanced throughout Ethiopia, although there are missed opportunities to drive stronger economic growth through specialisation, innovation and economies of scale. SMEs and microenterprises are enabled, but larger foreign investors and companies struggle to take root in these smaller cities.

Stage 4: Scenario testing and selection of a preferred option

Each reference scenario is then evaluated using an integrated, multi-indicator performance framework that links to national priorities and the Urban Development vision and strategy of the Ministry of Urban Development, Construction and Housing. The evaluation of these scenarios involves assessment of trade-offs between 46 urban performance, economic, social, and environmental indicators. These are grouped under 4 key drivers of sustainable urban growth: the integration of key urban systems, greener and efficient planning, supporting economic performance as 'engines of growth' and urban areas that act as hubs of social development and services. Each indicator can be mapped to MUDHCo's 8 strategic pillars and draws on quantitative and qualitative data to test assertions regarding the relative performance of each. Below are the summary scores for each scenario and some of the key findings suggested by this analysis.

Figure C: Scenario performance assessment



Analysis Findings:

1. **There are a wide range of economic, social, and environmental benefits available from unlocking the potential of a small number of compact secondary cities that can complement the development of Addis.** In comparison to the primary and distributed urban scenarios [scenarios A and D in the diagram above], the more compact and consolidated urban footprints of the polycentric and clustered scenarios [scenarios B and C] offer greater opportunities to build a more connected, efficient and competitive urban network. These larger urban clusters tend to offer more scope for low carbon transport and urban design solutions, as well as creating more climate resilient housing, services and infrastructure.

2. **These same urban development patterns [scenarios B and C] also balance the need to unlock growth through agglomerated urban centres with an improved distribution of services and jobs around the country.** Each city cluster would be built around a top-tier economic cluster or corridor that would carry key services, e.g. specialist heath care, as well as access to skilled jobs, e.g. tertiary manufacturing. Without elevating the status of these clusters these services and jobs would most likely centre on Addis Ababa.

3. **Whilst a distributed network of smaller cities [scenario D] is likely to offer more equally distributed access to services, culture and linkages to the rural economy, it does not achieve the necessary economies of scale to support key national infrastructure**. This drives capital and operational costs up, efficiency down and thereby acts as a drag on growth. This key trade-off needs to be designed into a final strategy, balancing well-designed, distinctive and competitive urban centres that drive growth, with improved linkages to the rural economy and public services extended to all.

4. **Due to the financial and capacity challenges of rapid urbanisation, it is important that the expansion of these clusters of urban and economic activity in Scenarios B and C are phased and sequenced according to need in order to manage the financial and capacity challenges of rapid urbanisation.** Planning may start but the Government will face choices about which key infrastructure projects to support in the first phase of growth. Designing a sequenced expansion with programmatic investment will help clarify how this could best be delivered.

In all cases, it is essential that the national urban system is designed to integrate travel, land use, social and utility infrastructure to improve efficiency, reduce cost and minimise environmental impact. The scenario performance assessment suggests that this is most achievable in a decentralised yet clustered spatial structure.

What could Ethiopia's future urban vision look like under the preferred scenario?

A preferred scenario is recommended that combines the best features of each scenario. It builds on Scenarios B and C in particular to outline how Ethiopia could develop a poly-clustered spatial development pattern. But Scenarios A and D also make important contributions.

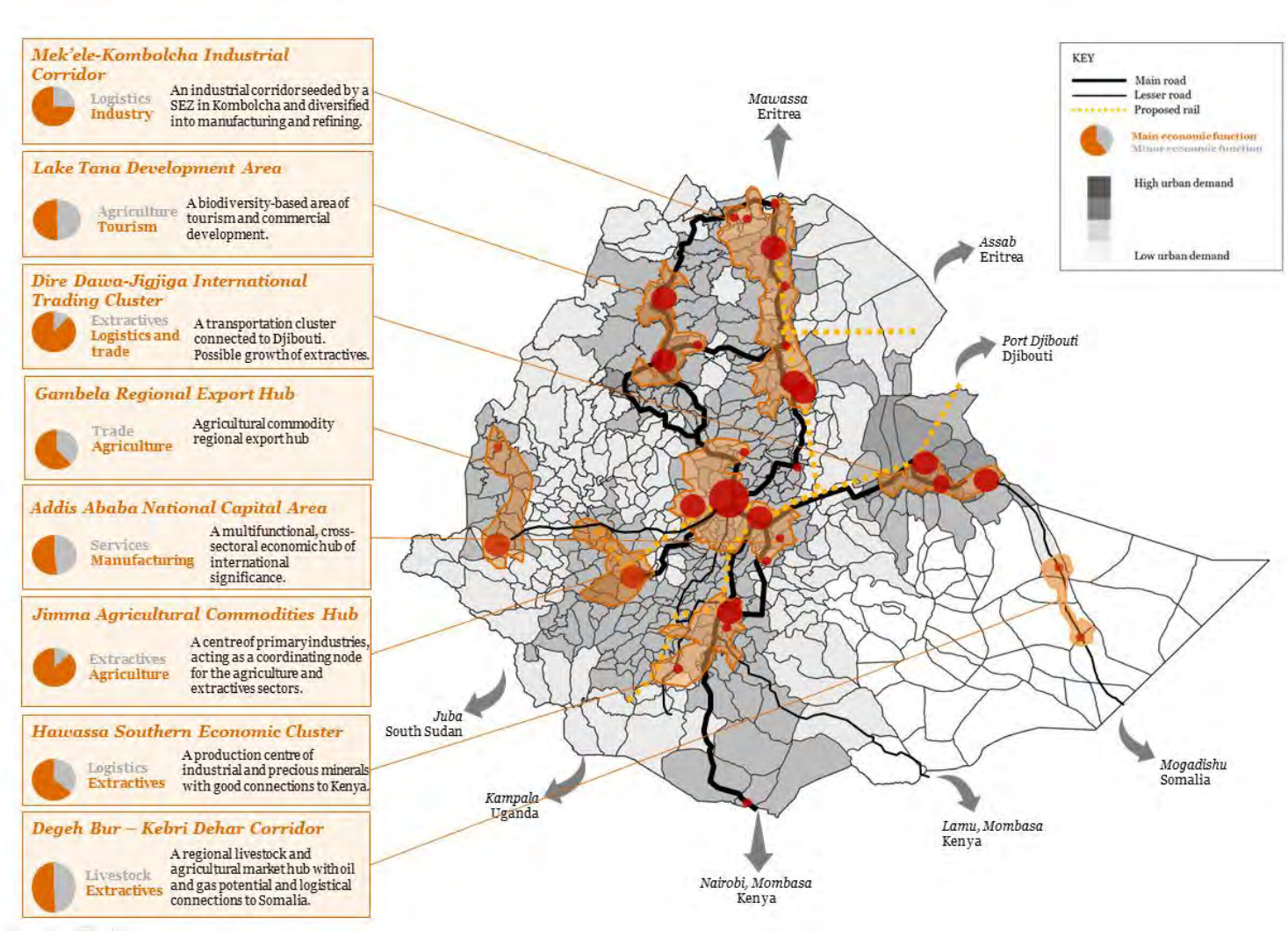
The preferred scenario is based on **three recommended strategic directions for growth.**

1. **Unlocking the potential of secondary urban growth centres** by harnessing the economic efficiencies offered by enlarged 'second cities' that can diversify and accelerate growth. To ensure future balanced growth, the Government needs to invest in a network of cities distributed across regions that will improve links with international and regional markets. This will diversify the economic activity and distribute wealth across the country.

2. **Agglomerating and connecting economic functions.** Clustering economic activity brings additional value to economic activity, and the location of these clusters should help to strengthen the value chain (raw materials, manufacturing, supply chains and trade).

3. **Targeting the development of a compact, connected and resilient urban network**. As outlined in the work of the Global Commission on the Economy and Climate, well managed urban growth based on dense, mixed-use urban neighbourhoods improves economic efficiency, improves climate and environmental performance and enhances resilience, all at a lower cost. The same principle applies to the national urban plan and highlights the value of key supporting infrastructure in delivering Ethiopia's Climate Resilient Green Economy.

Figure D: Recommended spatial scenario for Ethiopia's urban development



The recommended plan highlights the radial pattern of economic clusters and corridors that could be enhanced to support the continued growth of – and remove pressures on – Addis Ababa. Each of these has a particular economic function and will require key infrastructure investment and transport connectivity to support the movement of people and goods. Six key points emerge from the analysis:

1. There is potential for the development of a **regional economic corridor** from Djibouti through to the wider East African economy, and also for national economic corridors that follow infrastructure routes and reach towards future trading partners and border crossings.

2. Connecting the country to a range of regional trade routes and international ports is important to help the economy build more **resilient global connectivity** and drive cost competition between export locations.

3. Further analysis is needed on the most effective **sequencing of economic clusters and corridors.** Which cities should grow first, or become the largest, are important questions. This analysis suggests that outside of Addis Ababa, the near-term economic potential is greatest in three cities: Mek'ele, Dire Dawa and Hawassa.

4. Specialised cities will generally complement one another rather than compete at national level, although some **competition between urban centres** can be a positive influence.

5. The scope of this study has not fully explored the sub-structure of towns and smaller urban settlements that are rapidly developing across Ethiopia. Further work will be needed to look at the nature of development patterns in the Somaliland region and other regions less likely to develop large urban centres and where a **network of market towns and villages** would benefit from acting as logical connections to the large economic centres.

6. More analysis of the functions and infrastructure needs at cluster and corridor level is required – which could, for example, encompass skills and labour force demand. In this regard, the work supports the National Urban Development Spatial Plan by encouraging clear linkages to economic planning and the targeting of efficient and sustainable urban growth.

The preferred scenario also exhibits the following attributes:

- **Lower cost urban development and management** that makes better use of space, transport, utilities and public services.
- A **low-carbon development model** and reduced land and ecological impacts due to the compact and high density urban footprint that supports public transport.
- **Reduced urban sprawl** and direct impacts on the natural environment by limiting development to pre-defined areas that are compatible with supporting urban populations and intensities.
- Effective **distribution of social infrastructure and services** such as healthcare and education.
- High levels of **intra and inter-city connectivity** through the co-location of linked social and economic activities.
- **Improved accessibility and scale-up potential for MSMEs** by co-locating business inputs (such as academic institutions, labour, capital, infrastructure and market access) and supply chains.
- Greater capacity for **high-value economic functions** such as financial and professional services and secondary/ tertiary or even high-tech manufacturing.
- Intensive yet distributed **markets for agricultural products** and processed goods.

Stage 5: Implementation readiness

As outlined above, the urban development model centred on Addis Ababa has worked well to date, establishing Addis Ababa as the diplomatic capital of Africa and a national industrial hub, but it needs to better capture the potential of other urban centres. Meeting Ethiopia's ambitions for sustained rapid economic growth requires all parts of the country to contribute. An excessive focus on Addis Ababa would not be balanced and would not contribute to the rapidly emerging potential of regional states.

Ethiopia now faces a unique window of opportunity to harness its rapidly urbanising population to accelerate its development ambitions and demonstrate a new model for rapid urban growth. A young and rapidly growing working population in a country that is at an early stage of development means that Ethiopia is well placed to harness urbanisation as a positive force for the Government's growth strategy.

The Government's progressive outlook seeks to harness opportunities and avoid many of the disadvantages that rapid urbanisation can create. The Government also has an opportunity to ensure that these new cities are built in a compact and efficient way. This will cut transportation costs and reduce pollution, creating a sustainable platform for growth. Proper infrastructure planning will avoid the development of slums and drive industrial development by connecting people to jobs.

Using this work and the contributions of others, the Government has important and timely decisions to make that could have a profound impact on the future prosperity of the country. These decisions will frame the national spatial structure of Ethiopia's economic plan and how – as engines of growth – a network of productive, sustainable and resilient cities can support and accelerate this growth plan. To ensure future balanced growth, the Government needs to invest in a network of cities distributed across regions that will improve links with international and regional markets. This will diversify the economic activity and distribute wealth across the country.

The implications of this work suggest that the solutions extend well beyond the mandate of one Ministry or Government authority. Ethiopia already has an integrated planning process for economic strategy. Recognising the key integrating role of MUDHCo, a spatial strategy that relies on the economic plan needs full coordination. This needs to take place across the authorities responsible for key infrastructure – including energy, water and transport, but also agriculture, trade and logistics, industry, the emerging private sector and micro, small and medium enterprises.

Implementing the preferred spatial scenario needs to be complemented by parallel action on governance, finance and capacity at both national and local levels. The outlined plan is largely spatial and represents the consolidated findings of this study including expert opinion and broad consultation and feedback from government and delivery partners. This study has not, however, completed any formal analysis of capacity, policy and regulation, financial approaches and governance – which are critical for the sound implementation of any urbanisation strategy. So whilst the spatial elements need to be followed by detailed urban planning and infrastructure design, the economic and policy workstream needs to develop to support further design and implementation.

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Introduction

The purpose of this report

Most urban development globally has been a consequence of growth - Ethiopia instead has a unique opportunity to shape it. A well designed national urban system, coupled with proactive choices about the type and quality of urban structure Ethiopia needs, can improve the quality and performance of the nation's development.

This report contributes to a growing evidence base that targets Ethiopia's urban development opportunity. In recent years, a number of important steps forward have been taken regarding Ethiopia's urban future. For example, the Government of Ethiopia and UN Habitat has developed the Ethiopian Cities Prosperity Initiative (ECPI), which sets out a number of priorities for urban management. The World Bank is currently finalising its Urbanisation Review (EUR), which focuses on municipal challenges and solutions including budgetary management and land policy. Finally the Ministry of Urban Development Housing and Construction is currently developing a National Urban Development Spatial Plan. This report from the New Climate Economy is a contribution to this ongoing activity, particularly the emerging spatial plan as part of the development of the GTP II.

International experience shows that the agglomeration of function, industry and services can contribute to growth. This can easily be observed in many cities at a local level, where book shops, furniture shops and nightlife venues tend to cluster. Silicon Valley (technology) and the City of London (finance) are global examples of this process, and Addis Ababa's continental diplomatic function is a local one. It follows that these economic roles, particularly those that are export related, are important to size hierarchy and distribution of urban areas within a country. It is this distribution of urban function and its spatial implications that this work seeks to address.

This study complements and furthers this existing information by filling an important gap: a framework that brings together economic policy (through Ethiopia's Growth and Transformation Plan) and urbanisation as a managed process. This 'Spatial Economic Framework' will highlights how strategic alignment of aligning economic growth plans and planned urban development and expansion can optimise growth and development transformation opportunities, whilst minimising the negative environmental and social externalities that can otherwise persist.

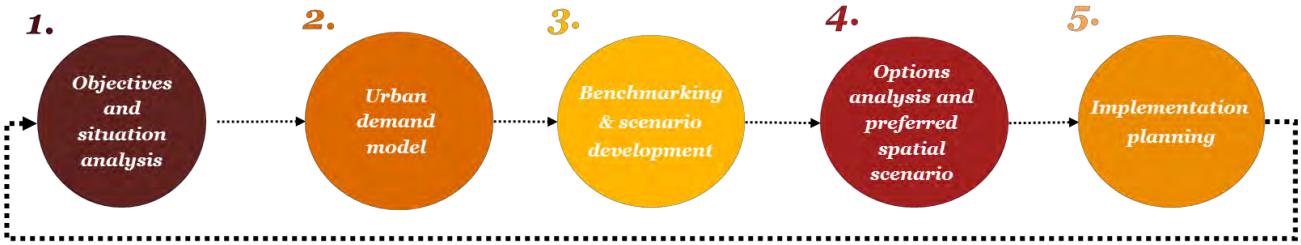
In order to achieve this, policy makers in Ethiopia need to be able to link economic strategy with a range of urban development choices such as the function of regional growth centres, the number and hierarchy of urban areas and the requirements of national power, water, information and transportation infrastructure. This study provides a high-level analysis of these issues and is intended to equip policy and decision makers with a toolkit to assist the Government with the proactive management of Ethiopia's urbanisation process. Capturing urban expansion at this early stage can lead to better growth, and in doing so can help to reduce unnecessary friction and externalities that it can otherwise give rise to, such as overcrowding, weak service provision and costly infrastructure development and retrofitting.

In addition to the framework, the study prepares a forward looking model of demand for urban development across the country. We also identify a range of 'scenarios' and then provide a preferred spatial economic urbanisation 'scenario' which illustrates the results of our analysis and can act as a strategic input to the more detailed spatial plan. Of course this study acts only as a starting point rather than a final analysis. Further work is needed to reinforce and validate these findings. We conclude by signposting the necessary enablers to support implementation of a new spatial economic strategy with recommendations for further work and how this study can be used to take this essential and collective agenda forward.

Introducing the spatial economic framework

The spatial economic framework set out in this report offers a starting point for understanding what questions need to be answered in order to design a national urban plan that responds to the economic goals and functions that are supported by urban growth centres. The urban development framework is a simple tool for answering these questions. The framework can be a basis for constructive conversation or a detailed analysis. This high level study seeks to illustrate the type of analysis that will be useful as Ethiopia's population and economic structure changes, and why it will be important to repeat analysis through the steps of this framework. The framework in figure 1 is set out in five steps which can be repeated in line with the five year GTP development and implementation process.

Figure 1: Ethiopia's spatial economic framework



Focuses specifically on Ethiopia's vision and broader development goals. Analysis of the demands of the GTP and existing urban policy commitments, and how the NUS can respond to these success criteria.	Involves spatial analysis to test the constraints (and opportunities) that relate to the realisation of the urban vision and structure. Summarised by an urban demand spatial output.	Rapid assessment of existing urban related national challenges and strategies in countries similar to Ethiopia. The development of reference scenarios based on benchmarking exercise.	Analysis of the choices facing policymakers including the urban structure, hierarchy, form and function of the NUS, plus how infrastructure and implementation support these choices. Conclude with a preferred option.	Review the available governance, policy, finance and implementation options that can be used as levers to support the implementation of the preferred structure and quality of urbanisation.

Navigating the report

This study starts with an introduction to the Spatial Economic Framework that has been developed through consultation and with recognised national planning processes in mind. Below we provide an overview of the five stages of the framework and how the framework can be used as a tool to assist policymakers both now and in the future. We then take each stage of the framework in turn to build towards a preferred urbanisation scenario.

Stage 1: We start by setting out the aspirations of Ethiopia's leadership to industrialise and become a lower middle income country (LMIC) by 2025, the Growth and Transformation Planning process which is in place to steer the country towards this aspiration and the various sector-level development plans through which this development will be delivered. Using these, we identify properties that the national urban system needs to exhibit and relate these to Ethiopia. We then look at the projected economic and demographic profile as a baseline of what unmanaged urbanisation and population growth looks like in the country.

Stage 2: An assessment of the macro-level spatial opportunities and constraints are then considered as components of an urban demand spatial model. This summarises and consolidates GIS layers that illustrate the

drivers and constraints that will shape demand for urbanisation in all areas of the country. The output shows the preferred locations for future growth.

Stage 3: The study then references a selection of comparator countries that have previously urbanised and developed economically from a starting position similar to Ethiopia's current state. The case studies summarise the characteristics of that development and the choices made to shape this transition. We identify good and bad practice in policy and decision making and consider what Ethiopia can learn from this. We also identify potential financing mechanisms and spatial policy options available to Ethiopian policy makers.

Using the international benchmarking data and wider experience and literature, we then develop a range of reference scenarios for Ethiopia's urbanisation, each of which displays the hallmarks of a particular development pattern experienced elsewhere. Each is characterised in terms of their spatial form and structure, natural resources, logistics, transport, water, power and utilities.

Stage 4: Each of these scenarios is analysed against 15 performance areas that are nested under four main drivers of growth. Each is an attribute of the spatial plan that can be compared between scenarios (e.g. low carbon, competitiveness or rural-urban linkages). Each performance area is contributed to by 1-4 specific indicators. This analysis helps to display the relative trade-offs and choices around urbanisation that Ethiopia will have to make. We then draw lessons from these reference scenarios to create a preferred scenario which brings the best of each, and combines it with Ethiopian policy, constitutional and cultural context. We explain how this preferred scenario could be structured and the recommended characteristics to meet national development goals and the GTP.

Stage 5: The key implementation choices are set out, including an outline of the significant features of the enabling environment, concluding with an indication of the way forward.

Stage 1: Objectives and situation analysis

1.1. Responding to Ethiopia's development goals and needs

The Government of Ethiopia has outlined a vision for the country to double its GDP per capita and achieve lower middle income country (LMIC) status by 2025. In present terms this would reflect an increase in GDP to $1,045 per capita.

In addition, Government has set a medium-term development goal to eradicate poverty through broad-based, equitable and sustainable economic growth. The Growth and Transformation Plan (GTP), overseen by the National Planning Commission (NPC), is the key economic planning instrument that outlines the Government's key economic growth objectives over a five-year period. GTP 1 covers 2010-2015 and is therefore coming to an end. This work focuses on building on this success through GTP 2 (2015-2020) and subsequent phases.

To meet the GTP goals the country's national urban system should be developed and expanded with the GTP objectives and needs in mind. The current GTP seeks to eradicate poverty through strong economic growth and structural transformation of the economy. The national urban system can and should deliver and support a number of the building blocks of the GTP, including social services, and consequently drive the economic growth and poverty reduction that Ethiopia seeks.

In delivering its economic plan, Ethiopia also needs to increase its access to international and regional markets, build and diversify export partner links and develop and expand competitive industries and services beyond the agriculture sector. Ethiopia's national urban system needs to exhibit certain characteristics ('critical success factors') in order to support and maximise the economic growth and structural transformation that the GTP is seeking.

Figure 2: Critical success factors of the NUS needed to deliver GTP goals

1.2. The impact of 'good' urbanisation

Ethiopia's urbanisation will happen, and this brings challenges. Without effective management, Ethiopia's urbanisation will be reactive, from small urban centres that provide an immediate and local response to a need for resources, connectivity and access to markets. Urbanisation of this type, if unchecked, can result in an urban structure that is flawed in design with the result being inefficient, unsustainable and unequal, and that faces a number of challenges:

- **Rapid urbanisation can rapidly transfer populations from rural areas to cities, often leading to social, economic and environmental problems.** The provision of adequate housing and sanitation within urban centres can fail to keep up with demand. Efforts at alleviating the housing shortage have seen the growth of condominium-type buildings, but the cost of provision and the affordability of these to the city population remain mismatched. As such, these developments remain out of reach to many low-income families.

- **The inability of planning regulation to keep up with urban population growth** – a judicious balance of demand and the correct response of supply (of infrastructure, social infrastructure and economic opportunity) is necessary to ensure that urbanisation occurs in a way that is sustainable.

- **The diversion of economic resources to mitigate urban problems** – if incorrectly planned for and coordinated, the 'clean-up' of urban areas can be a drain on the economy, such as resettlement of populations living in slum/shanty areas into new purpose-built housing, or the lock-in to cheap coal (in the short term) in the power plants at the expense of air quality, ill health and greenhouse gas emissions which will lead to increased costs associated with addressing health and environmental problems in the longer term.

- **Missing out on the opportunity to use urbanisation as a further engine for economic growth** – Ethiopia is at a stage of development where urbanisation can be a proactive 'means to an end', rather than a consequential/reactive response to rapid population growth. Creating the correct hierarchy and spatial configuration of attractive and viable urban centres will provide conditions favourable for economic growth.

- **The disparity between urban and rural quality of healthcare:** In the provision of medical services, whilst additional hospitals have been built under the Ethiopian Health Sector Development, the difference in the quality and availability of medical care between Addis Ababa and rural areas remains stark. As an example, antenatal care is available in two thirds of Addis Ababa, with 40% of births taking place in a healthcare facility, compared to as low as 2% in rural areas. Similarly, detection of tuberculosis is up to 4.5 times higher in the urban centres of Harar, Dire Dawa and Addis Ababa than in rural areas. However, with urban centres of different sizes, the quality and availability of care may tend to be concentrated in larger cities offering complex treatment whilst smaller urban centres may be limited to primary care and reactive outpatient services including family planning and the prevention of communicable diseases.

- **The availability of quality education outside Addis:** Social implications from a scenario where Addis Ababa disproportionately grows compared to other urban centres will also see the concentration of provision of education in the capital. Additionally, educational quality in urban centres will generally be higher; currently, attainment in Addis Ababa's primary schools is on average 10% higher than in rural areas and up to 25% higher for certain subjects such as English. Furthermore, whilst universities do exist in cities outside of Addis Ababa (in Jimma, Dire Dawa, Arba Minch and elsewhere), universities that are located near to industry and services tend to attract higher-quality candidates and more funding and are therefore able to provide a higher quality of education that in turn services these industries with high-quality employees.

However, pro-actively managed urbanisation has the potential to act as a catalyst and accelerator of economic growth rather than as a reactive or consequential response to it. There is risk of not capturing the benefits for urbanisation for development and instead increasing burdens on government and society. The development of a national urban growth strategy links urban issues, priorities, challenges and opportunities to wider economic process and external influences.

With improved macro planning, the urban structure can be shaped to efficiently distribute and agglomerate compatible economic activity, create attractive communities in which to live, use resources more efficiently and do so through improving connectivity between places and increasing their attraction to the commercial environment. Effectively designed and managed urban centres act as nucleation points for capital, labour and talent and can help Ethiopia evolve from its current social and economic form to one that recognises its agricultural legacy, provides equitable opportunities for its citizens and acts as an engine of growth for Ethiopia's continued economic development.

Well-managed urbanisation can reverse these impacts and provide a sustainable platform for growth. Managed urbanisation at national scale, combined with good city planning can offer considerable benefits and accelerated growth for Ethiopia. Strategic planning can develop an effective and well-functioning urban system: high density cores, mixed neighbourhoods, high capacity public transport and smarter, more efficient buildings and utilities. The urban environment, if planned and managed well, can deliver significant economic and social benefits:

- **Urban areas can help to drive national development strategies and plans.** The development and planning of urban areas should not be considered separately from national strategy development. Urban development and expansion can and should stimulate and drive economic growth, low carbon development and poverty reduction. A well-designed urban system will drive progress in delivering your national strategies, including the GTP, and CRGE.

- **Urban areas can be designed to operate efficiently and sustainably.** This can provide benefits such as carbon abatement (from otherwise sprawling, inefficient cities) and material and resource efficiency. Additionally, embedding liveability into cities, through walkable streets, thoroughfares, sustainably planted areas and open spaces contributes to the green cities components of the Climate Resilient Green Economy strategy.

- **Urban areas provide ideal locations for economic diversification and the development of new industrial and manufacturing sectors**. A large potential workforce is in close proximity and raw material inputs for industrial process, whilst not necessarily close, can be easily transported to urban locations. Urban areas can also act as agricultural processing hubs and serve more rural locations, including acting as bases for emerging national businesses and micro, small and medium-sized enterprises **(**MSMEs). Urban areas often bring together different emerging sectors and industries, facilitating the identification of linkages and economies of scale that come with agglomeration. Urban areas are also able to leverage greater trade influence and build access to regional and international markets through increased density of industry and economic activity.

- **Urban areas can deliver housing more efficiently to a higher proportion of the population by building more cost effective higher density housing.** Access to social infrastructure and services, including hospitals, schools and leisure facilities can be significantly increased and made more efficient in urban areas.

- **Climate mitigation and adaptation measures are essential factors to consider when planning and shaping the national urban system.** Climate and development are strongly interlinked in Ethiopia. Well-designed policies in these fields can make growth and climate objectives mutually reinforcing in both the short and medium term. In the long term, if climate change is not tackled, growth itself will be at risk. The New Climate Economy report "*Better Growth, Better Climate"* published in late 2014 argues that managed well, the additional investments in infrastructure needed to make the transition to a low-carbon economy will be modest (NCE, 2014). Ethiopia is currently in a very strong

position of having (a) a very low emissions per capita, (b) huge renewable heat and electricity resources and (c), perhaps most importantly, the opportunity to avoid lock-in to short term and outdated fossil fuel technology and seek clean and renewable alternatives. The Government has recognized this and is leading the way through the Climate Resilient Green Economy initiative.

1.3. Existing institutions, policy and strategy

MUDHCo is the responsible Ministry for urban development, planning and housing in Ethiopia. It has the responsibility of addressing city-level planning and management issues, but also integrating Ethiopia's urban areas with the country's spatial strategy. The Ministry is progressive and operates coherently under a clear mandate:

Ethiopia's Urban Development Vision: Creating resilient and liveable cities and an internationally competitive construction industry by 2020.

MUDHCo's Mission: Capacitating our cities and urban centres to play their role as development centres by providing standardised services for their residents and creating a competitive construction industry in collaboration with all stakeholders and development partners.

Key to the above mission is the role of urban areas as economic development centres. The urban setting is a great integrator of public policy, economic strategy and planning. Organised to deliver this mission, MUDHCo has developed an framework of pillars for urban development, and we have used these to inform the development of the urbanisation drivers and performance evaluation areas.

In table 1 below, we map our performance areas against the existing MUDHCo pillars to show how the GTP success factors reinforce and build upon the existing pillars. In reviewing this matrix it is important to maintain the perspective of this work in thinking about the macro urban structure and not the planning of individual cities.

