Prosperity Fund

GLOBAL FUTURE CITIES PROGRAMME

DURBAN

CITY CONTEXT REPORT

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Global Future Cities Programme
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GLOBAL FUTURE CITIES PROGRAMME

Introduction

ABOUT THE GLOBAL FUTURE CITIES PROGRAMME

In 2015, the UK government created a new Cross-Government Prosperity Fund worth £1.3 billion from 2016-2021, in order to help promote economic growth in emerging economies. Its broad priorities include improving the business climate, competitiveness and operation of markets, energy and financial sector reform, and increasing the ability of governments to tackle corruption.

Emerging Economies still face considerable challenges such as uncontrolled urbanisation, climate change and high and persistent inequality which can lower long-term growth prospects. The Prosperity Fund supports the broad-based and inclusive growth needed to build prosperity and reduce poverty, but also make development overall more sustainable through the strengthening of Institutions and Improvement of the global business environment.

The Global Future Cities Programme (GFCP) is a specific component of the Prosperity Fund which aims to carry out targeted interventions to encourage sustainable urban development and increase prosperity whilst alleviating high levels of urban poverty. The programme will also create significant short and long-term business opportunities in growing markets, forecast to be regional growth hubs, including for UK exporters who are world recognised leaders in urban innovation.

The overall strategy of the Global Future Cities Programme is to deliver the Programme in two phases; a strategic development phase (2018), followed by an implementation phase (2019-2021). UN-Habitat, in collaboration with the International Growth Centre (IGC) and the UK Built Environment Advisory Group (UKBEAG), has been mandated by the UK Foreign and Commonwealth Office (UK FCO) to develop and undertake the strategic development phase. This in turn, will inform and shape the implementation phase,

and collectively provide further evidence for the overall programme.

The Programme builds upon a coherent series of targeted interventions in 19 cities across 10 countries, to support and encourage the adoption of a more sustainable approach to urban development. In general, the proposed interventions aim to challenge urban sprawl and slum developments, thereby promoting more dense, connected and inclusive cities that in combination contribute to prosperity, achieving the Sustainable Development Goals (SDGs) and implementing the New Urban Agenda (NUA).

The Global Future Cities Programme builds upon three integrated pillars, that will address key barriers to prosperity, in selected cities:

- **Urban planning** – technical assistance for spatial restructuring (Public space, Heritage and urban renewal, Urban strategies and plans, Data systems for integrated urban planning);
- **Transportation** – technical assistance to support cities to develop integrated transport systems (Multi-modal mobility strategies and plans, Data systems for multi-modal mobility);
- **Resilience** – technical assistance to develop strategies to address the impact of climate change and ensure development is sustainable (Flood management plans and systems).

In order to capitalize on the proposed interventions and to ensure sustainability and impact in a longer-term perspective, the programme has a strong focus on technical support and institutional capacity development.

In many of the interventions, there is a particular focus on the potential of embedding smart/digital technology and data analysis platforms in urban governance and management processes. Integrating smart technologies is recognized as an instrumental area that significantly can improve the efficiency in the provision of key infrastructure services, enhance urban resilience, support evidence-based plans and strategies and promote integrated planning approaches across sectors.

INTERVENTION DEVELOPMENT AND VALIDATION

Based on initial scoping studies and government-to-government engagement carried out by UK FCO, the UN-Habitat team worked with partner local authorities and wider stakeholders to corroborate their city development strategies, and to confirm, enhance and develop the intervention proposals.

In each city, a Local City Specialist, supported by the national and regional country offices of UN-Habitat

and in liaison with the FCO local posts, took the lead in identifying stakeholders in a series of bilateral meetings, interviews and focal group discussions. This has collectively gathered information and provided more detailed knowledge and information on the City's visions and goals.

Based on this initial phase, a Charrette (planning workshop) involved high-level decision-makers from the public and private sectors together with civil society representatives. This facilitated discussion on the proposed and possible alternative interventions, related individual interests, technical opportunities and constraints, as well as political objectives. The outcome of the Charrette provided clarity on where stakeholders stand in relation to the strategic potential of the discussed projects and it allowed for the mobilisation of support.

At the same time, the Charrette allowed for the technical teams to proceed with the development of a Terms of Reference, outlining the specific scope and activities of each intervention. A final Validation Workshop assured consensus on the proposed projects and document's endorsement by the authorities.

Parallel to preparing the Terms of References, an evaluation of the interventions was initiated, aiming to address its feasibility within the local strategic context, identify potential impact on prosperity barriers and to explore the optimal delivery models. This process resulted

in a set of City Context Reports as well as an analysis of the technical viability of the interventions. The analysis aimed at both informing the development of the Terms of Reference and the future implementation phase of the Programme.

THE CITY CONTEXT REPORT

Objectives
A City Context Report is provided for each city of the Global Future Cities Programme. It serves as a tool to frame the proposed Programme interventions within the characteristics and pre-conditions of each city.

The Report targets a variety of stakeholders in the Programme: administrators, city managers, policy makers, legislators, private sector actors, donors, and local as well as international researchers and knowledge generators. The Reports also provide UKFCO the contextual setting of each proposed intervention, and can in addition, be used by the Service Providers as an entry point for the implementation phase.

By addressing the specific challenges facing each city, the Report illustrates how the interventions can work towards inclusive prosperity and sustainable urban development. The benefits of each intervention, however, cannot be achieved without certain enabling conditions to ensure its success. Therefore, critical aspects for the delivery of the proposed interventions and its success from a long-term perspective are outlined. Using thematic

best practices and evidence from global learnings and research, contextualized recommendations are provided on the conditions necessary for the intervention to be viable and to reach a maximum impact.

Essentially, the City Context Report serves to ensure that all actors within the Global Futures Cities Programme are aware of the specific conditions to be considered in the delivery of the proposed interventions, on a case-by-case basis.

Set-up and Scope
The first part of the City Context Report (General Overview) provides an overview of the Global Future Cities Programme and introduces the city from the perspective of the urban challenge which the proposed intervention intends to address.

The second part of the Report (Urban Analysis) more critically and technically analyses a selection of factors which need to be considered or to be in place for the intervention to succeed, addressing its feasibility, potential impact on prosperity barriers from a long-term perspective.

The third part of the Report (International Alignment and Technical Recommendations) presents short–and mid-term expected outcomes as well as long-term potential impacts. It further elaborates the contribution of the intervention to the achievement of the SDGs and the implementation of the New Urban Agenda as well as the programme objectives of the Prosperity Fund.

As the City Context Report is tailored directly to the Programme interventions, the analysis does not aim to comprehensively present all aspects of urban development. It does not elaborate on long term planning and transformation strategies, the effectiveness of policy or urban legislation, nor the entire municipal financial system. As such, it also excludes urban policy recommendations.

However, the Report has the scope to illustrate the general capacity of the city for project delivery, and in this regard, make recommendations to support implementation of the interventions and reaching set goals. The City Context Reports will be part of knowledge management for the Programme to generate local information and data on the cities as well as identify gaps in knowledge, systems or governance.

Methodology

Urban Analysis

The City Context Report provides a general analysis of the spatial, financial and legal conditions in the city that

can either facilitate or hinder the implementation and the long-term sustainability of the proposed interventions in transport, resilience and urban planning.

This framework follows UN-Habitat's three-pronged approach, recognising the three essential components for a successful and sustainable urbanisation: 1. urban planning and design; 2. urban economy and municipal finance; 3. urban legislation, rules and regulations.

Firstly, the spatial analysis describes the existing urban context specific to the intervention. Urban mobility systems, vulnerability of the built environment, spatial form and trends are considered as possible challenges in urban management that the intervention can address.

Secondly, the financial analysis aims to identify the mechanisms in place by which the intervention could be sustainably financed in the long-run. This section outlines the city's municipal capacity, existing regional, national and international financial ecosystem and existing financing mechanisms at the municipal level.

Thirdly, from a legal perspective, the Report critically analyses how the intervention could be facilitated or challenged by the vision of the city and its governance hierarchy. Enablers and obstacles resulting from any relevant legislation, as well as sectoral frameworks (e.g. strategies, policies, planning frameworks and development plans, detailed plans of relevance) are also described.

This approach aims to offer implementing partners, stakeholders and donors a general context of the city and, with it, demonstrate the appropriateness of the intervention from a spatial, financial and legal point of view, while at the same time informing about potential barriers and enablers for its implementation.

Potential Impact to the Program Objectives and the SDGs

The Report also outlines the potential impact of the interventions, based on the specific activities and outputs proposed. Impact can arise from a complex interaction of context-specific factors, rather than as result of a single action, which makes it difficult to empirically quantify longer-run effects that go beyond the identification of program outputs. An empirical, comprehensive impact assessment is therefore not part of the scope of this report.

Nevertheless, the report outlines potential benefits that are only achievable under certain preconditions and activities. Thereby, short-, medium- and long-term outcomes are defined with reference to a project-cycle approach, which considers all the project phases from

Planning and Design through *Building*, to *Operating and Maintaining.*

Short-term outcomes are directly achieved through the implementation of the technical assistance support, within the 2-3 years scope of the Global Future Cities Program.

Mid-term outcomes are only realised once the intervention is executed through either capital investment, implementation of pilot projects or the actual enactment of legal documents, plans or masterplans, within a possible timeframe of 3 to 7 years.

The broader long-term impact of the interventions is linked to the sustainability of the interventions in a 7-15 years timeframe and relates to the operation and maintenance phase of the project cycle.

The City Context Reports further connect potential impacts to the Programme's objectives, taking into account also the Cross-cutting issues at the core of UN-Habitat's mandate from the UN General Assembly. Consequently, the Programme's objectives are summarized into five principles:

- Climate Change;
- Gender Equality;
- Human Rights;
- Youth;
- Sustainable and Inclusive Economic Growth.

Cross-cutting issues are addressed with explicit reference to the 2030 Sustainable Development Goals (SDGs) and the New Urban Agenda, in an attempt to ensure that the proposed interventions are in line with the design, implementation, review and success of the 2030 Agenda for Sustainable Development. Consistent with UN-Habitat's mandate, the SDG 11 Sustainable Cities and Communities is linked with the urban dimension of the other 16 goals as an essential part of the localisation of the SDGs. In this way, interventions can support localisation processes, to support local ownership and ensure SDG integration in sub-national strategies and plans.

Technical Recommendations and International Best Practices

The interventions proposed in the various cities of the Global Future Cities Programme were grouped into clusters according to their thematic entry-point, as an elaboration of the thematic pillars of Urban Planning, Transport and Resilience.

These clusters are:

- Public space
- Heritage and urban renewal
- Urban strategies and plans
- Data systems for integrated urban planning
- Multi-modal mobility strategies and plans
- Data systems for multi-modal mobility
- Flood management plans and systems

Combining the international experience in urban policy and project implementation of UN-Habitat and the leading academic research of IGC, each cluster was analysed to offer evidence-based recommendations for a successful Implementation and a maximised impact of the intervention. Specific reference was given to implemented plans and international best practices.

