

DAR ES SALAAM MAPPING

A DEVELOPMENT MODEL FOR SUB-SAHARAN CITIES

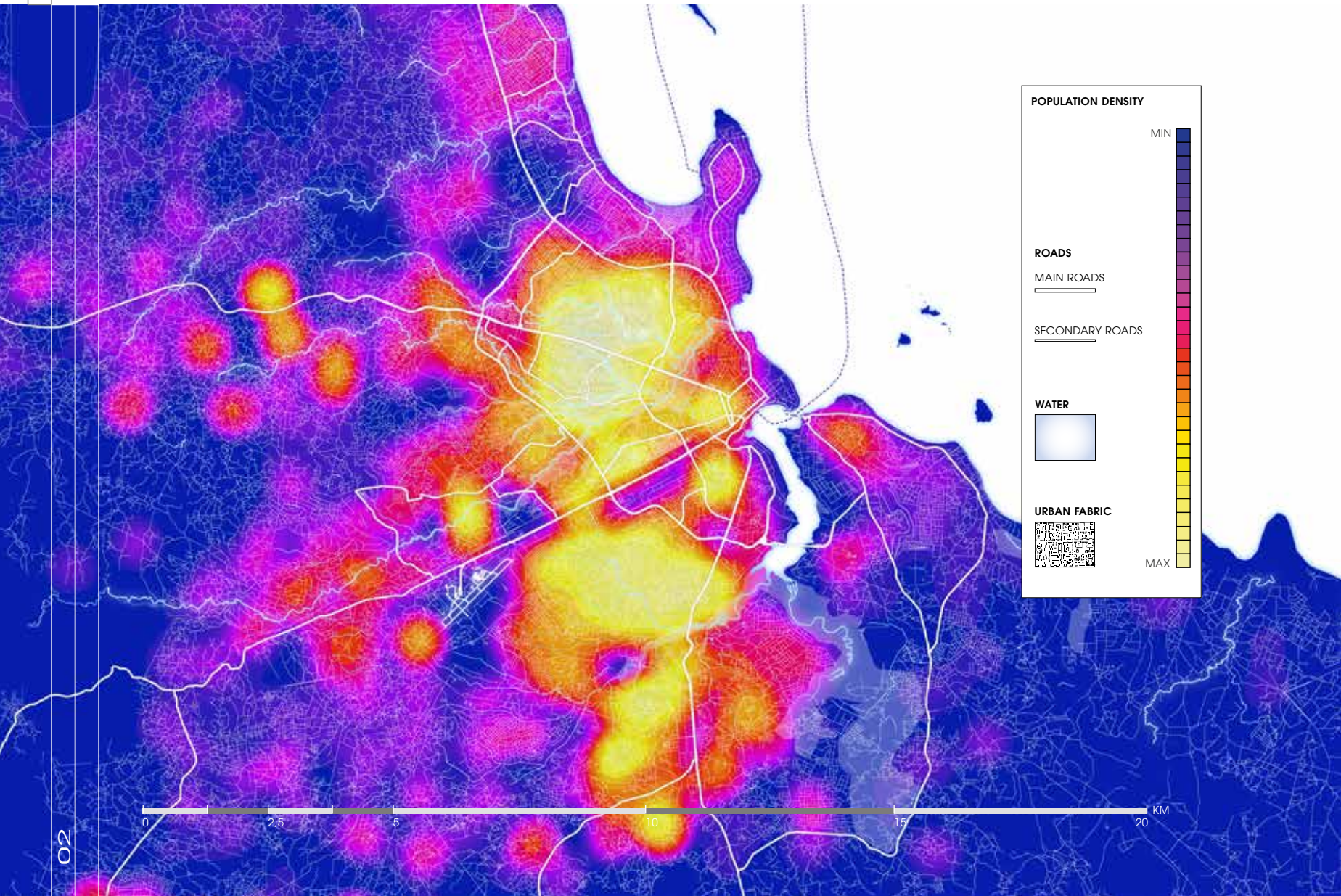
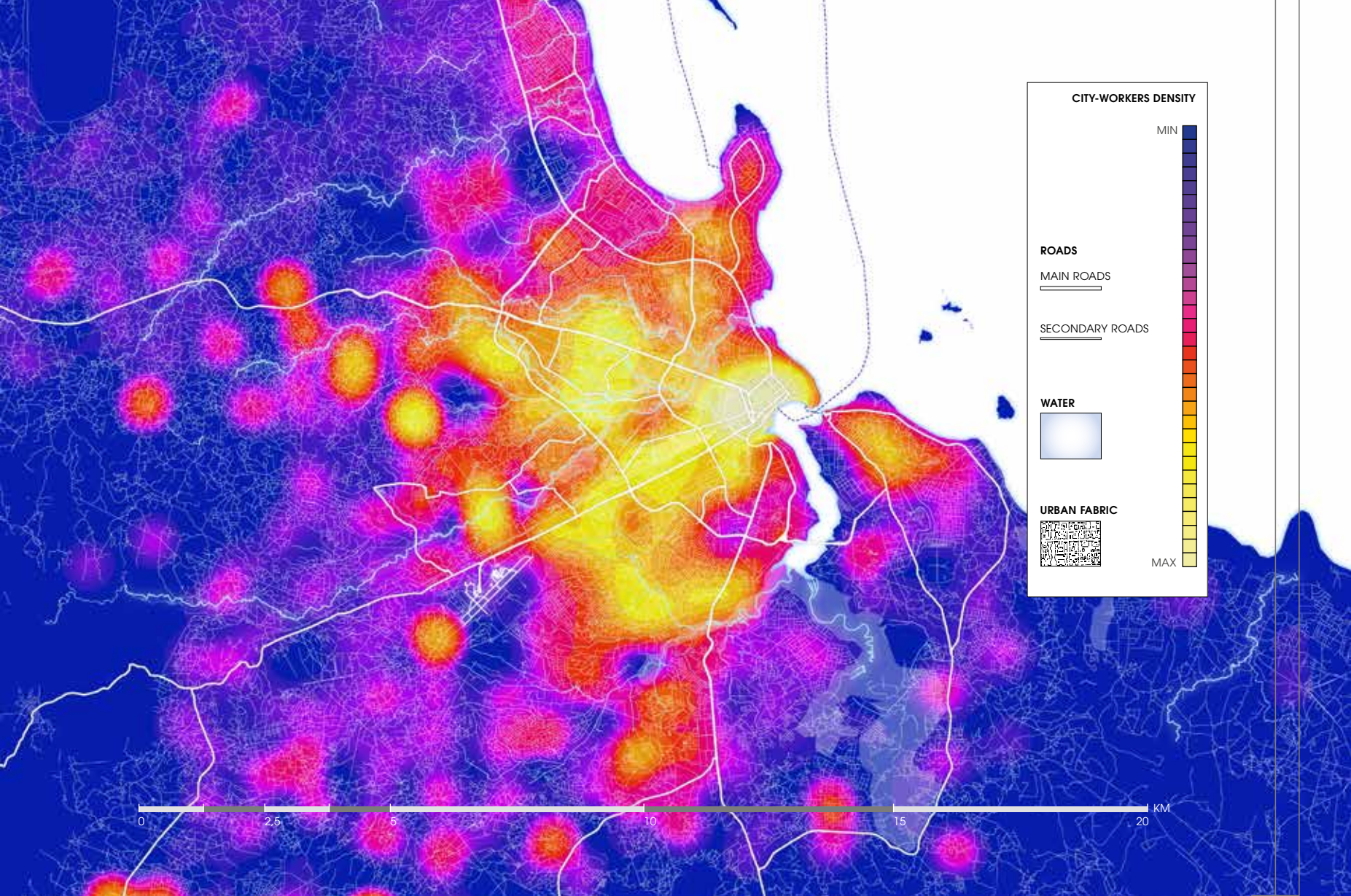
Sources: navteq-openstreetmap, for road graphs, points of interest, urban parks, rivers and lakes; municipal-provincial-regional-national statistical portal for population geodata on census cells and points-of-interest validation; NASA v4 Shuttle Radar Topography mission (<http://www2.jpl.nasa.gov/srtm/>) for land digital models; Global Land Facility Cover (glcf.umd.edu) Vegetation Continuous Fields for the percentage of greenery coverage; Google Transit Feed and local public transit agencies for the public transit routes and network.