Table 1. Pillars

		GTP Success Factors							
		Internationally competitive markets	Key infrastructure networks	Diversified employment and skills	Trade and logistics connectivity	Reliable utilities and urban services	Economic specialisation	Access to social services	Accommodation of economic migration
MUDHCo strategic pillars	Job creation, Micro and Small enterprise development	✓		✓			✓		✓
	Capacity building and good governance	✓		✓	✓	✓	✓	✓	✓
	Urban planning and design	✓	✓			✓		✓	✓
	Land development & management	✓	✓			✓		✓	✓
	Housing development & management							✓	✓
	Construction industry development			✓					✓
	Integrated urban infrastructure development	✓	✓		✓	✓	✓	✓	
	Green & safer cities	✓		✓		✓			✓

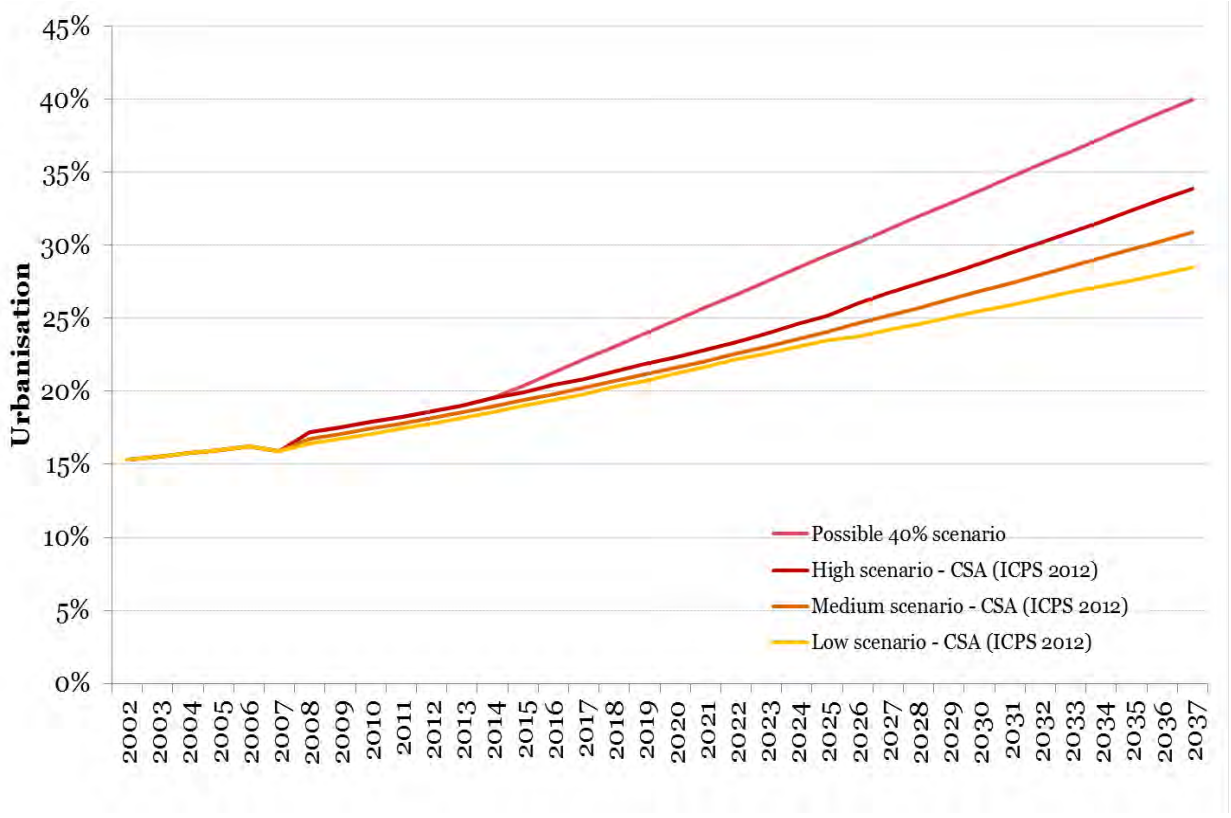
1.4. Baseline population and projected urbanisation

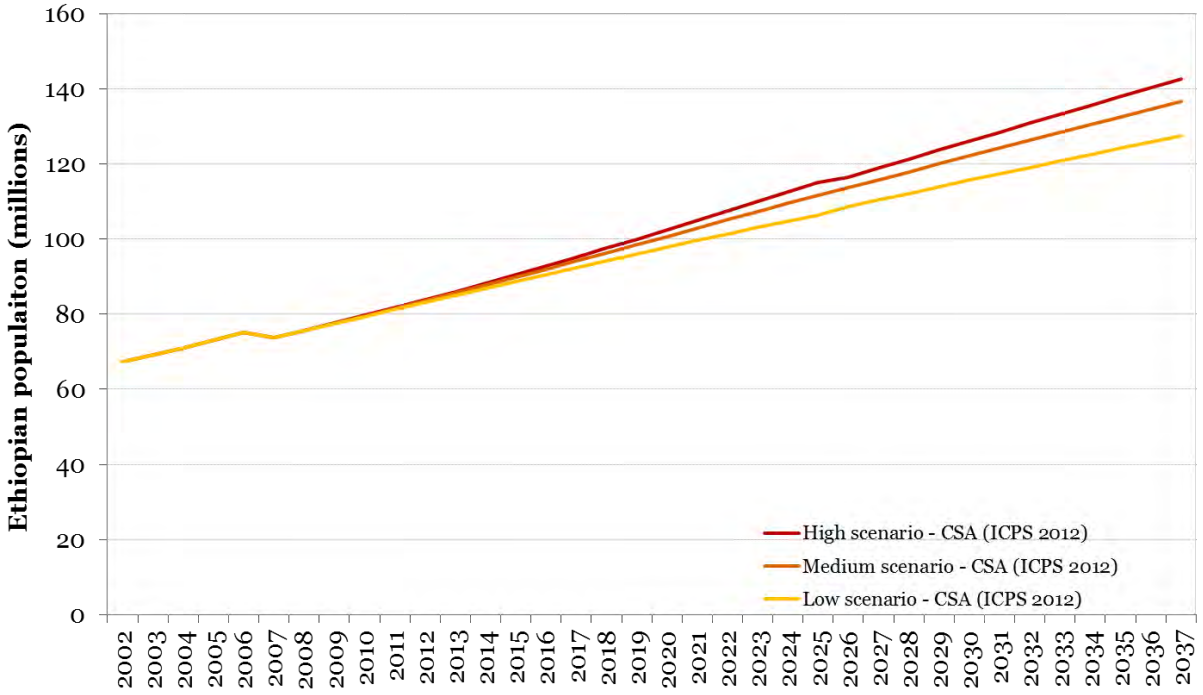
Ethiopia's current urbanisation level of 19% is projected to steadily increase to at least 30% by 2030. This estimation is slightly higher than the Government's Central Statistics Agency (CSA) population projections for the following reasons:

- The Ethiopia Urbanisation Review (EUR) conducted by the World Bank provides a comprehensive assessment of urban development in Ethiopia including detailed projections regarding future growth. By examining factors such as increases in the labour force and shifts in economic sector concentration, the EUR estimates that Ethiopia could reach an urbanisation rate of 30% by 2028, and that the urban population will triple to 42 million from 2032.
- Special economic zones have been planned (or established) that will agglomerate growth and attract increased urban populations to support their operation and supply chains.
- A number of very large industrial mega projects are being planned that will also drive further urbanisation in the country in a similar way.
- The impact of 70,000km of recent road building schemes in rural areas is likely to increase the rate of urban growth in agricultural regions.

Both the biggest challenge and biggest opportunity to Ethiopia's effective management of urbanisation is the projected rate of growth of its population; from a population of around 65 million in 2000 to a population close to 88 million in 2014, Ethiopia's annual growth rate has been 2.5% over this period. In the medium term, this is forecast to maintain momentum at between 2 and 2.58%, stabilising at 1.6% in the long term. Explaining population growth in relative terms only conveys part of the message – in absolute terms, Ethiopia will add another 20 to 27 million people to its population by 2025, with a projected population of between 135 and 150 million by 2040 (see figure 3).

Figure 3: National Population and Urbanisation Forecasts





Before exploring what the implication of population growth will be for the structure of urban hierarchy, it is first necessary to establish nomenclature used within this report to describe the relative sizes and functions of urban centres. Whilst this nomenclature draws upon much of the language used within the subject matter area of urban development and references, for example Central Place Theory, in its underlying thinking, the aim is not to re-think the complex theoretical basis for describing urban hierarchy, but rather to tailor this for the Ethiopian context in a way that is internally consistent within this study.

We reference the Ministry of Urban Development, Housing and Construction's definition of cities set out in the Ethiopian Cities Prosperity Initiative (ECPI), 2014. We have built upon this to describe urban centres of different sizes, types of activity, levels of service provision and importance in the national urban hierarchy:

- **Metropolis (capital) city** is the highest order settlement including global cities with a population of more than 5 million, but in a national context will refer to Addis Ababa as it serves the highest order functions such as the seat of government, the economic powerhouse and centre of culture. Metropolis (capital) cities have diverse economic activities, a complex level of infrastructural organisation (utilities, transportation, housing and social), and attract migrants from all regions of the country and possibly beyond, acting as a hub at a national and international level. Land use and planning within a Metropolis (capital) city will be complex, focused on densification within the urban core or 'downtown areas' with zoning that is coordinated between residential, commercial and industrial requirements. Within a Metropolis (capital) city, municipal governance may be devolved to some extent to sub-city levels of organisation with local influence on some issues such as zoning, form of service provision (for example waste collection frequency) and municipal taxes.
- **Regiopolis (primary) cities** are defined by MUDHCo as the 26 cities that have participated in CBDSD/UDF/ULGDP projects; excluding Addis Ababa, but including all nine Regional capital cities and Dire Dawa. These cities may specialise or focus on a lower number of economic activities and have a level of infrastructural organisation and complexity mostly focused within the urban core or 'downtown' area. Land use and planning with a Regiopolis (primary) city will be similar to that of a Metropolis (capital) city, however with municipal governance devolved to a lesser extent or not at all. Regiopolis (primary) cities can grow over time to be significant national hubs with much larger populations.

- **Secondary cities** are defined as the 18 cities that will participate in the ULGDP capacity building component only. These cities are currently regionally important settlements, but in the future may evolve in size and prominence to Regiopolis (primary) city status. Secondary cities may eventually be specialised cities focused on a key economic activity or be defined by a nationally importance piece of infrastructure, such as a special economic zone, or a prominent university.

- **Tertiary cities**, for the purposes of this study, are distinguished as those 41 remaining cities/towns with a population of 20,000 or more. Tertiary cities function as access points to infrastructure and economic activities within zones and will feature developed areas for commercial and light industrial activities, but mostly are designed around residential needs.

- **Urban villages** are those settlements identified as towns or urban agglomerations in the 2007 CSA census that have a population of 19,999 or less. These areas may have no clear zoning and instead be communities that have grown organically from areas that were previously rural. Provision of services and infrastructure will generally be low, though some level of self-organisation of economic activities may be apparent, with for example, a street or promenade of commercial activity.

These definitions of urban hierarchy were applied to present-day statistical population data at a woreda-level from the Central Statistics Agency. Against this, regional population and urban growth profiles were applied and the baseline urban hierarchy was developed. It can be seen that Ethiopia's urban population today is mostly structured into a large number of urban villages and tertiary cities. High-order levels of urbanisation are confined to a small number of tertiary cities.

In terms of how the current structures of settlement in Ethiopia may evolve, it is evident that urban villages and tertiary cities will evolve into higher levels of urban organisation, as secondary cities and regiopolis (primary) cities. In the baseline scenario, Addis Ababa is currently the only Metropolis (capital) city, attracting population from all parts of the country and acting as an economic and cultural hub within East Africa. In the future, cities that are currently secondary cities may evolve to an extent where Addis Ababa is no longer primary in terms of urban hierarchy but is networked with a number of competing cities within the country.

Table 2: Frequency and hierarchy of urban centres

Baseline urban hierarchy: *number and typology of urban centres today, in 2025 and 2050*							
	2,000 -20,000 pop.	20,000 - 50,000 pop.	50,000 - 100,000 pop.	100,000 - 200,000 pop.	200,000 - 500,000 pop.	500,000 – 1 million pop.	> 1 million pop.
Today							
Addis Ababa	-	-	-	-	-	-	1
Afar	16	4	1	-	-	-	-
Amhara	81	36	5	1	2	-	-
Benishangul-Mumtaz	15	1	-	-	-	-	-
Dire Dawa	-	-	-	-	1	-	-
Gambella	8	-	1	-	-	-	-
Harari	-	-	-	1	-	-	-
Oromia	184	49	11	4	1	-	-
Somali	36	7	1	1	-	-	-
SNNPR	92	23	6	4	1	-	-
Tigray	23	12	4	2	-	-	-
2025							
Addis Ababa	-	-	-	-	-	-	1
Afar	20	6	2	-	-	-	-
Amhara	54	46	19	5	2	1	-
Benishangul-Mumtaz	11	7	1	-	-	-	-

Dire Dawa	-	-	-	-	1	-	-
Gambella	8	1	-	1	-	-	-
Harari	-	-	-	1	-	-	-
Oromia	154	61	28	9	3	1	-
Somali	36	6	5	-	1	-	-
SNNPR	75	36	15	3	4	-	-
Tigray	13	16	7	3	2	-	-
2050							
Addis Ababa	-	-	-	-	-	-	1
Afar	15	5	4	3	1	-	-
Amhara	15	43	34	27	6	3	2
Benishangul-Mumtaz	7	6	6	1	-	-	-
Dire Dawa	-	-	-	-	-	1	-
Gambella	6	5	-	-	1	-	-
Harari	-	-	-	-	1	-	-
Oromia	52	103	49	32	17	4	1
Somali	28	16	4	3	1	-	-
SNNPR	36	49	24	17	6	1	1
Tigray	4	12	13	6	5	1	-

Table 3 below outlines baseline population projections for the main urban centres in Ethiopia, using medium-scenario population growth profiles at regional levels applied to the constituent urban centres. It must be noted that these projections are not deterministic – it is not a prediction of what the population in these cities will be – but is an indication of what the implications of projected regional growth rates will be on each of these urban centres.

Table 3: Population projections for Ethiopia's major urban centres

Baseline population projections for main urban centres in Ethiopia			
City	**Today**	**2025**	**2050**
1. Addis Ababa	3,195,000	4,105,000	5,086,000
2. Adama	308,526	529,281	1,322,290
3. Gondar	306,246	532,674	1,252,837
4. Hawassa	285,785	485,845	1,001,600
5. Dire Dawa	268,000	378,000	606,604
6. Bahir Dar	266,667	463,832	1,090,921
7. Dessie	177,688	309,065	726,913
8. Jimma	169,446	290,687	726,217
9. Jigjiga	154,183	216,422	347,500
10. Shashemene Town	140,717	241,402	603,089
11. Bishoftu Town	140,039	240,239	600,183
12. Mek'ele	131,020[1]	224,372	470,895
13. Harar	125,000	171,000	259,485
14. Gambela	62,093	114,171	253,927

[1] It is thought that the population of Me'kele is misrepresented here and is actually closer to 250,000.

15. Asosa	43,203	82,063	189,249

1.5. Baseline economic growth

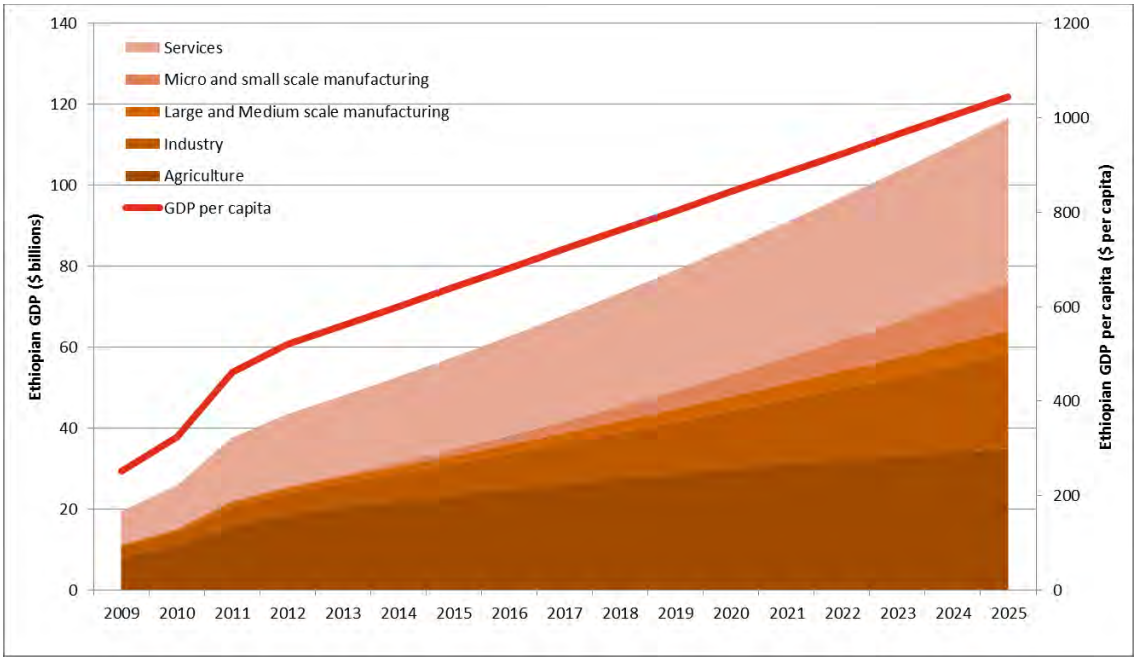
Ethiopia's recent economic growth is covered well by the existing literature. This chapter outlines the overall economic growth trajectory of Ethiopia, recognising the country's aspirations to reach LMIC status and the components of growth planned or required to reach that goal.

Ethiopia is a rapidly growing economy, whose development has been characterised by the dominance of its agricultural sector - which currently comprises 43% of GDP. Following productivity improvements in the agricultural sector (through use of fertiliser, breeding of improved seeds, transport infrastructure and structural changes to the sector), the Government of Ethiopia has, over the last two decades, pursued a programme of agricultural development-led industrialisation (ADLI). ADLI has seen growth in economic activities directly related to agriculture, through the creation of demand for inputs (for example farm machinery), the processing of outputs and production of consumer goods (such as textiles). The impact of this, together with successful policies of the Sustainable Development and Poverty Reduction Program (SDPRP), the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and the first phase of the Growth and Transformation Plan (GTP), has been the reduction in rural poverty rates and improved average GDP growth of 9.25% over of the past 4 years[2].

The next phase of economic growth for Ethiopia aims to sustain an average of 10% annual growth in real GDP and restructure the economy into new, higher value-added activities to reduce the proportion of the workforce currently employed in agriculture (78%), widen the export base of agricultural and non-agricultural products, and increase the non-agricultural share of GDP by around 1% per year.

Despite this plan for rapid economic growth and diversification, and compounded by a rapidly growing population, Ethiopia's GDP per capita remains low at $470[3]. The Government of Ethiopia holds an aspiration to reach LMIC status by 2025, defined as a GDP per capita of $1,045 per capita (using the World Bank Atlas method). Combining this with Ethiopia's population growth, the economy would need to grow to $117 billion by 2025, from a base of $59 billion today.

Figure 4: Economic growth forecast to 2025



[2] World Bank, Economic Prospects, 2011 (11.2%), 2012 (8.7%), 2013 (10.4%), 2014 (6.7%)
[3] World Bank, 2013 Atlas Method.

The challenge of this remains stark and to this end, the Government of Ethiopia has outlined within the Growth and Transformation Plan a number of imperatives that will serve as drivers of economic growth:

- **Building upon the agricultural basis of the economy** – this has been a theme of Government policy since the 1990s and programmes of agricultural development-led industrialisation have aimed at not only increasing the productivity of the agricultural sector, but also making use of opportunities in related and associated sectors such as light industrial food processing. Urbanisation in Ethiopia will at times conflict with agricultural-led development. The artful managing of both aspects and their respective social and economic implications is important to ensure that Ethiopia urbanises in a sustainable way. Going forward, it will be necessary to improve agricultural productivity to maintain agricultural growth and improve food security – despite significant improvements in recent years, agricultural productivity remains low in Ethiopia and must improve in order to maintain agricultural growth rates.

- **Stimulating industry as a growth driver** – historically, agriculture has been the main driver of growth in the economy, stimulating increased demand for services. The next phase of growth requires industry to become a primary driver of growth alongside sustained agricultural performance. Four aspects: agro-processing, light manufacturing, special economic zones and trade logistics (domestic and export) will be important in driving economic growth.

- **Stimulating private investment** – growth to date has been driven by public investment, but continued growth will increasingly involve private investment. This is through inward Foreign Direct Investment (FDI) and domestic investment. Improvements in trade logistics will increase the attractiveness of Ethiopia for both foreign and domestic investment.

- **Supporting non-agricultural employment** – transitioning agricultural workers into non-agricultural employment will require support in skill development and training as well as transport to link employees to new workplaces.

- **Enhancing exports** – Ethiopia has preferential trade access to major markets (namely the EU and US), the opportunities from which can be optimised by enhancing quality and better targeting demand in these markets. Strengthening exports also requires improvements in trade logistics.

- **Maintaining fiscal stability** – Sustained growth can only be achieved in a stable macro-economic environment. In particular, this includes reducing foreign exchange expenditure and increasing foreign income (improved balance of payments).

- **Focusing on micro, small and medium-sized enterprises (MSMEs)** – Recognising that Ethiopia's current dispersed population and economic structure requires the creation of local and networked enterprises to ensure equitable creation of opportunities for all sections of society and the economy. The emphasis on MSME development is apparent from the Ministry of Urban Development, Housing and Constructions' (MUDHCo) identification of it as a key strategic pillar for urban development in Ethiopia.

- **Creating industrial zones** – Particularly in Addis Ababa, Kombolcha, Dire Dawa and Hawassa. These are designed to catalyse private sector-led industrial activity with a focus on manufacturing. The benefits of these can be seen from international precedent such as the Jebel Ali Free Trade Zone (JAFZA) in Dubai, where related industries are offered preferential regulatory, fiscal and infrastructural incentives to operate. Secondary economic activities nucleate around industrial zones, providing associated services and materials as part of the economic value chain. As a result further economic activity is induced, including in the commercial sectors, in order to provide employees within industrial zones with the services that are typically required.

- **Structuring effective infrastructure development** - Such as road, rail and telecommunications. This is critical in providing areas that are economically unserved with projects that economic development can nucleate around. For example, the Addis Ababa-Djibouti rail project and other pipeline projects

such as the Addis Ababa/Sebeta-Mieso and Mieso-Dewanle lines open access to areas, connecting rural populations to each other and to urban centres, as well as connecting urban centres to each other. Telecommunications is increasingly important and seen as a 'leapfrog' technology that allows populations access to information which can be used to increase productivity and have positive social outcomes; for example, coffee farmers in Ethiopia use mobile phones to access market prices and related information such as weather forecasts in order to better manage production against quotas. The nature of infrastructure, whether it is disbursed or centralised, plays a key role in shaping the form and outcomes of Ethiopia's economic geography.

- **Planning megaprojects** - In addition to the creation of industrial zones and provision of infrastructure, other megaprojects such as special industrial projects, the commissioning of universities and other policies and programmes also serve to stimulate growth and make towns and cities viable as centres of economic activity.

In order for Ethiopia to attain its goal of achieving LMIC status by 2025, the effective coordination of these economic growth engines is required. In addition, and especially where public investment is required, there is a need to match the supply side of economic development with the profile of where demand is and what it looks like.

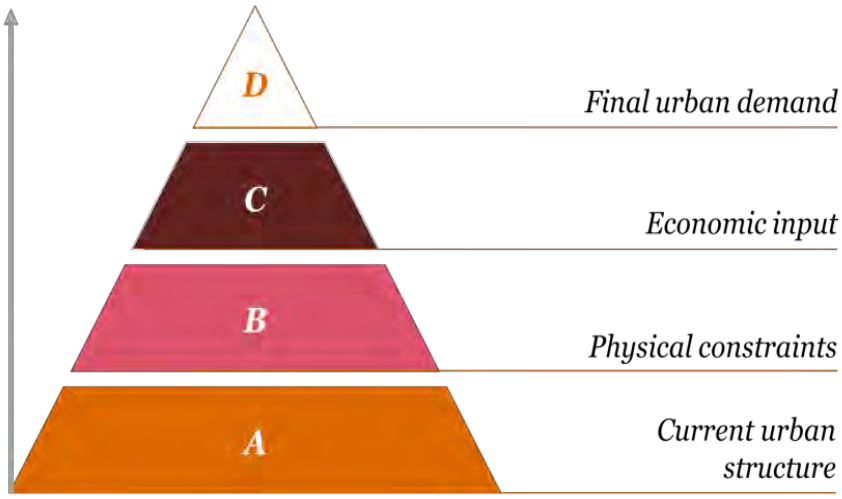
Stage 2: Physical constraints and economic opportunities analysis

2.1. Physical and spatial constraints and drivers

Ethiopia's spatial economic structure needs to be delivered both from a baseline of the country's existing urban structure, and in consideration of certain physical and resource constraints. There are also economic opportunities which will drive and shape the spatial nature of urban development in Ethiopia.

We have developed a spatial urban demand model using GIS which reflects these constraints and opportunities. This model will show the areas of the country that are best suited to sustainable and efficient urban expansion: where the greatest opportunities or **'accelerators'** of urban growth exist and where there are few or no constraints or **'decelerators'** of growth. This information can be used to shape future urban expansion and focus government intervention to stimulate secondary city growth in the best suited areas.

Figure 5: Urban demand and suitability: model layers



The three layers of the urban demand model are:

- **A. Current urban structure.** Urban development and expansion evolves from the pre-existing national urban system. Urban areas do not appear in new locations (unless through specific government intervention) but rather emerge around and near to current towns and cities as transport infrastructure develops and satellite areas appear. The current urban structure in Ethiopia acts as a baseline from which urban development and expansion will evolve.

- **B. Physical constraints.** Urban areas require sufficient water supply (both surface and groundwater) to meet population and industrial needs. Urban development should be focused close to sources of water that are able to meet what may be relatively large demand without resulting in water stress for surrounding regions. Natural hazards e.g. earthquakes and severe flood events, can cause significant damage to urban areas and disrupt their effective functioning. Climate change is a risk multiplier when considering natural hazards such as flood and drought events. More frequent and severe flood and drought events will likely pose greater threats to urban areas in the future. For that reason, developing and expanding urban areas in high risk zones does not make sense from a climate resilience perspective. Expanding urban areas in parts of the country where natural hazards pose a lesser threat will result in these urban areas being fundamentally more resilient to climate change impacts and requiring less investment in adaptation measures in future.

- **C. Economic inputs.** Urban development and expansion should be focused close to sources of commodities e.g. minerals for industrial input and agricultural products for processing. Urban areas should also be centered near transport routes for export markets to maximise export oriented economic growth. Proximity to input materials and export locations will drive and reinforce economic growth in these urban areas and lead to continued expansion.

Table 4 details each of the sub components for each of the three layers of the urban demand model and their weighting and influence on Ethiopia's urban development.

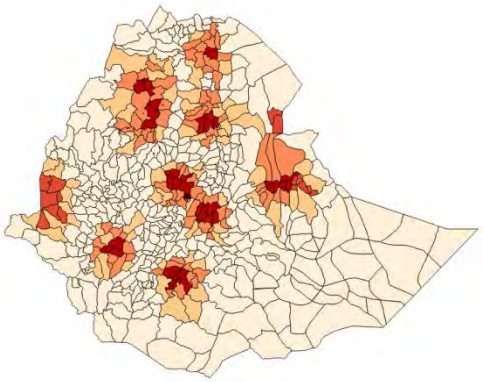
Table 4: Data layers of Ethiopia's urban demand model

Layer	Layer weighting	Sub-component	Sub-component weighting (%)	Urban development 'accelerator'	Urban development 'decelerator'
A. Current urban structure	**20%**	Largest urban areas and regional capitals	20	■	
B. Physical constraints analysis	**35%**	Water availability	20		■
		Flood risk	5		■
		Drought risk	5		■
		Earthquake risk	5		■
C. Economic input analysis	**45%**	Natural resource availability	15	■	
		Agricultural activity	15	■	
		Port proximity demand	15	■	

Each of the sub-components is spatially represented from our GIS analysis in table 5. Alongside each sub-component map is a short explanation as to how the sub-component acts as an opportunity or constraint for urban development and expansion.

Table 5: Urban demand model layers

A	***Current urban structure***
1	Largest urban areas and regional capitals



The areas shaded in dark red show the largest urban centres and regional capital towns of Ethiopia.

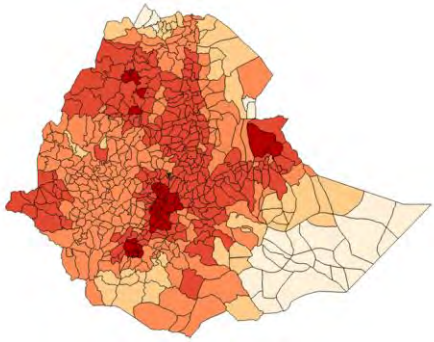
Current urban areas will drive future urban development and expansion. Towns and smaller cities represent the beginnings of future large secondary cities. Rural populations will be attracted to these areas and economic activity will develop in and around them. This is a natural process but one which the Government can steer and shape.

Creating urban areas in new areas where existing settlements are not present is expensive and difficult due to the lack of basic infrastructure and transport network.

The current urban network acts as a starting point from which key growth poles can be selected to drive growth and expansion and to develop a network of secondary cities.

B Physical constraints analysis

2 Water availability

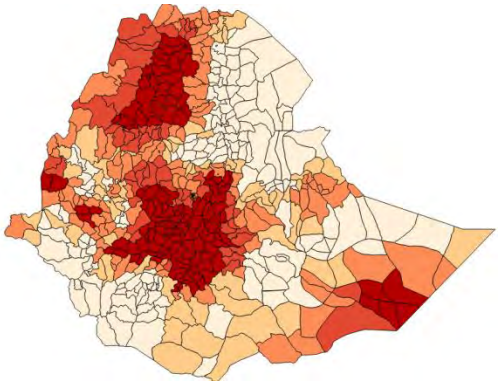


The areas shaded in the lightest colour are the most water scarce regions in Ethiopia. Those shaded in dark red have surface and groundwater more readily available.

Water scarcity is a constraining factor in urban development. Large populations and water intensive manufacturing and processing industries require significant quantities of water to thrive. Thus, water scarce areas are unable to support such populations and activities and urban development will be limited. In areas where water is more readily available there exist opportunities to expand economic activities and population bases.

The demand pressures on water must also be considered. The areas with highest water availability may not necessarily be the most suitable location for urban development if demand for that water source is already very high e.g. for irrigation use in agriculture. Water availability and demand must both be considered as factors in constraining and providing opportunity for urban development.

3 Flood risk



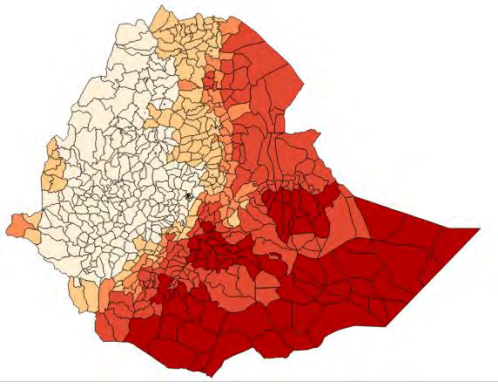
The areas shaded in the darkest colour are at greatest risk of flood events. Those shaded with a light colour have a relatively low risk of flood events.

Severe flooding is a constraining factor in urban development. Flooding can cause significant damage to urban infrastructure, services and economic activity as well as impacting human health. Climate change may increase both the frequency and severity of flood events in the future. Building flood protection infrastructure, future proofing new buildings and implementing flood protection schemes in regions of high risk will be necessary. These may be costly to develop and deliver.

Where possible, urban expansion should be focused in areas where flood risk is lower and impacts from severe flood events will be limited. Urban areas located outside of flood zones will be more resilient and ultimately more successful in their expansion and contribution to economic growth.

Where urban development is necessary on a flood plain or in high flood risk zones, flood resilience measures will need to be implemented.

4 Drought risk

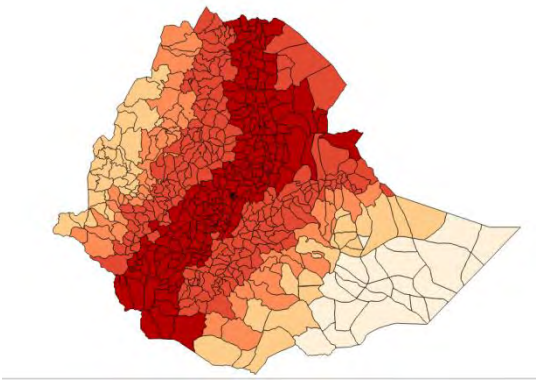


The areas shaded in the darkest colour are at greatest risk of drought events. Those shaded with a light colour face low to no risk of drought.

Severe drought is a constraining factor in urban development. Extended periods of high temperatures lead to reductions in surface and groundwater supply and limit agricultural crop yields. This reduces food and water available to sustain local populations, particularly large urban populations. This can lead to significant health implications for an urban workforce. Food and water will need to be sourced from greater distances and government intervention may be required in the distribution of goods to drought ridden areas and populations. Climate change may increase both the frequency and severity of drought events in the future.