The recommendations inform the Planning and Design phase which coincides with the timeframe of the Global Future Cities Programme, and always aim for long-term sustainability of the interventions.
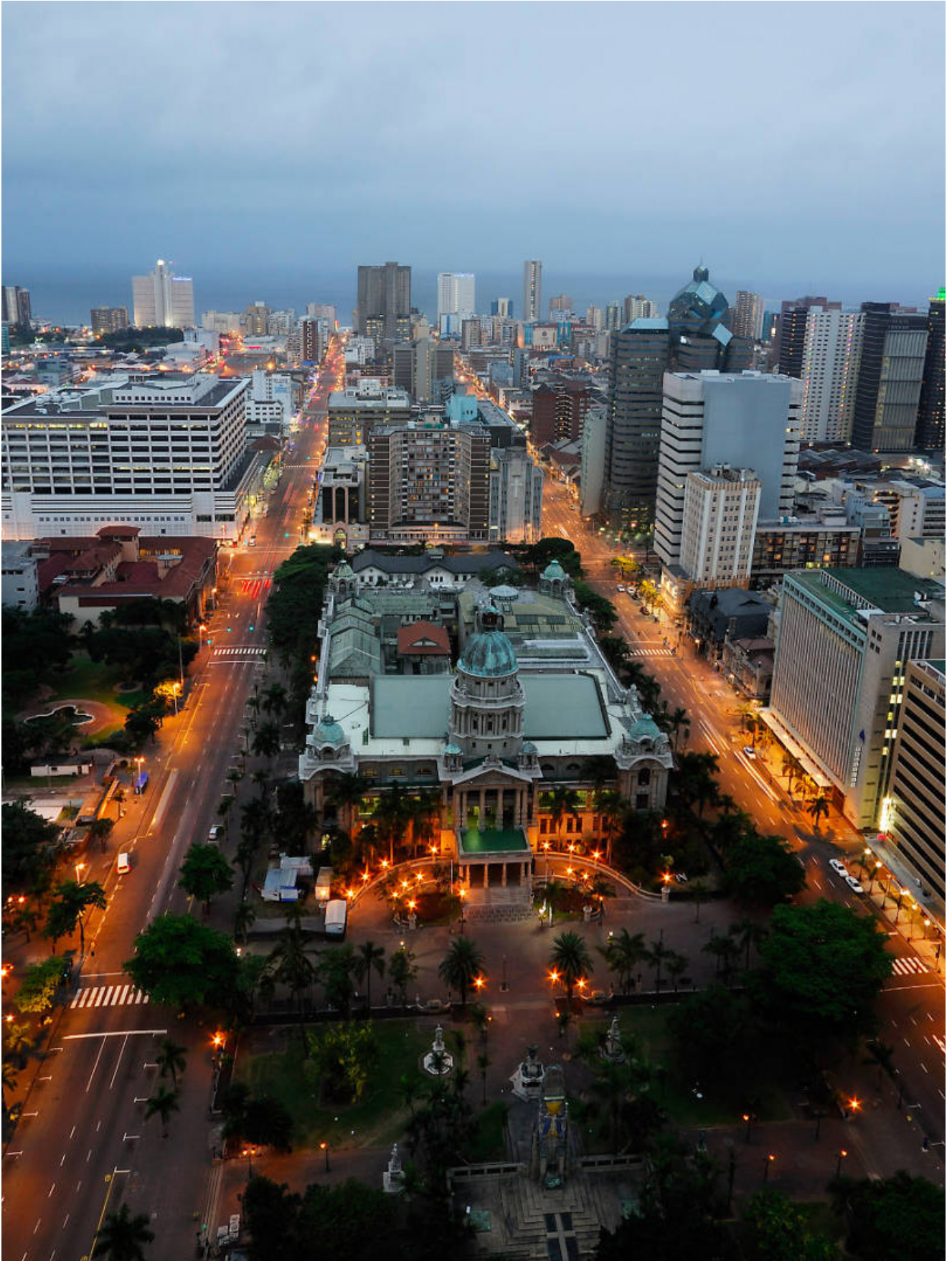
Durban

GENERAL CONTEXT

The eThekwini Metropolitan Municipality (eMM), comprised of the city of Durban and its surrounding towns, was formed at the end of apartheid in 1994 and was restructured with the adoption of South Africa's new municipal governance system in 2000. The eThekwini area formerly had seven independently-governed local councils and tribal land, but since 2000, the 219 elected members of the eMM City Council govern the city.

Durban is the largest city in the Province of KwaZulu-Natal and the third-largest city in the country, located on the east coast of South Africa along the Indian Ocean. Durban covers an area of approximately 2,556km[2] with 3.87 million inhabitants in 2017. From 2001 to 2011 the population grew at an annual average rate of 1.08 per cent.[1] The population growth is affected by high rates of in migration from the KwaZulu-Natal province and other parts of South Africa. Many of the migrants reside in informal settlements on the urban periphery where the land is more accessible. The central and north regions are the most densely-populated areas in the city and are home to more than two-thirds of city residents.

The eThekwini region is South Africa's second-largest economic centre after Johannesburg and the second-most significant industrial region. Despite being the busiest port in the country, the local economy is dominated by tertiary industries (72 per cent), which are growing faster than other sectors[2], while finance, community services and manufacturing have maintained positive growth. However, Durban maintains high rates of income inequality, which are characteristic of many cities in South Africa; Durban's income inequality is second only to Johannesburg.[3]

Durban has been the site of political tension since the country's transition to democratic government; intra-communal and politically-motivated violence is especially common in informal settlements and townships. Due to its turbulent political history, Durban faces several social development challenges such as alcohol abuse, HIV/AIDS and homelessness.
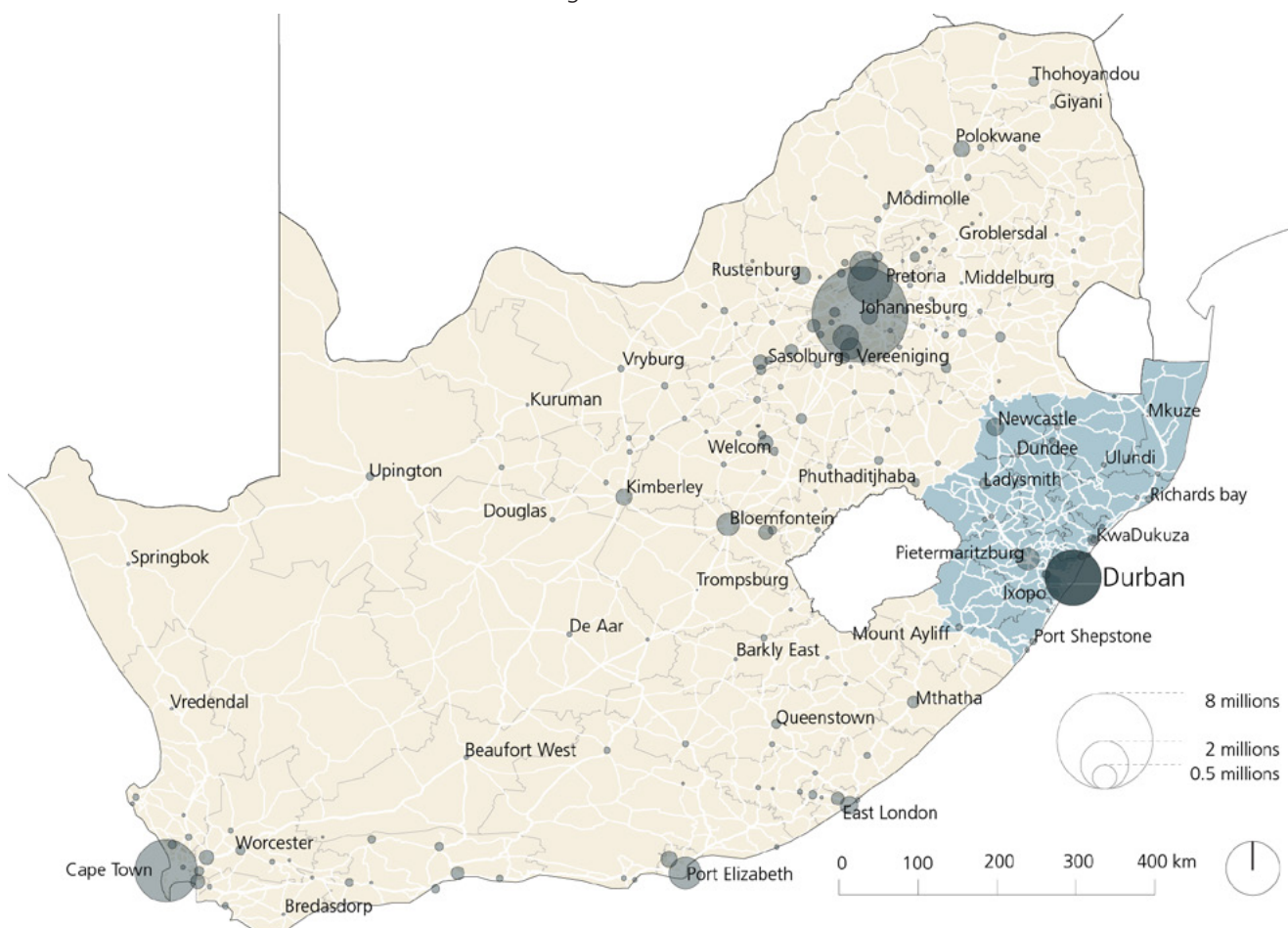

Fig. 2. eThewikini State and main South Africa Capitals by population

IMPROVED DATA INTEGRATION, COLLECTION AND ANALYSIS TO FACILITATE COLLABORATIVE INFORMAL SETTLEMENT ACTION

Problem Statement
According to the eThekwini Municipality, there are 569 informal settlements in the city, which comprise of about 250,000 households and are home to more than a quarter of the total population.[4] Despite the city's efforts to address the spatial, economic and social inequalities within informal settlements, they have continued to proliferate on the urban periphery and deprive residents of economic and social prosperity.

Durban's Resilience Strategy[5] describes 'collaborative informal settlement action' as one of the main actions for building resilience in the city. This focus on informal settlements recognises, on one hand, their relevance as an integral part of the urban fabric and the potential benefit that upgrading can bring to the lives of a large number of Durban's inhabitants. On the other hand it considers the overall impact that a climate-smart, well-planned and designed, serviced and integrated settlement would have on the environment.

The cross-sectoral nature of all required interventions– in infrastructure, social and economic services among others–suggests the need for updated, reliable city-wide data as the basis for developing a coordinated and holistic approach to settlement upgrading. In the context of these interventions, the concept of upgrading is used in the broader sense, which covers both the provision of basic services for informal settlements as well as a long-term shift from informal settlements to more formalised dwellings.

Opportunities exist for eThekwini Municipality to facilitate data collection by local informal settlement communities. There are also multiple data platforms being used in Durban for informal settlement actions but they are not properly integrated. The collection, analysis, integration and application of data is becoming a major challenge in Durban. In Durban's Resilience Strategy this data challenge is highlighted as a key constraint in how the city makes strategic decisions within the context of informal settlements.

Existing data challenges for informal settlements include:

- obsolete data
- duplicated data systems
- difficulty in obtaining access to municipal data across departments and their integration
- inadequate integration of community-collected data
- poor data management and analysis to inform strategic decision-making

There is both limited city-level and community-collected data that exists on informal settlements. Even so, there is no standardised data collection protocol that ensures comparability of data. This challenge is compounded by the lack of an integrated data management platform suitable for informal settlement planning, upgrading and support. These challenges are symptomatic of a larger data mismatch within the city, which is compounded by the mis-alignment of existing data platforms.

What is needed is an integrated city-level data platform that is responsive, interactive and aligned with the city's strategic objectives of informal settlement upgrading, and with a view towards building long-term resilience. This data platform should aim at facilitating the integration of both city-level and community and privately-collected data on informal settlements through a participatory process.

Description of the intervention
The overall objective of the intervention proposed by the Global Future Cities Programme is to develop a data management solution that will facilitate collection, analysis and integration of data related to informal settlement planning, upgrading and support.

While data on its own will not directly improve the condition of informal settlements, it could provide a starting point for informed, evidence-based collaborative action. This could develop the basis for the establishment of proactive and innovative city-wide partnerships to develop and execute inclusive and sustainable informal settlement upgrading and integration. Data is therefore intended as a planning tool for readdressing spatial, social and economic inequalities to support urbanisation.

Specific outputs of the intervention are:

- Consolidated principles for data management;
- Baseline analysis, identifying and document existing databases, data fields contained and data collection processes;
- Stakeholder engagement to establish a data-sharing process for informal settlements and to further identify discrepancies between various data sets collected by state agencies. At the same time, investigate what data is collected by the private sector and state-owned enterprises on informal settlements within eThekwini;
- Design and development of an informal settlements' information management solution and related specifications, and set up protocols for data collection, sharing and management; and
- Training to ensure that the appropriate capacity is built and embedded in the responsible municipal department.

Fig. 3.   Durban informal area (Source: eThekwini Muncipality)

Fig. 4.   uMhlanga interchange construction, Durban (Source: Caxton & CTP Printers and Publishers Ltd.)

ENHANCED INSTITUTIONAL AND GOVERNANCE COORDINATION FOR SUPPORTING ALIGNMENT OF STAKEHOLDER PLANS WORKING ON TRANSIT-ORIENTED DEVELOPMENT

Problem Statement
Apartheid and post-Apartheid planning have left as a legacy, a deep mismatch between areas of residence and areas of employment concentration. The current urban structure has led to unsustainable urban sprawl, given rise to long commuting times, increased travel costs and high unit cost of infrastructure as well as primarily precluded the development of mixed land use.

Durban has a significant base of public transit ridership. However, those riders are economic disadvantaged as private cars are the preferred choice for those who can afford it. The major issue in the transport is the high social and economic costs, especially in terms of residential patterns, due to the current urban structure.

EThekwini has a spatial mismatch between areas of employment and areas of residence. This mismatch is exaggerated for the marginalised poor sectors of society who live furthest away from the developed areas which contain the bulk of employment and social services and opportunities.