GIS data analysis and maps by Dante Presicce (www.invisibledata.net), post-production by Sebastiano Scacchetti.

Metropolitan Area
Area: 1,393 km²
Population: 4,364,541 inhabitants (2012)

Urban Main Districts:
Ilala (administrative district)
Area: 210 km²
Population: 1,220,611 inhabitants (2012)
Kinondoni (most populated)
Area: 527 km²
Population: 1,775,049 inhabitants (2012)
Temeke (industrial area)
Area: 656 km²
Population: 1,368,881 inhabitants (2012)

Sources:
https://en.wikipedia.org/wiki/Dar_es_Salaam
<https://web.archive.org/web/20131105105231/http://www.nbs.go.tz/takwimu/references/Abstract2011.zip>



The CityPlan once again goes to sub-Saharan Africa. After Luanda, capital of Angola, we now look at Dar es Salaam. Although now the former capital of Tanzania - the government is in the process of moving to the new capital, Dodoma - Dar es Salaam is nonetheless the **economic engine of the country, the focus of industrial production and infrastructure as well as home to its university and tertiary sector.**

Like many cities in this part of the world, Dar es Salaam is in the throes of tumultuous growth, its population of over 4 million (2012 data) forecast to exceed 10 million by 2030.

Built around a gulf on the midpoint of Tanzania's eastern coastline on the Indian Ocean, this former capital lies on a large fertile plain sectioned and irrigated by rivers wending their way towards the coast, an ideal spot on which to develop a human settlement. Directly opposite across the ocean lie Zanzibar and Mafia Island.

Like many other towns growing up around a natural harbor, Dar es Salaam's progressive expansion led to the commercial sector being concentrated in a Central Business District (CBD) in the heart of the city. This concentration is clearly evidenced by the high worker density on the appropriate map and the relatively low residential density in the central part of the city.

While tertiary activities are largely distributed along the main roads, the population map shows two main residential areas: Kinondoni and Ilala, quarters that have grown up as a result of considerable informal development.