Where possible, urban expansion should be focused in areas where drought risk is lower and where local agricultural commodity supply is more resilient to sustain a large urban population.

5 Earthquake risk

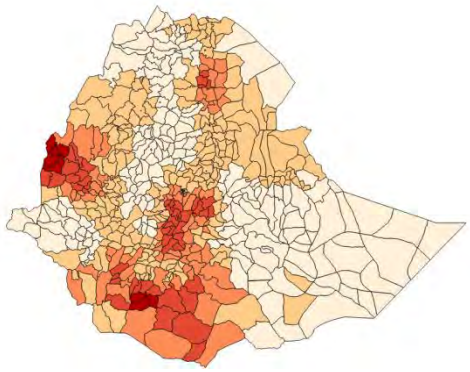


The areas shaded in the darkest colour are at greatest risk from earthquakes. Those shaded with a light colour have low to no risk of earthquake activity.

Earthquake activity is a constraining factor in urban development. Earthquakes can cause significant damage to or destruction of critical urban infrastructure and services. This can disrupt a city's economic activities and population and lead to major economic losses.

Where possible, urban expansion should be focused in areas where low or no earthquake activity is predicted. In areas where earthquake activity is predicted to be higher, consideration will need to be given to designing buildings and major infrastructure that can withstand seismic shocks. These updates to buildings may prove expensive to deliver.

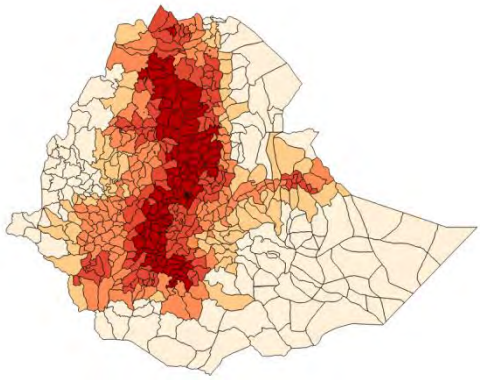
C	*Economic input analysis*
6	Natural resource availability



The areas shaded in darker colours represent areas of high natural resource availability. The natural resources we have considered within this map are oil, coal, gold, gemstones and industrial minerals. We have not mapped all natural resource deposits in Ethiopia but rather have focused on areas where the greatest clusters of deposits are observed.

The presence of available natural resources in close proximity acts as a driver for economic growth and urban development. Minerals for industrial input will spur the growth of new industries and processing plants in and around regions where these minerals and deposits are extracted, to minimise transportation costs. This will drive economic growth and job creation in the region and lead to population migration to the area. Local towns will expand to accommodate these migrating populations and develop into larger urban economic hubs.

7	Agricultural activity



The areas shaded in darker colours represent areas of higher agricultural activity. Those areas shaded in the lighter colours represent areas where agricultural activity is limited.

The presence of proximate agricultural growing areas can act as a driver for urban development and expansion. The local production of agricultural commodities can provide a food source for a large urban population and inputs for the agro-processing industry. The country is seeking to increase agricultural productivity and increase the value of agricultural commodities. This will likely be achieved by the development and expansion of the country's agro-processing and manufacturing industries. It makes sense for these industries to be located close to where their inputs i.e. agricultural commodities are grown and sourced. The expansion of industry will attract rural populations to these areas leading to urban development and expansion.

8	Port proximity demand

The areas shaded in darker colours are those that are closest to export routes and ports: Eritrea to the north, Djibouti to the east, Kenya to the south and to a lesser extent Somalia to the south east.

Port proximity will drive economic growth and urban development in these regions. Existing towns and smaller cities with direct access to port routes (and therefore also connected into national transport infrastructure) will be preferential locations for export trade and activities as the country develops a larger export orientated industry sector. These smaller urban areas could start to act as trade hubs, attracting rural populations through job creation and also foreign investment through strong economic opportunities. This attraction of population and investment will drive the development and expansion of larger urban areas in these regions.

2.2. Climate sensitivity

Whilst climate change will have a spatial impact on Ethiopia, and this has been captured in the table above, accentuating the physical constraints of water availability and drought risk, climate change will also affect Ethiopia's economy significantly. A wide range of work has already been conducted on the present and projected vulnerability of Ethiopia to Climate Change[4].

[4] Examples include papers, analysis, data and reports from the World Bank, International Food Policy Research Institute, International institute for Environment and Development, International Institute for Sustainable Development, Oxfam, institute of Development Studies and many others.

High climate variability is experienced across the country, with high and erratic rainfall causing droughts and both large scale flooding and flash floods. The impacts of these flood and drought events are widespread, affecting livelihoods, agricultural production and food security, damaging property and infrastructure, accelerating land degradation, and contributing to malnutrition and water-borne disease (Federal Democratic Republic of Ethiopia, 2007).

The agricultural sector is currently the major component of the Ethiopian economy – both in terms of GDP and employment, but is highly climate-sensitive, particularly as production is based on traditional rain-fed crop agriculture. As a result, crop yields are strongly dependent on both temperature and precipitation. Transport infrastructure in the country is also highly climate-sensitive, with the majority of roads in Ethiopia being unpaved and lacking drainage, therefore easily degraded by heavy rains and flood events.

Rapid population growth and the rise of urban areas will expose an increasing proportion of Ethiopia's population, economic assets and infrastructure to flooding. Addis Ababa is already experiencing an increasing number of flash floods during the rainy season which is causing damage to buildings and infrastructure.

Most of the existing knowledge base work understandably focuses on the sensitivity of the agricultural system, however far less has been done to project the impacts of climate on growth and development of the built environment and key planned infrastructure.

Table 6: Sector versus Hazard – High-level sensitivity analysis

	Agriculture (crops)	*Agriculture (livestock)*	*Utilities*	*Construction*	*Transport and ICT*	*Manufacturing*	*Finance and insurance*	*Mining and quarrying*	*Tourism*
Overall sector risk rating	Severe	Severe	Severe	High	Medium	Medium	Medium	Low	Low
Floods	Severe	Severe	Severe	Severe	Severe	High	High	High	Low
Droughts	Severe	Severe	Severe	High	Low	High	Medium	High	Medium
Extreme temperatures	Severe	Severe	High	High	Medium	Medium	Medium	Low	Low
Geophysical (e.g. earthquakes)	Medium	High	High	High	Medium	High	Medium	Medium	Medium
Landslides	Low	Low	Medium	Medium	Severe	High	Low	Severe	Low

Severe High Medium Low

Climate change is projected to expose Ethiopia to greater weather variability in the future. Ethiopia's average annual temperature is projected to increase by 1.5°C to 3°C by the 2050s (relative to the baseline 1961-1990 period) and projections of the change in annual rainfall range from -30% to +30% by the 2050s (OECD, 2014). Increases in severe flood and drought events are also possible. There is evidence that climate change, in combination with development and population pressures, will exacerbate asset destruction in urban areas due to flood events (Jalayer et al., 2013). The sensitivity of the energy sector is also expected to increase as a result of climate change, through what is expected to be an increased volume of hydroelectric power generation which is inherently sensitive to climate conditions (OECD, 2014).

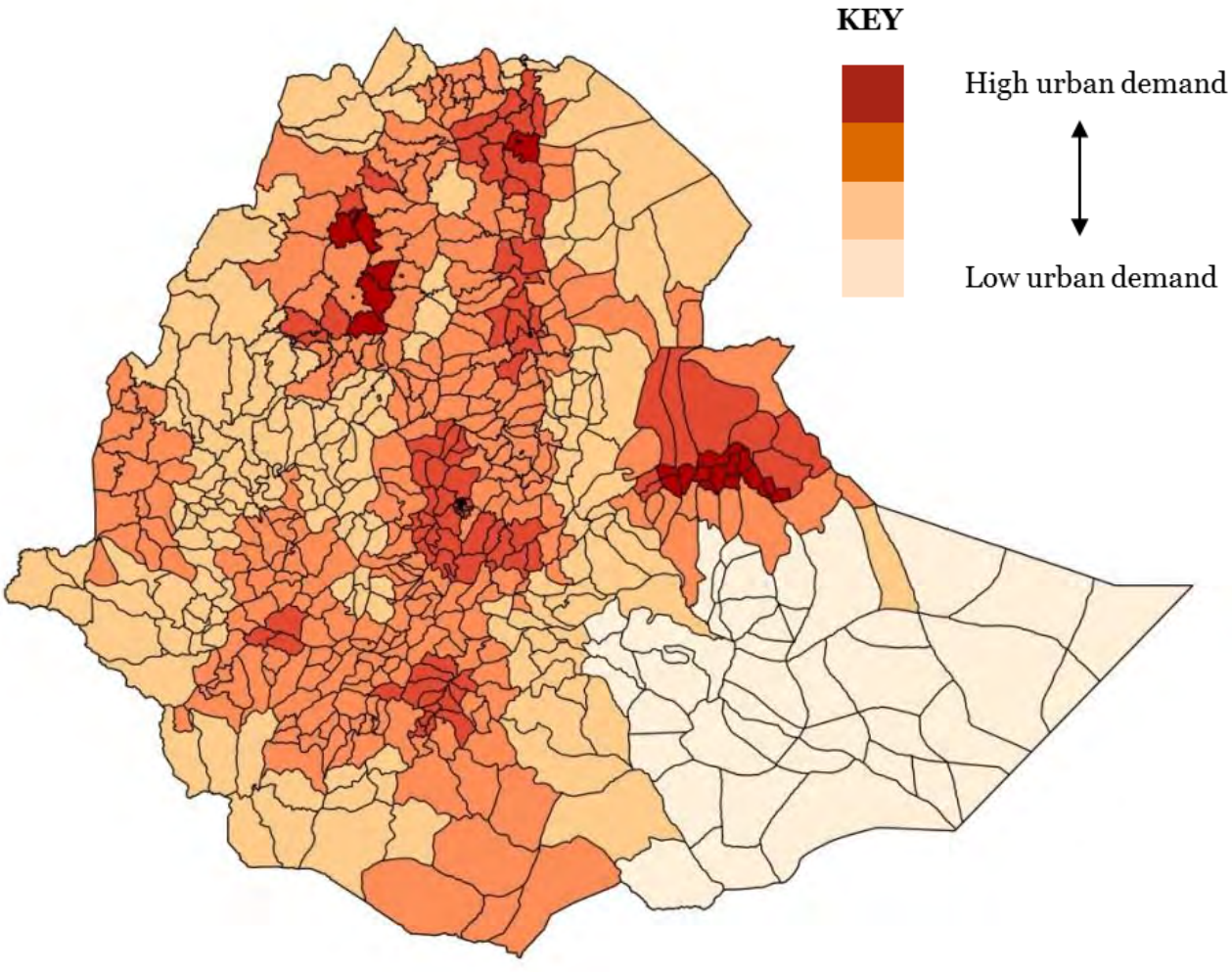
The impact of climate change on Ethiopia is likely to dampen economic growth and development; this is especially true because of Ethiopia's basis as an agricultural economy. Climate change may cause reductions in crop yields and affect the long-term suitability for the growing of certain agricultural commodities.

Compounding this is Ethiopia's reliance on hydroelectric power which is dependent on rainfall and therefore especially vulnerable to drought arising more frequently and severely from climate change. Furthermore, the increased frequency of extreme weather events such as storms may also occur, resulting in localised hazards. How urban systems consider these risks and respond to these through adaptation is therefore an important component of Ethiopia's national urban strategy in delivering a climate resilient green economy.

2.3. Spatial urban demand and implications for urban development

Spatial urban demand varies across Ethiopia as would be expected due to the specificity of the different drivers and constraints as described earlier. Figure 6 shows Ethiopia's spatial urban demand. The Woredas shaded in darker colours are the areas of the country that are best suited to sustainable and efficient urban expansion: where the greatest opportunities or 'accelerators' of urban growth exist and where there are few or no constraints or 'decelerators' of growth. The highest urban demand can be seen around the current urban centres of Dire Dawa, Bahir Dar, Gondar and Me'kele with significant demand also around Dessie, Adama, Hawassa and Jimma. Considering the Government's planned secondary cities, this reinforces the choices made in selecting these urban growth areas.

Figure 6: Spatial urban demand outputs



Some interesting findings are raised by the spatial outputs of urban demand that may highlight gaps in the existing urban development pattern:

- The southern and western regions of the country are both relatively well suited to urban growth and expansion but there are no current designated secondary cities for these regions. Whilst these regions may not support a city of the same size as Mek'ele or Dire Dawa there is potential scope for one or more tertiary cities in each of these regions, potentially Arba Minch, Finchawa or Moyale in the south and Asosa or potentially Gambela in the west. The southern region could act as a trade and export corridor through to Kenya and particularly the port of Lamu in which case additional urban areas in this region may be required to support this export growth. The western region of the country around Asosa has relatively high natural resource availability which will likely drive industrial growth in the northern regions around Mek'ele and Dessie. An urban centre close to extraction areas in the west could be supported and would serve to strengthen rural-urban linkages in the region.

- There is a lack of urban and economic development opportunities in the south eastern areas of the country, in the Somali region. The region is the least suited to urban expansion and a number of constraints exist, including low water availability and high risk of severe drought events. This raises an important question as to whether urban development should be limited here, and to what extent. The region may be best suited to a small number of urban villages, to provide some level of regional balance.

- The proximity of some of the planned secondary cities to each other suggests that some may thrive at the cost of others. For example, a dominant centre may emerge from either Mek'ele or Dessie to act as the industrial cluster of the north. It is unlikely that both areas will take on the same function and rise to the same status.

- The World Bank's EUR found spatial variation in job creation. Northern cities such as Adwa and Mek'ele have been creating and sustaining employment cross-industry, whereas others such as Dire Dawa actually created net job losses – as labour requirements in these industrial sectors is losing out, despite being identified as priority sectors under the GTP II.

Stage 3: Benchmarking and scenario development

3.1. Selecting countries with similar characteristics

Case studies of countries that have made the transition from developing country to MIC status can offer insight and lessons from which to draw upon. Many of these countries have experienced rapid economic growth, which, in some instances, has been driven and reinforced by effective urban development. Considering Ethiopia's vision to achieve LMIC status by 2025, these countries can act as useful examples to draw knowledge and learning from. Policymakers in these countries have set ambitions and goals, considered policy options and made decisions to shape and drive the national urban structure and nature of economic development. Lessons can be learned from the successes and implications of these decisions and actions and applied to the context of Ethiopia.

To source the most applicable lessons learned we focus on countries that earlier in their development trajectory exhibited similar characteristics to present day Ethiopia. These countries illustrate potential economic and urban development pathways that Ethiopia may follow. A long list of countries (see Table 7) was selected based on the following basis:

- **Agricultural dependency prior to rapid economic growth.** Economic growth and development is driven and accelerated by industrialisation and the move to the provision of services. A shift in society/economy from agrarian to industrial and service-related can pose a significant challenge to a country as well as delivering the benefits of economic growth. Understanding how other countries have faced the challenges of rapid and mass rural to urban migration, and if and how they have maintained balanced regional development between metropolitan and rural areas, may be usefully applied to Ethiopia's situation. Ethiopia is currently a largely agrarian country with over 90% of its population living in rural areas and agriculture contributing to more than 90% of the country's exports.

- **A large, and growing, population.** Societies that have a large and young population, with a high number of individuals of working age seeking employment, face challenges in managing and directing these young populations, as well as housing and providing essential services to them. Knowledge of how countries have proactively (or reactively) acted to direct or manage a young and increasingly mobile population will be critical to apply to the Ethiopian context. Ethiopia has a relatively large population, already over 90 million, of which around 40% are currently under the age of 15. Effectively managing the migration and flow of these individuals as they reach working age will be critical.

- **Devolution of power to sub-national and local level.** Countries where some urban planning strategy development and implementation is devolved to regional/local departments and authorities may face difficulties in balancing national and local interests and drivers. Understanding the balance between national and local policymaking and planning influence, and the associated impacts on urban development, will be useful to consider in the context of Ethiopia. Whilst central policies are developed at the national level in Ethiopia there is an element of devolved power given to regions and zones to implement these policies.

- **Low urbanisation rates and limited network of large urban centres.** A large rural population and limited urban growth prior to industrialisation provides a country with a wide range of potential opportunities, and therefore choices, to drive urban growth and development. Looking at choices and decisions made by economies in this position previously will provide insight for Ethiopia when considering available urban development options and potential implications of such options. Less than 20% of Ethiopia's current population live in urban areas and the urbanisation rate, to date, has been relatively low.

Table 7: Long list of countries and Multi-Criteria Analysis

Comparator country	No. years to reach MIC	Baseline year	Year achieved MIC status	Change from baseline year to year achieved MIC status								Key economic sectors				
				GDP per capita ($)	Population	Urban pop. (% of total)	Pop. in urban areas > 1 million (% of total pop)	Largest city pop. (% of urban pop)	No. cities > 1 million	No. cities 500,000 – 1 million	No. cities 300,000 – 500,000	Agriculture	Forestry	Extractives	Manufacturing	Services
South Korea	5 years	1973	1978	$ 25,977	+3 million	+8%	+6%	-1%	+1	+2	+2				✓	✓
Brazil	8 years	1969	1977	$ 11,208	+20 million	+8%	+5%	+1%	+4	-1	+8	✓	✓	✓	✓	✓
Malaysia	9 years	1970	1979	$ 10,514	+3 million	+8%	+3%	+3%	No change	+1	-1		✓	✓	✓	✓
Colombia	21 years	1972	1993	$ 7,826	+13 million	+14%	+5%	No change	+2	+1	+2	✓		✓	✓	
China	12 years	1992	2004	$ 6,807	+131 million	+13%	+7%	No change	+36	+60	+90	✓			✓	
Thailand	14 years	1976	1990	$ 5,779	+13 million	+5%	+1%	-3%	No change	No change	No change	✓			✓	✓
Indonesia	28 years	1978	2006	$ 3,475	+89 million	+26%	No change	-10%	+2	+6	+1	✓		✓	✓	✓
Philippines	30 years	1976	2006	$ 2,765	+45 million	+12%	+1%	-8%	+1	+3	+2	✓		✓	✓	✓
Honduras	30 years	1976	2006	$ 2,291	+4 million	+17%	+4%	-3%	No change	+2	No change	✓		✓		
Vietnam	11 years	2000	2011	$ 1,911	+10 million	+7%	+3%	No change	No change	+2	-1	✓			✓	✓
India	23 years	1988	2011	$ 1,499	+226 million	+3%	+3%	+2%	+26	+12	+15	✓		✓	✓	✓
Ethiopia		2014										✓	✓			

Analysing the growth period from developing country to MIC status in Table 7 provides some interesting insights on how countries' urban structures have changed during this transition period.

- All countries show a significant increase in urban population during this transition period, with the exception of India.
- Rapid population growth (in percentage terms) posed a challenge to economic development, with double-digit population growth resulting in at least 12 years to attain MIC (in the case of China), and between 21 and 30 years (for Colombia, Indonesia and the Philippines). This should be a point of note to policy makers; Ethiopia's population is expected to grow between 22 and 30% between 2014 and 2030, and the lessons from other countries show that the implication of this is likely to be a longer time period to attain MIC status.
- For a large proportion of the countries considered, there was little change in the share of the total urban population living in the largest city. Most countries show little or no change, with the exception of Indonesia and the Philippines where the urban population in the capital shifted to other urban areas in the country (the share of the urban population living in the largest city dropped by 10% and 8% respectively). From this, it seems that countries undergoing this transition are not following a 'primary city' model where the largest city remains the sole driver of economic growth. Rather, it suggests that countries have diversified their national urban structure to balance against the largest primary city.
- There appears to be a steady progression of cities through the size classification. There are few examples of a decrease in the number of cities within a certain size classification i.e. where one city has moved up into the next size classification, one or more cities have risen up from the classification below. This growth and development across the different tiers of cities can be seen in all the countries analysed, with the exception of Malaysia and Vietnam.

We focus on detailed case studies of **South Korea, Colombia** and **Vietnam**. These 3 countries were selected to provide a range of approaches and experiences to urban development.

South Korea is admired as a development success story, taking only 5 years to reach MIC status and having now achieved high income status: GNI per capita is nearly USD 26,000. South Korea now exhibits a largely urban population and provides a longer term potential vision for Ethiopia beyond its current LMIC ambition for 2025. South Korea has used its urban development to drive and accelerate economic growth. This can provide useful lessons for Ethiopia to consider and apply.

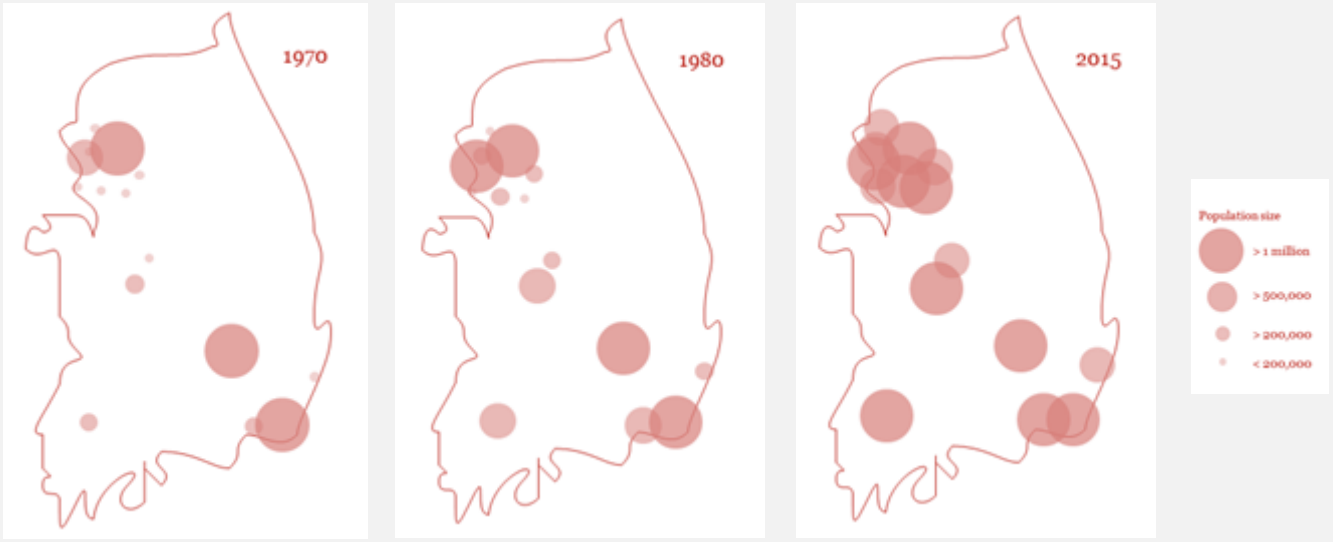
Colombia has followed a slower development pathway but is now a prosperous and expanding upper MIC country. Colombia is similar to Ethiopia in a number of respects, including being rich in natural resources, facing physical geographical constraints and having a similar land mass area. Colombia now has a largely urban population across a diverse range of cities that have emerged.

Vietnam has a similar population size to Ethiopia and is still in the relatively early stages of urban development. It has a much lower urban population currently than other MIC countries, with a lower number of large cities and smaller populations living in these cities. Learnings from Vietnam's recent past and initial decisions as to how to address future rapid urbanisation will be useful in shaping early stage choices available to Ethiopia at the start of its urban development trajectory.

3.2. Country case studies

South Korea

Figure 7: Spatial representation of South Korea's urban development from a baseline similar to Ethiopia's (1970) to LMIC status (1980) to present day (2015).



An economic success story

Korea has transformed rapidly from a largely agrarian society in the mid-20th century to what is now an economic powerhouse. Taking only 5 years to move from an economic position similar to that of Ethiopia to 'Middle Income Country' status, Korea is now one of the wealthiest nations in the world. Korea became the first major recipient of donor aid to achieve high income status and can be seen as an example of positive and fast development. As one of the fastest growing economies from the 1960s to 1990s, Korea was driven by its industrial sector and adopted an export-oriented economic strategy to drive the economy at pace. The export of goods and services now accounts for over half of Korea's GDP. Large national companies ("chaebols") were established specialising in electronics and digital technologies, textiles, automobiles and shipbuilding.

What does Korea's urban structure look like?

The Korean urban hierarchy is dominated by Seoul. A city of around 10 million, Seoul acts as the main administrative national and international city with numerous public functions. It is an attractive location for siting company headquarters and focuses on services, including research and finance. Satellite cities to the south of Seoul e.g. Bucheon and Seongnam, have grown rapidly but are still influenced by the central function of Seoul. They have failed to take on as many of the urban functions of Seoul as expected. The Seoul urban area, known as the Capital Region (CR), now covers much of Gyeonggi province (and the city of Incheon) and remains the key driver of the Korean economy.

Busan, located on the south-west coast, has emerged as the second largest city (a 'Tier 2' city). It is one of the world's top 5 hub ports and exports high added value intermediary goods e.g. cars and their components, predominantly to markets in China and Japan. A network of smaller but still major cities (population 1-2.5 million each) has emerged, which includes Incheon, Daegu, Daejeon, Gwangju and Ulsan. These cities have promoted the development and specialisation of a few key sectors to drive economic growth:

- Daegu is focused on textile and apparel industries
- Incheon is focused on transportation and logistics and recreational services
- Gwangju is focused on high precision engineering and historical and cultural services
- Daejeon is focused on electronics and defence industries

Korea benefits from an extensive network of railways, highways and bus routes. There was a clear commitment in the 1970s and 1980s to infrastructure investments: expressways linking and connecting the major cities and railway improvements and electrification reducing freight transport times.

Korea's economic and population challenges

Korea faced broad resource and demographic challenges to economic development. The country has limited natural resources of its own and overpopulation in a small land area. An industrial-driven and export-oriented approach was adopted by the country as a result. This approach led to 2 key challenges as Korea began to move along its development pathway – the overwhelming focus on the growth of Seoul, and linked to this, the increasing income disparity between the industrial and agricultural sectors. In the 1950s Seoul's population was less than 2 million but had reached over 5 million by 1971. The city was described as a vortex, pulling in people, and wealth, from the rest of the country. Factories in Seoul and Gyeonggi Province employed 48 percent of the nation's 2.1 million factory workers. By emphasising the industrial sector, Seoul's export-focused development strategy left the rural sector relatively underdeveloped. Increasing income disparity between the industrial and agricultural sectors and spatial polarisation became a major concern during the period of Korea's rapid economic growth.

Government actions and policy choices to address these challenges

Korea set goals of restraining Seoul's growth and encouraging a more balanced and decentralised national urban development. In the period 1960-1990, as Korea, was growing rapidly, the Korean government attempted a range of policy options to achieve these goals.

Applying the growth pole concept to Seoul and Busan. Korean planners and policy makers designated the already developing metropolitan areas of Seoul and Busan (about 500km apart) as growth poles. The aim was to generate spread effects to areas surrounding Seoul and Busan by establishing and promoting industrial activities in the two cities. If these 2 metropolitan areas developed further, other urban centres would also develop through a trickle-down effect. This, however, was not the case. Seoul and Busan grew rapidly. The development of industrial bases and provision of infrastructure and services concentrated in and around Seoul and Busan, along with easy access to domestic and international markets, caused the two areas to develop at pace. Other urban areas paid the price, with decreasing growth. Other cities that were less well developed became comparatively less attractive to develop and lagged behind in industrialisation. Income disparity increased and migration to Seoul and Busan exploded, causing major city planning issues.

Opening of the suburban electric railways. Suburban rail links were established between Seoul and Incheon and Seoul and Suwon. This set off the metropolisation process around Seoul and encouraged commuting and rapid development along these rail corridors.

Establishing new towns. New towns were developed around Seoul for the resettlement and relocation of industries. Tax reductions were offered to people and businesses moving from Seoul to the new towns in Gyeonggi province: Bundang, Pyungchon and Sanbon to the south of Seoul, and Ilsan and Joongdong to the west. All towns were located within 20 km from Seoul's CBD. Overspill populations and industries moved to these easily accessible new towns and other existing small towns surrounding Seoul. This however continued to reinforce the national economic growth imbalance between Seoul and the rest of the country.

Developing a greenbelt around Seoul and Incheon. The Seoul-Incheon metropolitan area continued to focus economic growth away from other areas of the country. Korean policymakers wanted to apply a brake on Seoul's physical growth. Without the space to expand, the city has become more and more heavily congested with a very high population density (twice that of New York). Leapfrogging development occurred with a huge conurbation appearing beyond the greenbelt causing growth to still remain focused within the province. The greenbelt did little to prevent urban sprawl but lead to immensely high house prices in the centre.

Administrative decentralisation and public sector industrial complexes. National administrative functions concentrated in Seoul were decentralised into regional centres. Large scale public sector industrial complexes were also established to encourage the development of these regional centres. New urban growth patterns began to reduce the dominance of the two major cities and regional centres began to appear. Urban development in the largest third tier cities such as Daegu, Gwangju and Daejeon was guided by the establishment of dynamic and growing industries and improvements in spatial accessibility and housing supply.

National land development plan. An increased focus on regional centres and cities promoted the establishment of new growth centres for exports. A Southeast Coastal Industrial Belt/Development Corridor was developed, consisting of the coastal industrial complexes of Ulsan, Busan, Pohang, Changwon, Masan and Yochon, and the inland industrial complexes of Daegu and Kumi. These became major regional centres for steel, petrochemicals, fertilisers and machinery products, which reduced the distribution and procurement costs of these products. A Western Coastal Development Corridor was also established to build links with new cities in China, North Korea and Russia through the construction of ports, industrial bases, highways and logistics complexes. The two corridors were linked to form an L-shaped corridor or economic zone.

Integrated Regional Settlement Areas (IRSAs). A more elaborate and balanced spatial distribution plan focused on the development of smaller urban centres and rural areas was implemented. The country was divided into 28 IRSAs according to criteria of homogeneity and size of central city which was designed to act as a central point for each region. This included 5 large metropolitan city IRSAs (Seoul, Busan, Daegu, Gwangju, Daejeon), 17 local city IRSAs and 6 rural city IRSAs. Daegu, Gwangju and Daejeon were designated as growth poles to counterbalance Seoul and Busan by absorbing a portion of their functions. Designating regional centres as growth poles aimed to increase the functions of these regional centres and reduce those of the largest metropolitan areas. The 17 local IRSAs were designated as second level growth poles and were planned to develop to the level of Daejeon, with a population size of about 500,000 by establishing facilities similar to those of Daejeon. These centres were intended as centres for labour-intensive manufacturing, trading and administrative services which provide crucial support for rural populations. 6 rural cities were designated to help stabilise rural areas by facilitating the modernisation of rural facilities and establishing agricultural and fisheries, processing activities to absorb rural migrants closer to their homes. The stimulation and growth in these regional centres could counteract the growth of Seoul and Busan, which was needed for a more balanced urban hierarchy in the country. The urban development pattern shifted. Rapid growth occurred in regional centres while Seoul's growth slowed. Broader spatial distribution and a more balanced urban development was fostered throughout the country. There still remain issues of underdeveloped rural areas, however. Migration to local, rural cities is leaving rural areas in crisis. A lack of educated young people is failing to increase the efficiency of production and build the potential to supply high quality agricultural products to urban areas.