EThekwini is currently focusing on achieving a more spatially efficient, inclusive, integrated and compact urban form where employment, social services and opportunities are easily accessible and connected to all parts of the city. In this regard, a Transit-Oriented Development Strategy (TOD) was identified transversally by several planning instruments as a key spatial response to advance socio-spatial transformation.

However, certain gaps have been identified which hamper the implementation of these strategies.

These include a lack of:
* Coordination among policies, regulations and planning;
* Coordination among various stakeholders;
* Experience in private investors' involvements and insufficient financing mechanisms; and
* Technical capacity within the relevant eMM departments.

Description of the Intervention
The overall objective of the proposed intervention is to develop a multi-sectoral institutional model that acts a coordination tool to plan, implement and operationalise TOD and to formulate a change management process to foster alignment of stakeholder plans, both public and private sector.

Technical support is required to develop an organisational structure by identifying sector roles and responsibilities in planning, implementing and managing TOD within the municipality and the lead and coordinating function for aligned inter-governmental and private sector initiatives.

Furthermore, technical support is also required to identify overarching strategy and policy statements for TOD especially for the C2 and C3 corridors (described later).

This will be based on a combination of the stakeholders' vision, the city's goals, national development priorities and best management practices in TOD, best practices in land use management, transport and financial modelling, utilisation of value add in public and private land, and context-specific urban design and urban management.

The strategy and supportive policy statements will seek to unlock the development potential of the corridors in relation to properties within the trunk corridors and feeder routes. This will identify a series of catalytic investments to allow all public interventions to be focused in a spatial context to leverage private and public investment.

Specific outputs of the intervention are:

- Development of a baseline: Analysis of the existing mobility situation and trends, as well as existing plans, policies and legal frameworks;
- Stakeholder engagement and consultation plan;
- Change Management Framework: governance and organizational structures, implementation mechanisms and tools for efficient planning, implementation and operationalization of TOD Strategy and policy statements for TOD Implementation; and
- Strategy and policy statements for TOD: Overall intervention design and set up, viability, risk management plan and targets, together with a communication and marketing strategy.

Improved Data Integration, Collection and Analysis to Facilitate Collaborative Informal Settlement Action

Main Stakeholder
eThekwini Municipality

Possible Project Partners
Governments and public institutions on national, regional and local level;
Civil society, NGOs, media and academia; Private sector.

Thematic Cluster
Data systems for integrated urban planning

Keywords
Data system, planning, informal settlements, transport, resilience, economy

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Enhanced institutional and governance coordination for supporting alignment of stakeholder plans working on Transit-Oriented Development

Main Stakeholder
eThekwini Municipality
eThekwini Transport Authority

Possible Project Partners
National Department of Transport;
National Treasury (City Support Programme);
KZN Department of Transport;
eThekwini Municipal Human Settlements Unit;
Other Governments and public institutions on national, regional and local level;
Civil society, NGOs, media, and academia;
Private sector

Thematic Cluster
Multi-modal mobility strategies and plans

Keywords
Institutional and governance coordination, TOD, planning, transport, resilience and economy

URBAN ANALYSIS

Spatial Analysis

URBAN FORM AND SPATIAL STRUCTURE

Current Urban Form
About 68 per cent of the eThekwini Municipal area is rural, mainly in the northwest and southwest areas of the municipality with pockets of dense settlements.[6] The great majority of rural areas falls beyond the urban development line (fig. 7), with dispersed settlement patterns and land holdings under the Ingonyama Trust[7] and Traditional Authorities, with communal land tenure.

This unique institutional arrangement in the city brings about challenges with regard to planning and management. This has resulted in insufficient land use regulation, allowing some households to be located on environmentally-sensitive land. The remaining 32 per cent of the municipal area is urban, dominated by residential and economic land uses.[8]

Durban is structured by a T-shaped mobility network formed by the N2 (running north-south) and N3 (running north-west from the coast) mobility corridors.

As part of the Municipal planning process, Durban is divided into four functional areas: Central, South, West and North Municipal Planning Regions. The Central Region, representing the urban core, has significant economic, residential and servicing capacity. In the past decade the economic and residential growth axis has developed with increased momentum towards the North.

Land Use and Urban Challenges
With most employment and consumption opportunities concentrated in the central core areas, the economic land uses in the city are unevenly distributed across the municipal area and separated from the higher-density residential land uses in Central and North regions. This is a direct legacy from the Apartheid-era's racially-segregated zoning, which sought residential-only townships for black people, which were separated from job opportunities and services.

There is still limited racial integration in the city and the poor, predominantly black households remain further away from employment centres and transportation corridors. Unlike most cities in the world, in many South African cities the population density is concentrated on the urban periphery while well-located, well-serviced locations have low density. Durban is not an exception, with density concentrated within the former townships and the densest areas limited to Durban's Central Business District. The remainder of the metropolitan area is settled at low densities, with an average of 4 dwilling/ha[9], roughly 13 people/ha[10].

The extensive rural area within the municipality is nonetheless undergoing rapid change as rural settlements are sprawling and becoming semi-urban.
Such a low density is unable to sustain public transportation and other infrastructure, resulting in long commuting times, high transport costs, high infrastructure costs, underused public space, environmental degradation and so on.

Fig. 5.   Functional Areas of eThekwini Municipality

Fig. 6.   Traditional Authorities of eThekwini Municipality

N2

N3

Waterbody
Main Road
Railway
Informal Settlements
Residential Area
Business and Mixed Use Area
Industrial Area
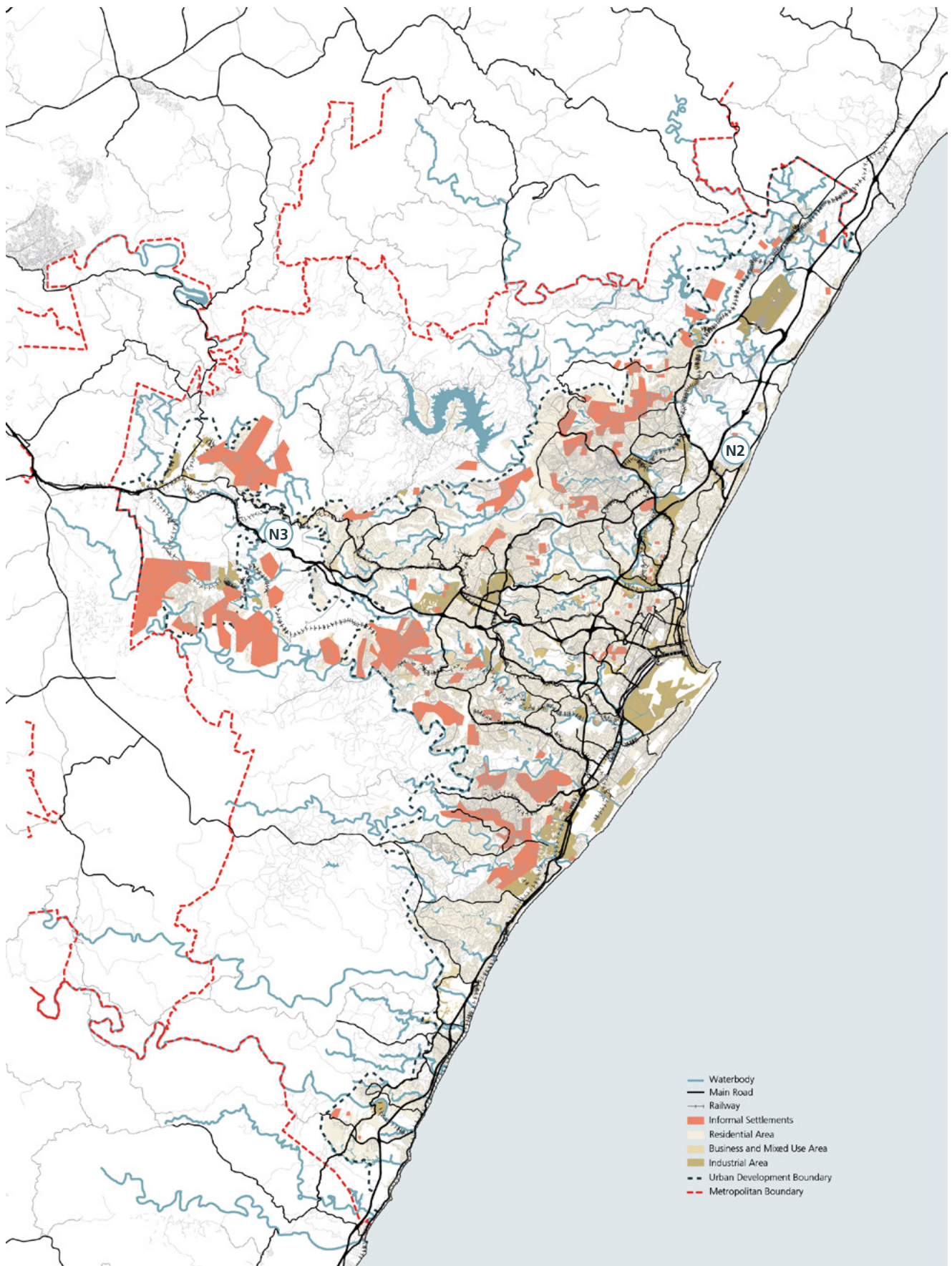Urban Development Boundary
Metropolitan Boundary
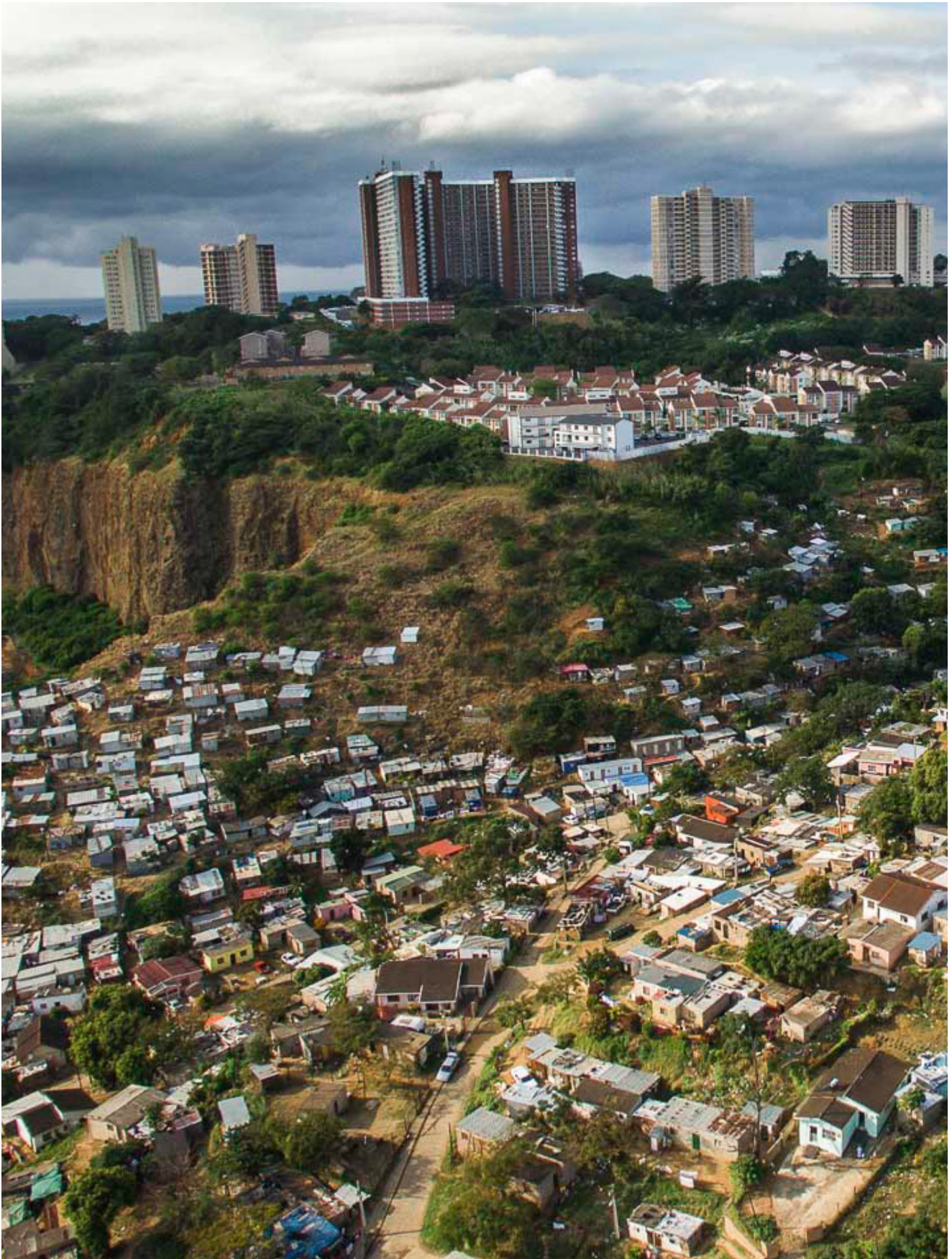
Fig. 7.   Durban Urban Strcuture

Fig. 8. Durban Suburbs (Source: Unequalscenes)

Urban growth

When comparing the city's density pattern from 2001 to 2011, most of the density increase happened in the rural periphery and greenfield development areas, as well as along the northern coast.[11] Density within the traditional suburbs remained stable and density along the backbone of the Public Transport Network has declined or remained stable. It implies that the rural areas constitute an easier access point into the city for migrants, with a flexible, context-specific and undocumented land management. At the same time the city's housing programme could not secure well-located land at reasonable prices and was forced to deliver large-scale greenfield housing projects on the periphery of existing settlements.