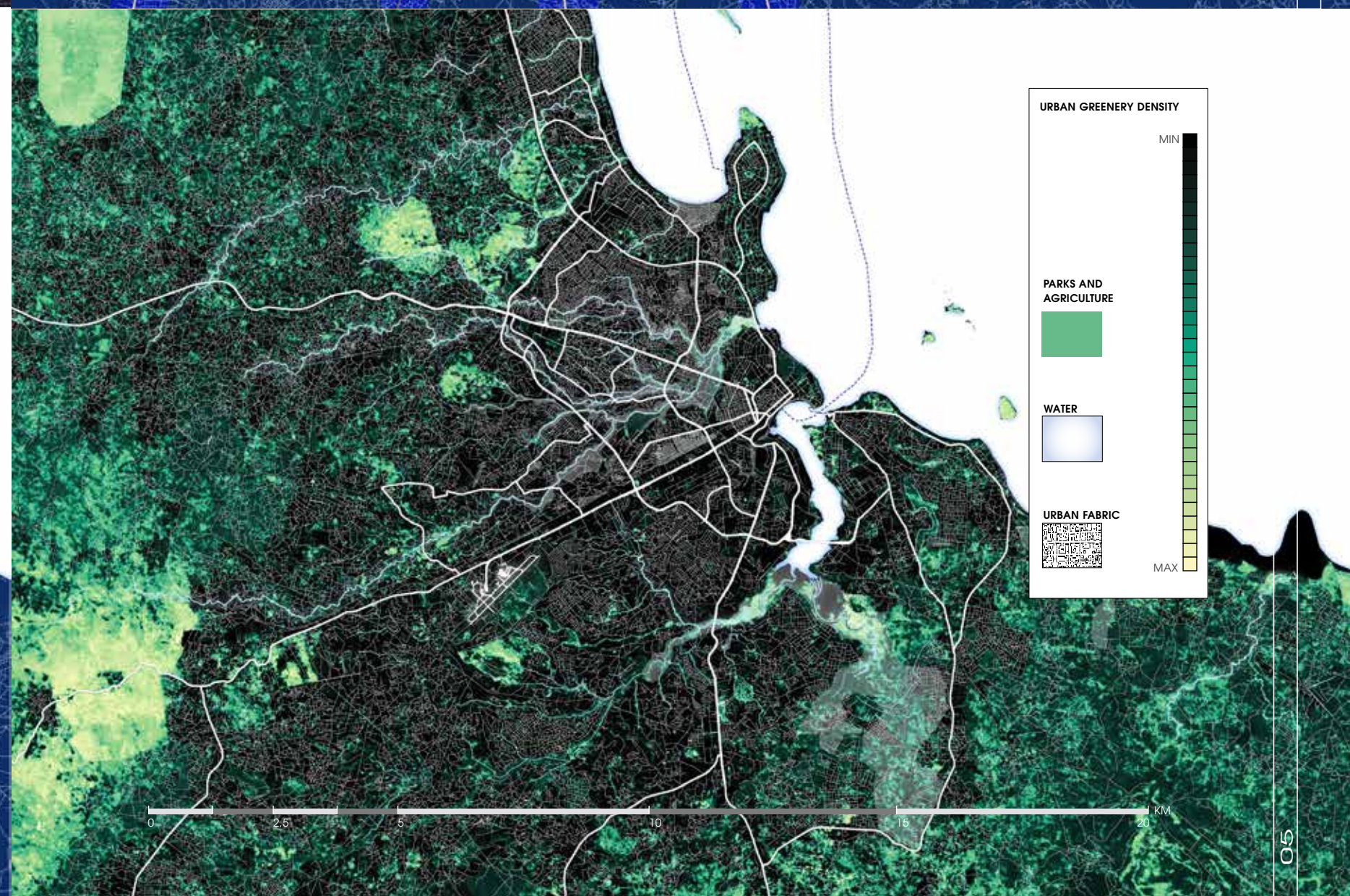
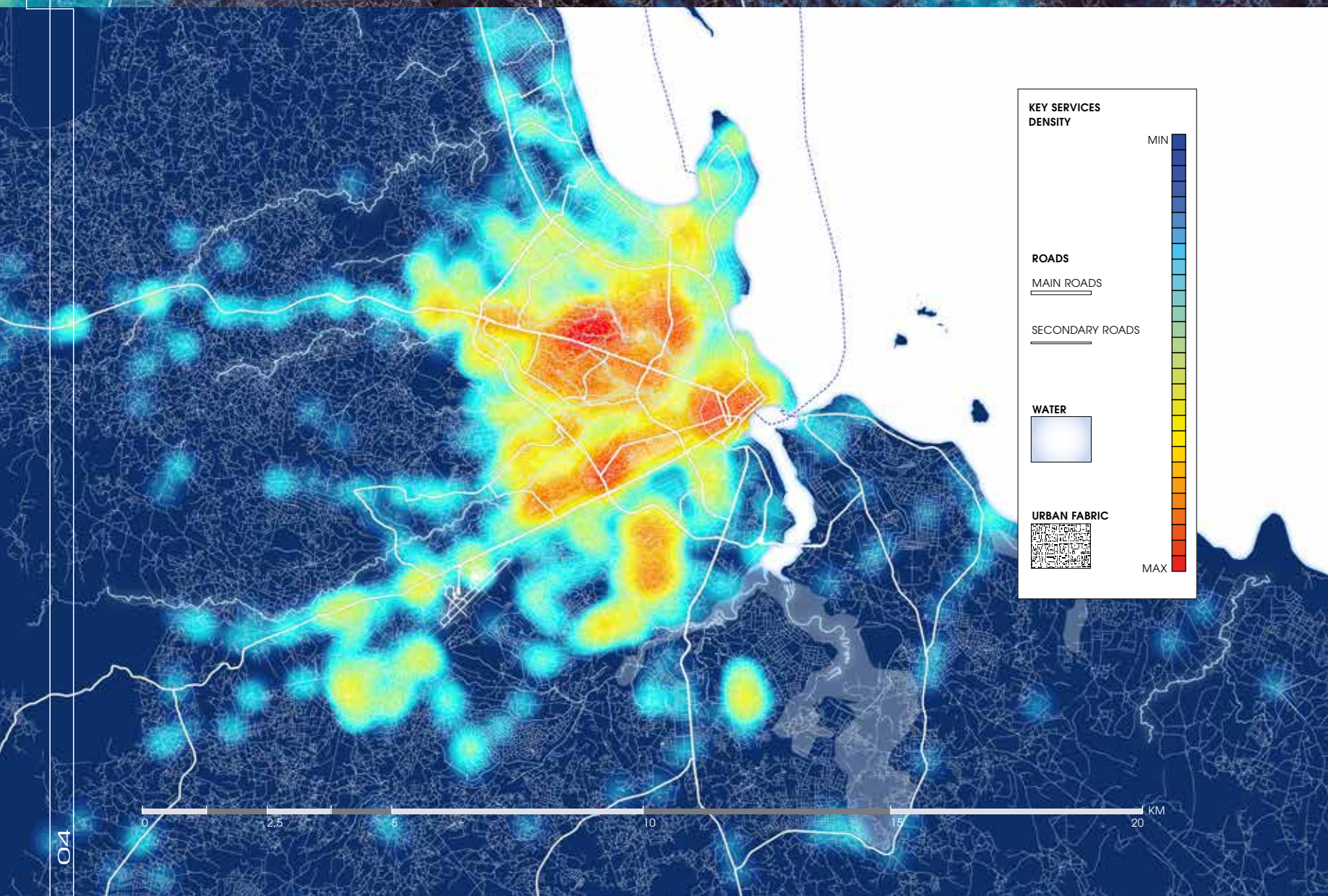