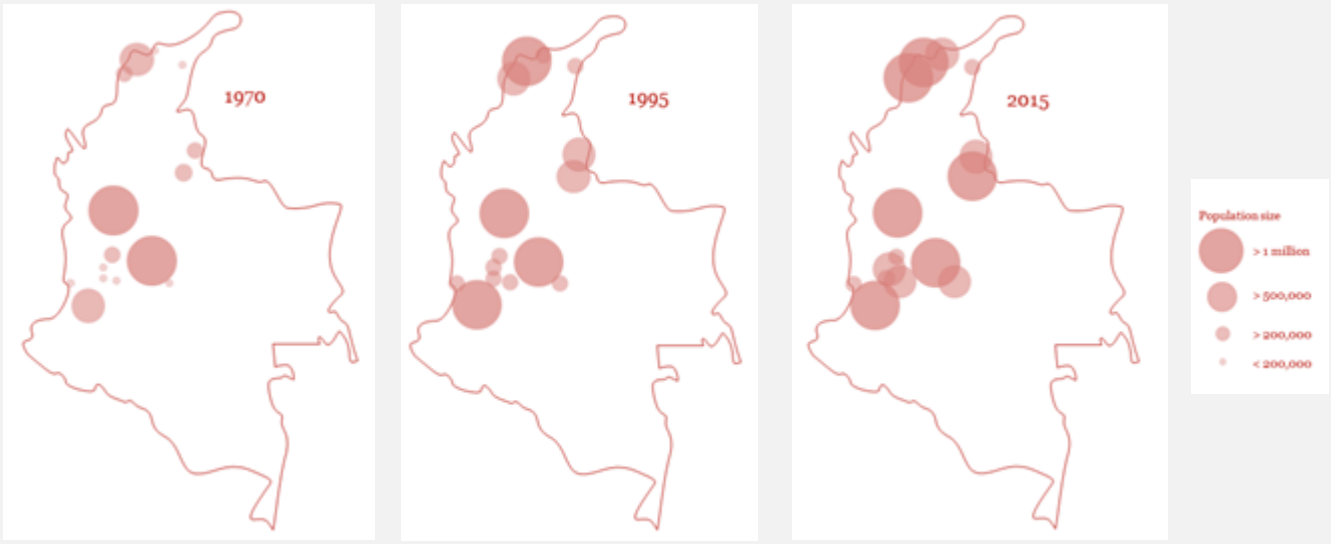
Regulation of the Capital Region. Strict regulations on land use have been imposed in the CR, aiming to limit the growth in this region. Relocation of firms out of the region into other areas – a move stimulated by a Comprehensive Incentive Package – consisting of financial assistance, tax incentives, development rights, reductions in moving expenditures, and the establishment of a service centre for industrial relocation.

Lessons learned from Korea

1. Ethiopia might look to stimulate the development of Tier 2 (local city IRSAs) and Tier 3 (rural city IRSAs) cities, following the growth pole concept in Korea. Selecting only one or two growth poles may be insufficient to counteract the projected growth of a projected mega city like Addis Ababa. A second (and potentially third) level of urban hierarchy located evenly throughout the country may be the most reasonable counterbalance to Addis Ababa.
2. Appropriate selection of growth poles is key to success. Less developed towns or small regional cities should be designated as growth poles to accelerate industrialisation and encourage these areas to keep pace with larger, more developed urban areas. If the focus remains on existing, well developed cities, less developed cities or towns will appear less attractive to develop and will consequently suffer. Spatial and hierarchy consideration is also important. Growth poles should be designated throughout the country and tiers of growth poles are required to ensure that a smaller city is able to take on some of the same urban functions as a local larger city. The same urban functions need to be allocated to regional centres as currently exist for Addis if growth and development goals are to be achieved.
3. Despite decentralisation policies and more balanced national development plans from the government, the Korean economy has always been organised and remained oriented around Seoul since the beginning of its economic development. This model (a primary city/metropolitan area and supporting cities) has worked effectively for Korea and could be applied to the Ethiopian context: Addis can act as a primary city provided it is supported by a broader urban network.
4. Ethiopia might look to implement a parallel development plan in rural areas, vital for the success of urban development in the country. The development of local agricultural towns with mechanised agriculture and agricultural processors is critical to prevent high regional income disparity.
5. Establishing a greenbelt around a city such as Addis may not restrict urban sprawl or the rapid development of a growing and dynamic city. Leapfrogging development will potentially occur and impacts to housing prices and traffic congestion may be seen.
6. Ethiopia could look to establish an intercity rail network between designated 'growth pole' cities to improve freight transport times and ensure the efficient and effective movement of goods.

Colombia

Figure 8: Spatial representation of Colombia's urban development from a baseline similar to Ethiopia's (1970) to LMIC status (1995) to present day (2015).



Economic growth driven by an urban network and a new focus on sustainability

Colombia is an expanding upper middle income country and the third largest economy in South America. One of the four 'Pacific Puma' economies, Colombia has transitioned from a largely agrarian society to one of the most urbanised countries in Latin America in the last 50 years. Over the past four decades more than half of GDP growth (average GDP growth of 4-5% per year) has been driven by urban economic activities. The expansion of the urban network has concentrated economic growth and improved standards of living, particularly in Bogotá, Medellín, Cali and Barranquilla. Mass migration to cities from rural areas has accelerated as Colombia has transitioned to a primarily export-based economy and established urban jobs, particularly in the extraction and processing industries. Rich in natural resources e.g. oil, precious stones, forest products, and other commodities e.g. coffee and other agricultural products, Colombia has developed a significant export market as well as a strong base in services e.g. banking and financial services, tourism, and software and IT services.

Two thirds of Colombia's energy comes from renewable sources, predominantly hydroelectric generation. Current (transport) infrastructure however is strained between and within large cities which have grown rapidly. Significant spending on infrastructure is required in many cities. A number of Colombian cities have previously been home to cartels, and crime and lack of security has been an issue hindering development. Equity is also a key issue, with high income disparity between urban and rural areas and also within urban areas. Colombia is particularly vulnerable to climate change and natural disasters. In the last 90 years the country has experienced an average of 183 natural and man-made disasters per year, with a high risk of flooding, landslides, earthquakes and volcanic eruptions in many cities. As a result, the country is taking environmental and sustainability issues seriously and taking leadership in considering sustainable urban development and future proofing cities.

What does Colombian urban structure look like?

Colombia has a large and diverse network of growing cities. A number of large secondary urban centres have developed in addition to the capital Bogota, e.g. Medellín, Cali, Barranquilla and Bucaramanga. Whilst Bogotá has a population of nearly 8 million, there are 5 other cities with a population between 1 and 3 million and another 5 over 500,000. The number of cities with more than 100,000 inhabitants grew from nine in 1951 to 40 in 2006. 76% of Colombia's population now lives in urban areas.

Economic development in other Latin and South American countries remains highly concentrated in one major city e.g. 46% of Argentina's GDP comes from Buenos Aires with the second city, Rosario contributing around 9%. In comparison Bogotá contributes around 24% to the national economy, followed much more closely by the second-largest city, Medellín at 9%.

Medellin is a modern urban centre, closely resembling Bogota. Industrial manufacturing drives the city, although is now in decline. The construction industry and non-financial services are rising to prominence. Medellin was declared the most innovative city in the world and the preferred corporate business destination in South America in 2013. Cali's connectivity to the Pacific port of Buenaventura has provided it with an outlet to the global market. Its GDP is driven by industry, real estate, non-financial services and commerce. Barranquilla is an industrial port city on the Caribbean

coast responsible for shipping a large amount of Colombia's coal and oil exports, as well as a range of other manufactured and industrial goods. Cartagena is a historical city as the principal port and economic centre during colonial times. Its historic downtown centre is an UNESCO World Heritage site and an important tourist destination. It also derives GDP from fishing and industrial manufacturing. Bucaramanga's proximity to large hydrocarbon deposits has made it an unofficial capital for the growing energy industry. It is home to the Colombian Petroleum Institute, the research branch of the state oil and gas company Ecopetrol and the Colombian Natural Gas Company. There is also a high concentration of industrial activity and construction.

Colombia's urban centres are physically constrained by topography (Andes mountain range and Amazon rainforest), and the majority of urban centres are located along the coast or in the highlands of the Andes mountains. The lack of transport infrastructure linking major urban centres remains another key factor restraining the flow of goods and labour and thus broader economic growth. In several cases it is cheaper for companies to export than it is to ship goods domestically.

Colombia's economic and population challenges

Colombia faced a period of high population growth and extensive rapid and uncontrolled rural to urban migration in the mid 2oth century. The population of Bogotá alone has increased from just over 300,000 in 1938 to approximately 8 million today. Growth and expansion of these urban centres continues today, with indications that rural to urban migration is increasingly direct, from agricultural regions to the large urban centres, bypassing smaller centres. Pressures of population growth in the major urban centres of Colombia have been (and in some cities, continue to be) severe with overcrowding, slum establishment and poor intra-city transport infrastructure. Social issues of crime, lack of security and high income disparity also continue to be a problem for some of Colombia's cities. Continued rural to urban migration is expected with a large young population. In 2005 over 30% of the population was under 15 years old, compared to just 5.1% aged 65 and over. Economic development is also hindered by a lack of sufficient inter-city infrastructure connecting key urban areas.

Government actions and policy choices to address these challenges

Urban development in Colombia appears to have been more reactive than proactive. Urban areas have developed based on their proximity to natural resources e.g. oil, mineral reserves. Colombia's regions are known for diversity in natural resources. Certain government policies and interventions have shaped the country's urban development, although a number of these have been more reactive measures.

Accelerated Economic Development plan. This policy promoted large scale industrial farms and industrial agribusinesses producing for export rather than local consumption. Subsidies were provided to large scale farm owners and small landholders were evicted from land and forced to migrate to urban centres. This policy resulted in insurgency in rural areas and guerrilla wars across the country, funded by the narcotics trade. Rural Colombians sought security and opportunities for work and migrated to cities. This approach has created a large economic imbalance between urban and rural areas.

Growth of free trade zones and the attraction of MNCs. The government has progressively introduced a number of investment incentives designed to promote investment, employment and economic growth from industrial and service activities. In the 2010 "Doing Business Report," the World Bank ranked Colombia as the most business-friendly country in Latin America. In the 1960s Colombia established and continued to expand permanent free trade zones ("zonas francas") in large and growing urban areas. There are now 6 in total, located in Bogotá, Medellin, Cali, Cartagena, Barranquilla, Cucuta, Bucaramanga and Eje. In these zones multiple new companies can establish projects and are subject to more favourable tax and customs treatment. In return, companies must meet certain investment and job creation requirements during the first 3 years of operation. Free trade zones can be seen as regional development poles. Colombia has also nurtured foreign investment. Foreign investment regulations have been loosened allowing greater freedom for the repatriation of profits, a higher percentage of foreign ownership and investment, in a wider variety of firms. By 1986, more than 700 foreign firms were operating in the country, totalling USD 2.7 billion in investment. One side effect has been the unbalanced nature of economic growth with significant focus on large and international companies and little encouragement of the growth of small and medium-sized businesses. Wealth has been focused within a small number of companies and individuals in key sectors and has had limited trickle down to the poor. There is a large (and growing) income gap between the urban rich and poor, and Colombia's cities are some of the most unequal in Latin America.

Exploitation and exports of oil resources. By the 1980s, the government placed more emphasis on oil, which created more urban jobs in the extraction and processing industries and ultimately led to a tripling of oil exports. This surge encouraged other private companies, which helped diversify the economy and increase domestic consumption. This growth caused a large number of rural inhabitants to migrate to cities such as Bucaramanga and Barranquilla.

Devolving power to municipalities. National governments of Colombia have historically handed urban policy to the municipalities. The rapid growth of provincial urban centres poses administrative and political problems however. In many cases, municipalities do not have the technical and financial capacity to meet the challenge of properly designed

cities and towns. One example is the Medellin Master Plan (MMP). In the 1950s as Medellin was growing rapidly, a plan was established for the expansion of the city into a large metropolitan area. The population of Medellin exploded faster than anticipated, however, and the city limits grew to areas that had not been considered in the MMP. High levels of in-migration to Medellin provided workers for the expanding textile industry which in turn encouraged a greater flow of rural migrants and caused temporary settlements to appear beyond the expected bounds of the MMP. Major problems arose, including a lack of service provision in poor areas, urban violence and the reduced potential for an effective transport system.

Public-private partnerships. The city of Cali's growth was encouraged through public-private partnerships, particularly in infrastructure development. The growth of the university was also crucial for training professionals and leading to further industry and trade in the surrounding area.

Transport infrastructure investment. Cali initially developed as a commercial and urban centre away from its previous focus as an agricultural hub after the construction of the railway linking it to the port of Buenaventura. Connectivity between urban centres and regions is relatively limited at present. The Colombian government has now committed to invest USD 100 billion in infrastructure by 2021, which will finance adding 2,000 kilometres to the country's road network.

Intra-city transport systems. The implementation of inter-city commuter rail services e.g. Metro de Medellin, has had a transformative effect on urban areas, including the reduction of social exclusion. Bogotá has also implemented a Bus Rapid Transit (BRT) system which has a capacity and speed similar to most metro systems and can move 46,000 passengers per hour per direction at peak times. Bogotá has transformed its public transit system and is now heralded as a model for effectively moving a developing country city's transportation system towards sustainability.

Involvement in sustainable urban development programmes. Colombian city planners are increasingly seeking external advice and input to develop and implement more sustainable urban development strategies. Valledupar and a number of other Colombian cities are part of the Urban Expansion Initiative, a programme launched by New York University to help cities make long-term preparations for their growth. Cartagena has sought to integrate climate change adaptation into city planning and sector management.

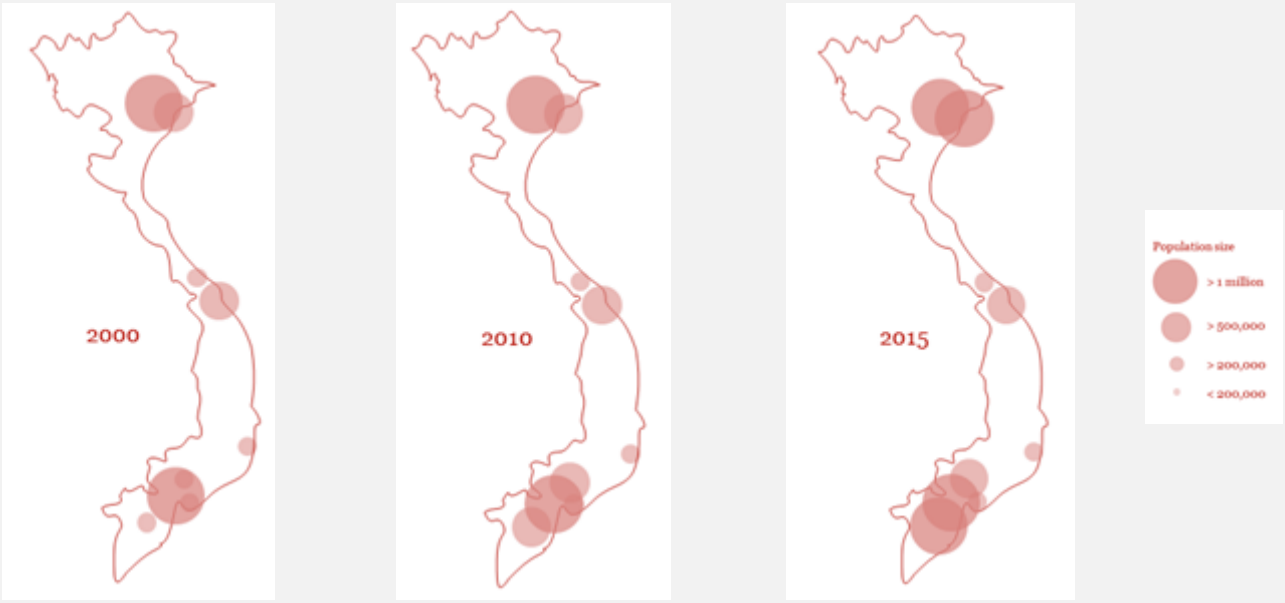
Rural development in Colombia has been relatively neglected. Agriculture has been growing at a much slower rate than the rest of Colombia's economy with low productivity and underutilised farmland. By encouraging displaced people to return to rural areas and foster new urban centres, the country has the capacity to positively stimulate the economy further. To achieve this, policy initiatives will need to stimulate key drivers of human development in rural areas by promoting access to land, improving public administration and closing the gender gap.

Lessons learned from Colombia

- Ethiopia might look to multipolar growth and the development of diverse urban centres in the same way as Colombia to give the country a more balanced population and economic growth. These cities provide buoyancy to the wider economy by providing a large, active domestic market and focus areas for value-added manufacturing. Acting as competing "growth poles" that are attractive as locations for industrial and commercial expansion, these cities relieve some of the pressure on Bogotá. The conglomeration of urban centres also provides a platform for the shift from a resource driven economy to a knowledge-driven one.
- Ethiopia should ensure that strong transport links between secondary cities and an integrated national transport infrastructure is established. Connectivity between urban centres is critical to stimulate the effective and efficient flow of goods and labour. More connectivity between regions helps to transport goods and workers more efficiently and stimulate rural economies.
- Ethiopia could consider seeking a more sustainable urban transport model for Addis Ababa e.g. a Bus Rapid Transit system, using Bogotá as an example.
- Ethiopia could seek a more balanced growth model between larger companies and SMEs to ensure that growth is pro-poor. Colombia has focused on attracting foreign investment and MNCs but has failed to create an enabling environment for SMEs and microenterprises. This has resulted in inequality growing faster in Colombian cities than in other Latin American cities. As part of a more balanced growth model, Ethiopia should consider policies to drive rural development simultaneously and use regional urban centres as a focus for agriculture.
- Ethiopia could focus designated growth poles on key sectors, similar to Colombia's experience with oil in Bucaramanga and Barranquilla. Increased income and employment from an initial industry will bring in other industries to the region.
- National and municipality governments need to work together to address urban development. Territorial planning must be addressed with a clear vision and technical knowledge, so that cities and towns grow in an organised and sustainable fashion. To facilitate this, municipality and local governments may require more and stronger channels of information, coordination and control from national government.
- Ethiopia may want to consider the use of public-private partnerships to drive growth of new urban centres.

Vietnam

Figure 9: Spatial representation of Vietnam's urban development from a baseline similar to Ethiopia's (2000) to LMIC status (2010) to present day (2015).



A focused urban development vision

Vietnam has already reached LMIC status but its urban population remains relatively low compared to emerging and developed economies. Much of the country's growth is now being driven by the emerging urban centres – over 70% of Vietnam's GDP emanates from the country's urban centres. Since 1986 and the adoption of Doi Moi policies (liberal market mechanisms, encouraging private sector initiatives) the country's urban population has begun to grow. There is an increasing economic transition toward industrial manufacturing, away from agriculture and towards an increasingly export oriented focus. Vietnam is in the incipient stage of urbanisation, transitioning to an intermediate stage of rapid urbanisation. Since 2000 the urban population has increased from 22% to 32% of the country's total population. As the country enters a crucial phase of urbanisation, the government has committed to a proactive and planned management of urban development in order to maximise the benefits of this urban transformation.

What does Vietnam's urban structure look like?

Population growth in the last 10 years has been highest in the largest cities of Ho Chi Minh City (HCMC) and Hanoi and their surrounding regions e.g. Hai Phong city, close to Hanoi and Can Tho, close to HCMC. Smaller cities have been growing the least, or, in some instances, have lost populations to the larger cities.

HCMC and Hanoi act as two independent and dominant urban systems. They have driven rapid economic growth through high growth and industrial concentration in their surrounding areas. The elongated shape of the country has naturally resulted in more than one principal economic growth pole. HCMC and Hanoi have developed along slightly different trajectories.

HCMC is focused on manufacturing production, mainly of low value added products. Hanoi and the surrounding Red River Delta region is focused on heavy and higher technology manufacturing due to its proximity to massive industrial bases in southern China. Outside of the two growth poles, Da Nang is a large port city, centrally located along the Vietnam coast. It acts as the commercial and educational centre of central Vietnam and is a hub for transportation being located on the National Route 1A road and the North-South railway. Hue, located closely nearby, continues to be an important historic and cultural destination.

The two dominant modes of freight transport within the country are inland waterways and roads. The majority of freight movement is currently intra-regional i.e. raw materials and manufactured goods are normally transported relatively short distances around the main urban centres. As such regional transport links are the strongest with national infrastructure linking the main urban areas being somewhat weaker.

Vietnam's economic and population challenges

Vietnam has previously been a largely agrarian economy. It is now expecting a high and rapid urbanisation, similar to what is likely to be experienced in Ethiopia. Effective management of such a rapid transition will be critical. National transport infrastructure is highlighted as a potential factor limiting economic growth. Whilst the dominance of the two urban systems of HCMC and Hanoi is recognised, these two regions face logistical bottlenecks and high freight transport costs. Improving urban road and infrastructure conditions should be priorities, particularly investments in spatially connective logistic infrastructure to sustain HCMC and Hanoi, the engines of economic growth for Vietnam.

Government actions and policy choices to address these challenges

Development of an urban development vision and interim scenarios. Vietnam's policymakers have set a strategic vision to gradually develop Vietnam's urban system towards an urban network model. Interim scenarios have been identified to guide the transition through to 2050. An initial move towards an urbanised region scenario (smaller urban centres more specifically in the north and south of the country around the existing centres of Hanoi and HCMC) will be followed by a focus on developing a metropolitan region scenario (building metropolitan areas in the north, central and south of the country around Hanoi, Da Nang and HCMC). A final transition to a networking region scenario is then expected when urbanisation reaches 70%, equivalent to many developed countries. The desired outcome is a network of linked urban areas throughout the country.

Distinguishing clear city roles and classification. The Government Decrees No. 72 (2001) and No. 42 (2009) established city and town classification requirements in an attempt to distinguish between the roles of different cities. The classification system has implications for administrative functions, tax collection and state funding allocations. A possibly unintended consequence has been a trend for cities to exploit loopholes in the classification system to move up in the ranking. These moves are largely administrative and not necessarily based on the actual economic function of the cities. The current thinking is to develop a system of cities that each play a role in the country's urban economy.

Managing the rise of megacities and balanced regional development. Vietnam is seeking to foster a more even distribution of economic growth and urban development but has recognised that the rise of megacities with populations over 10 million is likely. Previously the government passed a decision calling for the development of medium and small sized cities while containing the growth of the largest cities. Subsequently, however, in a similar policy reversal move already witnessed in China, the government has accepted the likely rise of megacities in Vietnam (Hanoi and HCMC). Vietnam, has, to date, performed well as ensuring that welfare improvements are more widespread across the country. This relatively balanced distribution of service provision e.g. 96% of Vietnam's population has access to electricity, has been driven by a sustained and strong government commitment to more inclusive social development. It is underpinned economically by the strong growth of the two core cities and ensuing positive spill over to the surrounding rural regions.

Public sector, strategic infrastructure and foreign investment. Da Nang, in the centre of the country, has emerged recently as a thriving commercial and tourist centre having previously been a relatively small and insignificant town. State sector industry was initially focused in Da Nang and investment in infrastructure has led to better infrastructure then in other municipalities in Vietnam. The city has supposedly the best investment environment at Vietnam at the moment due in part to this improved infrastructure, whereas previously it lay in the shadow of Hanoi and HCMC and was often ignored for investment in favour of these more recognisable cities. The city's economy has grown faster than Vietnam's annual growth rate of 7%. From 2006 to 2010, Da Nang grew at 11% a year. During 2011 through 2013, the city's annual growth rate never dropped below 10% despite broader global economic stagnation. As well as improved infrastructure, Da Nang has brought about this growth through attracting foreign investment and promoting tourism. Concessions issued to foreign firms include the city covering infrastructure development costs for large investments over USD 20 million, a Land Use fee discount and a five year tax exemption. The city is also being promoted as a stop on the south-east Asian backpacker trail, being located within 100km of three UNESCO World Heritage Sites.

Lessons learned from Vietnam

- Ethiopia might look to develop a long term vision and interim scenarios for urban development. These provide a long term focus and goal and a clear pathway for urban development.
- Ethiopia might have to accept that Addis Ababa will become a megacity but simultaneously construct policies and an enabling environment for more balanced national growth and improvements in social welfare.
- To effectively promote new regional cities away from traditional growth poles i.e. Addis Ababa, Ethiopia could consider focusing state sector industry in the designated centre, investing in infrastructure and offering favourable conditions to attract foreign investment into the city or town.

3.3. Spatial planning and policy options

To supplement the 3 detailed case studies above, further examples of how other countries have responded to urbanisation issues are highlighted in Table 8 below. These examples highlight both good and bad practice in urban development and how these choices have led to both successes and failures in transforming a national urban system.

Table 8: Complementary examples of spatial strategy and planning from other countries

Issue	Country	Detail
Functions of growth areas	Pakistan	Pakistan's three largest metropolitan areas of Karachi, Islamabad and Lahore all have a different focus or specific function within the country. Islamabad is the more cosmopolitan city and as the national capital, performs the national political and administrative functions. Karachi is an industrial and service based city where large foreign multinational corporations have been attracted to invest. It is the centre of Pakistan's banking, industry, and trade and is the engine of the country's economic growth. Lahore is the cultural and historical centre of Pakistan.
	Germany	Germany is characterised by a polycentric urban system with a relatively evenly distributed network of several larger cities with different specialisations. The urban system is decentralised with urban development policy being more of a local than national concern. Some city regions are characterised by a distinct orientation towards service industries, whereas others remain focused on commercial and industrial activities. Berlin has a political and administrative role as the national capital. Frankfurt acts as an international centre of banking, finance and commerce. Hamburg is a trading and media focused city and Munich specialises in high-tech industry and services.
Primary cities	Turkey	Despite hopes that Ankara and Istanbul would act as twin growth poles in Turkey, Istanbul has raced ahead of the capital, Ankara, to act as Turkey's primary city. Istanbul has become a commercial centre for banking and finance, construction, manufacturing and services and is the growth engine of Turkey, trading heavily with surrounding eastern European and former Soviet states. Istanbul is seen as a global city, linking to Europe and the Middle East and also as a cultural hub of art and entertainment. Istanbul's population has quadrupled since 1980, now reaching nearly 13 million. The city has invested heavily in infrastructure, including a metro system, updated trams and a new rail tunnel. The rural poor are flocking to the city, driven by the high economic imbalance between rural areas and Istanbul. Inequalities in Istanbul, as a consequence, have been increasing. The city administration is now attempting to limit its population to 16 million in the fear that it will be unable to support a potentially larger one of 25 million.
	Indonesia	Jakarta is the primary city of Indonesia, and its domination over other cities in Indonesia has been increasing since the 1950s. Jakarta's population is larger than the combined population of the country's second, third and fourth most populous cities. There has been little investment in inter-city and inter-regional transport and telecommunications infrastructure by the government which has led to businesses and investors favouring Jakarta over other regions in Indonesia. There is growing awareness that there must be other large urban agglomerations that can compete with Jakarta and drive forward the country's economic growth. Policies are now being implemented to attempt to redress this regional imbalance, for example a government ministry has been assigned to accelerate the development of eastern Indonesia. It appears to be a difficult challenge to overcome Jakarta's dominance however. The implementation of the regional autonomy law, designed to stimulate local regional growth was unable to redistribute growth from Jakarta to other parts of the country.
City cluster development	USA	Clusters of cities have been established on both the east and west coasts of the USA. In some cases, specialisation is also seen within these clusters. A Silicon Valley cluster on the west coast has developed around San Francisco and smaller areas of San Mateo, Palo Alto and Santa Clara where technology and IT innovation is a key focus. On the east coast, the cities of Boston, New York, Philadelphia and Washington D.C. form a larger cluster that drives significant economic growth.
	China	China currently has ten city clusters including the Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta clusters. China is aiming to turn these into world-class city clusters whilst also developing a further ten clusters. The ten existing city clusters, covering 10% of the country's area, and supporting one third of the country's population, account for two thirds of the country's entire economic output and have turned into strong growth engines of the Chinese economy.
Priority growth areas	South Africa	South Africa has established four Industrial Development Zones (IDZs) in Richard Bay, Coega, East London and OR Tambo International Airport to develop industrial hubs to encourage entrepreneurship and competitiveness of manufacturing industries. These zones appear to have not lived up to expectations due in part to infrastructure (transport, communications etc.) constraints. The country is now considering the creation of special economic zones (SEZs) designed to improve the performance of existing IDZs. The aim of the SEZs is to accelerate industrial development, economic growth and employment outside current established hubs in order to make South Africa an attractive destination for foreign direct investment.

Issue	Country	Detail
New city developments and financing	China	As part of China's urbanisation plan a number of new cities were planned ahead of populations moving into new areas. These city developments have seen success in some instances but for others these new cities seem likely to fail. Labelled as 'ghost towns', their future is dependent upon their specific location to a great extent. The Pudong district of Shanghai is now filling up with people and business, due to its strategic location and proximity to the large port of Shanghai. In comparison, Ordos has been located in the middle of a desert where groundwater availability is very low. There are no signs that this ghost town is likely to become a thriving urban hub. Another major factor that has led to this trend is the lack of affordable housing available in these new city developments. Part of the reason that these city developments have arisen is due to the nature of local government financing. Local governments are provided little funding from national central government and pass much of their tax revenues up to the central government. Facing funding deficits, local governments buy land from poor residents at a low price and sell on to developers, a transaction which generates finance for them to deliver the necessary infrastructure in their region. The way that local governments finance themselves is therefore a significant driver for these new city developments to be built, even in physically constrained regions.
	Angola	A new satellite city, Kilamba has been built 18 miles outside of Angola's capital, Luanda. The city development built by the state-owned China International Trust and Investment Corporation (CITIC), is designed to house up to 500,000 people and covers 5,000 hectares. Kilamba is one of a number of new satellite cities being constructed by Chinese firms around Angola. To date there has been little uptake of people moving to Kilamba which raises questions as to the suitability of this new development. Kilamba is in an isolated location and only accessible by bus from Luanda which can take a number of hours. There is also a lack of affordable housing in the development and low access to credit which limits the ability for much of the population to purchase housing. If the city development fails to thrive in the future, the Angolan government will face a potentially large wasted investment.
Governance	Brazil	Brazil's capital relocation from the overcrowded Rio de Janeiro to the planned, built city of Brasilia was considered for a number of years and undertaken in the 1960s. Brasilia was established to encourage the development on Brazil's interior which was less economically developed than its coastline where cities of Sao Paulo, Rio de Janeiro and Curitiba had formed. Brasilia experienced very rapid growth after its designation as the national capital and the move was largely considered a success. Other countries have since followed this approach and relocated their capital to new cities to drive regional growth in that area.