It is estimated that the population growth in the northern region will more likely grow at a faster rate due to the migration trends and, if left unchecked, this will continue to contribute towards sprawl and urban inefficiency.

In the 2016 Preliminary Resilience Assessment[12] Durban is cited with have the most expensive housing market relative to income in the country. This condition makes the spatial form resistant to change. The high cost of housing near employment areas, coupled with the high costs of transportation, leads to the growth of informal settlements.

SPATIAL DISTRIBUTION OF INFORMAL AREAS

Like many post-Apartheid cities in South Africa, Durban is faced with a growing number of informal settlements. There are more than 550 informal settlements comprising 238,000 households in the city and more than a quarter of Durban's population of approximately 3.5 million live in the urban and peri-urban informal settlements.[13] Despite their relevance and extension throughout the city, most settlements are of limited dimension, composed of 100 households or less.[14] Most of them are scattered on the outskirts of the city, mainly located on land which due to morphological constraints – steep slopes, inappropriate soil for construction and so on – is too difficult to develop in the formal market. As a result, they are vulnerable to climate-related disasters, especially increased flood risk.

Lack of basic services such as water, sanitation, energy and waste management, matched with the safety risk, makes those living in informal settlements the most vulnerable communities in the city. Additionally, the inadequate access to infrastructure and transport deprives the informal settlement dwellers from the benefits of living in an urban area. Informal settlements have high unemployment rates, low household incomes and poor levels of education.
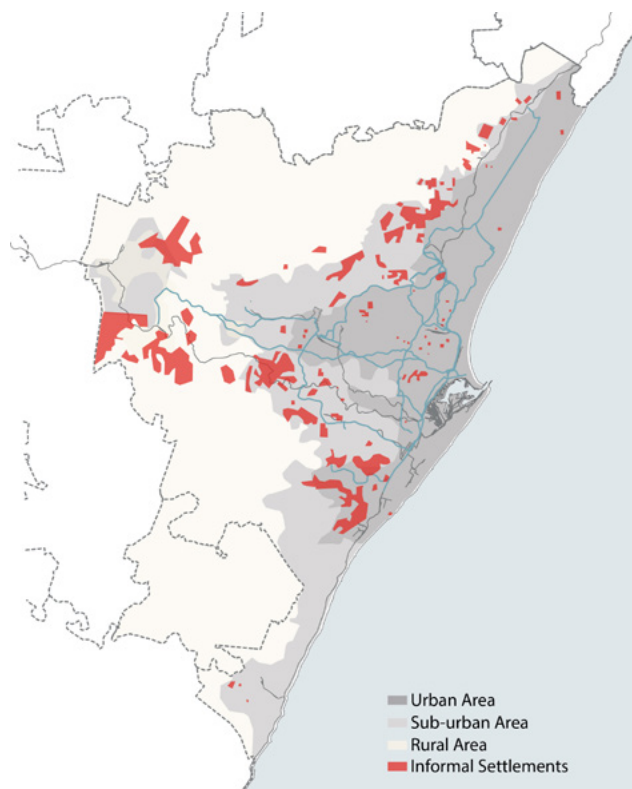
Fig. 9.   Distribution of Informal Settlements in Durban

CURRENT INITIATIVES FOR INFORMAL SETTLEMENTS

Breaking New Ground

Housing policies and strategies have been struggling to cope with urbanisation trends in Durban in the past decade. Conventional upgrade methods have been facing serious budgetary constraints, combined with legal issues relating to complex statutory land assembly processes and developers reluctant to work on projects involving informal settlements.[15]

The Comprehensive Housing Plan for the Development of Integrated Sustainable Human Settlements, also known as Breaking New Ground (BNG) is a policy introduced since 2004, dealing with informal settlements through a phased development approach that will deliver security of tenure, municipal engineering services and social and economic amenities. Under BNG the Municipality has delivered more than 180,000 units to date with more than 250,000 units still to be delivered.[16]

However, the provision of affordable and adequate housing still remains a challenge for the government, as most of the areas for low-cost housing as well as in situ upgrading are located away from areas of economic opportunities and do not address the underlying issue of racial integration among the divided settlements.

National Upgrading Support Programme (NUSP)
eMM's Human Settlements Unit has taken part in the National Department of Human Settlement's NUSP, a nationwide initiative to provide municipalities with technical assistance to support to Participatory Based Planning. A total of 42 settlements within eThekwini Municipality were selected to undertake socio economic surveys and develop a community capacity development programme. The ultimate goal of NUSP is to facilitate city-community partnerships in order to replicate these experiences in other settlement within eThekwini.

Durban's Resilience Strategy
As mentioned in the introduction, the Resilience Strategy identifies *collaborative informal settlement action* as one of the key Resilience Building Options. To identify appropriate resilience interventions to address informal settlements, the strategy aims to:

- Explore alternative models for human settlement delivery
- Increase understanding of spatial informal dynamics, with an expanded platform of data collection and data analysis
- Improve partnership and collaboration among communities, NGOs, CBOs and eMM
- Involve communities in planning processes

In particular, Collaborative Informal Settlement Action's Outcome 2 highlights the need to have a consolidated quantitative and qualitative community and municipal information system, openly accessible and regularly updated. This would be the base for the establishment of proactive, innovative and city-wide partnerships to develop informal settlement upgrading, and to enable an integrated administrative system.

National Treasury's City Support Programme (CSP)
This initiative, supported by the World Bank and in partnership with NUSP, seeks to improve the service delivery and management systems of South African cities. A scoping study was prepared in June 2016, while engagements with eMM have already been initiated

Isulabantu Project
The University of KwaZulu Natal in Durban, University College London, uTshani Fund (SDI Alliance) and eMM have launched this project, focusing on community-led informal settlement upgrading. Isulabantu Project aims at overcoming the top-down approach traditionally used by the South African government, which has yielded poor results. It explores barriers and enablers for communities to upgrade their informal settlements in Durban.

Informal Settlement Incremental Upgrading and Integration Partnership Programme (via Area-Based Management (ABM))
eMM's Human Settlements and Area-Based Management Units together with Project Preparation Trust, a local NGO, aims at developing pilots to test and refine community-organisation partnership models, improving collaboration among stakeholders to include the government. This is done through a precinct-based planning approach. Area-based, multi-stakeholder processes are recognised as the best way to improve communication not only among government, organisations and citizens but also to promote engagement and integration across different community groups. Four to eight settlements, or up to 20,000 households, will be involved in participative planning and capacity training to lead to an incremental upgrading implementation.

Strategies and Data
Despite national and local government's efforts to address the spatial, economic and social inequalities among informal settlements, they continue to proliferate and densify largely due to urban migration and natural growth of households. One of the key programmes in the Integrated Development Plan of the eThekwini Municipality aims to provide incremental services – roads, footpaths and stormwater controls – and address infrastructure backlogs of informal settlements.

However, the Municipality recognises that incremental improvements in housing and basic services and strengthening tenure security are just a part of a sustained process of urban change, where key social services such as schools and clinics, access to public transport and economic opportunities have an important role.[17]

This integrated response to the many challenges of informal settlements demands a coordinated and aligned approach, from all levels of administration as well as from private sector operators, NGOs and communities. One of the biggest challenges is a lack of reliable and integrated city-level data. While there are some data platforms that exist in the city, they are uncoordinated and disintegrated. The challenge of data is exacerbated by the lack of standardised data collection protocols that hinder the comparability of datasets collected by various stakeholders.
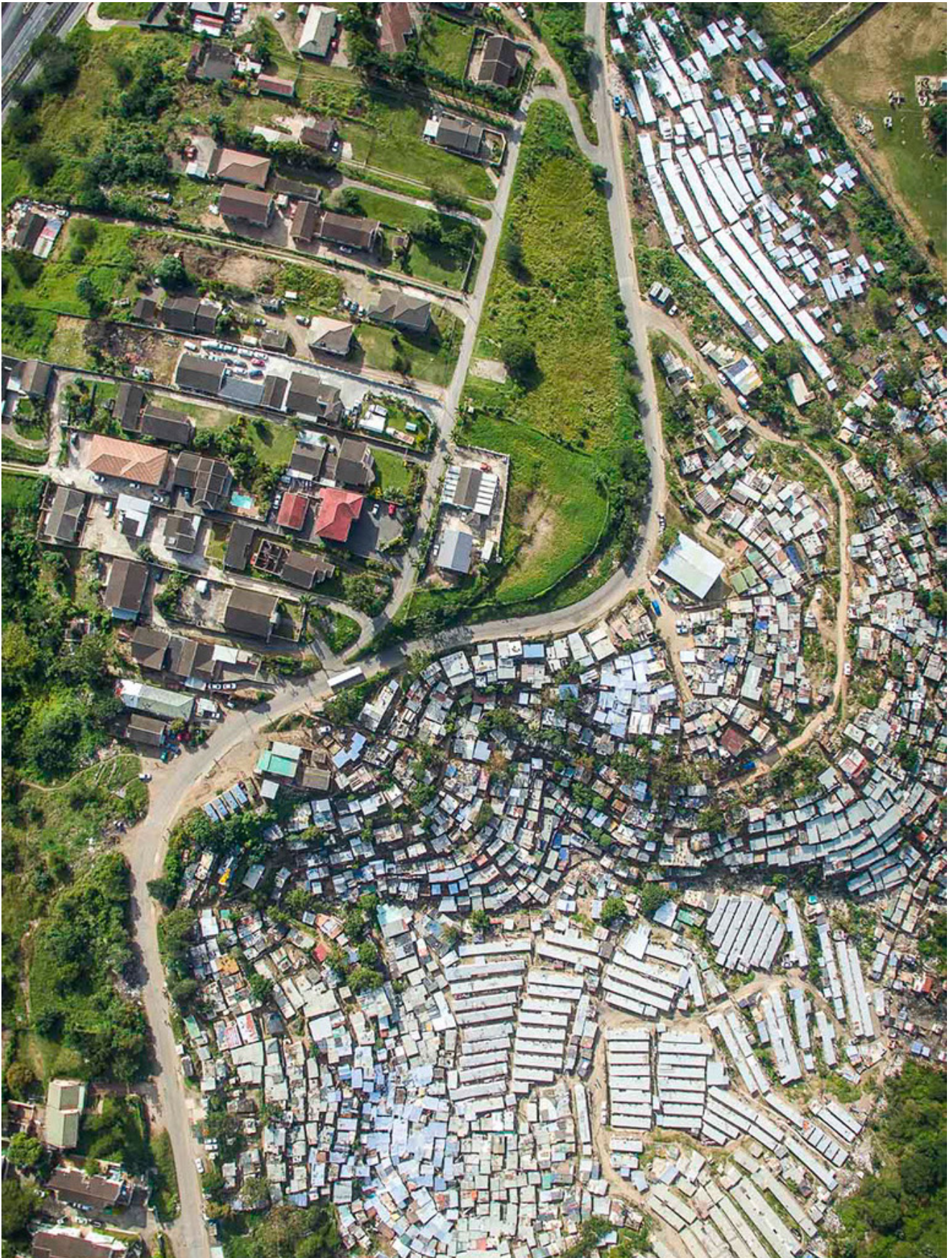
Fig. 10.   Durban Suburbs aerial view (Source: Unequalscenes)

EXISTING CONDITION OF THE MOBILITY SYSTEM

Mobility and transport infrastructure in Durban comprise a variety of modes and operators, both private and public. While governance is discussed under the Legal Analysis, the following section gives an overview of the main systems in place and their coverage area.