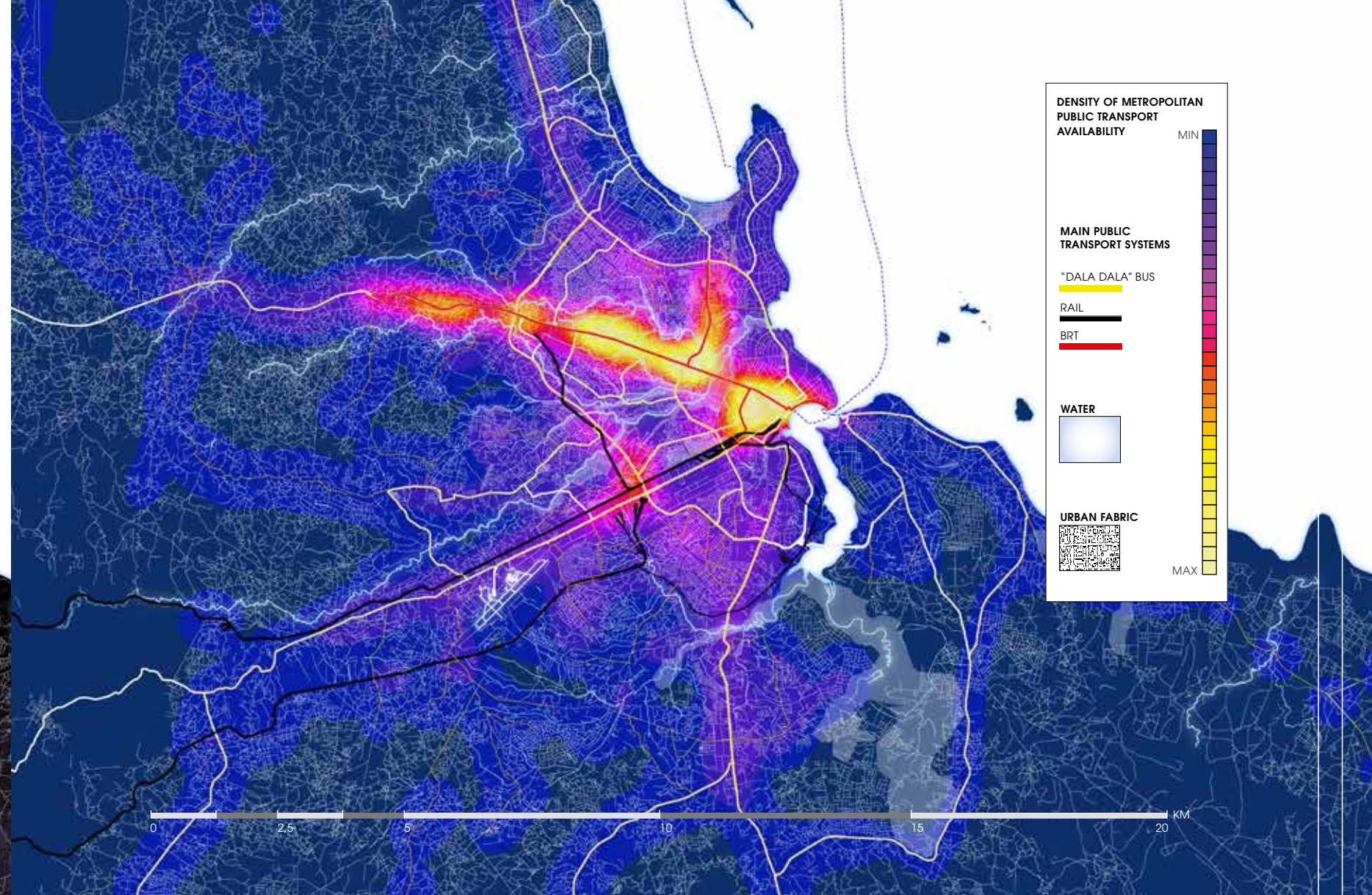
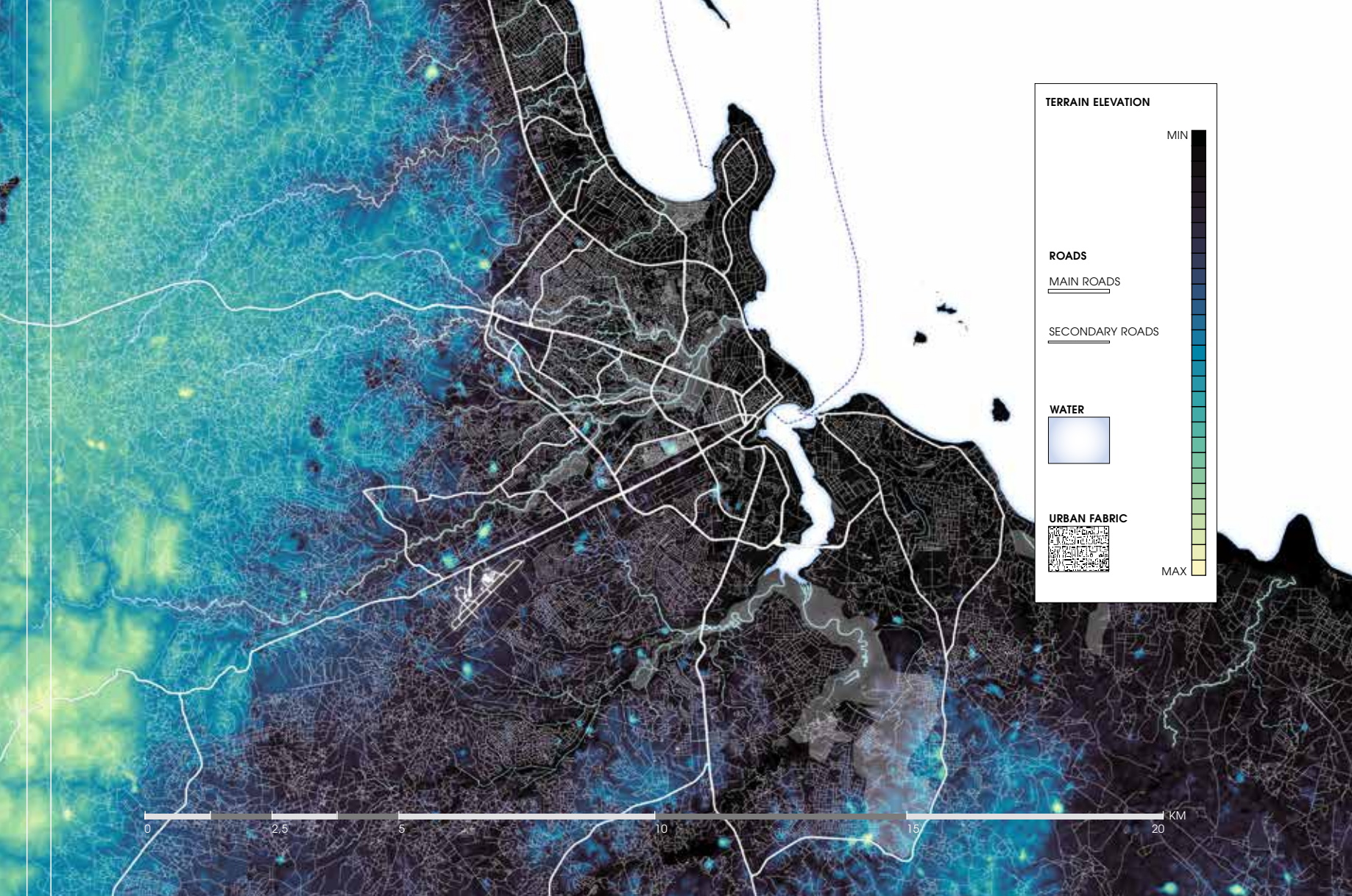
The services map indicates the key role played by the main trunk road Julius K. Nyerere, along which are concentrated the city's key tertiary activities. Of note is the fact that retail and hotel activities also serve as