Table 9: Evaluation of spatial policy options for urban development

Spatial options	*Definition*	*Pros*	*Cons*	*Examples*
Special economic zones (SEZs)	SEZs are geographical regions with greater levels of free-market laws and regulations than in rest of the country	- Attraction of FDI - Increase employment opportunities through job creation and upskilling - Improvement of local infrastructure and utilities - Promotion of exports - Acceleration of country's economic growth	- Displacement of farmers and loss of agricultural land - Uneven national growth with opportunities skewed towards SEZs - Loss in tax revenue - Can be more costly to monitor than the simpler FTZ (below)	**China:** Zones established with tax incentives to attract FDI and lower barriers to entry for foreign enterprises. Guangdong, Fujian, Shenzhen and Hainan were established as early SEZs in 1980s, strategically placed away from the capital Beijing to minimise outflow of investment from Beijing. Shenzhen is seen as a SEZ success story. Its population increased from 30,000 in the 1970s to over 10 million in 2000s by which time annual FDI inflows were $81.5 billion.
Free trade zones (FTZs)	An FTZ is an SEZ at its extreme – whereby there is complete free trade. As such, many of the above pros and cons also apply here	- Easier to administer than SEZs – as the terms are simpler - In allowing free trade, technology sharing is incentivized, spreading benefits widely	- As above - Furthermore, money laundering and customs fraud can be incentivised	**Costa Rica:** FTZs here offer member companies a wide range of financial benefits – including a 100% exemption for import and export duties. This has meant that the flow of new technologies into the country has been greatly incentivised. However, many types of companies – such as retail and tourism - do not receive exemptions here, and are capped in domestic sales – making it tough for start-up businesses.

Spatial options	*Definition*	*Pros*	*Cons*	*Examples*
Green belts	A green belt is an area – usually in a strip around a city – on which building is restricted	- Prevention of urban sprawl - Protects and maintains agricultural activities, rural communities and natural habitats from being absorbed by urban centres - Forces better land use within urban centres	- Creation of a physical barrier can limit the economic growth of a dynamic city - Once these are created – it is very difficult to attain public support to remove them	**UK:** Green belts in England now cover 13% of the total land area. They have been implemented in many areas other than London, around smaller cities such as Bristol, Cambridge and Oxford, as well as around urban clusters such as Manchester and Liverpool. However, green belt policy has been criticized, as rather than stopping urban development – the belts have simply been hurdled, leading to greater use of cars to travel across them, increasing pollution.
Urban corridor development	Often running between major cities, these 'ribbon' type lines of urbanisation develop around increased industrialisation and transportation links	- Natural, rapid urban development can occur between two nearby business hubs - This can be easily incentivised by strong infrastructural links between these hubs	- If developing into sprawling mega-regions and city-regions, this could create very high population density, leading to difficult living conditions	**Malaysia:** A manufacturing and service industry corridor has developed, running from Kuala Lumpur to the port city of Klang. This is the fastest growing urban corridor in the world, in terms of both population and economy. However, this urban sprawl has been met with concern from the World Bank, as it is growing rapidly with an arguable lack of necessary regulation.
Designation and allocation of growth poles	Specific 'poles' or clusters can be designated for economic growth or specialisation of a particular industry or service	- Can create areas for rapid industrial growth - Relatively easy to create through significant investments into a tight geographical location	- Must be carefully planned – as too much investment could cause excessive or uncontrollable urbanisation - Can develop at the expense of local agriculture	**Sao Paulo, Brazil:** This was a historically important growth pole for the region, providing the fastest levels of growth in the country in the 20th century. However, the rapid urbanisation led to a neglect of agriculture, and small farmers' livelihoods were negatively impacted.
Establishment of new towns or 'satellite' towns	Establishing new towns can be an alternative option to manage increasing urban populations.	- Creation of 'satellite' towns in undeveloped areas can help accommodate the increasing housing needs around urban areas - Industrial and commercial development alongside residential can create employment opportunities	- Self-reliance could become a double-edged sword – as the need for transport links is diminished if people don't need to move away – leading to a lack of mobility - Lack of transport infrastructure can cause these new towns to be isolated - New towns can create pockets of racial or ethnic uniformity due to lower mobility	**Singapore:** Significant investment into new towns since the 1950s has seen the successful development of many new residential areas – which are self-reliant due to commercial, industrial and recreational areas being built alongside the new housing – fuelling job creation. However, this option has also had its downsides, as these self-sufficient new towns have produced a lack of mobility. Additionally, new towns here have arguably created certain racial and ethnic bubbles in the city, meaning that the otherwise diverse population is split into geographical racial clusters
Tax incentives	Fiscal policy can include tax incentives that incentivise certain economic activities through reducing or removing their taxation	- Tax breaks on business can massively incentivise industrialization - These can be useful in urban planning, incentivizing businesses to move to new areas which need to be developed - Similarly, housing subsidies can achieve a likewise effect	- Tax breaks result in a loss of revenue for governments - Similarly, businesses with significant sunk costs will be unfavourably disadvantaged, as they may be unable to afford the move.	**Bogotá, Columbia:** Tax breaks for foreign investors are making this city hugely influential in the region. This brings in FDI as well as new technologies, helping to develop the human capital here as a beneficial knock on result. However, tax breaks do result in a loss of revenue for the government – meaning they may have to look elsewhere for financing opportunities.

Spatial options	*Definition*	*Pros*	*Cons*	*Examples*
Planning incentives and regulations	This involves providing limitations to factors such as building density or factory footprints. Such limitations can be either financially incentivised, or legally regulated	- Voluntary incentive schemes can be easy to administer - This could potentially involve green growth planning – with incentives for companies which adhere to certain carbon emission thresholds, helping to lower pollution	- These can be both complex and costly to monitor - Planning regulations can tend to favour bigger business with the capacity to afford cleaner green technology	**Chicago and New York:** Rewards based systems have been established to incentivise development which meets pre-set government criteria. As such, limitation thresholds were created, with financial incentives awarded to development which stayed within these limits. However, these did prove costly to administer, based on the effort required in monitoring.
Infrastructure provision	Infrastructure is a key to linking urban areas to one another in terms of transport. But beyond this, effective communications, waste and water management and energy production is required	- Transport links are vital in providing social mobility - Development of effective waste and water management are necessary pre-cursors to create an environment for sustainable economic development	- Energy infrastructure can be controversial – as even green options like hydropower can have negative impacts (see example) - Careful planning is required to prevent expensive over-provision	**China:** In Yunnan, hydropower expansion on the Mekong River is providing huge amounts of clean energy to be sold as far away as Shanghai. However, this is coming at a cost in food security for livelihood fishermen, as the changing water levels are destroying fisheries. This has further diplomatic implications, as food sources in downstream Mekong countries are being adversely affected
Urban design	This is the process by which cities are shaped on a large scale, such as the creation of park areas and industrial hubs	- Creation of building codes can give control over urban density and form - Detailed plans are required to ensure sustainable development - With effective planning, urban sprawl and slum creation can be avoided	- Neglecting agricultural rural areas in favour of spending on urban planning can lead to unsustainable development, and food insecurity - Even effective urban plans can have their downsides (see 'New Towns' above)	**Seoul, S. Korea:** In trying to overcome urban congestion and excessive carbon emissions, the government created greenbelts (see above) as well as public transport planning systems (reducing congestion) and waste-to-incinerator schemes for eco-friendly waste management. However – the fact that this planning has come after a huge amount of urban development – rather than before - means that they are not as embedded as they could have been.

Table 10: Financing mechanisms for urban development

Financing mechanisms	*Examples*	*Pros*	*Cons*
Domestic budget allocation	**São Paulo, Brazil:** R$15 billion of the R$90 billion total collected in taxes by the city in 2005 was dedicated towards urban planning. This gave the city a level of control over its urban development.	• Expenditure can be devolved to regional governments commensurate with regional urban demands • Usually subject to procurement rules favouring domestic suppliers	• Displacement of competing budgetary requirements • Liable to changes in priority on Government expenditure • Costs of urbanisation greater than can be met by Government expenditure
Government borrowing	**China** – local governments here have borrowed money via Urban Development Investment Vehicles (UDIVs). These have helped to finance the huge investment in urban planning across the country. However, this borrowing could pose both credit risks for the banks and fiscal risks for the local governments.	• Urban development costs are in domestic currency; greater control over costs	• Adds to Government debt and decreases country's creditworthiness • Accrual of interest on Government debt
Structural loans	**The World Bank and IMF** historically used to provide loans on the condition that 'structural adjustment' policies would be undertaken in a given country – most notably in African countries such as **Nigeria** and **Zambia**. In attaching such conditions, money was provided on the basis that good governance reforms would follow. However, these were heavily criticized, as the recipients could lack the capacity to manage the money effectively. The more recent Poverty Reduction Strategy Papers (PRSPs) of the World Bank and IMF are arguably more robust.	• Intend to help a state through providing finance and guidance towards good governance • Are generally very low interest loans (at or below 1%), and can even be written off as grants	• Governance policy reforms placed on national governments from international bodies • Lack of national ownership and control
Development finance	**DFID and the UN**, amongst many other Foundations and NGOs, are investing more in finance regimes for small and medium enterprise (SME), as well as micro-financing to alleviate extreme poverty. This involves making credit available for entrepreneurial ventures, which can rapidly help develop a city from the bottom-up.	• Making small loans available vastly increases opportunities for the urban poor • Beyond just creating jobs and stimulating economic growth, it can also allow for opportunities in business innovation in newly developing cities	• Concentrating on development finance in urban areas alone can leave rural agriculture lacking – leading to food insecurity
Foreign Direct Investment (FDI)	**China** is rapidly investing all over the world – most particularly so in Africa. Many of its investments – such as in hydropower development in **Ethiopia** – could provide massive beneficial economic and social knock on benefits for those living in cities which can receive the clean energy. However, some Chinese FDI has come under scrutiny – such as in **Angola** – where the country may only really be receiving short term monetary injections, with newly created job roles being taken up by Chinese workers. As such, this may lead exclusively to short term – and therefore unsustainable – economic development.	• Stimulate economic growth • Employment creation and upskilling of population • Tax revenues • Technology transfer (potentially including low carbon technologies) • Capital formation • Expanded international trade	• National and local firms unable to compete • Domestic suppliers tend to be bypassed • Potential worker and environmental exploitation by multinational corporations • High dependence on a small number of companies

Financing mechanisms	*Examples*	*Pros*	*Cons*
Revenue generation	**London** has progressively increased road tolls, parking, and driving limits over the past decade, introducing new charges within the centre to try to lower congestion whilst creating revenue. High parking tolls alongside this mean that a great deal of revenue is created to reinvest into the city – whilst reducing people's incentives to drive their cars there at the same time.	• Provides a simple way to generate a lot of revenue • Simultaneously lowers congestion while generating funds for urban planning	• May be unaffordable to lower-income groups • Potentially long payback periods • May marginalise those who cannot afford other means of reaching their office
Public-private partnerships	**Thailand** has been creating governmental policy which incentivizes private energy producers which are creating renewable energy. As a result, levels of renewable energy sourcing have greatly increased in the country	• Monetary incentives can easily incentivise partnership • Failing to effectively utilise the private sector in urban planning could risk wasting a valuable resource	• Lock-in to long-term contracts • Profit-making incentives from the private side could stand in the way of long term social or environmental public goals

3.4. Implications for Ethiopia's urban growth

These case studies and examples show instances of both successful management and shaping of the urban system and also examples of failure to act to drive a country's urban form. Some key insights applicable to the Ethiopian context can be extracted:

- Ethiopia should embrace the rise of Addis as a focal city for the country. Addis can act as a primary city provided it is supported by a broader urban network. Addis may be a focal point for economic growth, but experience from other countries suggests that a network of cities (multipolar growth) is needed to provide back-up to Addis and reinforce economic growth and development. The model of a primary city and supporting cities has worked in both the Korean and Colombian contexts with an example of a larger primary city (Seoul) and smaller primary city (Bogota). Supporting cities provide buoyancy to the wider economy by providing a large, active domestic market and focus areas for value-added manufacturing. The conglomeration of urban centres also provides a platform for a later shift from a resource driven economy to a knowledge-driven one.

- The development of a long term vision and interim scenarios may provide a long term focus and goal for Ethiopia, and a clear pathway for its urban development.

- The correct selection and designation of growth poles to counterbalance Addis is critical. A sufficient number or size of centres is needed to counterbalance the projected power of Addis. Selecting too few growth poles throughout the country or those that are already well developed may limit the ability to divert growth away from Addis. Spatial and hierarchical distribution of designated growth poles must be considered.

- The same urban functions need to be allocated to regional centres as currently exist for Addis if growth and development goals are to be achieved. Smaller cities and towns need to be able to take on some of the same urban functions of larger cities if their growth is to succeed.

- To promote regional cities, Ethiopia could consider the potential role of state sector industry, public-private partnerships, investment in infrastructure and the establishment of favourable conditions for foreign investment to drive growth in these new urban centres. The balance between foreign investment and SME/microenterprise activity should be considered to ensure that growth is inclusive and reaches the poorest. Creating an enabling environment for both foreign and local investment is important.

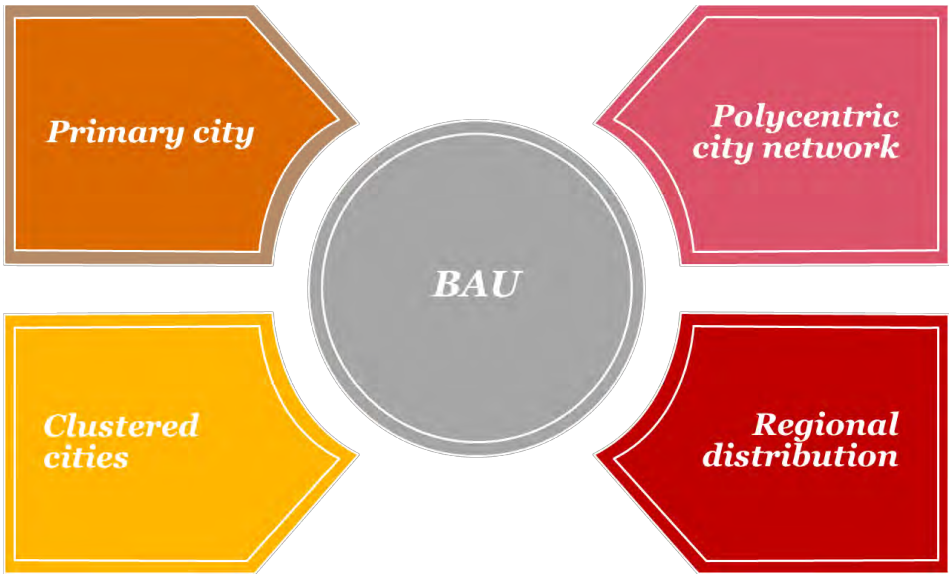
- Rural-urban linkages are critical to consider. Simultaneous rural development can drive and reinforce the success of urban development and minimise regional income/wealth disparities.
- Stimulating economic growth in new centres has appeared more successful than policies seeking to limit growth in large, dynamic and growing cities such as Addis. These policies (e.g. greenbelts, growth management plans) have generally been less effective and led to wider implications, including increased congestion, rising house prices and outflows of industrial activity where cheap labour and land can be guaranteed.
- The development of an integrated national transport infrastructure, particularly to connect growing urban areas is important. The connectivity of urban centres by high capacity road or rail networks encourages the efficient and effective movement of goods and labour.

National and municipality governments need to work together to address urban development. To facilitate this, municipal and local governments may require more and stronger channels of information, coordination and control from national government.

3.5. Presentation of alternative urbanisation scenarios

In addition to a Business as Usual (BaU) scenario, we have developed four alternatives for Ethiopia's urbanisation. These scenarios are based on the different types of national urban system that exist in countries worldwide including those covered in the benchmarking exercise. Each of these is broadly feasible to implement in Ethiopia, however they are not intended as complete individual solutions and it is likely that none will represent an appropriate model for urbanisation. They will, however, help us learn about the pros and cons of different approaches, which will in turn help to identify components of a preferred urban scenario and strategy.

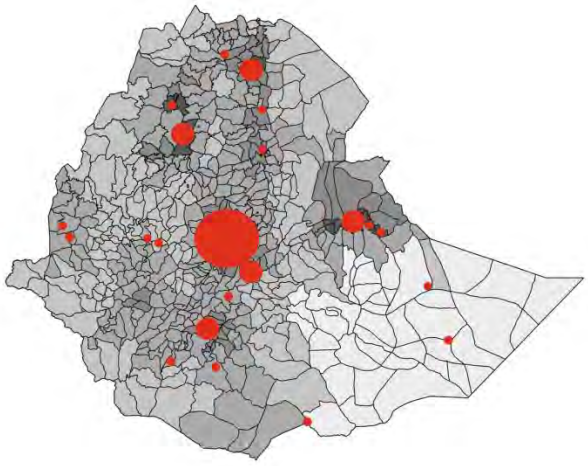
Figure 10: Four alternative urban development scenarios



Each reference scenario is described in more detail below. Assumptions have been made as to the nature and form of the specific urban components (form, function, transport, energy, social infrastructure etc.) which define each scenario. These components are driven by the physical choices selected by policy and decision makers; for example whether a high capacity rail system is put in place, whether urban areas are designated for specific functions or are governed centrally or through devolved power at the region or city level. A clear assumption for each component allows each scenario to be clearly defined and evaluated through our Performance Assessment Framework. The scenario components will result in different characteristics and outcomes for each scenario, the impacts of which will be measured through our indicator list in Stage 4 of the framework.

Alternative urban development scenarios

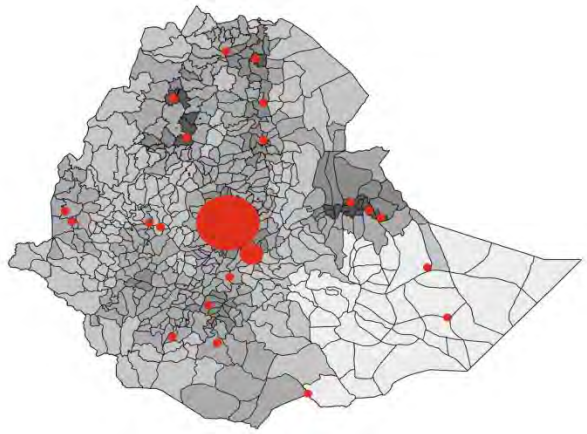
Business as Usual (BAU) scenario



Addis Ababa continues to grow but in an unplanned and reactively managed way. There is high rural migration in to the city and informal settlements appear as a consequence. Addis Ababa continues to deliver all the national political and administrative functions. The city attracts some industry and manufacturing development as well as foreign investment but these are relatively limited. A number of secondary cities appear organically across the country but perform similar functions and do not specialise. These secondary cities struggle economically, due to limited transport links and strong competition between each city. The GTP is delivered at a slower pace than expected and hoped. There is a high level of pull migration from rural Ethiopia into these secondary cities and regional income disparities become more pronounced. A network of urban villages exists which drives agricultural-led industrialisation in the regions. In these villages, there is some MSME development in the agricultural sector.

Assumptions made on component choices	
Function	A large primary city performing many of the national urban functions, including all national government departments. A number of secondary towns across the country each performing a similar function and home to some industrial, manufacturing and service industry.
Economic basis	Some global companies have offices in Addis Ababa and a small number of secondary cities. National companies are more common and there is some MSME development but this is limited.
Transport infrastructure	**Inter-city:** limited national public transit infrastructure beyond capital connection. Limited main road and rail network linking Addis Ababa to some of the country's secondary cities but movement of goods and people outside of Addis Ababa is slow and relatively inefficient. **Intra-city:** Addis is unable to retrospectively implement a transport system of sufficient capacity to meet the needs of the rising population. The organic growth of secondary cities has resulted in these areas being dominated by personal vehicle use and public transport systems are limited.
Energy infrastructure	Addis Ababa and the secondary cities are reliant on electricity generation from hydroelectric plants distant from these cities. Transmission infrastructure is long and unreliable. Electricity transmission across the rest of the country remains limited.
Water infrastructure	Water pipeline infrastructure is limited across the country. Water is piped from remote locations to Addis Ababa but additional pipelines need to be built to support the growth of the secondary cities.
ICT infrastructure	Limited ICT network is developed in Addis Ababa and in some of the secondary cities. There is no economic case for extending connectivity further across the country.
Urban form	Addis Ababa has some dense urban areas but there is much informal sprawl and slum development. Secondary cities are sprawling with limited public transport. Informal settlements have also appeared around the city limits of these secondary cities.
Social infrastructure and service delivery	Addis Ababa and secondary cities struggle to provide sufficient housing, healthcare, education and sanitation infrastructure and services for residents due to the rapid influx of rural migrants. Infrastructure continually comes under demand pressure and is degraded.
Governance	Addis Ababa and secondary cities are governed from a central function in the city. Urban governance capacity beyond Addis Ababa is limited, even in the larger secondary cities.

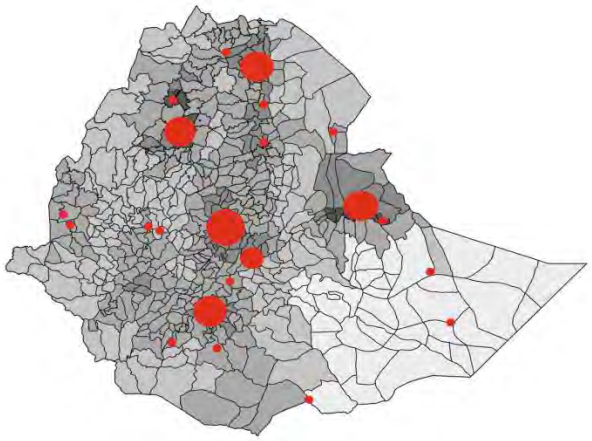
A *Addis Ababa as the 'primary' city*



Addis Ababa continues to grow into a dynamic multi-functional and cosmopolitan megacity. The GTP is still delivered but largely driven by industry and services based in Addis Ababa, as well as foreign investment directed into the city and special economic zones surrounding the city. Addis Ababa is seen as an international city and an attractive place to do business. It delivers all the national political and administrative functions and is home to internationally renowned universities and education. There is a high level of pull migration from rural Ethiopia into Addis Ababa and regional income disparities become more pronounced. Economic activity is still driven by foreign investment in other special economic zones outside of Addis Ababa. There is little contribution from SMEs and microenterprises. These industrial areas operate relatively independently of the main Addis Ababa metropolitan area and dynamic cities do not emerge around these zones. There will be a lesser need for an integrated rail network to other regions of the country.

Assumptions made on component choices	
Function	An international city performing many if not all national urban functions. All national government departments and major industrial, finance and trade activity located in Addis Ababa.
Economic basis	Large global companies have offices in Addis Ababa. Some MSME development but limited.
Transport infrastructure	**Inter-city:** Limited national public transit infrastructure beyond capital connection. Limited main road and rail network linking Addis Ababa to some of the country's larger market towns but movement of goods and people outside of Addis Ababa is slow and relatively inefficient. **Intra-city:** A high capacity system is developed in Addis Ababa which includes a major subway and rail network. This system struggles to cope with the ever expanding population of Addis Ababa.
Energy infrastructure	Addis Ababa is reliant on electricity generation from hydroelectric plants distant from the city and a long transmission grid. Electricity transmission across the rest of the country remains limited.
Water infrastructure	Large amounts of water are transmitted from remote locations to support the growth of Addis Ababa. New and long range infrastructure has to be built.
ICT infrastructure	Intensive ICT network is developed in Addis Ababa. There is no economic case for extending connectivity across the country.
Urban form	Addis Ababa has a dense primary urban area. There is informal sprawl and further slum development at the city limits and lower density development in smaller towns elsewhere.
Social infrastructure and service delivery	The city provides housing, healthcare, education and sanitation infrastructure and services for Addis Ababa residents but attempts to provide services to a rapidly growing population is a challenge. Infrastructure continually comes under demand pressure and is degraded.
Governance	Addis Ababa is centrally governed with a city-centric urban governance model. Urban governance capacity beyond Addis Ababa is limited.

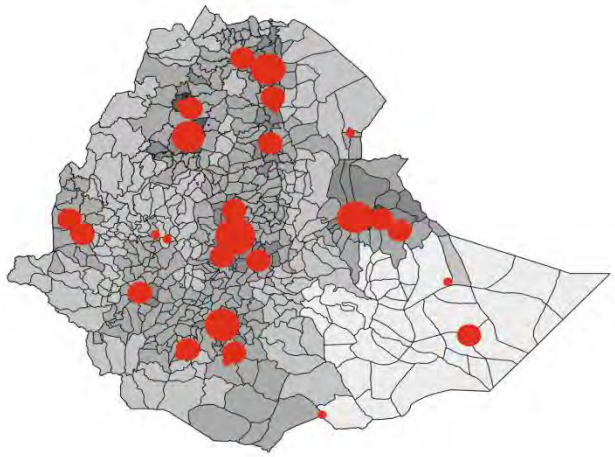
B *Polycentric city network*



A network of regional secondary cities emerges to support Addis Ababa. Addis Ababa retains national political and administrative duties and remains the largest urban area in the country but the other cities appear as dynamic and growing cities on the international scene. These cities are relatively diverse, some more focused on a specific sector or industry, but all drive a substantial portion of the country's GTP and economic growth. These cities build a strong domestic market in Ethiopia and encourage broader development across the country. SMEs and microenterprises become more engaged and active in these cities and urban-rural linkages are strong. A fast and efficient road and rail network links Addis Ababa to these secondary cities and other transport infrastructure is established in the surrounding areas reinforcing rural-urban linkages. A more balanced economic growth and service provision is seen across the country although some regions further away from these cities remain neglected to an extent.

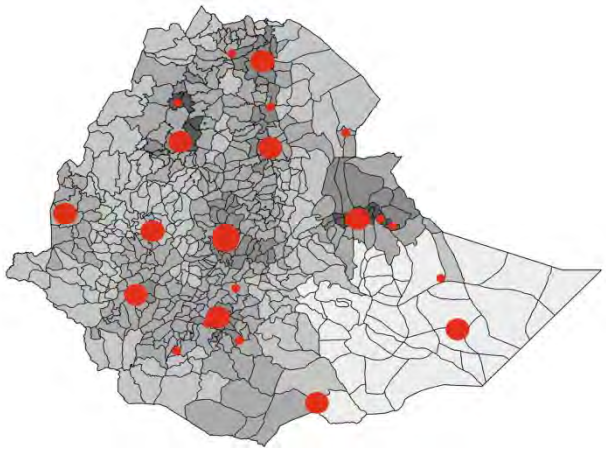
Assumptions made on component choices	
Function	3-5 large secondary cities > 3 million each, including Addis Ababa (which is >5 million). Multifunctional but specialised centres for manufacturing, government, trade etc. Addis Ababa retains central government functions, Dire Dawa becomes a trade hub, Mek'ele and Hawassa industrial manufacturing centres and Bahir Dar an agricultural hub.
Economic basis	Some global companies have offices in secondary cities. National companies are more common and there are clusters of MSMEs in some of the secondary cities.
Transport infrastructure	**Inter-city:** A network of high capacity road and rail links between the secondary cities is developed. Movement of goods and people outside of Addis Ababa is quick and efficient. **Intra-city:** In each of the cities a BRT system is implemented. A supporting rail system is required in Addis Ababa.
Energy infrastructure	Distributed centres of demand linked to regional energy assets. There is a diversity of energy options available and transmission grids only need to be relatively short. Electricity transmission across the rest of the country is increasing.
Water infrastructure	Urban centres are located close to sustainable surface and ground water sources and water pipeline infrastructure required to transport water is limited.
ICT infrastructure	A national hard-wire network with city-nodes is delivered. Branches to serve more rural areas occur in a second stage.
Urban form	Urban centres are dense but there is some slum development in the suburban areas of cities. Large cities will still need to manage slum development.
Social infrastructure and service delivery	Secondary cities provide housing, healthcare, education and sanitation infrastructure and services for city residents. There is a more sustainable and efficient distribution of social infrastructure. Demand is distributed and the smaller but significant urban centres are better able to cope with inward migration and are better able to plan infrastructure and service delivery.
Governance	A strong network of policy and implementation involving central and devolved functions. Urban governance capacity across the secondary cities is relatively strong.

C *Clustered cities*



Large and dynamic metropolitan areas develop in two clusters: one in central Ethiopia around Addis Ababa and one in the north of the country. The Addis Ababa cluster is more service focused, e.g. finance and banking services, IT and communication services. This cluster also retains national political and administrative functions within Addis Ababa and is seen as the more international hub. The northern cluster is more industry intensive, focused on natural resource extractive industries and processing for export trade growth. Transport infrastructure in the regional areas around these hubs is good and the two clusters are connected by reliable and quick rail and road networks. There is some infrastructure in place in other regions of the country but this is limited, as are other centres of economic activity. Smaller towns and cities find it hard to compete with the two clusters and high levels of migration to these metropolitan areas from rural areas and smaller towns occur.

Assumptions made on component choices	
Function	2-3 large urban clusters servicing large regions with populations of 3-4 million each. Addis Ababa remains the financial and governing capital and a second commercial and trade capital develops in Dire Dawa. A third industrial and manufacturing cluster emerges around Mek'ele. There is a high degree of specialisation in each of the clusters.
Economic basis	Global companies are attracted into the industrial and trade clusters. National companies also appear in clusters and support MSME development.
Transport infrastructure	**Inter-city:** A network of high capacity road and rail links between the city clusters and to export routes is developed. Movement of goods and people between and around these clusters is quick and efficient but remains more difficult in other areas of the country e.g. the south. **Intra-city:** In each of the city clusters there is sufficient demand for a LRT and high capacity rail system.
Energy infrastructure	2-3 major demand nodes with linkages to northern and central energy resources. Long transmission lines are required to supply the city clusters and electricity transmission across the rest of the country remains limited.
Water infrastructure	High volume transmission of water is required, particularly to the industrial and manufacturing centre in Mek'ele. Large distribution pipelines and back up infrastructure are required to serve the city clusters.
ICT infrastructure	Intensive ICT network is developed in city clusters. There is limited connectivity across the country to rural areas.
Urban form	Urban centres of city clusters are dense but sprawl appears between the city clusters and starts to form large metropolitan areas. Slum development occurs in some of this sprawl and needs to be managed.
Social infrastructure and service delivery	City clusters provide housing, healthcare, education and sanitation infrastructure and services for city residents. Demand is more distributed than in the primary model but is still difficult to meet and plan for in the large city clusters.
Governance	2-3 separate municipalities with a connected central function. Urban governance capacity beyond the city clusters is limited.

D	*Regionally distributed cities*
	Addis Ababa devolves greater power to the regions and regional capitals take on many of the urban functions that Addis Ababa formerly held. Political and administrative functions are delivered by regional cities and industrial and service activity can be found in all these cities. Operating relatively independently of each other, there is limited specialisation with all cities performing similar functions. Economic growth is relatively well balanced throughout Ethiopia although there are missed opportunities to drive stronger economic growth through specialisation, innovation and economies of scale. SMEs and microenterprises are enabled, but larger foreign investors and companies struggle to take root in these smaller cities. These cities generate a domestic market in Ethiopia but are not known internationally and are not seen as strong economic players beyond Ethiopia. Transport infrastructure linking regional capitals with their surrounding area is strong. Inter-city transport links are much weaker by comparison.