Road Network
Hosting the busiest port in Africa, Durban has a comprehensive road network comprised of national, provincial and municipal roads. Some 80 per cent of public transport in the city uses the road network and the majority of freight movement is road-based.[18] The T-shape national corridors consist of the N3 route connecting Durban and Johannesburg, and the N2 route running north-south along the coast.

Rail System
The city is fairly well served with commuter and freight rail services operated by Passenger Rail Agency of South Africa (PRASA) and Transnet Freight Rail respectively. The existing commuter rail system consists of a north-south line following the coast, an east-west line into the hinterland and a few spur lines.

There has been a significant decline in rail service due to the poor levels of reliability, punctuality and service predictability. In order to address this, PRASA invests heavily in some ongoing programmes to improve the rail service and customer experience including station modernisation/improvement, renewal and replacement of rail infrastructure as well as property development initiatives at some major stations.

Bus System
There are 200 bus operators in a mix of subsidised and unsubsidised contracts that provide services on some 1400 unidirectional routes in Durban. The majority of the bus routes are serviced by seven subsidised bus contracts. Unsubsidised operators are experiencing significant decrease in ridership and struggle to survive with their ageing fleet. Major issues of bus system are 1) the direct, negative competition between bus and rail services 2) the deteriorating unsubsidised bus services and 3) the low ridership level.

Minibus Taxi System
As the most popular choice in public transport, minibus taxis and bus services provide an extensive covered-route network throughout the city. There are approximately 120 taxi associations serving the municipal area.[19]

Metered Taxi System
There are approximately 600 metered taxis under some 150 metered taxi operators in Durban.

Public Transport and Challenges
The reliance on public transport in Durban is significant. About 47 per cent of residents travel by public transport. Minibus taxis are the most dominant mode of public transport (68 per cent), followed by bus (17 per cent) and rail (15 per cent).[20] Although the Municipality is fairly well serviced with commuter rail services and the taxi and bus route system, providing extensive coverage throughout the city, the public transport system is economically inefficient with many services in direct competition with each other, which results in unprofitable rail and bus trips.

The geographic shape of the city also causes negative impacts on the poor, including the people living in informal settlements or townships, which results in long and expensive travel for them. However, public transport services are often unreliable and unsafe and so the majority of the poor have limited and inconvenient access to social services and facilities.

Key issues relating to transport are identified in the Integrated Development Plan and these include a lack of integration of services between different transport modes, lack of adequate control and enforcement over public transport modes, limited funding to provide adequate public transport services and low ridership levels – all of which make it hard to make public transport sustainable.

The IPTN Plan
The city has already focused on several levers that will bring about long-term change to public transport. The public transport corridors are one of them. Durban, via the eThekwini Transport Authority (ETA), has developed the GO!Durban Integrated Public Transport Network (IPTN). The IPTN Plan defines the ultimate (2025) public transport network which is intended to be a major structuring element of the city. The network comprises not only a system of trunk, feeder and complementary routes but is also complemented by connecting bus/minibus services and local services to key nodes on the trunk alignments.

The provision of a public transport service is in its early stages. The network comprises a number of elements that include trunk routes, feeder routes, complementary routes, transfer stations, park and ride facilities, fleet plus fare and collection systems.

The configuration of the network is informed by the demand/activity patterns, population density, existing network and so on. All the trunk corridors correspond to densification areas identified by the MSDF, and are designed to integrate areas of employment with areas of residence to enable connectivity to opportunities and amenities and to provide the supporting land uses

necessary to generate viable thresholds to sustain the provision of public transit. Corridor C2 is designed to connect Bridge City and KwaMashu with an upgraded rail route, while Corridor C3 is going to provide new connections between Bridge City to Pinetown, which is not easily traversed at present. In 2025, the IPTN plan will comprise approximately 250km of trunk public transport corridors of which 60km are rail-based. The full IPTN network will be within 800m of more than 85 per cent of the city's population.[21]

C3 forms part of the Phase 1 network, and it is expected be operational by late 2018. Aligned with the TOD strategy, the City Council approved C3 Land Use Strategy in support of TOD in December 2017 with a focus on using vacant land/underutilised land within the corridor (400m-800m).
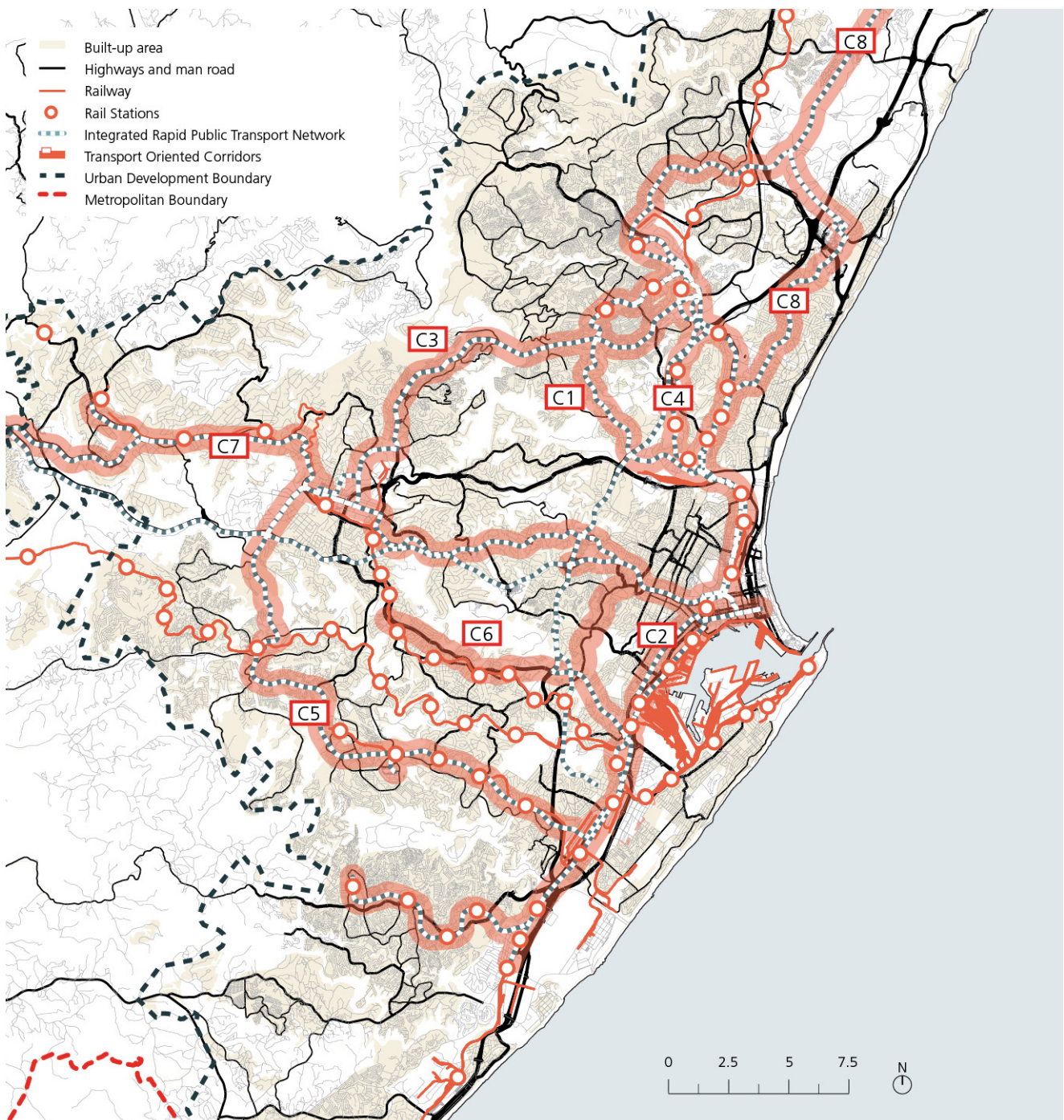

Fig. 11. Main Transport Corridors

Service Charges
Property
Government Transfers for Operating Expenses
Government Transfers for Capital Expenses
Other

Fig. 12.   Revenue 2016-2017 eThekwini Municipality

Financial Analysis

MUNICIPAL FINANCIAL CAPACITY

Consistent with other South African municipalities, Durban relies principally on own-source revenue to finance its expenditure. The total 2016-17 budget for eMM stood at RAD 41.6 billion (approximately USD 2.8 billion), rising from RAD 31.7 billion in 2011. This is approximately USD 813 per capita, which is rather high in comparison with Johannesburg's municipal revenue, which stood at USD 740 per capita in 2017-18.[22]

This includes operating budget of RAD 34.9 billion, and the capital expenditure of about RAD 6.73 bn. In terms of percentages this translates approximately into a capital expenditure of 17 per cent and an operating expenditure of 83 per cent. Consequently, it indicates a low capacity for capital expenditures as most of the revenues are spent in operation and maintenance.

On the revenue side, Durban relies principally on own source revenues to finance Its expenditure. Figure 12 provides a breakdown of key sources. Between July 2016 and June 2017, 84.09 per cent of revenue was locally generated, coming from residents paying for water and electricity, rates, licenses and fines and from interest and investments. About 15.91 per cent came from national government, mainly through from the equitable share of taxes plus grants from National Government.[23]

Revenue from land and/or property is an indicator of the ability for the city to capture appreciation of land value. The city is able to raise revenues from this source on the basis of the Local Government: Municipal Property Rates Act [No. 6 of 2004] which created a uniform property tax mechanism across the country. Municipalities tax properties based on the value of land and improvements.[24]

In 2013/14, the revenue from property rates ranged across different provinces from 15.5 per cent of total own revenue in Ekurhuleni to 22.6 per cent in eThekwini
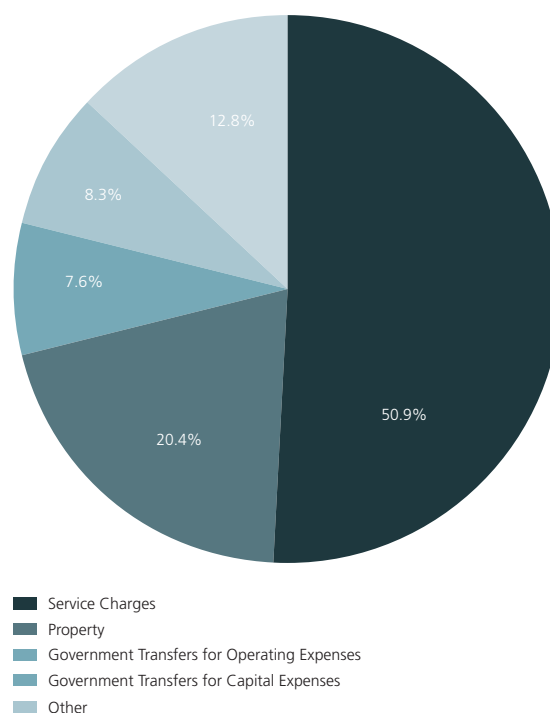
with an average of 22 per cent across cities in South Africa[25], putting eMM as the highest in South African. However, this does indicate that there is presence of land value capture mechanisms which can be used to expand municipal revenue if need be.

Figure 13 provides a snapshot of the key expenditure heads in the city. Spending in governance-related fields represents 12.9 per cent while spending in urban planning including planning and development and housing accounts for 5.9 per cent of the expenditures.

FINANCING MECHANISMS

The intervention for establishing a data system for informal settlements will need capital expenditure to finance its set up and implementation. Similarly, the Governance and Coordination intervention has a focus in the promotion of TOD developments that may translate into capital expenditure needs in the future.

Enhance Institutional and Government Coordination

As the institutional and government coordination support in Durban aims at promoting Transit Oriented Development (TOD), there is an opportunity to promote land-based finance to fund future requirements of capital expenditure. TOD plans require significant investments in infrastructure in terms of buildings and utilities. As the city is empowered to raise property tax,

which is partially based on land values, through the Local Government Municipal Property Rates Act, it is already well placed to capture some of the values from these increases.

However, given South Africa's Apartheid historyn and current spatial segregation in the city, Durban will want to ensure that the rise in the land values, which land value capture instruments are predicated on, do not exacerbate urban spatial inequality. Therefore, the city may consider instruments such as impact fees or exaction,[26] that place the burden of paying on property developers rather than the citizens. The city can also apply construction bonds, which work as an incentive for developers to share the gains from additional building rights.

Data System for Informal Settlements
While data systems can contribute to efficiency and increased revenues in the long-run, setting up and maintaining a data system can be costly from a capital expenditure and long-term maintenance perspective. Sources of financing are usually derived from internal sources of revenues because it is difficult to raise associated fees and taxes. The city should explore possibilities for the mobilisation of internal resources, which may be difficult in the context of Durban given the low capacity for capital expenditure. Additionally, resources may be mobilised from the national government. Other sources of financing can come from grants from international financial institutions, such as the World Bank or the African Development Bank.