Assumptions made on component choices	
Function	A network of 8-11 federal capitals each with a population of circa. 1 million. Smaller scale multifunctional centres which do not specialise and provide local regional hubs for government, industrial activity and trade.
Economic basis	Global companies do not base themselves in regional capitals. National companies emerge and dominate regional capitals and MSME development is supported.
Transport infrastructure	**Inter-city:** A network of major and minor roads is developed. Movement of goods and people between regional capitals is possible but transit times are slow. **Intra-city:** In each of the regional capitals there is a road system and in some of the larger capitals a limited BRT system.
Energy infrastructure	Demand is distributed and can be linked to regional energy assets. Significant trans mission infrastructure is needed to serve these multiple regional capitals but larger parts of the country have access to power.
Water infrastructure	Regional cities are located closer to natural surface and groundwater sources and place a more sustainable demand on these. Limited pipeline infrastructure is required although some cities suffer from water shortages where located in arid lands which have groundwater constraints.
ICT infrastructure	Urban areas are poorly serviced as there is limited business case for an extension of the hard-wire network to regional capitals. Wireless technology needs to be sought as an alternative but this will be expensive.
Urban form	Some regional capitals have pockets of density but there is extensive low density urban sprawl in most cities.
Social infrastructure and service delivery	Regional capitals struggle to provide sufficient housing, healthcare, education and sanitation infrastructure and services for city residents. Demand is distributed and access should be high but this is difficult and costly to achieve at scale across all cities.
Governance	Centralised governance function with regional structures. Urban governance capacity across the country is relatively high.

Stage 4: Scenario and options analysis

4.1. Measuring the performance of scenarios

In order to understand the implications and trade-offs between the four reference scenarios, a comparative performance assessment methodology has been developed. The framing for the assessment draws on four drivers that link the GTP process and MUDHCo's strategic Pillars. The four drivers are expressed through 15 performance areas which reflect the role of urbanisation in supporting sustainable growth.

Figure 11: Four drivers of sustainable national urban development

The 15 performance areas have one or more corresponding indicators of which there are 46 (see table 12). These indicators have been developed from a range of sources including international benchmarking, local consultation and established priorities including the GTP, CRGE, the Poverty Reduction Strategy Paper and Ethiopia's other national objectives. The current scoring and performance assessment is an assertion-based comparative analysis.

The approach ties each metric to an assertion *e.g. for energy efficiency we assert that consolidating the population and economic activity in bigger and more compact cities is more energy efficient.* The evidence behind this assertion is well addressed in existing literature which references more compact street patterns, adjacency of property leading to solar shading, better thermal insulation, centralised mechanical and electrical equipment for heating, ventilation and cooling, shared utilities and fewer private car journeys.

We apply this logic to each of the metrics, for the purposes of which metric is indexed against a scale of 0-10 which qualitatively assesses the alignment with the assertion through expert judgement. This score forms the basis of each metric i.e. 10 (high alignment), 5 (medium alignment) and 0 (low or no alignment). The 0-10 scale offers the flexibility to differentiate between scenarios with similar alignment. It would be valuable to take these initial results into consultation with stakeholders to validate and improve the confidence of this assessment.

The table that follows shows the alignment of the drivers and performance areas to the MUDHCo Strategic Pillars as expressed in the ECPI.

Table 11: Alignment of performance areas used in this study to MUDHCo's Strategic Pillars

Driver	Performance area	MUDHCo pillars								
		Capacity and leadership	Productivity and employment	Land management	Urban governance	Housing	Construction Industry Development	Urban infrastructure	Urban environment	Inclusive development
Engines of growth	Competitiveness		✓				✓			
	Strong rural-urban linkages		✓	✓						✓
	Access to markets		✓							
	MSME growth		✓							✓
Greener growth	Natural resource efficiency			✓					✓	
	Climate and disaster resilience			✓					✓	
	Low carbon development						✓		✓	
	Environmentally sensitive			✓					✓	
Integrated urban systems	Compact urban form			✓	✓	✓		✓		
	Connectivity	✓			✓		✓	✓		✓
	Cost of urbanisation	✓			✓			✓		
	Accommodating growth	✓				✓	✓	✓		✓
Hubs of social development	Social infrastructure and services					✓	✓	✓		✓
	Cultural and political equality									✓
	Reduction of poverty		✓	✓		✓	✓	✓		✓

The MUDHCo Pillars and performance areas are complementary and aligned but include some differences in their application. The performance areas have been specifically designed to evaluate the characteristics and trade-offs between alternative spatial scenarios. Although these are most applicable at a macro level they may offer some optional performance indicators for MUDHCo to consider including in its framework. One obvious evolution of the Pillars is could suggest is for each to have a city and a national planning dimension.

The other area in which MUDHCo may consider adding to its framework is around the issues of national urban efficiency and city competitiveness. This could fit in around the productivity and employment pillar or create an additional pillar that links directly to the spatial implications of the GTP. These options are suited to further discussion with the Ministry. Below is a clear mapping of the indicators used in this study and the MUCDHo Pillars.

Table 12: Scenario assessment using the Performance Assessment Framework, based on 46 indicators

Performance area	Indicator	MUDHCo Pillar	BAU	Primary	Polycentric	Clusters	Distributed	Assertion we are testing
Greener growth								
Low carbon development	*GHG intensity of the economy*	Pillar 7: Environmental sustainability	4	3	6	8	2	• Bigger cities are more GHG efficient. Transport will be an important factor driving GHG emissions. Transport energy use per capita generally declines as city size increases
	Energy efficiency of the economy	Pillar 7: Environmental sustainability	3	4	7	9	3	• Bigger cities are more energy efficient. Denser, taller buildings in larger cities are more compact and energy efficient.
Environmental performance	*Ambient Environmental quality - air*	Pillar 7: Environmental sustainability	4	5	6	5	6	• Dense cities reduce dependency on cars and increase walkability and public transit, improving air quality.
	Ambient Environmental quality - water	Pillar 7: Environmental sustainability	2	5	6	5	6	• Dense cities make water treatment more viable, reducing general environmental pressures.
	Ambient Environmental quality - noise	Pillar 7: Environmental sustainability	3	4	6	5	8	• Bigger cities have more noise due to transport, industrial and construction activities.
	Natural capital (forests and natural habitats)	Pillar 7: Environmental sustainability	2	9	4	7	3	• Smaller cities likely to be more sprawling and encroach on more land than one megacity. More land required to support transport, water, energy infrastructure for network of cities.
	Biodiversity	Pillar 7: Environmental sustainability	2	9	4	7	3	• The more land used for urban development, the more habitats damaged/destroyed and biodiversity lost.
Natural resource efficiency	*Energy efficiency*	Pillar 7: Environmental sustainability	3	4	7	9	3	• Bigger cities, with denser, taller buildings are more energy efficient.
	Water use	Pillar 7: Environmental sustainability	5	6	7	9	1	• Polycentric, distributed and cluster considered more water efficient than primary (diseconomies of scale for large infrastructure).
	Waste generation	Pillar 7: Environmental sustainability	5	5	7	9	4	• Waste is easier and cheaper to manage in bulk.
Climate and disaster resilience	*Exposure to climate risks*	Pillar 7: Environmental sustainability	6	7	5	7	4	• Exposure to natural hazards is high in a megacity and reduced if population is spread across a number of smaller cities.
	Vulnerability	Pillar 7: Environmental sustainability	4	5	7	8	5	• Vulnerability to climate and disasters is less in large cities due to the presence of reliable infrastructure and increased capacity to protect and reach endangered populations quickly.

	Resilience of water supply	Pillar 7: Environmental sustainability	3	4	3	4	8	• Likelihood of sufficient water supply to serve the urban population – spatially dependent on location of supply. Water supply has bigger impact on megacity than distributed smaller cities.
	Resilience of energy supply	Pillar 7: Environmental sustainability	3	4	6	4	8	• Likelihood of sufficient energy to serve the urban population – spatially dependent on location and reliability of power generation Larger city less resilient due to dependence on one power source.
Engines of growth								
Competitiveness	*Structural transformation*	Pillar 3: Urban good governance	2	4	8	10	3	• Polycentric and cluster cities promote specialisation and a shift from agriculture to industry. Primary model limits industrialisation scope whilst smaller cities remain agriculture focused.
	Economic Growth	Pillar 2: SME development, Urban productivity & job creation	3	4	7	9	2	• Large and fast-growing domestic markets and cities tend to be more successful in the competition to attract capital, firms and people.
	Global appeal	Pillar 2: SME development, Urban productivity & job creation	7	9	5	6	1	• High profile cities attract international investment. Smaller cities will serve only national or local businesses.
	Financial maturity	Pillar 2: SME development, Urban productivity & job creation	6	8	7	8	2	• Breadth/depth of financial sector increases in larger cities. A more mature financial sector drives productive investment.
	Talent attraction & development	Pillar 2: SME development, Urban productivity & job creation	5	6	8	9	3	• Bigger cities have a higher number of high quality HE institutions which provide a pool of highly skilled workers. Smaller cities will likely only have smaller colleges.
	Jobs (international)	Pillar 2: SME development, Urban productivity & job creation	5	9	7	8	1	• Larger cities attract more international companies/big employers. Although, based on literature large companies will likely hire smaller number of new employees.
	Jobs (local)	Pillar 2: SME development, Urban productivity & job creation	2	4	6	7	9	• Smaller cities will drive employment growth in regions for Ethiopian nationals, including unskilled/lower skilled jobs. SMEs tend to grow faster, creating more jobs.
Strong rural-urban linkages	*Efficiency of agricultural sector*	Pillar 2: SME development, Urban productivity & job creation	3	2	5	4	10	• Distributed smaller cities provide more support to agricultural industry and increase value added through agro-processing and local suppliers/finance/support network.
	Rural market linkages	Pillar 6: Integrated infrastructure & services	3	4	7	6	8	• Rural populations will have greater access to urban markets in a distributed city model, due to reduced travel times to urban areas.
MSME growth	*Support to MSMEs*	Pillar 2: SME development, Urban productivity & job creation	4	2	8	8	7	• Most MSMEs are not based in larger cities but predominantly located in rural areas. Distributed model would provide greatest local support to MSMEs.

Access to markets	*Access to international markets*	Pillar 2: SME development, Urban productivity & job creation	3	3	8	9	1	• Need specialised port city to provide improved access to international markets. High distributed urban centres will not provide access to all parts of the country.
	Exports	Pillar 2: SME development, Urban productivity & job creation	5	4	7	8	3	• Increased ability to export with polycentric/cluster models as costs are reduced as cities can be located closer to export routes.

Hubs of social development

Social infrastructure and services	*Health*	Pillar 6: Integrated infrastructure & services	3	2	7	6	9	• Air pollution, poor diet, spread of disease in slum areas all greater issues in large cities.
	Access to clean water	Pillar 6: Integrated infrastructure & services	6	4	6	7	5	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than primary city by planning and installing required infrastructure and services ahead of incoming population.
	Access to education	Pillar 6: Integrated infrastructure & services	2	3	7	8	6	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than primary city by planning and installing required infrastructure and services ahead of incoming population.
	Access to healthcare	Pillar 6: Integrated infrastructure & services	2	3	7	8	6	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than primary city by planning and installing required infrastructure and services ahead of incoming population.
	Access to public transport	Pillar 6: Integrated infrastructure & services	4	3	7	8	6	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than primary city by planning and installing required infrastructure and services ahead of incoming population.
	Access to local facilities e.g. sports and leisure	Pillar 4: Urban planning and land management	4	3	7	8	6	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than a primary city by planning and installing required infrastructure and services ahead of incoming population.
Reduction of poverty	*Income distribution*	Pillar 2: SME development, Urban productivity & job creation	2	2	6	5	8	• Income likely to be more evenly distributed with multiple urban centres rather than being focused within one city.
	Poverty reduction	Pillar 2: SME development, Urban productivity & job creation	4	3	8	8	5	• Greater employment opportunities available in distributed and polycentric models due to easier access for rural poor to employment and trickle down economic benefits.
Cultural and political equality	*Creative culture*	Pillar 8: Inclusive & safer cities	5	6	7	8	4	• Cultural vibrancy is higher in larger cities.
	Political representation	Pillar 8: Inclusive & safer cities	4	4	6	4	9	• Access to political representatives is likely to be higher in a distributed model due to easier access for direct engagement with politically elected individuals.

Integrated urban systems

Accommodating growth	*Prevalence of informal settlements*	Pillar 5: Housing and construction industry development	1	2	6	5	4	• Informal settlements more likely to appear in bigger cities where population is less controllable.
Connectivity	*Connectivity between urban areas*	Pillar 6: Integrated infrastructure & services	2	2	7	9	2	• Clustered and polycentric models have the best transport links between cities.
	Transport efficiency	Pillar 6: Integrated infrastructure & services	2	2	8	10	2	• Transit times depends on quality and reliability of road and rail networks. These networks will be most developed in a polycentric or cluster model.
Compact urban form	*Co-location of social and economic activities*	Pillar 4: Urban planning and land management	2	4	8	9	3	• Co-location of activities easier to do in compact mixed land use cities (usually seen within the polycentric and clustered models).
	Public space provision	Pillar 4: Urban planning and land management	2	4	7	7	7	• Pre-existing dense cities have less open space. Planned cities can be developed with open space in mind.
	Access to housing	Pillar 5: Housing and construction industry development	2	1	6	5	8	• Access to reliable infrastructure is higher in larger cities with larger municipal budgets. Polycentric cities can deliver services greater than primary city by planning and installing required infrastructure and services ahead of incoming population.
Cost of urbanisation	*Cost of urbanisation (& associated infrastructure delivery)*	Pillar 4: Urban planning and land management	1	4	6	7	3	• Increased costs associated with clusters or polycentric cities due to infrastructure development compared to a megacity where infrastructure is already in place.
	Regulatory efficiency for business i.e. overall business environment	Pillar 2: SME development, Urban productivity & job creation	3	4	8	9	3	• Ease of doing business higher in larger cities - presence of support services in close proximity. More difficult in distributed model.
	Local government fiscal autonomy	Pillar 3: Urban good governance	5	2	6	4	8	• In a distributed model regional capitals will have more control over city finances and increased local representation of how finance is directed
	Cost of public service delivery	Pillar 4: Urban planning and land management	3	2	7	8	4	• Public services are more expensive when distributed over a large number of urban locations. Urban centres offer efficient delivery of health and education services and also allow specialisation.

4.2. Scenario analysis results including trade-offs

Figure 12 summarises the comparative performance of each of the urban development scenarios. For greater clarity each is then shown on the pages that follow with supporting narrative. The intention of this performance assessment is to stimulate discussion around the different structures of urban development that Ethiopia might pursue and the likely benefits, trade-offs and challenges that could emerge from making different choices. In pursuing any future scenario, hybrid or variant thereof, it will be possible to both maximise the opportunities that are presented by the chosen path and minimise the disadvantages. The analysis presented here indicates the likely direction against each performance area.

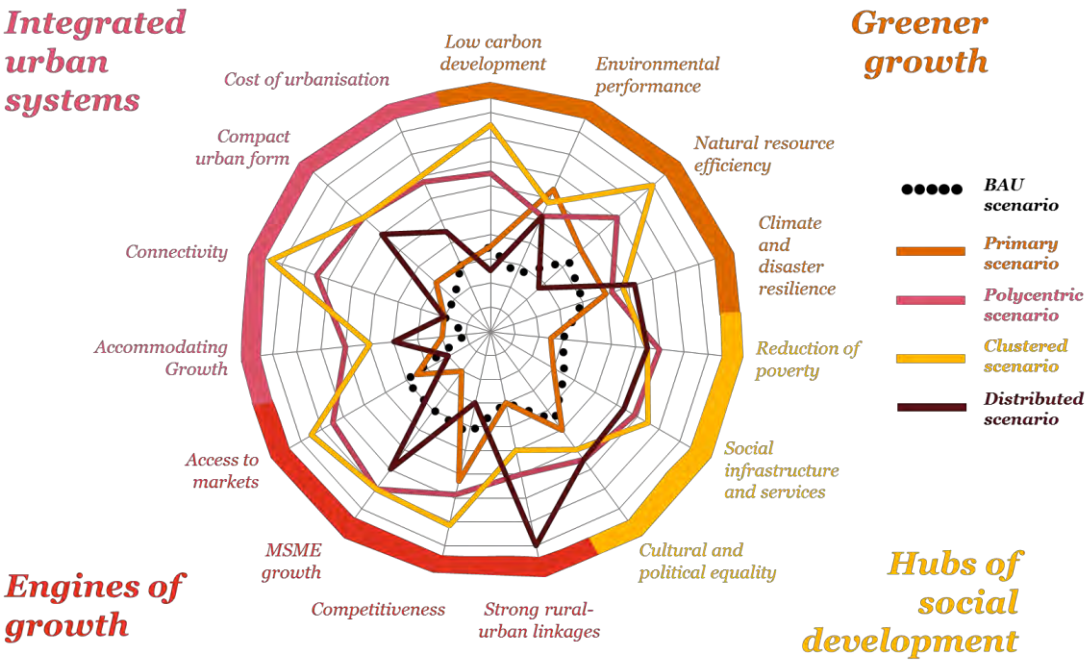
This approach is most powerful in comparing scenarios and trade-offs and does not quantify or predict the absolute performance of each scenario. Importantly, each scenario could be well or poorly designed at a city level and so the comparison focuses of the trade-offs and performance of the overall urban structure at national level.

We encourage continued refinement and improved measurement of these metrics to link more concretely with evolving policies and plans. Following this, data-driven quantifications of each of these will be possible with a clear and spatial plan with known populations, functions and locations of urban centres. This is a clear connection with the NUDSP process.

In reading the performance assessment, whilst the individual scores have been provided, what is more important is the relative performance of each scenario against itself and the Business as Usual (BAU) scenario. This will identify the trade-offs to be expected between scenarios and the choices that policy makers will face in designing a managed approach to effective urbanisation.

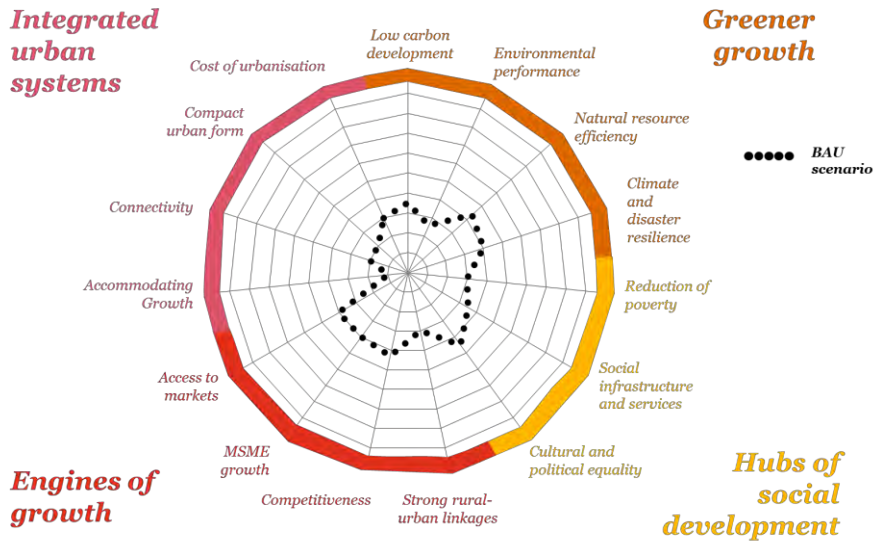
The reader should be aware that in some cases the performance areas are constructed from competing influences. For example, the climate resilience of each option seems relatively equal in the reference scenarios. But there are competing forces at play here; a more compact urban structure reduces exposure to natural hazards, but only if located away from locations with acute risks. More systemic risks such as heat and drought can be mitigated by building adaptive capacity and resilience which can be hard-wired into urban areas. A distributed urban structure reduces the risk that a large proportion of the population will be exposed by a single climatic event; however it is more likely that these settlements will be highly vulnerable through a lack of capacity and supporting infrastructure, finance and services.

Figure 12: Comparative performance of BAU and alternative urban development scenarios



Business as Usual (BAU) scenario

Performance assessment



Summary and key trade-offs

- Ethiopia follows a 'diffused pattern' of urbanisation (ESSP2, 2010)
- Reactively-planned and unmanaged urbanisation will result in inefficiency and environmental degradation
- Rural-urban linkages may exist because of legacy of agricultural-led industrialisation and urban centres as providing access to market for agricultural produce
- Costs of urbanisation likely to be high due to retrospective clean-up of informal settlements within and on the periphery of urban areas

Engines of growth

In this scenario Ethiopia is reactively planned and insufficiently managed. This scenario will struggle to efficiently deliver the needs of the GTP and develop a competitive economy. It is likely that urban centres will grow based primarily on the economic opportunities they present to the nearby population, and not in synchronicity with a wider range of factors including climatic and geophysical suitability, governance and alignment with a coordinated national strategy. As a result, Ethiopia's urban centres (particular Addis Ababa) in the BAU scenario will attract migrants from rural areas, but do so in an uncoordinated way. For example, nearby urban centres growing in parallel may duplicate certain economic activities. However as the BAU scenario implies, the effects of agricultural-led industrialisation, in the absence of a subsequent urban and economic development strategy, will continue to be felt. Urban centres will develop as a means of delivering agricultural produce to consumers and of supplying the agricultural sector with products and services. The opportunity to scale these centres into industrial and service hubs may be hampered and national and international market access is likely to be limited.

Greener growth

In a BAU scenario of reactively-planned and inadequately-managed urbanisation, the growth of multiple urban centres in addition to Addis Ababa may result in an unmitigated encroachment of environmentally sensitive areas, and may not necessarily use natural resources in an efficient way; for example, unplanned growth of cities can often take short-cuts to satisfying demand for resources, such as raw materials in construction such as timber, by sourcing them from peri-urban areas. This may give rise to practices such as illegal logging and degradation of forested areas and/or areas of biodiversity. In addition, reactive approaches to managing urbanisation under the BAU scenario may result in poor urban environmental quality such as inadequate disposal of municipal waste and water contamination.

Hubs of social development

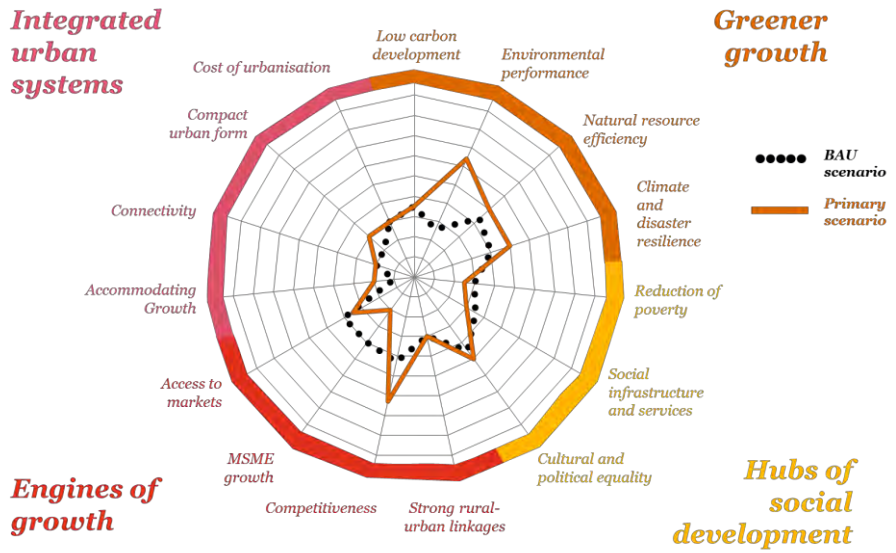
Social development in the BAU scenario is likely to progress by expanding access of educational and health service provision to a greater number of people. However, whilst a basic level of social infrastructure can be deployed in this scenario, high quality social services and advancement is likely to be concentrated in Addis Ababa , reducing access of much of the population to higher end health and education services . In unmanaged urbanisation, where market forces dominate, social inequality can increase leading to informal settlements, social segregation and, in large urban centres, ghettoization of individual communities.

Integrated urban systems

Urban systems are reactively-planned in the BAU scenario, leaving little capacity for coordination or smart integration of urban infrastructure. As a result, governance and policy-making in rapidly-growing urban centres can be paralysed by ineffectiveness, making it more difficult to retrospectively enhance urban systems without increased costs and social disbenefit. For example, the delayed supply of housing to meet demand inevitably results in slum clearance and comes with high economic and social costs. Interacting and associated economic activities may form but not consistently and without a framework plan. Integrated infrastructure is likely to be harder to plan and more costly to retrofit.

Scenario A. Addis Ababa as a primary city

Performance assessment



Summary and key trade-offs

- Ethiopia's pattern of urbanisation is a concentration of economic, political and commercial resources in Addis Ababa
- Reduced environmental impact
- Less resilient to climate and disaster risks due to concentrated exposure and vulnerable informal settlements
- Poor rural-urban linkages
- Poorer at extending coverage of social infrastructure and services
- Primary city benefits from greater profile internationally, attracting inward investment and increasing competitiveness

Engines of growth

The primary city scenario envisages Addis Ababa as a very-large, internationally-significant city that contains many economic activities and channels investment nationally. As a result, the economic profile of Addis Ababa in this scenario is likely to be varied with a focus on services (such as real estate, tourism and hospitality, financial and banking services and associated professional services) and, to a lesser extent, light industry (such as manufacturing). In contrast, other urban centres will likely have certain economic activities displaced in favour of Addis Ababa, and be limited to possibly lower-value economic activities such as agricultural-related manufacturing and processing and retail. This will result in weaker rural-urban linkages as the overall economic structure of Ethiopia will be significantly weighted towards and dependent on Addis Ababa. However, the city is generally too large to be an efficient growth engine for the whole country.

Greener growth

The primary city scenario's strength is in its ability to deliver urbanisation with reduced environmental impact, relative to the BAU. This is mainly driven by the lower urban footprint created by concentrating population and activity in one place, and thereby reducing the impact on natural habitats and biodiversity. This scenario avoids the multiple large urban centres sprawling and encroaching on environmentally sensitive areas, and abating the stresses placed on regional water and material resources. However, although Addis Ababa becomes a very large high-density city it is too large and cannot harness the efficiencies offered by compact and specialised cities from a GHG perspective. Instead, smaller cities in the primary city scenario are lower-density, car-based and have to travel long distances to reach the central market. Addis Ababa also needs to reach a long way to trade with its international partners.

Hubs of social development

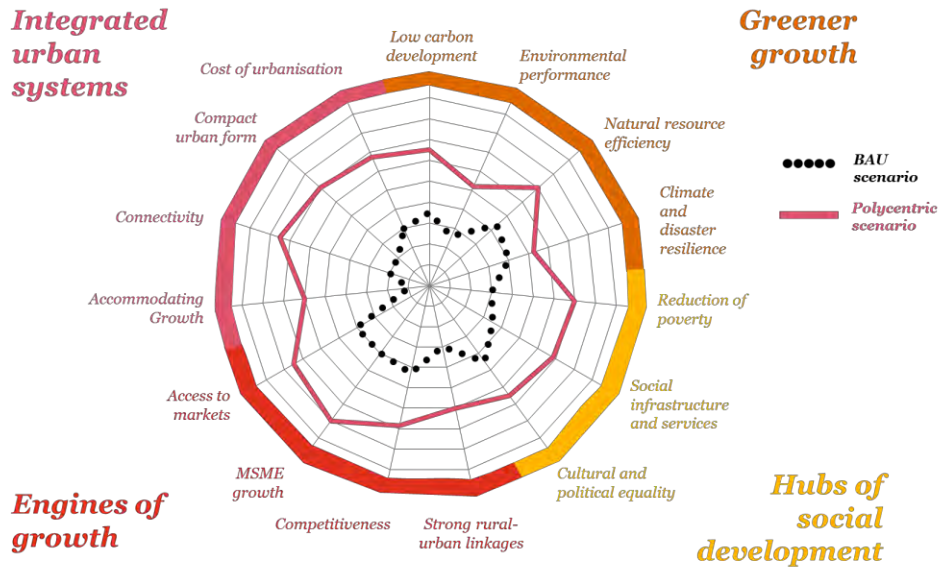
Addis Ababa in the primary city scenario will be a very-large, economically diverse and highly-productive city that will be dependent on, and continue to attract, talented and qualified migrants from elsewhere in Ethiopia resulting in high levels of socioeconomic mobility. In order to facilitate this, Addis Ababa will benefit from the co-location of tertiary education institutions such as universities and technical colleges. In contrast, other urban centres will likely experience a 'brain drain' of local, qualified professionals to Addis Ababa, leaving behind a relatively less-productive workforce and therefore limiting the quality of social services provision (such as high-quality schooling and healthcare services) in these urban centres. Addis Ababa may become so large that the city is unable to continue providing support services to the whole population, particularly at the city boundary.

Integrated urban systems

In the primary city scenario, Addis Ababa attracts a significant amount of resources in planning its own urbanisation. As a result, municipal capacity to govern and set policy is likely to be of high quality and matched with effective investment in urban infrastructure such as sanitation, power, transportation and telecommunications, which may be coordinated, if not integrated. Intra-city connectivity may be facilitated by high-quality suburban rail systems as well as scheduled bus services, all of which may be part of an integrated and singularly-governed transportation system. Addis Ababa will however grow to be too large and the efficiency of service provision will begin to break down without huge additional infrastructure investment in subways/metros, heavy rail networks and devolved municipal administrations. At populations above 5 million people this cost is likely to escalate and the city efficiency and functionality are likely to suffer.

Scenario B. A network of polycentric cities

Performance assessment



Summary and key trade-offs

- Ethiopia's pattern of urbanisation is a network of interconnected medium-sized cities
- Cities are more competitive but may lack critical mass of talented labour and capital to maximise economic productivity
- Cities may specialise, economically
- Rural-urban linkages as viability of cities will depend on economic specialisation of cities
- Better provision of social infrastructure and services to urban and rural populations

Engines of growth

This scenario would rebalance economic inequity between urban areas compared to the BAU, and essentially allow market economics to choose which urban centres are more successful than others depending on their individual comparative advantages. As a result, competition between cities would be healthier but, given the distributed nature of such cities, possibly be unable to maximise opportunities presented by proximity (for example, under a city clusters scenario). Under this scenario, it is likely that individual cities would specialise in different economic activities, either organically as a function of closeness to production areas (e.g. agriculture or extractives) or as a result of policy to induce urbanisation (e.g. from a Special Economic Zone). As a result of this, certain activities might lack the 'critical mass' of talented labour, capital and infrastructure to maximise the economic opportunities of greater urbanisation.

Greener growth

A planned and effectively managed network of polycentric cities in Ethiopia would generally reduce environmental degradation relative to a BAU of unplanned urbanisation. Low carbon development is also much more likely as efficient infrastructure can support compact urban form and agglomerated economic functions. Cities in this scenario would coordinate their requirements for materials, thereby being resource efficient and environmentally sensitive. Through the distribution of Ethiopia's urban population across a number of urban centres, the resilience to climate and disaster risks is strengthened (although overall exposure may be increased). Adoption of a policy of planned polycentric cities would also ensure that provision of environmental services matches the rates of growth of each urban centre, and would result in a diluted impact on regional environmental resources.

Hubs of social development

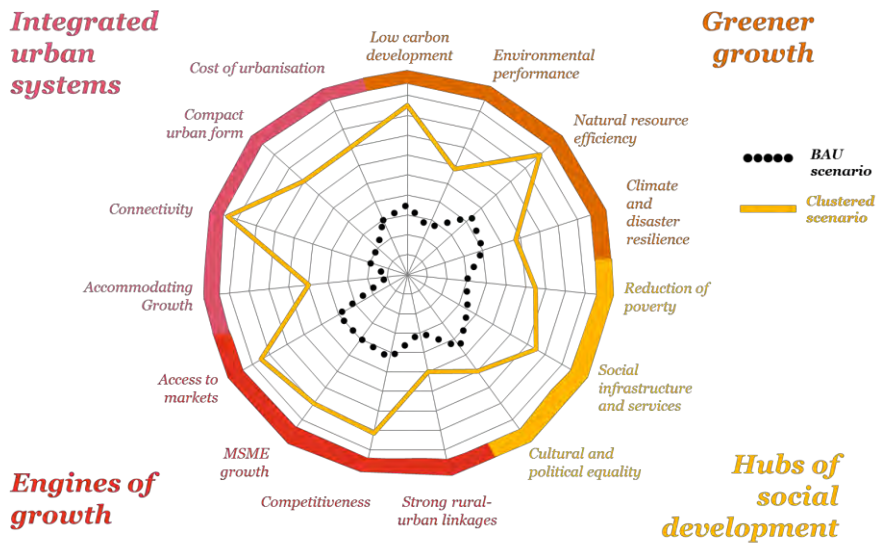
It is likely that the distribution of urban centres across Ethiopia in a network of polycentric cities scenario will improve the quality of life for the urban population, as well as for rural populations. Urban populations will benefit by living in medium-density cities with most of the required social infrastructure and services self-contained within the city, but will require travel to other cities for certain services such as specialised medical treatment or academic training. Rural populations are likely to benefit significantly by being in closer proximity to social infrastructure and services.

Integrated urban systems

In order to deliver a polycentric model of urbanisation in Ethiopia, municipal capacity is needed to effectively manage local issues and adequate delivery of infrastructure. It is likely that, with populations of approximately 3 million, cities in a polycentric model will benefit from the provision of power, water, sanitation, telecommunications and transportation infrastructure of a quality at least similar to that of Addis Ababa presently. However, significant investment will be required at a national scale to ensure inter-city connectivity, either with provision for high-capacity and reliable rail or scheduled and efficient inter-city bus services.

Scenario C. City clusters

Performance assessment



Summary and key trade-offs

- Ethiopia's pattern of urbanisation is multiple cities clustered into urban corridors
- Cities benefit from polycentricity as well as being co-located; efficient use of natural resources
- City clusters balance economic specialisation with critical mass needed for high-GVA activities
- City clusters offer improved quality of life to urban and rural populations
- Support of MSMEs and provision of access to markets

Engines of growth

Cities within clusters mutually reinforce each other with labour, resources and connected infrastructure – this creates synergistic growth, allowing greater economic diversity; large-scale commercial and industrial activities may be located within the cluster, with dense city cores hosting tertiary sector and retail services. The city clusters scenario also allows a degree of economic specialisation between cities within a cluster; for example, one city may act as a port/trading hub, possibly taking advantage of labour and availability of raw materials, whilst another may act as a manufacturing hub. Cities within the cluster may compete amongst themselves through municipal-based incentives to attract labour and investment to respond to a specific need. At a national-level, clusters of cities will attract migrants from, and possibly displace, small urban centres in rural areas.

Greener growth

Urban centres in the city clusters scenario benefit from close proximity to other urban centres, further reducing GHG emissions, maximising natural resource use and efficiency and minimising environmental impact through limiting sprawl to specific corridors/clusters. Specifically, city clusters may operate as integrated and connected entities in terms of resources, for example with a raw material (e.g. timber) being used in one urban centre and recycled in a different urban centre nearby. Environmental quality within cities in this scenario has the potential to be higher, with cross-municipality coordination of infrastructure delivering efficiency and accessibility benefits. However, because of the diverse economic potential of clustered cities, it is possible that economic activities with a detrimental environmental impact (such as industrial activities) may be located within the cluster, leading to adverse environmental impacts on the local population. Effective zoning and environmental safeguards should mitigate this risk.

Hubs of social development

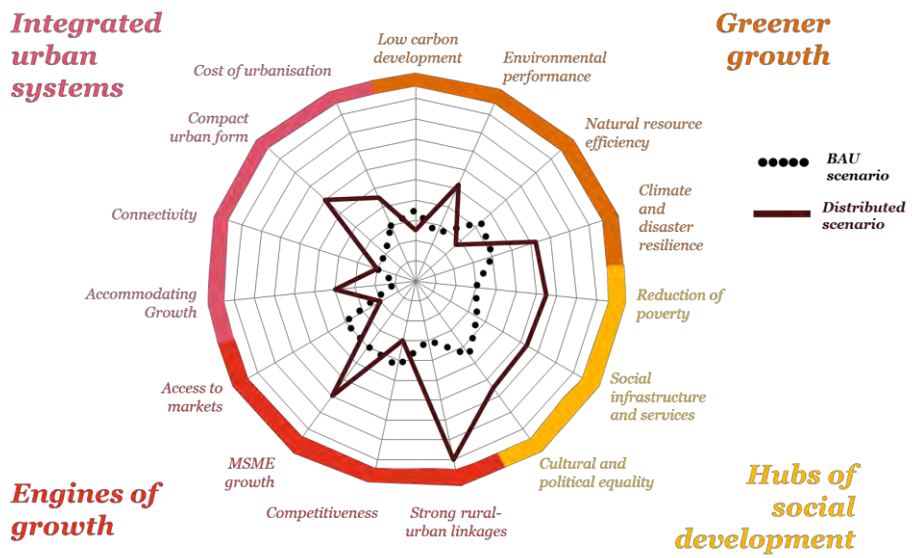
City clusters offer economic diversity, which brings with it social diversity; various cultural and language groups may settle within clusters. Additionally, some degree of socio-economic stratification may also be observed, with city centres attracting higher-income groups whilst lower-income groups settle in the suburban and peri-urban areas. In developing a city clusters model, it is therefore necessary to extend social infrastructure and services to the built-up urban area outside of each city, so that equitable social services and economic opportunities are available.

Integrated urban systems

The city clusters scenario consists of medium- to high-density cities located in close proximity to each other and benefiting from connected, if not integrated, infrastructure. However, inefficiencies may arise in terms of the governance of municipal areas if multiple governing jurisdictions operate in close proximity to each other. A clear governance framework that outlines how municipalities may effectively coordinate overlapping urban systems will maximise the opportunity presented by a city clusters scenario.

Scenario D. Regional distribution

Performance assessment



Summary and key trade-offs

- Ethiopia's pattern of urbanisation is devolved and independent growth of regional capitals
- Smaller cities are likely to be low-density, sprawling and inefficient but are more resilient to climate risks and disasters
- Provides excellent opportunities for MSMEs but lacks critical mass to scale-up industry
- Cities themselves may be culturally homogeneous but, at a national-level, cultural diversity grows with social and economic benefits

Engines of growth

In this scenario, equal representation of cities responds to a social and political need to support the federal structure of Ethiopia. As a result, urbanisation following this scenario is likely to be misaligned to the economic and commercial needs of the domestic economy; the support for growth of a regional city may come at the cost of support for an alternative city for which there is a strong economic rationale, such as linking agriculturally productive regions to markets. That said, regionally-distributed urban centres are likely to prove to be thriving incubators of MSMEs, providing the basic services necessary to support MSME development. However, MSME scale-up into commercially-viable larger enterprises may be more difficult due to lack of proximity to potential suppliers, competitors (which spur innovation), consumers and adequate capital. The economic performance of this scenario, therefore is that small-scale enterprises will benefit and provide useful employment to many people, but the ability to attain rapid and high-quality economic growth may prove difficult.

Greener growth

In this scenario, it is possible that the development of regionally distributed cities could be achieved in such a way that delivers greener growth; for example, municipal governments might be effective in encouraging citizens to adopt environmentally sustainable practices. However, with Ethiopia's urban population distributed across multiple urban centres, it is likely that no one urban centre outside of Addis Ababa will develop to become a higher-order city in terms of size, form and function. As a result, such cities are unlikely to be able to exploit the sustainability benefits that come with high-density, compact and efficient urban design, instead being low-medium density large towns with considerable suburban sprawl. On the other hand, with an urban population distributed among a large number of regional urban centres, the vulnerability to climate risks and disasters is dispersed and therefore Ethiopia will benefit from greater resilience.

Hubs of social development

The distributed scenario is based on the growth of regional capitals; the dispersed nature of which will act as independent urban centres with good quality social infrastructure and service provision such as higher education academic institutions and healthcare facilities. In the distributed scenario, it is likely that ethnic and language groups will concentrate in their regional capitals, and as a result, integrated cultural diversity within cities is likely to be difficult to build under this model. However, at a national-level, cultural diversity may become richer, with certain cities becoming characteristically associated with a regional culture. Typically, this provides social and economic benefits such as through tourism.

Integrated urban systems

In this scenario, it is likely that urban centres distributed in such a way to support equal representation would benefit from a high degree of autonomy in governance and decision-making with regard to the role and form of municipal infrastructure. However, this autonomy may also result in challenges, such as coordination with a national strategy, the local capacity and technical know-how to effectively design and manage smart urban systems and the financeability of such projects (with regional governments most likely required to finance their own infrastructure projects, with little support from the Federal Government).

4.3. Constructing the preferred scenario

One of the central hypotheses of this report is that well-planned and effectively managed urbanisation mutually reinforces economic growth. We have seen that as countries urbanise, their economies also mature and become more prosperous. This profile of development is due to the concentration and co-location of various economic inputs such as raw materials, labour and capital to efficiently undertake economically productive activities.

Urbanisation provides economies of scale to these productive activities through shared and reliable infrastructure such as electrical power, good-quality roads and formal housing, as well as a ready pool of consumers to serve as a market for goods and services, generating business profits, tax receipts and wages, and enhancing the Gross Value Added of the urban economy. Urban centres, therefore, have the potential to accelerate growth, diversify economic activity, and distribute wealth across the economy, leading to social benefits.

It is important to recognise the timing and coordination of this structural transformation needed to capture the large, growing and young labour market but also avoid lock in to unsustainable and costly patterns of growth.Before presenting the preferred spatial arrangement there are some important underlying directions that have emerged as essential components of successful urbanisation in Ethiopia. The consolidated analysis of the scenarios and through wide consultation we have identified three strategic directions that can help lead Ethiopia towards efficient and effective urbanisation.

Strategic direction #1: *Unlock the potential of secondary urban growth centres*

The primary city of Addis Ababa has served Ethiopia's development well to date; establishing itself as the diplomatic capital of Africa, a regionally important city and the national hub of non-agricultural economic activity. To deliver the sustained growth planned under GTP II there is a need to diversify the urban structure of the country and tap the economic power of new urban centres in the regional states.

Whilst urban centres deliver economic and social benefits, the number of urban centres needs to be finely balanced with their size, density and function in order to maximise their power. For example, a larger number of small urban centres distributed across the regions of Ethiopia are inefficient in terms of natural resource use compared to higher-density scenarios such as the polycentric or clustered models. In contrast, the distributed model of urbanisation offers stronger rural-urban linkages, by providing social benefits such as opening accessibility to educational and health services to a larger number of geographic areas in the country, especially compared to the primary city model where the centre of gravity of Ethiopia was concentrated in Addis Ababa.

We recognise that MUDHCo has already identified seven cities as future growth centres (including Adama, Mek'ele, Bahir Dar, Dessie, Dire Dawa, Hawassa and Jimma). Our analysis suggests that the continued investment in and development of these urban centres, together with support for the growth of others would best support the activities of the GTP2 and provide improved connectivity with international and regional markets.

It is therefore essential that these selected cities grow and take on new economic roles to reduce pressure on Addis Ababa and unlock accelerated urban and economic growth nationally. This would provide viable and managed nodes distributed around Ethiopia where there is latent demand and suitable conditions for urbanisation, into and around which rural populations could nucleate.

Strategic direction #2: *Agglomerate and connect economic functions*

We have seen that countries such as South Korea experienced rapid economic transformation in parallel to urbanisation by effectively building critical mass in existing urban centres and connecting these to new ones. The designing-in of planned agglomeration and interconnectivity between associated economic functions

therefore has a number of benefits; it was seen in the performance assessment of the city clusters scenario that this form of urbanisation was intrinsically low carbon in its development, was resource efficient, provided high-degrees of national connectivity and was highly-competitive.

To maximise the potential of Ethiopia's urban system, careful planning is required to optimise the inter-city relationships between related growth centres. A mapping of planned functions and drivers will tell us how strong and what types of linkages are required. Many large cities will both be a multifunction centre for commerce, education, public services and retail, but some will also take on more specialised functions which are more important to link with related functions in other cities. These linkages can take a number of forms and may require associated infrastructure and planning to support an efficient and effective structure:

- **Inputs functions:** Cities that accommodate primary industry which extracts and processes raw materials for manufacturing should have access to freight infrastructure that allows them to transport their product to the manufacturing centres (which may be located closer to national and international markets). Individual facilities can be connected with road or light rail networks.
- **Supply chain functions:** Those companies that are associated through their supply chains will perform better and be more competitive when located closer together. This will support economic agglomeration and clustering of functions and sectors in particular areas of the country.
- **Market function:** Those functions that require the exchange of goods and people will be more efficient located closer to one another.
- **Knowledge functions**: Despite the expectation that much information will be exchange digitally, the exchange of information and knowledge as part of research and academic process should also be considered. Institutions such as specialised universities, academies and industrial research centres should be co-located with relevant industry recipients and employers.

The outcome of economic association is likely to be a tendency towards city clusters that are mutually supportive. The scenario analysis shows that this structure results in lower infrastructure costs, better access to services, improved economic efficiency and connectivity between economic functions. Clusters will only occur where there is significant urban demand and a strategic location or purpose for a city. It is likely that up to four clusters are possible in the foreseeable future; a cluster centred around Addis Ababa is obviously one, but clusters are also likely to develop radially around this starting with Dire Dawa potentially followed by northern and southern clusters of linked activities.

This clustering approach would emphasise and encourage urbanisation in designated areas that are suited to supporting urban population centres, and discourage organically-grown urban centres in rural areas that may be unviable. Multiple population centres within urban clusters connected to each other with well-planned infrastructure would create the conditions needed for highly-competitive domestic growth in a preferred urbanisation scenario.

Strategic direction #3: *Support the development of a compact, connected and resilient urban network*

The scenario performance assessment showed that well-planned, high-density and compact cities are intrinsically efficient as they share resources, limit encroachment on rural and peri-urban areas and distribute social and economic services more effectively to urban populations. Supporting this, there are also well-established principles and practical solutions that support sustainable city development. These support the idea that cities are an efficient mechanism for accommodating growing populations and economic activities. City growth has historically been associated with polluted and sprawling slums, excessive resource use, congestion and other urban challenges. In fact, a well-designed urban form and supporting infrastructure can foster a more efficient and competitive city system that solves rather than creates these problems.

The key to achieving this is carefully planned municipal land use zoning and city densification around transit nodes. This results in areas of compact housing and mixed-use zones that bring people and their jobs closer

together. The reduced physical footprint increases the ability to supply the necessary utility and social infrastructure as well as reduce the environmental and resource footprint including improved energy and carbon intensity.

To be sustainable, urban areas must also be climate and disaster resilient. Ethiopia may never have another opportunity to decide where it grows its population and economy and so ill-considered decisions taken now will lock-in exposure to climate and disaster related hazards that could pose huge problems as cities grow. Planning, for example, must account for future demand for and availability of water resources - not just what is observed or needed today. The cost of seismic resilience (such as insurance and adaptation measures) in cities such as Tokyo, San Francisco and Istanbul for example is huge, and Los Angeles is running very short of water without any obvious or inexpensive solution available.

Ethiopia's Climate Resilience Green Economy (CRGE) strategy is therefore an important reference point for practical and contextual solutions that can be deployed in Ethiopia's urban areas to support more sustainable development and this should be taken into account when designing any form of urbanisation.

4.4. The preferred scenario

The preferred scenario is constructed by balancing the strengths of each of the test scenarios. The preferred scenario incorporates the requirements of Ethiopia's development vision under the Growth and Transformation Plan, the lessons learned from comparator country benchmarks, and the performance assessment conducted on four models of urbanisation. By assessing four alternative models for the spatial urban development of Ethiopia we have identified some of the benefits, disadvantages and trade-offs between each reference scenario. This feeds insight into the development of a preferred scenario that is designed to balance the strengths of each scenario as determined by the alignment with the 7 Urban Development Pillars.

The preferred scenario is a conceptual model for linking Ethiopia's economic plan and national urban system and serves as an input to the national spatial planning process. When detailed through the National Urban Development Spatial Plan, this conceptual model should give shape to a more detailed urban demand and settlement pattern, attract, shape and organise the influx of people into the country's cities and in certain areas act as centres of gravity for value-creating activities. This is turn will lead to a process where more efficient and effective urbanisation that has a lower environmental footprint, provides better access to social services, and enhanced market linkages to the rural economy are designed-in to support the GTP objectives and plans.

The preferred scenario is based on multiple urban centres clustered (poly-clustered) into planned development areas and corridors, but only to the extent that there is underlying urban demand and suitability. This prevents over development of less suitable areas and a balanced model of expansion. The key clusters and corridors are:

- Addis Ababa National Capital Area
- Lake Tana Development Area
- Mek'ele-Kombolcha Industrial Corridor
- Dire Dawa-Jigjiga International trading cluster
- Hawassa Southern Economic Cluster
- Jimma Agricultural Commodities Hub
- Gambela Regional Export Hub
- Degeh Bur – Kebri Dehar Corridor

The specialisation of each cluster, or even cities within clusters, is particular. These clusters are diverse in economic rationale and function, incorporating services, commercial activities and elements of an industrial base; for example the North West Development Area might have opportunities to develop the tourism sector around Lake Tana and drawn in the benefits of sesame processing. Similarly, each cluster will also have different social, language and cultural attributes which will depend on the locations of incoming rural migrants. We can now apply the performance assessment framework to our preferred option.

Figure 13: Preferred hybrid 'poly-clusteed' scenario for unlocking the power of cities in Ethiopia

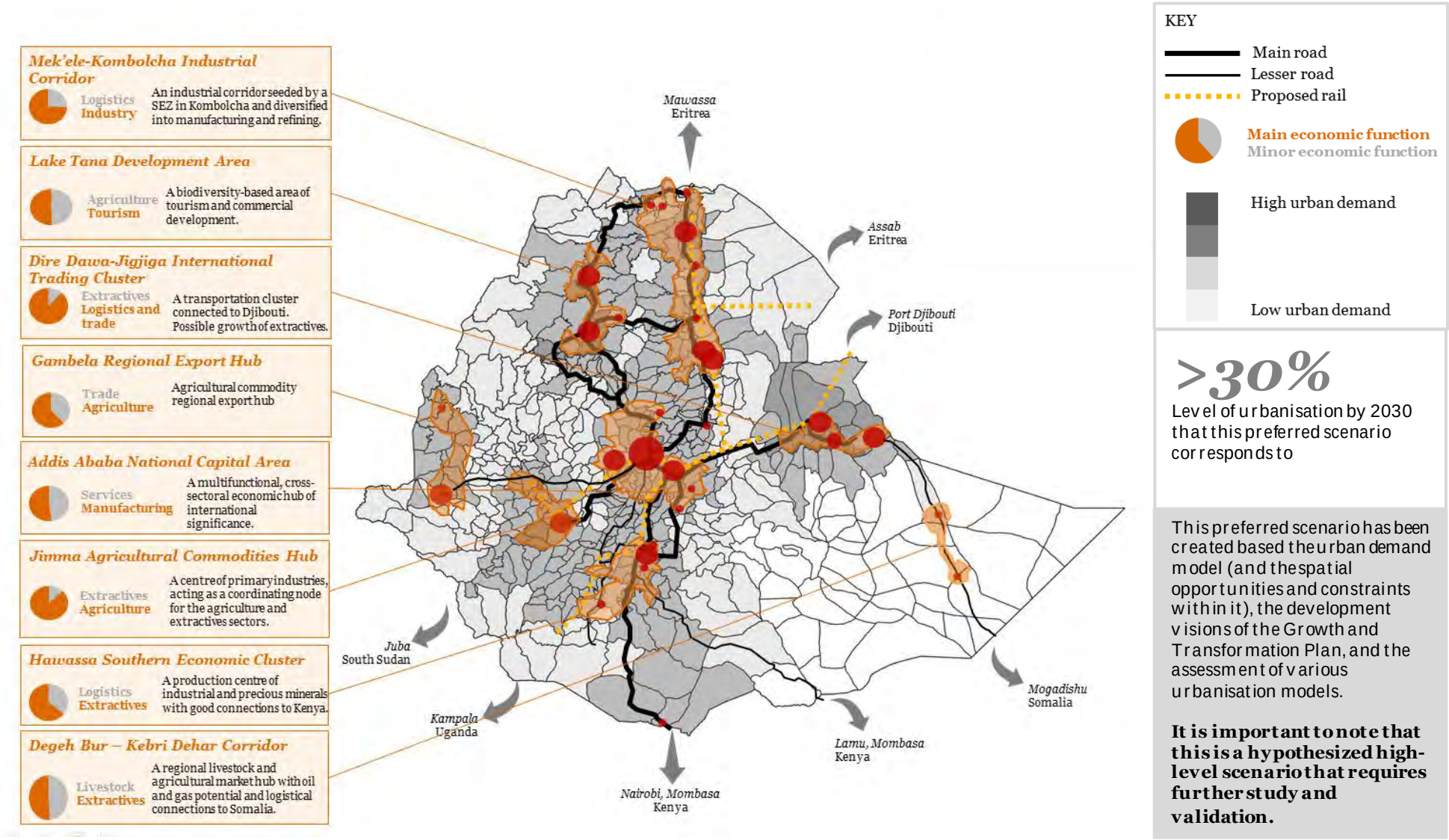
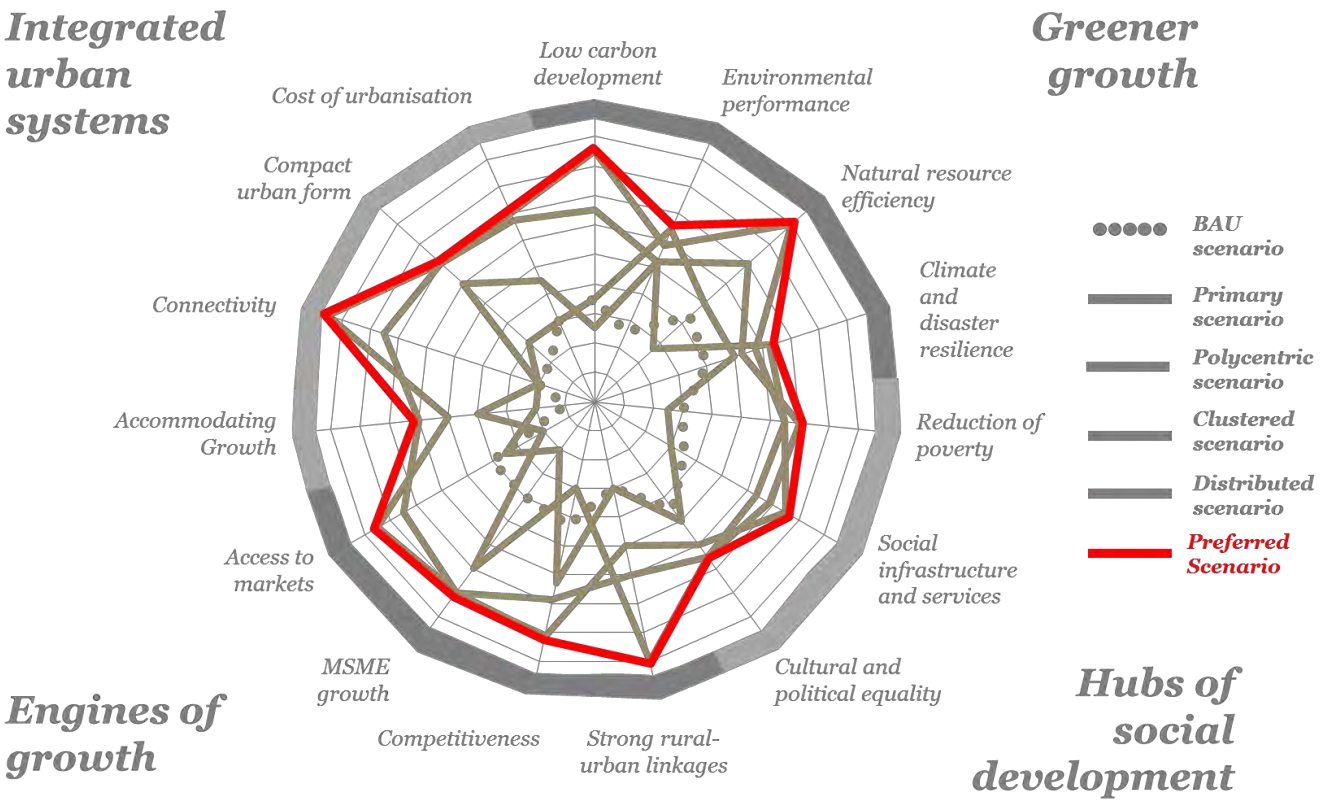


Figure 14: The performance assessment framework (PAF) applied to the preferred option

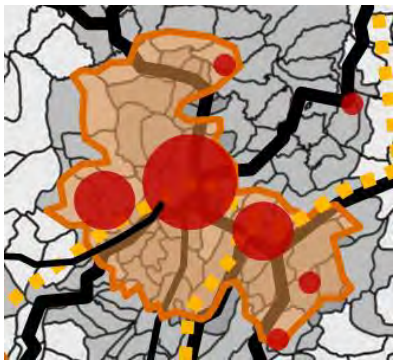


The preferred scenario also exhibits the following attributes:

- **Lower cost urban development and management** that makes better use of space, transport, utilities and public services.
- A **low-carbon development model** and reduced land and ecological impacts due to the compact and high density urban footprint that supports public transport.
- **Reduced urban sprawl** and direct impacts on the natural environment by limiting development to pre-defined areas that are compatible with supporting urban populations and intensities.
- Effective **distribution of social infrastructure and services** such as healthcare and education.
- High levels of **intra and inter-city connectivity** through the co-location of linked social and economic activities.
- **Improved accessibility and scale-up potential for MSMEs** by co-locating business inputs (such as academic institutions, labour, capital, infrastructure and market access) and supply chains.
- Greater capacity for **high-value economic functions** such as financial and professional services and secondary/ tertiary or even high-tech manufacturing.
- Intensive yet distributed **markets for agricultural products** and processed goods.

4.5. Key economic corridor and cluster descriptions

Addis Ababa National Capital Area (NCA)



Our analysis has led us to conclude that a poly-clustered configuration of urban areas within Ethiopia is an effective way of responding to the twin needs of managing urbanisation and delivering the country's economic and social transformation. Given that Addis Ababa is currently the dominant urban centre (by far), our preferred option suggests the establishment of an urban cluster centred around the city; the National Capital Area.

This cluster incorporates the population centres of Addis Ababa, Ambo, Bishoftu, Assela and Adama. Given Addis Ababa's current role as a multi-sector hub incorporating services, commercial and manufacturing activities, it is likely that the Addis Ababa NCA will continue to act as a multi-functional hub for Ethiopia, acting as a broker and coordinator between more specialised economic activities elsewhere in the country. The Adama Science & Technology University complements Addis as an educational hub and the city also provides transportation services on route to the Dire Dawa-Jigjiga International Trading Cluster from Addis. The size and form of the NCA would be limited to areas where there is high urban demand, and certain areas within the cluster could also be protected from development - such as through the use of a green belt planning policy. This might serve to concentrate housing in denser areas, which would be a desired outcome.

In order to optimise growth and development within the cluster, some degree of harmonisation (and at least coordination) would be needed between the various decision-making and planning bodies in order to deliver integrated transport infrastructure, support transit-oriented development and encourage the required mix of economic activities to support growth. In the context of the NCA's place in Ethiopia, many roads lead from Addis Ababa to the north, east, west and south of the country. In order to facilitate connectivity between the NCA and other clusters, it might be necessary to expand capacity and road quality along certain routes to ensure the movement is efficient into and through the NCA. Furthermore, the currently planned rail network would benefit from suburban stops within the NCA (with possibly limited stops and higher speeds along inter-cluster stretches) to facilitate the movement of freight from outside the NCA to depots and distribution centres in the suburban areas of the cluster.

Finally, Addis Ababa is already internationally significant, but to international investors it is also a benchmark of Ethiopia's progress and attractiveness as an investment location. In addition to its role as a regional centre, Addis would continue to form the centre of national governance, financial and professional services - thus distinguishing itself as an internationally recognised and competitive city, and the country leader. With so much investment in rural and secondary urban centres it is important that investment into making Addis the best capital city possible continues, and also that its diplomatic role is sustained.

Current Overview

Key economic focus
- Manufacturing (Addis)
- Services
- Finance
- Political services (Addis)

Urban Population
- 3.66 million est.

Infrastructure
- Centre of country's road network
- Single non-operational rail line

Future implications

Expanded economic focus
- International finance and trade
- Tertiary manufacturing (Addis and Adama)
- Political services (Addis)
- Transportation and educational services (Addis & Adama)

Infrastructure needs
- Improved rail and road connections leading to other clusters and corridors
- Freight and passenger rail hub in Addis
- Mass transit systems including suburban stations

Dire Dawa- Jigjiga International Trading Cluster

Perhaps the strongest urban demand outside of Addis Ababa is the need for a dry port facility and economic hub to be located in the east to support the country's expanding international role. Its general function is to connect the key cities of Addis and Dire Dawa with international markets for import and export purposes. This key economic linkage from the port to the capital is the first - and most important - national corridor.

It is proposed that the region surrounding Dire Dawa should be developed as an inland port, manufacturing and population centre, with associated secondary industries and strong transport infrastructure (e.g. freight and passenger rail plus high capacity roads). The current standard gauge railway under construction (the National Railway Network of Ethiopia [NRNE]) is likely to advance this region to be the first economic cluster to develop after Addis Ababa.

The region's development is heavily reliant on the ability to access port infrastructure. In this regard it is well placed to exploit the Djibouti port, but also Berbera and Mogadishu in Somalia and potentially Lamu in Kenya. The security and competitiveness of port access and charges is an important foundation that must be secured. Without this the region is otherwise less attractive in terms of natural resources to support growth. Following this, it is not recommended that primary industry with heavy demands for water, power and raw materials is established here. Instead, storage, secondary manufacturing, trading and logistics should form its economic backbone.

There are topographical and cultural constraints to establishing a cluster in this location. A key relationship to resolve is the functional alignment between Jigijiga as a gateway to Somaliland and Dire Dawa's role in connecting the export hub in Djibouti.