Empowered by the Municipal Finance Management Act (NFMA), eMM has the capacity to borrow domestically and internationally, both from the private sector and international financial institutions.[27] Across South Africa, municipalities routinely take on debt. As of 2017-18, the average debt to revenue ratio for all municipalities stood at 18 per cent. For eMM, this ratio stands at 25 per cent - providing an indication of significantly less sustainable borrowing by the municipality. The Development Bank of Southern Africa (DBSA) is the largest lender to municipalities in South Africa, followed by commercial banks and pension funds.[28] Legally, the municipalities are constrained by the Section 46 of the MFMA which mandates that long-term debt (that exceeds 12 months) can only be incurred for the purposes of (a) capital expenditure on property, plant, or equipment acquired for the achieving the objectives of the local government or (b) for refinancing existing long-term debt.[29]

On the other hand, in terms of securing the longevity of the investment, there is also scope to bring in the private sector. There may be efficiency gains in entering a PPP, as the private sector may have the expertise to set up and run data collection systems for the city. They will have

an interest in the data itself as well as bringing in the expertise to analyse and therefore utilise and ultimately potentially monetise the data - generate revenue from it. However, given that the data system is specifically focused on collecting data on informal settlements, the value proposition may be more difficult. In engaging a PPP, the city would have to address the potential costs of collaborating with the private sector.
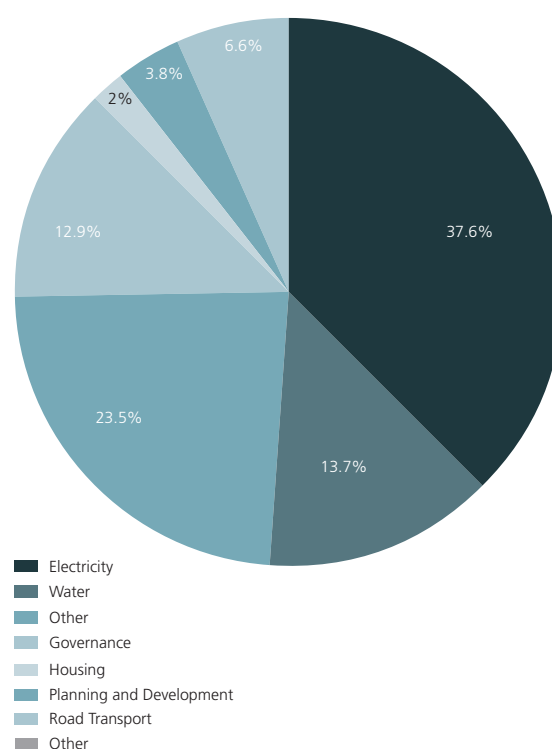

Fig. 13. Expenditure 2016-2017 eThekwini Municipality

Legal Analysis

GOVERNANCE STRUCTURE

eThekwini Metropolitan Municipality (eMM)
The eThekwini Metropolitan Municipality (eMM) has clear exclusive executive and legislative authority over the city of Durban.[30] As other municipalities in South Africa, eMM is a single-tier body. The eThekwini City Council, elected through mixed-member proportional representation, elects the city's Mayor and appoints the city manager. The city manager is the administrative head of the city but the Mayor sits above the city manager in the organisational hierarchy.

Inter-governmental Coordination
There are mechanisms to coordinate eMM with the Provincial Government and with the central government of South Africa. However, most of these mechanisms are non-statutory and some are ad hoc.

The central government's Department of Cooperative Governance and Traditional Affairs is tasked with supporting and coordinating with municipalities across South Africa.[31] The South African Local Government Association (SALGA) is a statutory autonomous association of all municipalities, which lobbies for the municipalities. SALGA plays an active role in intergovernmental relations. For example, it is often invited to the Presidential Coordination Council (PCC) to coordinate with provincial and central government officials.

The KwaZulu-Natal Premier's Coordinating Forum (PCF) is mandated to coordinate between the provincial and the municipal governments. However, it has been reported that meetings have been infrequent and irregular. Hence, coordination relies on more ad hoc mechanisms.[32]

Transport Governance
The control over transport infrastructure in the city is divided between several private and public actors. The eThekwini Municipality Transport Authority (eMTA) is the principal municipal body mandated to oversee the development, maintenance and planning of transport in the city. eMTA has three branches: (1) road system management, (2) strategic transport management (which includes planning), and (3) public transport. The breakdown of operation of the transport infrastructure is provided in the figure 15.

Further to this, eMM is establishing an Integrated Rapid Public Transport Network to be called GO! Durban. This will necessitate significant intergovernmental coordination, as the national government is expected to provide policy support and funding, the provincial government will manage the project and eMM will be responsible for planning and implementing the system.[33]

ALIGNMENT OF PLANS AND POLICIES IN DURBAN

There is significant devolution of strategic planning to the city government for general planning and administration of the city. At the national level, the key strategic plan is the Integrated Urban Development Framework which sets up a broad policy framework for urbanisation in South Africa. While this is mainly a spatial plan, it does, however, include certain Strategic Integrated Projects (SIPs).
The provincial government, KwaZulu-Natal, drafts the Provincial Growth and Development Strategy, a strategic plan. However, there is no legal provision that municipal plans have to be consistent with this strategy.

Fig. 14. *Global Future Cities Programmme Charrette in Durban (Source: UN-Habitat)*

Public transport	Who runs it?
Buses	Currently there are seven bus contracts covering 70 per cent of the metropolitan route system. A total of bus operators, in 13 associations, along with approximately 20 independent operators, provide service on the remaining 30 per cent of the route system. At this time there are no unsubsidised commercial contracts. Bus contracts are regulated by the eMTA.[35]
Rail	There are extensive commuter and freight rail services in eThekwini along the North–South rail corridor and Port–Inland rail corridor. The North-South rail corridor rail services are operated by the central government's Passenger Rail Agency of South Africa (PRASA) and the Port-Inland corridor by Transnet Freight Rail.
Local Roads	Local roads are either operated by the eMTA or the South Africa National Roads Agency (SANRAL), but it is unclear how they coordinate with each other. Hence, prima facie, there might be a need to unify the management of all local roads under one administration.[36]

Fig. 15.   Transport operators in Durban[34]

As required by the Municipal Systems Act of 2000, eMM adopts an Integrated Development Plan (IDP) every five years and this is the key statutory strategic plan for the city of Durban. The current Plan covers the 2017-2022 period and establishes the broad priorities of focus for the city.[37] The Plan calls for expansion in the smart usage of data for planning and has several projects integrated into the plan to that end. For example, under Plan number 7 there are schemes for both a data warehouse and the establishing of more robust data infrastructure. There is also considerable focus on promoting coordination between government departments. Additionally, through the Built Environment Performance Plan and the Service Delivery and Budget Implementation Plan, eMM identifies implementable projects under the IDP.

Other relevant municipal plans include:

- Radical Economic Transformation Framework: in May 2017, the eThekwini mayor launched the city's Radical Economic Transformation (RET) Framework which focuses on economic empowerment of black communities through developmental initiatives.[38]
- The Municipal Spatial Development Framework (M-SDF): MSDF serves as a spatial framework which guides the 'desired spatial distribution of land uses, spatial priorities and strategic infrastructure provision within a Municipality in order to give effect to the vision, goals and objectives of the municipal IDP.'[40] The MSDF is also supposed to provide guidance to facilitate private investment. Part of this framework is the revitalisation of existing economic areas.[41]

- Durban's Resilience Strategy, adopted in 2017, identifies two options to build resilience within the city, namely 'collaborative informal settlement action' and 'integrated and innovative planning at the interface between municipal and traditional governance systems, while pointing at additional resilience challenges will also need to be addressed over time.' The Sustainable and Resilient Cities Initiatives Unit will be responsible for leading the development of an implementation plan clarifying any gaps and proposing priorities for next steps for implementation.
- The Built Environment Performance Plan (BEPP) aims at integrating spatial planning and infrastructure implementation identifying catalytic projects and programmes. To do so, the BEPP collates the built environment aspects of the IDP and the Municipal Spatial Development Framework together with the Service Delivery and Budget Implementation Plan (SDBIP), and the Capital and Operating Budgets into a single framework. It enables the release by the national treasury of major built environment grants based on the formulation of a clear plan that shows how the metro is going to achieve spatial transformation of marginalised areas and promote economic growth.

URBAN RENEWAL AND INFORMAL SETTLEMENTS LEGAL FRAMEWORK

Legal instruments allow for urban renewal projects in the city, accompanying the increasing policy focus on this topic. Apart from directly acquiring land, the Constitution Act No. 108 of 1996 and the Expropriation Act of 1975 both allow for *eminent domain to be used by the eMM. Eminent domain must follow the following procedure:*[42]

- It must attempt to purchase the said land on 'reasonable terms' through negotiation
- If this fails, it must seek approval from the Executive Committee of the Province of KwaZulu-Natal, which includes representatives from all seven regions in KwaZulu-Natal
- eMM must offer compensation to the owners for the land expropriated

Urban regeneration and renewal are mainly undertaken by the Strategic Spatial Planning Branch (SSPB) of the eMM's Development Planning, Environment and Management Unit. The branch is tasked with the preparation of special plans and strategies concerning urban renewal.[43] SSPB drafted the eThekwini Inner City Local Area Plan and Regeneration Implementation Plan in 2016, which set out a framework to regenerate the inner-city of Durban with a focus on promoting resilient infrastructure, collective mobility and aiming to increase the population density by promoting mixed-use development.[44] The plan was formally approved by the eMM council on 1 June 2018 with an expected timeline of 36 months to implement.[45]

The development of sustainable and integrated human settlements, including informal ones, as wel as the provision of housing opportunities to qualifying beneficiaries – enabling secure tenure and quality living environments – is managed in part by the eMM's Human Settlements units. As Durban's Resilience Strategy describes informal settlements as a cross-departmental strategic priority, it is essential that the responsibility for informal settlements be understood in an integrated manner. The provision of housing is informed by national policies including Outcome 8 of the Programme of Action,[46] 'Sustainable human settlements and improved quality of household life', and by Chapter 8 of the National Development Plan, 'Transforming Human Settlement and the National Space Economy'.[47] At the local level, the Human Settlements Unit works to implement Plan Three of the eThekwini Municipality's Integrated Development Plan, 'Creating a Quality Living Environment'.

In addition, there is national support for urban renewal programmes including, but not limited to, the following:

- The National Upgrading Support Programme (NUSP), which provides support under its Upgrading Informal Settlements Programme
- The Urban Settlements Development Grant, which provides grants to municipalities for urban renewal. eThekwini has received financial support from this grant.[48]

SMART USE OF DATA LEGAL FRAMEWORK

Some sectors at the municipal level employ the smart usage of data, particularly the energy sector. Data collection, however, is generally done by specific departments with limited mechanisms for interdepartmental data sharing. One example of smart data usage is the eThekwini Municipality's Energy Office, which uses emissions data to help shape the cities climate change policy. Additionally, they publish a Durban Solar Map, which allows residents to predict the amount of electricity they can generate through independent solar panels. This is also used as part of the cities Durban Solarcity Framework.[59] In addition to this, eMTA has developed a Smart City Portal which encourages the integrated use of GIS based-data from various sectors including data on road accidents, traffic signal faults, municipal services, facilites and street lighting.[50] eMM is primarily dependent on a GIS system for spatial data on housing.[51] Data is limited to only spatial aspects and often perceived to be outdated.[52]

LEGAL FRAMEWORK FOR PUBLIC-PRIVATE PARTNERSHIPS

The Municipal Finance Management Act (2003) and Section 86A of the Municipal Systems Act (2000) provide the legal ability for municipalities in South Africa to enter into PPPs. The two laws establish similar provisions. Based on these laws, the Minister of Finance and the Minister for Provincial and Local Government set up uniform guidelines – known as *Municipal Public-Private Partnership Regulations - for municipalities to follow while undertaking a PPP agreement. They can deviate from these guidelines only if the National Treasury preapproves it. Broadly, these guidelines establish a framework for the need for feasibility study, standard procurement measures, amendment to a PPP agreement and broader contract management.*[53] eThekwini has two PPPs in process, one in waste and another in water.[54]

INTERNATIONAL ALIGNMENT AND TECHNICAL RECOMMENDATIONS

Potential Impact

The potential impact analysis outlines the main benefits that can potentially be attained through the Global Future Cities Programme in Durban, in the short-, medium- and long-term. Nevertheless, as impact can arise from a complex interaction of context-specific factors, rather than as result of a single action, an empiric impact assessment is out of the scope of this report.

The short-term work refers to the outcomes that can be achieved through the implementation of the technical assistance support within the 2-3 year scope of the Global Future Cities Programme. Mid-term outcomes are only achievable once the intervention is executed at the city level either through capital investments or the legal validation of key polices and plans. Long-term impact of the interventions is linked to the sustainability of the interventions in a 7-15 year timeframe and is related to the project cycle phase of operation and maintenance.

SHORT-TERM OUTCOME

A city-wide integration, collection and analysis platform on informal settlements will consolidate information and knowledge on all informal settlements in Durban, making them accessible and ensuring a punctual and well managed update. The information management solution will support in coordinating different institutional structures to ensure integrated management and collaborative informal settlement action within the eMM and with local communities.

Ensuring that data is captured from various sources, and integrating self-assessments undertaken by the residents of each informal settlement with community, private sector and municipal-collected data, will expand the potential to elaborate strategies and make decision, providing informed statistics as well as new perspectives on needs and challenges that communities need to face. Through enhancing the institutional governance for supporting Transit-Oriented Development (TOD), the

second intervention proposed by the Global Future Cities Programme could promote the implementation of an organizational structure and operational polices to lead and coordinate the alignment of governmental and private sector initiatives and plans.

The Management Framework proposed by the intervention will support a transversal management approach, increasing the ability of eMM for planning, implementation and management of TOD for improved corridor efficiencies.

Mainstreaming of participatory and cross, inclusive and pro-poor approaches will ensure the embedding of cross-cutting issues into the transit-oriented strategies and plan.

MID-TERM OUTCOME

The open and holistic nature of the data considered by the intervention, with the emphasis on retrieving data from informal settlement communities, may strengthen the local groups and create skills among them. This sort of collaborative knowledge development has the potential to shift the way communities and governments engage, build cohesion and facilitate trust towards eMM and so laying the foundation for inclusive city planning.

These partnerships will be able to develop and execute collaborative, climate-smart and sustainable informal settlement upgrading plans, linking social, economic and spatial development.

At the same time, mechanisms and tools for efficient planning, implementation and operationalisation of TOD Strategy for Durban will help the elaboration of strategies to promote compact, mixed-use development along rapid transit corridors and nodes, intensifying uses while sustaining walkability to provide adequate first and last mile connectivity.

Together, the two interventions could develop a mainstreaming approach for inclusive urban regeneration, densification and transport corridor development which would link social, economic and spatial improvement.

LONG-TERM IMPACT

With enhanced capacity to collect, integrate and analyse data and improved collaboration with communities and other actors, the eThekwini Municipality could establish integrated administrative systems and simplified regulatory procedures to implement informal settlement upgrading. At the same time, the use of land for informal settlements could be proactively managed in Durban, ensuring land ownership rights. Ultimately, all informal settlements in Durban could experience improved social, economic and environmental well-being and this would reflect on the prosperity of the whole city.

A well-planned, implemented and operationalised transit-oriented development will improve mobility within the metropolitan area while also increasing efficiency, quality and reliability of public infrastructure. The deployment of value capture mechanisms will strengthen municipal finances and increase municipal capacity for revenue generation.

At the same time, it will accelerate spatial integration and service delivery along the corridors and nodes, facilitating the distribution of a greater investment flow along densification corridors. In particular, the better connection between township nodes and Central Business Districts, with subsequent better access to basic services, livelihood opportunities and amenities, will bring higher rates of sustainable and inclusive economic growth throughout the entire eThekwini Municipality.

Fig. 16.   Durban aerial view (Source: SkyscraperCity)

Contribution to Sustainable Urban Development

2030 SUSTAINABLE DEVELOPMENT GOALS

The Global Future Cities Programme aims to contribute to the implementation of the 2030 Agenda for Sustainable Development, mobilising efforts to tackle poverty, fight inequalities and combat climate change.

INCREASED ACCOUNTABILITY

Improved data management for informal settlements will enhance inclusive and sustainable urbanisation through collaborative actions and decision making at all levels (SDG 16.7). The participatory process and the community involvement, promoted also by the Institutional and Governance Coordination will allow a stronger monitoring and evaluation process on the public administration, leading to the establishment of more accountable and transparent institutions at all levels (SDG 16.6).

INCREASED CAPACITY AND COORDINATION

Municipal spending and revenue generation will be improved (SDG 17.1) by the introduction of mechanisms and tools for efficient planning, implementation and operationalization of TOD Strategy.

Moreover, data integration, collection and analysis will 'increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics' (SDG 17.18) relevant for informal settlements, as well as for the transit corridors connecting them to the rest of the city.

This data use will enhance coordination among administrative departments as well as different stakeholders (SDG17.14), while encouraging and promoting effective public, public-private and civil society partnerships (17.17).

ENTREPRENEURSHIP AND REDUCED INEQUALITY

Open, reliable and well-structured data may support entrepreneurship, creativity and innovation in ICT and other sectors, encouraging the formalisation and growth of micro-, small- and medium-sized enterprises within informal areas (SDG 8.3). This will progressively sustain income growth in lower-income groups (10.1).

INCLUSIVE URBANISATION AND RESILIENT INFRASTRUCTURE

Institutional coordination for TOD strategy will enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable planning and management of Durban (SDG 11.3). It can also support the development of quality, reliable, sustainable and resilient infrastructure through the municipal territory. (SDG 9.1)

INCREASED ACCESS TO BASIC SERVICES

Comprehensive urban renewal and transit-oriented instruments can improve the provision of urban services such as transport systems (SDG 11.2), water and sanitation (6.1, 6.2), waste management (11.6), energy (7.1) and public spaces (SDG 11.7), making them more accessible, safe and affordable for all. Special attention will be given to the needs of vulnerable groups such as women, children and persons with disabilities (1.4).

NEW URBAN AGENDA ALIGNMENT

The New Urban Agenda is an action-oriented document adopted by Member States during the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) held in Quito, Ecuador, in 2016. It sets the framework for sustainable urban development globally for the coming 20 years, laying out how cities should be planned and managed to promote sustainable urbanisation.

The New Urban Agenda encourages UN-Habitat and others 'to generate evidence-based and practical guidance for the implementation and the urban dimension of the SDGs in close collaboration with Member States, local authorities, major groups and other relevant stakeholders, as well as through the mobilisation of experts.'

The Global Future Cities Programme directly relates to the UN-Habitat's draft Action Framework for the implementation of the New Urban Agenda (AFINUA).

This framework is organised under five categories:
- National urban policies
- Urban legislation, rules and regulations
- Urban planning and design
- Urban economy and municipal finance
- Local implementation

Both interventions proposed by the Global Future Cities Programme in Durban aim at boosting coordination and cooperation between different institutions and levels of government as well as other stakeholders and local communities. This will promote alignment between development plans and policies at all territorial levels (AFINUA key item 1.4) and jurisdictional coordination and coherence (AFINUA key item 1.6).

Moreover, supporting the data strategies for collaborative actions on informal settlements in Durban will lead to setting up a planning and design process that is evidence-based and participatory (AFINUA key item 3.1) and will contribute to establishing and supporting community-led groups that bridge the gap between citizens and government (AFINUA key item 5.6).

At the same time, data architecture and data governance for Durban could have a beneficial influence on the ICT environment of the city with the municipality and the local communities playing a catalytic role as users of services and provider of data and thus stimulating entrepreneurship within the sector and supporting inclusive local economic development, job creation and microfinance (AFINUA key item 4.4).

Better institutional coordination will help in the application of economic modelling to spatial planning and cost-benefit analysis for economic analysis, introducing municipal finance principles in the design and operation of more inclusive, sustainable and equitable local finance (AFINUA key item 4.2).

The interventions will help to design and implement systems that ensure social, economic and safe physical access to quality basic services by all (AFINUA key item 4.5). This should go along with the provision of integrated, efficient and equitable urban service frameworks, particularly in unplanned, built urban areas (AFINUA key item 5.4).

CROSS-CUTTING ISSUES AND PROSPERITY FUND

The Global Future Cities Programme seeks to achieve higher rates of sustainable and inclusive growth while increasing long-term investments in sustainable urban projects. Moreover, it will provide greater awareness, capability and confidence while establishing regulatory frameworks which result in higher incentives for partnerships and financial mechanisms.

The four Cross-Cutting Issues of UN-Habitat, as identified in the Strategic Plan 2014-2019, are mainstreamed to ensure that all UN-Habitat work targets those with the most need and promotes socially- and environmentally-sustainable cities. In this regard, the interventions detailed for Cape Town are shaped under the mainstreaming of environmental safeguards, youth, gender equality and human rights.

The data integration to facilitate collaborative informal settlement action is strongly aligned with the Programme, helping to establish public policies that meet the practical and strategic interests of vulnerable and low-income groups. This will be achieved with the integration of data collected by communities, NGOs and CBOs together with government datasets as the base for informed and inclusive decision making.

Furthermore, both Programme interventions address differentiated analysis with emphasis on gender, age and socio-economic characteristics in order to account for the differential impacts experienced by women, children, the elderly and persons with disabilities when they are forcibly evicted. This will inform the development of plans and proposals that enhance gender equality, youth opportunities and economic growth.

Potential Benefit	Short term	Medium Term	Long term	SDG Alignment		New Urban Agenda	Programme Objectives and Cross-cutting issues
				GOALS	TARGETS	AFINUA KEY ITEM	1. Climate change; 2. Gender equality; 3. Human Rights; 4. Youth; 5. Sustainable and inclusive economic growth
Better Governance & Integrated Management of cities including better coordination and cooperation between different levels of government and communities.				17	17.14	1.4, 1.6, 2.5, 5.5	Climate change; Human Rights; Sustainable and inclusive economic growth
Increased capacity to prioritize strategies and improved tools for decision making based on informed demographic, economic, cultural, environmental and other holistic projections.				11, 17	11.a, 7.18	1.1, 3.1	Climate change; Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Increased local capacity for evaluating and monitoring the impact of urban plans, policies, and strategies.				17	17.16, 17.18	3.1, 5.1	Climate change; Gender equality; Human Rights; Youth
Increased ability to better plan inclusive economic growth in a sustainable, climate smart manner.				16, 17	16.6, 17.1	2.5, 2.6, 3.8, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 5.5	Climate change; Human Rights; Youth; Sustainable and inclusive economic growth
Integrated plans, frameworks and approaches to promote more sustainable, resilient, and socially inclusive cities				1, 11, 13, 16	1.5, 11.3, 11.B, 16.7, 13.2	2.1, 2.2, 2.3, 2.7, 3.2, 3.7, 4.5, 5.1, 5.2, 5.3, 5.4	Climate change; Gender equality; Human Rights; Youth
Encouraged and/or promoted effective public, public-private and civil society partnerships				17	17.17	5.6	Sustainable and inclusive economic growth
Comprehensive urban renewal instruments adopted, that enhance linkages between the spatial, economic and social development.				11	11.1, 11.3; 8.3	2.4, 2.7, 3.4, 3.5, 3.7, 3.8, 5.2, 5.3, 5.4	Climate change; Human Rights; Sustainable and inclusive economic growth
Established land management systems, including fit for purpose planning tools and land administration, for the sustainable delivery of all other elements of the urban fabric.				11	11.a, 11.3	2.3, 3.3, 3.7, 4.2, 4.5, 5.1, 5.2, 5.3, 5.4	Climate change; Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Better capacity of local governments for ensuring land ownership rights and limiting evictions or disruption of livelihoods.				1	S1.4, 5.a	2.7, 5.2	Gender equality; Human Rights
More equitable and effective provision of urban services and affordable housing.				1, 6, 7, 11, 16	11.1, 6.1, 6.2, 7.1, 11.2; 11.3, 11.6, 1.4	2.7, 3.7, 4.5, 4.6, 5.4	Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Improved access to basic services in informal settlements & peri-urban areas				1, 6, 7, 9, 11, 16	6.2, 6.3, 7.1, 11.6, 1.4	4.5, 5.3, 5.4	Climate change; Gender equality; Human Rights
Increased quality of life, including the promotion of economic equality and poverty reduction.				1	1.1, 1.2	3.5, 4.2, 4.4, 4.5, 4.6	Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Strengthened municipal finances and increased municipal capacity for renevenue generation.				17	17.1, 17.1	2.6, 3.4, 4.1, 4.3	Sustainable and inclusive economic growth
Lower costs of transporting goods and increased efficiency of the transportation system				9, 12	9.1	3.3, 4.5, 5.1	Climate change; Sustainable and inclusive economic growth
Increased efficiency, quality, and reliability of public infrastructure and basic services.				9, 12	9.1, 12.2, 12.c	2.3, 4.2, 4.5, 5.3, 5.4	Climate change; Human Rights; Sustainable and inclusive economic growth

Fig. 17. Potential Impact and Programme Objectives Alignment

Fig. 18. Durban City Hall (Source: GVK-SiyaZama)

Success Factors

The following statements are considered as evidenced success factors based on international best practices. They should be considered for the two interventions in Durban in order to achieve the maximum impact on the Goals and the Programme Objectives, as well as to ensure sustainability for the whole project cycle.