Current Overview

Key economic focus
- 56% Services (Dire Dawa and Harar)
- 7% Manufacturing (Dire Dawa and Harar)

Urban Population
- 660,000

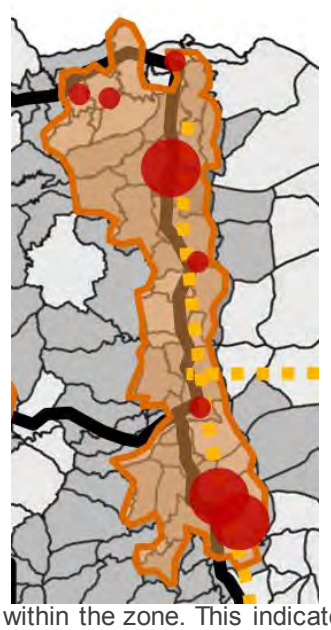
Infrastructure
- Established road network linking the cluster
- Single non-operational rail line through Dire Dawa
- Airport linking Dire Dawa to Djibouti

Future implications

Expanded economic focus
- Trading and logistics services
- Storage
- Secondary manufacturing (low resource requirements)

Infrastructure
- Jigjiga and Harar freight connections to the NRNE station in Dire Dawa

Mek'ele-Kombolcha Industrial Corridor



Our analysis indicates that there is high urban demand and suitability in the region between Mek'ele and Dessie, along the axis of the No1 Highway between Addis Ababa and Adigrat. The presence of existing urban centres and infrastructure, the availability of precious minerals (including gold and gemstones), the availability of rivers and proximity to sea ports in Eritrea all indicates that urban development along this corridor ought to be considered.

This is an economic corridor incorporating the population centres of Kombolcha, Dessie, Weldiya, Maychew, Mek'ele, Wikro, Adigrat, Adwa and Aksum. A special economic zone already established in Kombolcha, with foreign investment from China and Israel, seeks to stimulate industrial development in the area through preferential conditions and incentives for businesses operating within the zone. This indicates the potential type of economic activity that could be undertaken in the Mek'ele-Kombolcha Industrial Corridor - it could take advantage of its infrastructure and location to act as an industrial engine for Ethiopia. Initially, the types of industry that could be supported might be related to agricultural outputs (such as textiles and garments) and existing industries (cement and steel fabrication) - but as national supply chains grow, the corridor could support more advanced industrial activities such as metal refining and fabrication, component assembly and chemical processing – depending on the demands of the market and strategic requirements of the Ethiopian Government.

The Mek'ele-Kombolcha Industrial Corridor benefits from close proximity to sea ports in Eritrea, serving as a high-volume route for Ethiopian goods to international markets (subject to trade agreements negotiated at a diplomatic level). In order to improve this type of activity, the development of dry ports in the north of the corridor might be considered, such as in Adigrat and/or Adwa. This might take the form of warehousing and depots as well as nodes for customs and border control checks in order to make cross-boundary freight movements more efficient. Freight rail along the axis of the corridor to Addis Ababa will also aid the efficient movement of goods into and out of Ethiopia.

Given that many conditions exist to support the development of the northern urban corridor, the growth of the Mek'ele-Kombolcha Industrial Corridor can be encouraged and considered as part of the first phase of our preferred option, should Ethiopia decide to implement it. One challenge may be the topography of the area which is mountainous and may impede transport linkages in certain areas.

Current Overview

Key economic focus

- Mining and quarrying processing (Tigray)
- Textiles (Adwa, Mek'ele)
- Tannery & Leather (Dessie, Kombolcha)
- Cement and Steel (Mek'ele, Dessie, Kombolcha)
- Agro-based industries (Mek'ele)
- Tourism (Aksum)
- Pharmaceuticals (Adigrat)

Infrastructure

- Established road network linking Mek'ele, Woldis and Dessie to Addis Ababa
- Domestic flights to Aksum

Potential 2025 Overview

Expanded economic focus

- Mineral exploration in Tigray
- Trading and logistics services with Eritrea to the North;
- Primary industry - steel

Urban Population

- Tigray and Amhara both expected to increase by over 50%

Infrastructure needs

- NRNE will have stations in Weldiya, Kombolcha, Mek'ele and Aksum
- Freight connections to Dessie for steel transport ought to be considered

Lake Tana Development Area

From an urban demand point of view, it is possible that the areas surrounding Lake Tana in the northwest of the country offer opportunity for development, given that significant urban centres already lie within its vicinity.

This is a cluster incorporating the population centres of Bahir Dar and Gondar. As the world's second largest exporter of sesame, the growing and processing areas around Gondar represent a significant economic opportunity for infrastructural freight linkages to encourage international trade. Horticulture is also prevalent here, with cut flower agribusiness emerging in recent years. Additionally, given the inclusion of Lake Tana, its biodiversity, and points of historical and cultural interest in the area, there might be potential for tourism and hospitality-based economic activities.

In order to capitalise on this unique asset, it might be desirable to discourage high-intensity secondary industries in this cluster. For this reason it has been identified in this preferred scenario as a 'development area' rather than an 'economic cluster', to emphasise the social and environmental benefits that are possible through its effective management. That said, the spatial opportunities and constraints analysis for this part of Ethiopia indicates that coal deposits may be available, and so policy-makers may face some strategic choices between extensive resource extraction and fully protecting existing biodiversity in this area, to use as an engine of development.

In order to optimise growth and development within the cluster, some degree of harmonisation (and at least coordination) would be needed between the various decision-making and planning bodies in order to deliver integrated transport infrastructure and environmentally-sensitive urban development. This development area might therefore benefit from some degree of protection – such as being designated a national park – in order to articulate the value of this area's natural capital.

Current Overview

Key economic focus
- Sesame growing and processing (North Gondar)
- Textiles (Bahir Dar)
- Cut flower (Bahir Dar)
- Tourism (Bahir Dar)

Urban Population
- 464,000

Infrastructure
- Established road network with Addis Ababa
- Airport

Potential 2025 Overview

Expanded economic focus

Added emphasis should be on:
- Tourism services
- Hospitality based economic activities

Urban Population
- Amhara expected to grow by 68%

Infrastructure needs
- Passenger links to major tourism destinations
- Freight links between Gondar and northern cluster dry ports for sesame export
- Development of an international schedule from airport for cut flower trade

Hawassa Southern Economic Cluster

Our analysis indicates that latent demand exists in the south of Ethiopia for urban development that supports industrial growth and connections to economic centres in East Africa. This is based on the southern part of the country being rich in precious and industrial materials (e.g. in the Guji zone), and being relatively flat in terms of terrain – which could potentially support urbanisation around the towns of Hawassa and/or Arba Minch. The investment in new industrial zones here will also drive demand for urban expansion.

Hawassa has been identified as the location for a Special Economic Zone, and road infrastructure extends from Addis Ababa to the south, potentially allowing this cluster to support intensive resource-based economic activities. Dilla, and the Gedeo zone in general, forms a significant proportion of the national coffee trade – a major economic national export. In addition, the southern cluster could act as a transportation and logistics hub for freight movements to and from Kenya and Somalia, via Moyale and Dolo, respectively. The routes for such a journey are vast, with the southernmost part of the cluster (Arba Minch) being approximately 250 miles from the border town of Moyale – although some improvement in the quality and capacity road network is likely to be required, specifically between the No9 highway and No6 highway in the region of Arba Minch.

The Hawassa Southern Economic Cluster is therefore likely to support the urban centres of Arba Minch, Dilla, Yirga Alem, Sodo, Hawasa and Negele if connections between each centre can be improved through coordinated infrastructure. This cluster would then serve as a southern hub from which social services such as healthcare and education could be provided. It is not clear whether developing large urban centers in the region is necessary in the first phase of implementation - rather industry and population centres will grow organically until the trading routes with East Africa have matured. At this point a more proactive strategy would develop joint infrastructure and connectivity with Kampala, Nairobi and possibly Juba or Mogadishu, depending on the relevant relations.

Current Overview

Key economic focus
- Coffee production and trade logistics (Hawassa, Dilla, Sodo)
- Gold extraction (Guji zone)
- Higher Education (Hawassa)
- Textiles (Hawassa)
- Healthcare (Hawassa)
- Agro-processing (Hawassa and Dilla)
- Tourism gateway (Arba Minch)

Urban Population
- 617,000

Infrastructure needs
- Currently only a few road linkages

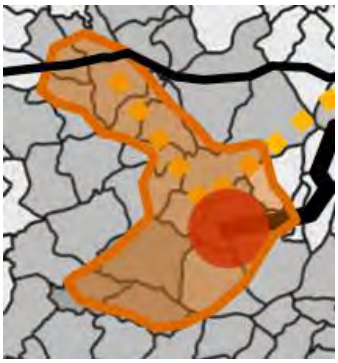
Potential 2025 Overview

Expanded economic focus
- Development of Hawassa as a hub for education, technology, and healthcare
- Development of storage and transport logistics for coffee export
- Precious material extraction

Urban Population
- 1 million + (SNNPR region expected to grow by 63%)

Infrastructure needs
- Expanding links between coffee production, warehouses and transport/logistics centres
- The international airport expansion could be used for freight linkages with Europe, to take advantage of coffee exports

Jimma Agricultural Commodities Hub



The Jimma Agricultural Commodities Hub is included in our preferred option as a smaller, secondary cluster which may be considered for minor growth now - to be accelerated in later phases of the implementation of this scenario. The cluster is located in an area for which there is some urban demand, due to possible connections to agriculturally-productive zones - particularly regarding coffee and chat. Chat has the added bonus of being climate resilient to drought and diseases – making it an advantageous choice for farmers. Agro-processing centres in Jimma, fertilizer plants in Yayu, and the potential availability of oil and gold for extraction in the wider region add further economic potential to the development of this cluster. Without further analysis, it is not possible to ascertain the exact economic potential of these resources (and therefore whether development in this cluster should be pursued). However, a trade-off can be expected as primary industries require significant amounts of water, which may compete with the water requirements of any resident urban population within the cluster.

Should this area prove to have a high potential for growth, then the Jimma Agricultural Commodities Hub could act as a hub for some of Ethiopia's primary industries, offering a base for the extraction, refining, exchange and transportation of primary products to elsewhere in Ethiopia – and also to South Sudan. In this situation, effectively managing urbanisation will face significant challenges from pull forces of areas close to extractives locations (e.g. mines or wells) where industry will naturally prefer to locate. Policy-makers then face a choice of whether to permit urbanisation in such areas, with the consequence of the possible expiration of urban viability once the resource has been extracted, or to deploy a strategy where material resources can be responsibly and sustainably extracted whilst providing long-term opportunities for rural migrants into the new urban areas.

Current Overview

Key economic focus
- Higher education (Jimma)
- Coffee and chat production and processing (Jimma)
- Fertilisers (Yayu)

Urban Population
- 155,000

Infrastructure
- Currently only a few road linkages

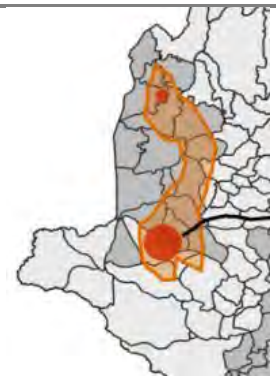
Potential 2025 Overview

Expanded economic focus
- Development of Jimma as an intellectual hub
- Potential secondary focus on precious material extraction

Urban Population
- 250,000+ (Omaria population expected to grow by 63%)

Infrastructure needs
- Increased freight links to transport fertilizer between Yayu, Jimma and Addis
- Potential freight airport expansion to exploit international coffee exports to Europe

Gambela Regional Export Hub



Gamebela, Dembi Dolo and Asosa in the west of the country offer the potential for urban growth in the long term. The presence of fertile agricultural land used for coffee growing in the regional capital of Gambela – coupled with the eco-tourism potential of the national park - gives this urban area a distinct opportunity for growth. However, it is its geographical location which – when considered alongside the national material resources available in Asosa – gives Gambela a unique opportunity for urban growth as a western international trade hub looking to the long term.

Platinum, iron and coal reserves in West Welega, gold and marble in Benishangul-Gumuz and copper to the nearby north-west give Asosa the potential to transform into a large urban centre for materials processing. Embedding strong freight links with Gambela can then unlock this entire western region collectively as an extractives and trade cluster (subject to relevant trade agreements at a diplomatic level) – as Gambela is situated in an ideal geographical location to trade westwards along the blue Nile with

Current Overview

Key economic focus
- Agriculture (Wider region)
- Coffee (Gambela)
- Platinum, iron (West Welega)
- Gold (Asosa, Benishangul-Gumuz)

Urban Population
- 144,000

Infrastructure needs
- Currently only a few road linkages
- Planned rail links with Asosa within NRNE

South Sudan. This can complement Asosa's trade proximity by road to Sudan. Dembi Dolo has the potential to develop into a transport and distribution logistics hub, as it is situated between the two areas. As such, it can help facilitate – for example – the transport of coffee north from Gambela, to trade with Sudan, or equally the transport of materials south from Asosa for trade with South Sudan.

Potential 2025 Overview

Expanded economic focus
- Trade logistics (Gambela)
- Potential oil extraction (Gambela)
- Eco-tourism (Gambela National Park)
- Transport logistics and storage (Dembi Dolo)
- Materials Processing (Asosa)

Urban Population
- 255,000+ (Urban areas in Gambela and Benishangul regions expected to grow by 75-80%)

Infrastructure needs
- International freight links via airport and river – Gambela
- Expand links between Asosa and Gambela to embed the latter as an international trade hub looking westwards

Degeh Bur – Kebri Dehar (South-Eastern) Corridor

The Somaliland region is sparsely populated in urban terms, yet there lies considerable potential for development if significant oil extractives are found here. If such reserves were discovered, urban demand could heighten considerably in the vicinity to accommodate the influx of jobs this would create in extraction, processing (and indeed, trade logistics, given its proximity to Somalia). Degeh Bur and Kebri Dehar are relatively well established in the region, and could be potential growth poles in the instance of future oil extraction. As Somaliland has been zoned in preparation for expected oil discovery in future, this corridor could be a necessary first step in creating the national capacity to process the extraction.

The area is currently used extensively for livestock farming, and should urban expansion be planned in future, maintaining and improving rural-urban linkages will be key. Degeh Bur also benefits from an influx of historical and religious tourism – which the domestic airport in Kebri Dehar helps to facilitate. Continued promotion of this could boost economic inflows to the corridor in future, and could provide a stable, continued source of income whilst oil exploration takes place.

Current Overview

Key economic focus
- Livestock Agriculture
- Pilgrimage Tourism

Urban Population
- 72,000

Infrastructure
- All-weather road linkages with Jigjiga and some flights between Dire Dawa and Kebri Dehar

Potential 2025 Overview

Expanded economic focus
- Potential oil source
- Trade linkages
- Possible agro processing/ leather

Urban Population
- 98,000+ (Somali Urban population expected to increase by 36%)

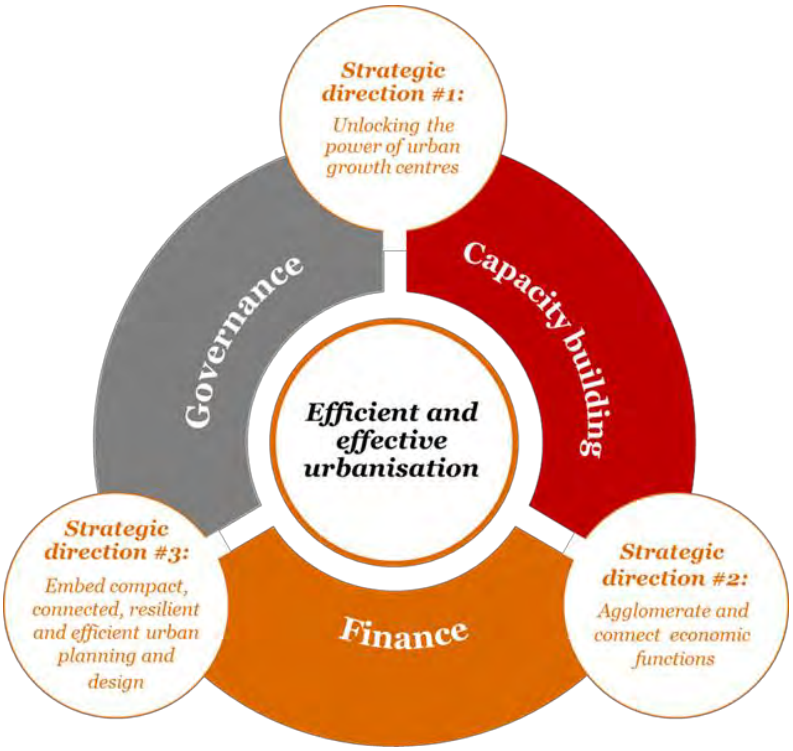
Infrastructure needs
- Freight and/or oil pipeline connection with Jigjiga to accommodate transport of potential extractives

5. Stage 5: Implementing the preferred option

5.1. Key choices, enablers and implications for action

The preferred scenario sets a rationale and spatial vision; however the biggest challenge is in implementation. One aspect of the transition from analysis to implementation planning is the need to identify and progress some of the major decisions regarding national planning.

To embed the three strategic directions it is vital that three key enabling conditions are met: capacity, finance and governance. These issues are introduced below but have not been studied in depth in this report. There is a need for much greater research, analysis, planning and support in this area. Some issues such as land policy, management and administration are well explored through the World Bank's EUR, but it will be useful to explore capacity, finance and governance options in more detail including comprehensive benchmarking to orientate governance on the available options, their successes and failures.



1. Governance: Connecting economic, spatial and development planning

A key challenge for Ethiopia is governing the integrated planning and policy processes that converge at the urban scale. The national spatial plan is the physical platform on which the GTP relies and needs long term integrated land use planning. The spatial urban strategy and the GTP inform one another, but also need to interface with other key infrastructure providers and key sector authorities including agriculture, industry and the private sector including MSMEs. Furthermore, the country's wider poverty reduction, social and environmental development agendas should be represented.

Although not universally practiced, integrated national planning of economic and spatial strategies can be a powerful process. Examples of countries that use national spatial economic planning processes include the Netherlands, Indonesia, Ireland, China and the UAE. In Ethiopia, an evaluation of the current economic planning process will deduce to what extent the current process can adequately incorporate coordinated spatial planning. This process must link to the governance system that connects local and national government and ideally would have input from the private sector and dialogue with investors and trading partners.

Effective governance of Ethiopia's implementation of its urbanisation vision will be required to ensure that clear mandates exist for ownership of specific components of the strategy, so that stakeholders can be coordinated in ways that make best use of their skills and expertise and eliminate inefficient practices such as divergent activities, process duplication and lack of overall coordination. Strategic planning of these integrated issues

therefore needs a common or shared platform across government as a minimum. This will help Ethiopia take advantage of the benefits of agglomeration for economic inputs, supply chains, market and knowledge functions and in doing so improve urban-rural linkages. Integrated planning can also enhance international trade and national transport and infrastructure.

The balance between national and local autonomy in policy, finance and planning should be explored. The expected effects of devolution policies must be examined in order to determine whether and how they can unlock growth and strengthen regional growth poles. At city level, albeit within a national framework of guidance, policy control over land use planning, transit orientated development, user building and infra codes and regulation, density and sprawl, charging, utility provision and public space can all be achieved. With the right skills and capacity this can give rise to greater opportunity than adopting national planning codes.

The success of managing urbanisation requires the building of capacity of key stakeholders such as the Ethiopian Government (both Federal and Regional), urban and infrastructure planning practitioners, key professional bodies, academic institutes and relevant actors within the private sector. The benefit of this will be to develop the technical skills required to create effective policy, gain an understanding of the complex issues involved, and broaden the base of stakeholders able to contribute to Ethiopia's vision for urbanisation.

2. Phasing urban expansion

It is important to note that our preferred scenario does not suggest the simultaneous growth of all of these clusters; this is likely to be difficult to achieve as it is a function of rural population density, maturity of infrastructure, availability of economic opportunities and budgetary constraints of the Federal Government.

As part of this phasing approach, decisions will need to be made about which elements of the strategy are strategic high-priority elements that warrant short term action and which elements can be implemented at a later date. This will focus time and resources to select suitable policy options to drive priority actions. For example, developing the economic growth corridor between the Addis Ababa National Capital Area and the Dire Dawa-Jigjiga International Trading Cluster is likely to be a high-priority action warranting short term action and policy implementation e.g. through promoting the Dire Dawa special economic zone, strengthening inter-city transport infrastructure, and offering planning and tax incentives along the growth axis.

Phasing also implies scaling decisions; e.g. you may wish to select a cheaper, short build time transport infrastructure option (e.g. modern LPG bus routes) in some regions first and plan upgrades to a more complex and efficient transport system in a phased manner in the future. Generally the preferred scenario falls into three phases of development:

- **Phase 1:** Connecting the Addis Ababa National Capital Area, Hawassa Southern Economic Cluster and the Mek'ele-Kombolcha Industrial Corridor with the Dire Dawa-Jigjiga International Trading Cluster to create a nucleus of four distributed economic territories whist developing the conditions for growth in other clusters. Initially this may follow something akin to the polycentric model. This would provide the backbone for growth, and may justify investment in significant infrastructure linkages.

- **Phase 2:** Bring two additional supporting clusters on-line, most likely the Lake Tana Development Area and Jimma Agricultural Commodities Hub. These areas would build on their natural strengths but could retain some flexibility to distinguish themselves in the evolving economic landscape by taking on new functions. It is possible that as Addis develops services and creative industries, it may be possible to migrate some industries to new locations that are cheaper – but only if they are properly connected. These spill-over effects may be important for the development of further clusters in the medium term.

- **Phase 3:** Although positioned as a third phase, it may indeed be the case that the Gambela Regional Export Hub and the Degeh Bur-Kebri Dehar Corridor develop early, but at a slower pace.

3. Investing in connections and gateways: Identifying key infrastructure that unlocks the spatial strategy

Acknowledging that key infrastructure is often responsible for driving spatial development patterns, the provision of access to transport, trade and resources must be carefully considered to ensure it is prepared in harmony with the spatial plan. Ethiopia's infrastructure planners are increasingly understanding and setting out the needs of the country in terms of key economic infrastructure. National spatial economic planning adds evidence to decision makers when forecasting demand, deciding where to invest in infrastructure or deciding which areas to service first and with what capacity.

Infrastructure is a 'means to an end', and prioritisation of infrastructure (and limited resources to deliver it) needs to be fastidiously linked to real demand and priority development objectives. Each cluster or corridor in the plan has particular needs regarding the timing, capacity and mode of transport required. Some will exchange greater flows of people and services, whilst others will require more dedicated capacity for manufactured goods and raw materials.

The urban demand model presented here accounts for the availability of key water and energy resources trading corridors and ports; however, these constraints need to be recognized, and must respond to the content, capacity and priorities of infrastructure providers. More specific questions raised by this report include:

- What are the specific infrastructure demands of both the preferred scenario and the development phase?
- Which of the port corridors should be prioritised and how should trade be diversified amongst these?
- Are the regional trading connections strong enough, particularly regarding East Africa?
- What mode(s) of transport infrastructure will connect the main economic and population centres to support their economic function and compact city development?
- What are the strategies for freight and logistics as opposed to passenger travel?

Section 4 sets out some of the potential infrastructure needs of each growth cluster or corridor. These needs should be validated and collated into a national infrastructure inventory and plan.

4. Financing spatial transformation

Ethiopia's urban expansion will have to be seed funded, particularly in the early stages of its development. In time, the growing maturity of municipal and national infrastructure financing should improve the financial autonomy of the urban system, drawing in the private sector. Federal Government budgets will have to be identified and work with local financial institutions will need to become mobilised. International donors and investors may bring capital but balancing this against innovative financial products through co-investment will be important in order to develop Ethiopia's own financial sector. Sources of capital and financial mechanisms for delivery are not always the problem. Investors most often refer to the lack of an adequate pipeline of high-quality (and low risk) bankable projects.

Although the infrastructure deficit will be large when bridging this gap, there are a range of sources of capital that can be accessed to stimulate and support this transition. Relying purely on municipal revenues in the early stages of urban expansion is unrealistic if cities are to keep up with infrastructure demand. Options include: domestic budget allocation and government bonds; international financial and development institutions; bilateral donors; emerging infrastructure funds; and specialist sources of development finance such as the newly established Green Climate Fund. The UK Department for International Development (for example) has just indicated that it will be establishing an Ethiopian Infrastructure Advisory Facility (EIAF) to help remove barriers and support the financing of key infrastructure projects.

Resources are also needed to establish and incentivise the private sector to establish operations in the planned Special Economic Zones (SEZs) that are planned in seven locations. Financing mechanisms must be synchronised with the planned spatial form of urban development. A number of policy options may be combined to sufficiently drive urban expansion in particular regions. For example in the Ethiopian context, special economic zones (SEZs) in Kombolcha and Hawassa may also require broader enabling policies such

as planning incentives and infrastructure provision to maximise their attractiveness. There are other means of fiscal transfers that encourage agglomeration of industries such as:

- Tax breaks
- Free or low cost land allocations
- Investment in land assembly and site infrastructure
- Low cost loans
- Start-up or launch funding (CAPEX and OPEX) for SMEs and preferred industries
- Regulatory easements such as rapid licensing
- Skills and training support
- Marketing and promotion of SEZs to FDIs

Achieving municipal fiscal autonomy can help to drive regional growth. The ability of cities and municipalities to determine and finance their own infrastructure and development needs can be attractive in the long term. Local control of certain policy, financial management and revenue generating activities can be helpful where there is sufficient capacity to manage such activities. Focusing on the national circumstances, the World Bank EUR considers the status and needs of municipal financing in detail.

From the international perspective, creditworthiness is a major challenge for developing cities that are often running a deficit and have weak Public Financial Management (PFM) and fiduciary oversight. Improvement of the local financial system to enable access to credit for municipalities, developers and individuals is a major challenge (for many countries) that requires additional research and action. According to the World Bank, less than 5% of major developing cities are currently internationally investable (compared to 20% in local markets). In addition to improving PFM and increasing revenue collection from licensing, user charges and taxes, actions could include:

- Establishing urban infrastructure funds or investment facilities that are backed by central government or international donors.
- Set up dedicated urban development agencies that focus on specific or thematic areas including regeneration, housing, industrial zones etc.
- Municipalities could set up a specific inward investment unit that focuses on marketing and promotion of a low regulatory environment and fiscal incentives available to encourage specific types of development.
- Green Bonds and revolving financing facilities could pay for infrastructure and attract new sources of capital with a higher risk appetite or with subsidised returns.

5. Managing risks

Should a validated version of the preferred spatial scenario be adopted in full or in part by the National Urban Development Spatial Plan, there are a number of risks to be highlighted so that mitigation action can be taken:

- **Growing pains:** To gain 'first mover advantage' there is a possibility that the new spatial strategy drives migration to secondary cities at a level that is greater than expected. In this eventuality, housing and servicing the new population may be harder than expected, which could in effect backfire on the aspiration to agglomerate and attract certain economic activities. Government should therefore carefully consider the positioning and communications around the spatial strategy to encourage productive migration and manage speculative movement.

- **Lack of infrastructure provision:** Without a clear national infrastructure plan and financing to support this, there is a risk that the key economic infrastructure required to unlock the spatial strategy is not adequately provided. Limited resources will require compromise, innovation and patience. Phasing is one way to focus resources on the most important priorities. Another option is to provide less expensive intermediate infrastructure solutions that can be scaled at a later date. Mapping the corridors for this future expansion is a necessary requirement.

- **Capacity limitations:** Something repeatedly recognised by government consultees of this report was that capacity (along with finance) is a priority issue. There are a range of ongoing efforts by MUDHCo and others to improve local municipal capacity in particular; however the scale of resources and time required is significant. The readiness and assimilative capacity of local government to plan, develop and administer a wide range of new investment and activities will test this capacity further. This is a key risk (and perhaps the most significant one) in realising the spatial urban development plan.

- **Climate, disasters and natural resource security:** External factors may also threaten or constrain growth and progress with the plan. If the national urban system does not build in efficiency and resilience, it will expose itself to greater threats from natural capital depletion (e.g. water, forests, minerals) and climate or disaster risk (e.g. drought, flood, extreme weather and seismic activity). Many of these endogenous factors cannot be controlled – however, the development of resilient and efficient urban systems (driven by compact and connected planning) can mitigate and reduce these risks. The continued development of climate adaptation planning, disaster and emergency risk management systems is necessary to enable planned growth.

- **Private sector development:** Finally, whilst government action is a critical stimulus, the private sector – small and large – is the only realistic long term enabler of growth. No economy can grow to its full potential without a strong private sector, as it brings scale and innovation through links to the global economy and marketplace. The risk is that the private sector is not engaged fully and does not feel incentivized to participate in the urban transformation of Ethiopia. Efforts to stimulate the MSME sector in particular are good and should be continued, but the need for integrating private sector capacity into all sectors and locations may require refreshed analysis, policy and planning.

5.2. The way forward

The choices Ethiopia makes today will have far reaching implications for sustainable economic development and the environment. The nature of the national urban structure is being set today. The consequences of these choices – be they positive or negative – are lasting. This window of opportunity needs to be considered with utmost care and attention to avoid undesirable lock-in. It is therefore crucial that at this early phase of urbanisation policymakers consciously support the process of sustainable urbanisation. This requires long term thinking and commitment.

This report signals how the transformation of Ethiopia to a more urban future can be managed. This paper has introduced a five step 'spatial economic framework' for the development of a strategy for Ethiopia's development. These five steps are designed to move Ethiopia from a strategic development vision to an implemented urban strategy that realises that vision, and can be updated in the context of the country's main development plan, the GTP. While the work focuses on Ethiopia, the framework used and the subsequent analysis has been designed to be applicable to other countries as they grapple with the same complex issues.

The findings of this work are positioned as a contribution to the development of the GTP II and beyond, but also input to the National Urban Development Spatial Plan. The piloting of the spatial economic framework does not attempt to give all the answers to delivering an effective and efficient urbanisation path for Ethiopia. It also raises further questions about the completeness of the planning process and the enablers that are so important to its delivery. These areas need to be explored in more detail, especially related to the required cross-sectoral governance, financial strategy, and capacity to implement any chosen urbanisation strategy.

There are some key outputs and next steps still required to mobilise efforts on Ethiopia's spatial economic plan. A gap analysis of the national urban strategy and spatial planning process reveals some areas for further work. Specific proposals (some of which are already being actioned by government) include:

- Linking and resolving any asymmetries with CRGE and GTP strategies.
- Spatial planning at national, corridor and local levels.
- Creating a national urban sector programme detailing planned investment and phasing.
- Carrying out a national urban institutional review and possible design of new features.
- Developing policy packages to support the new urban structure and preferred characteristics.
- Creating a national key economic infrastructure development plan to unlock the spatial strategy.
- Devising a financial strategy to address project and municipal financing challenges.
- Outlining which capacity development programmes are to be expanded and scaled to address new challenges.
- Identifying and developing practical tools to assist with planning, management, monitoring and reporting of urbanisation progress.
- Mapping IFI and donor support to national planning and implementation processes.
- Exploring how to best leverage access to donor and development partner support including bilateral, multilateral agencies, trading partners and country investors and how to access private sector finance and capacity.

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Tables

Tables 2 & 3: Project team analysis based on 2014 Woreda-level statistical data - ICPS 2012 Projection report (medium scenario) – CSA
Table 4: Layer and sub-component weighting is based on project team assumptions

Table 7: All statistics for comparator countries from World Bank indicators (http://data.worldbank.org/indicator), with the exception of “Number of cities > 1 million”, “Number of cities 500,00 – 1 million” and “Number of cities 300,000 – 500,000”, taken from United Nations Population Division ‘World Urbanisation Prospects: The 2014 Revision’ File 17b (July 2014): http://esa.un.org/unpd/wup/CD-ROM/Default.aspx
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Figures

Figure 3: ICPS, CSA 2012
Figure 4: Project team analysis based on the GTP I