TECHNICAL CONSIDERATIONS FOR DATA SYSTEMS ON INFORMAL SETTLEMENTS

Ensure Representativeness in Datasets

Where appropriate, data collection efforts should be distributed evenly across geographic and socioeconomic communities. Communities that are not represented in data may be excluded from policy and planning decisions, potentially exacerbating existing social divides.[55] This should be taken into especial consideration for the data management intervention to facilitate collaborative informal settlement action in Durban.

Consider Balancing Authoritative Datasets with Information that Reflects Local Perspectives

A focus solely on authoritative, government-generated data such as that from Censuses may result in a top-down approach that disregards local perspectives. Information generated by citizens, or in direct consultation with citizens, should also be included in the planning process.

While traditional methods of public consultation continue to play an important role in planning processes, planners are looking to incorporate newer types of public engagement, which are made possible through data systems and technology. For example, volunteered geographic information (VGI) and other crowdsourced data can be a valuable source of planning information that is sensitive to the local context and inexpensive to collect. However, it may be difficult to assess the quality and accuracy of crowdsourced information as the identity, expertise and motivation of a contributor often remains unknown.

Platforms that incorporate VGI, such as OpenStreetMap, may in part rely on "Linus's Law" to ensure a satisfactory degree of data accuracy. This phenomenon indicates that inaccurate data will be flagged or corrected when there is a large enough crowd engaged in contributing content. The PetaBencana.id example also exemplifies how crowdsourced data can be used to monitor flood conditions in real time.[56]

Establish planning needs and identify the associated data requirements

A clear definition of planning problems and objectives will facilitate the scoping of the intervention and inform future data collection efforts. It will identify the datasets that correspond to the planning activities and objectives and those that are relevant for planning may include land-use,[57] disaggregated on population characteristics, cadastral[58] and physical geography. The Australian Transport Assessment and Planning example provides a framework for urban planning problem identification.

Build Capacity for Data Systems Management for Urban and Transport Planning

It is important to develop human capacities and quantitative skills within planning professionals to match investment in data technology. Data-based methods are often considered as part of an isolated branch within the transport or planning professions. However, the fundamental problems of transport and planning have not changed with the advance of big data.

Developing human capacities and quantitative skills in the planning profession in parallel with investment in data technology ensures that the information encapsulated in expensive datasets can be turned into actual benefits for users and operators. Necessary skills may include geospatial analysis, computer programming, statistics and database management. The Rio Operations Center is an example of how partnership with a technology company can build local capacity for embedding a large-scale data system in a city.

Develop a Strategy for Digital Inclusion

Citizens who lack access to digital services may be excluded from planning processes and are put at a disadvantage when it comes to accessing the city and its services. Research on the digital divide indicates that individuals who lack basic digital skills, network connections and usage opportunities may not be able to benefit from city services or information which are delivered through digital platforms, such as a municipality's open data portal. For instance, the Smart Cities for All initiative works towards building inclusive smart cities and promotes digital urban interventions that are accessible to elderly and/or disabled populations.[59]

SPATIAL CONSIDERATIONS FOR TRANSIT-ORIENTED DEVELOPMENT

Linking Transport and Land-Use Planning

In many cities, transport and land-use planning are carried out by different institutions and as a result have generally been detached from each other. Planning for transport can proactively determine where urbanisation will happen and thus ensure the city grows efficiently.

More specifically, transport and land-use planning are complements in two ways:

- Together, land-use and transport determine accessibility to jobs, commerce and services
- Intensive land-use facilitates high population density, which in turn makes transport systems more cost-effective

The implementation of Transit-Oriented Development in Durban should integrate the different urban planning instruments with transport corridors and leverage proximity and connectivity, especially in segregated and vulnerable areas.

Permissible Zoning and Infrastructure Investments

Transit-Oriented Development (TOD) corridors are specifically planned around transport nodes, with a mix of housing and commerce as well as employment opportunities. Governments can facilitate these types of developments through permissible zoning and other regulatory instruments as well as providing anchor infrastructure investments and other options.

Proximity to Urban Services and High Densities

Locating the amenities close to public transport improves connectivity as people can access their residences and jobs more easily; it may thus lower transport costs for households as they will not have to spend as much as when they were traveling long distances.

Increasing density around transport nodes should have an overall effect on ridership and thus fare generation, making transport options more financially viable. To undertake ToD requires careful planning of the station sites as well as for a radius around them. To leverage the benefits, this should happen at the same time as the public transport is being developed as it may require significant investments in infrastructure, including buildings and utilities.

Coordinated, Realistic and Context-Relevant Spatial Plans

Credible and realistic plans consider existing land uses, administrative and political constraints such as budgets for public investment and realistic forecasts for population growth and income levels. They also coordinate and regularly update land use plans and sectoral urban plans such as transport between cities and the surrounding metropolitan region to combine long-term flexibility with short-term certainty.

Plans should incorporate growing peri-urban areas, otherwise the lower cost of development outside of the regulated area will encourage leapfrog development, whereby development occurs on land that does not border the existing development.

Building on Plans Across Different Planning Hierarchies

Higher-tiered plans along the geographic and administrative hierarchy should promote interactive effects along the network. However, localised planning, which is usually undertaken within a shorter timeframe, is also required to provide more detail to aid the overall implementation of higher-level plans.

The alignment of stakeholder plans working on Transit-oriented Development for Durban should engage different geographical and administrative hierarchies for the planning exercise. Local plans for urban transformation should align their specific investments, projects and programmes with higher-level plans. The key to a planning hierarchy is that they all correspond and build off each other and that they are not developed in isolation.

FINANCIAL CONSIDERATIONS

Investments on Data Collection can Affect Positively the Long-term Economy of the City

Data will be key to understanding and then planning upgrading and supporting informal settlements in Durban. Data can be costly to collect on a regular basis and therefore the city is looking at a data management solution. This will be an investment into a collective good with potential spillover effects to other parts of the economy as well, depending on how the data is used.

Land-based Financing for Inclusiveness

The TOD approach has also been selected to overcome the spatial segregation in the city. In this sense, Durban will want to ensure that the rise in the land values, on which land-value capture instruments are predicated, do not exacerbate urban spatial inequality.

Therefore, the city may consider land-based finance instruments that put the burden on property developers such as impact or extraction fees[60] or construction bonds.[61] Consequently, these mechanisms can help cross-subsidising social housing, basic services and key public infrastructure. These mechanisms, however, can only work if there is a real estate market that is interested in building in the area. In this regard, the

Fig. 19.   Durban informal settlement (Source:eThekwini Municipality)

provision of a Plan for the area that is solid and provides a clear strategy that attracts developers can contribute to applying these mechanisms.

Realistic Financing and Funding Strategies for key public investment

Public transport is an economic system that, if well integrated, can provide large efficiency gains and other benefits than if each system operates individually. Improvements to connectivity is one of the main ways that urbanisation can support long-term economic growth. However, one of the major barriers to implementing transportation plans is that they include financially-unsustainable projects.

Given that transport developments often involve large scale investments it is crucial that the intervention considers the long-term financing needs for implementation. In this regard it is essential, at an early stage, to quantify investments, develop cost-benefit analysis and support projects with financial strategies that are feasible and promote the long-term financial sustainability of the infrastructure. A mix of financing mechanisms will be needed by the city that can include borrowing, the implementation of PPPs or seeking national transfers. In any case, the city will need to identify long-term own source revenue streams to pay back public or private debt.

Construction bonds

Construction bonds can be an adequate financing mechanism, providing land-based finance tools that put the burden on developers instead on citizens. The system consists in selling or auction developers the right to build a higher density than allowed for zoning regulations, resulting in increased revenues for the city from their anticipated value. This system can address some of the difficulties associated with assessing the market value that many cities face in implementing land-based finance. They can also, therefore, reduce the traditional transaction costs involved in negotiating the relevant impacts of the project on individual properties. As South Africa has a relatively-sophisticated capital market environment, which is required to support the credibility of the construction bonds and the process for their access and disposal, this instrument could be used in this context. Although there is nothing implicit in the tool that prevents its use in low-income areas and for social housing, the combination of lower-payment capacity and perceived negative externalities may decrease bids below the threshold costs for public investment. Therefore, this mechanism should rather be applied in higher income areas.

Fig. 20.   Global Future Cities Programme participatory Charrette in Durban (Source: UN-Habitat)

LEGAL AND GOVERNANCE CONSIDERATIONS

Leverage Data Systems and Civic Technologies for Public Engagement

Data systems and digital technology create the opportunity for new approaches to public engagement in urban planning. For example, online apps and tools can facilitate two-way communication between citizens and the municipal government and raise awareness of local urban development plans. Crowdsourcing and the collection of VGI also allows citizens to share their local knowledge. Citizen Budget, for example, is an online tool developed by the non-profit organization Open North that can be deployed in cities to solicit feedback from citizens on municipal budgets.[62]

Build and Formalise practices for Integrating Data Analysis Into Decision-making Processes

Consider how the information obtained from data analysis will inform and support urban planning decision-making. Data systems may be applied to measure the impact of previous plans and policies, which can inform the making of an urban planning. Qualitative information may also be integrated into these practices.[63]

Create Policies and Protocols for Data Sharing

The Bursa Smart City Strategy will likely involve coordination and data sharing between a variety of government departments. It is important that policies and protocols for data sharing are in place. These policies must comply with relevant data protection and privacy laws. Such policies can, for example, cover privacy and security considerations and outline clear responsibilities for data ownership. The development of protocols and policies for data sharing can also be an opportunity to adopt data standards and create protocols for data quality monitoring.

The INSPIRE Directive, for example, enables environmental data sharing throughout the EU by outlining a set of data standards across 34 spatial data themes. This cross-boundary data sharing initiative has assisted in environmental policy-making efforts by making data more accessible. Indonesia's One Map policy also illustrates how the centralised management of geospatial data at a national level can resolve issues such as overlapping land claims.[64]

Adopt Data Standards to Promote Usability and Interoperability of Datasets

The adoption of data standards can promote interoperability of datasets, allowing for data from a variety of sources to be combined and compared. The adoption of standards can also facilitate data sharing between departments and institutions. Types of data standards may include those that govern metadata, specification of character formats, predefined

vocabularies and file formats (Sieber and Bloom, 2018). Standardised data can also be used by software developers to create apps.

For example, the adoption of GTFS (general transit feed specification) by many transit operators around the world has led to the creation of transit apps such as the Transit App; these combine multiple sources of transit schedules around the world. Open511 and GTFS are examples of existing data standards for road event and transit, respectively. Moreover, the Open Data Standards Directory provides detailed information on existing data standards for data from categories such as crime, expenses and election results.

Practice Effective Data Custodianship

Data custodians should be appointed in a given government unit or department as those responsible for managing datasets throughout all phases of the data lifecycle. This includes activities such as creating, maintaining and enforcing data standards and ensuring the availability and quality of datasets. Best practices in data management should be formalised through policies and guidelines and these may include topics such as data security procedures, data access and appropriate disposal of data. To ensure accountability, each dataset should have one (and only one) data custodian. For example, the province of British Columbia, in Canada, publishes data custodian guidelines.[65]

Coordination Between Relevant Government Institutions

Multiple levels of government have authority over various parts of transport planning. This often creates overlaps in jurisdiction and unclear mandates, making coordination difficult. Thus, effective coordination mechanisms such as joint planning authorities need to be set up for the water transport intervention. For integrated transport systems to work seamlessly, the most recommended situation is to have one authority responsible for the whole system. The greater number of authorities involved, the more complex planning and managing becomes.

Participatory Processes to Understand the Needs of Diverse Users in Transport

A city's transport system has to service the needs of diverse sectors of society. In order to do this, it is key to understand the specific needs of potential stakeholders are, including income levels and vulnerable groups, travel destinations, and frequency of travel at different times of day. This assessment can be done by involving as many relevant stakeholders as possible in a participatory planning process to ensure that the plan will address their requirements. Their participation will also have the additional benefit of ultimately generating support for the implementation of the plan.

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