public amenities and places of socialization. Other areas where services are concentrated are the huge residential complexes along Kawara Road in the north of the city.

Until recently, public transport largely relied on an informal minibus service, a typical feature of sub-Saharan cities, and known in Dar as "Dala dala". The city does have an official bus service and railway system, but their timetable and service frequency are unpredictable to say the least.

Today, however, Dar es Salaam can boast a new BRT (Bus Rapid Transport) service running from the city center to Kimara and Morocco Junction. This is Dar's first real public transport service, and is one of the most advanced and well-managed in the whole of eastern Africa. Its frequent and reliable service catering for large numbers of passengers has made the BRT a great success. It is also the first step towards the building of a wider network - now in the advanced planning and contracting phase - that will include five other routes. When completed, it should make **Dar es Salaam the first sub-Saharan city to have a truly integrated general public transport system for all its citizens.** But already the huge success and quality service of its BRT has set this city apart from its east African counterparts.

The map showing public greenery is indicative of a city that has grown up without the backing of solid urban planning of its green areas, with the result that urban sprawl has made inroads on account of little formal control. Some green areas in the center have managed to escape, however. These are especially located at the mouth of the River Msimbazi, a flood prone area. If well managed though, these areas could be preserved as a special feature of the city and turned into public parks.



A NEW CHAPTER IN DAR ES SALAAM'S CITY TRANSFORMATION

BY JAMES RAYNER*, MONIKA BIK, PHIL BONDS AND SEAN CLEARY

A city poised for change

Dar es Salaam is a vibrant and fast growing East African coastal city of 5.7 million people (growth rate projections for 2017 based on 2012 Census data and The World Bank) with a population expected to more than double over the next 15 years. The city's past has been heavily influenced by early Arab and German colonists before falling under British rule following the end of World War one until Tanzania secured its independence in December 1961.

Today, while state functions are being relocated to Tanzania's new inland capital Dodoma, Dar es Salaam is expected to become East Africa's main port and trading center, supplying six inland countries, and it is well positioned to host imports from China, India and elsewhere.

The city is divided into a number of distinct quarters and at its core, the central business district (CBD) has a formal, managed structure and waterfront aspect. The CBD contains Dar's best hotels, downtown residences and international businesses, being serviced by legacy infrastructure dating from the 1960s and featuring elegant art deco and modernist buildings, competing with more recent interventions rising to 35 stories on the foreshore.

The west side of the CBD is the consolidated city center area - a dense, gridded, fine-grained streetscape of commercial and retail activities under crammed offices, hotels, and apartments in a bustling streetscape of competing shop and restaurant frontages.

Dar's economic urban areas include its industrial port linked strategically to the airport; and the Peninsula - Dar's distinctive diplomatic enclave, located to the north. Elsewhere, dense slum settlements cluster around the local markets and employment sub-centers that accommodate much of the city's urban population.

The area beyond comprises an outer ring of peri-urban settlements - a creeping blanket of largely informal development that sprawls along Dar's four key radial approach roads into the rural hinterland.

Dar es Salaam exemplifies the commercial and political realities of contemporary Africa - ever-poised for change but with challenges to overcome. Exponential growth is placing increasing strain on the city's inadequate infrastructure networks and waste management systems. Its crowded buses, unpaved roads, over-burdened and discontinuous power networks, sparse health and education facilities means significant parts of the city remain poorly served.

Dar es Salaam has a significant informal economy where buying anything from DVDs to shower cabinets in the middle of the highway is not an unusual activity and it is this significant gray economy that is also undermining efforts to formalize and boost tax revenues to improve infrastructure and community facilities.

However, a dominant issue for urban life in Dar es Salaam, an issue that has constrained its ability to progress, is congestion - but Dar es Salaam is fighting back.

The first phase of the city's Bus Rapid Transit (BRT) network is now in its second year of operation with a 20.9 km section of Morogoro Road,

which boasts 32 passenger stops, now a vibrant and thriving artery, pulsing with movement and activity and in contrast with the long-jams characterizing the city's other radial roads.

A holistic approach to development

The President's Office Regional Administration and Local Government, supported by The World Bank and Nordic Development Fund as part of the Dar es Salaam Metropolitan Development Project (DMDP), are undertaking a ground-breaking project.

For the first time in the context of an African city, the project seeks to integrate plans for the development along its BRT corridors and Broadway Malyan is leading a diverse consultancy team to establish a coherent strategy for the areas surrounding the first phase of the BRT line. The strategy builds on the success of the BRT's journey time improvements to stimulate substantial new urban connected redevelopment, attracting new inward investment and helping to improve living standards and related city infrastructure. Once completed, this framework will become a prototype approach for all future six phases of the BRT network.

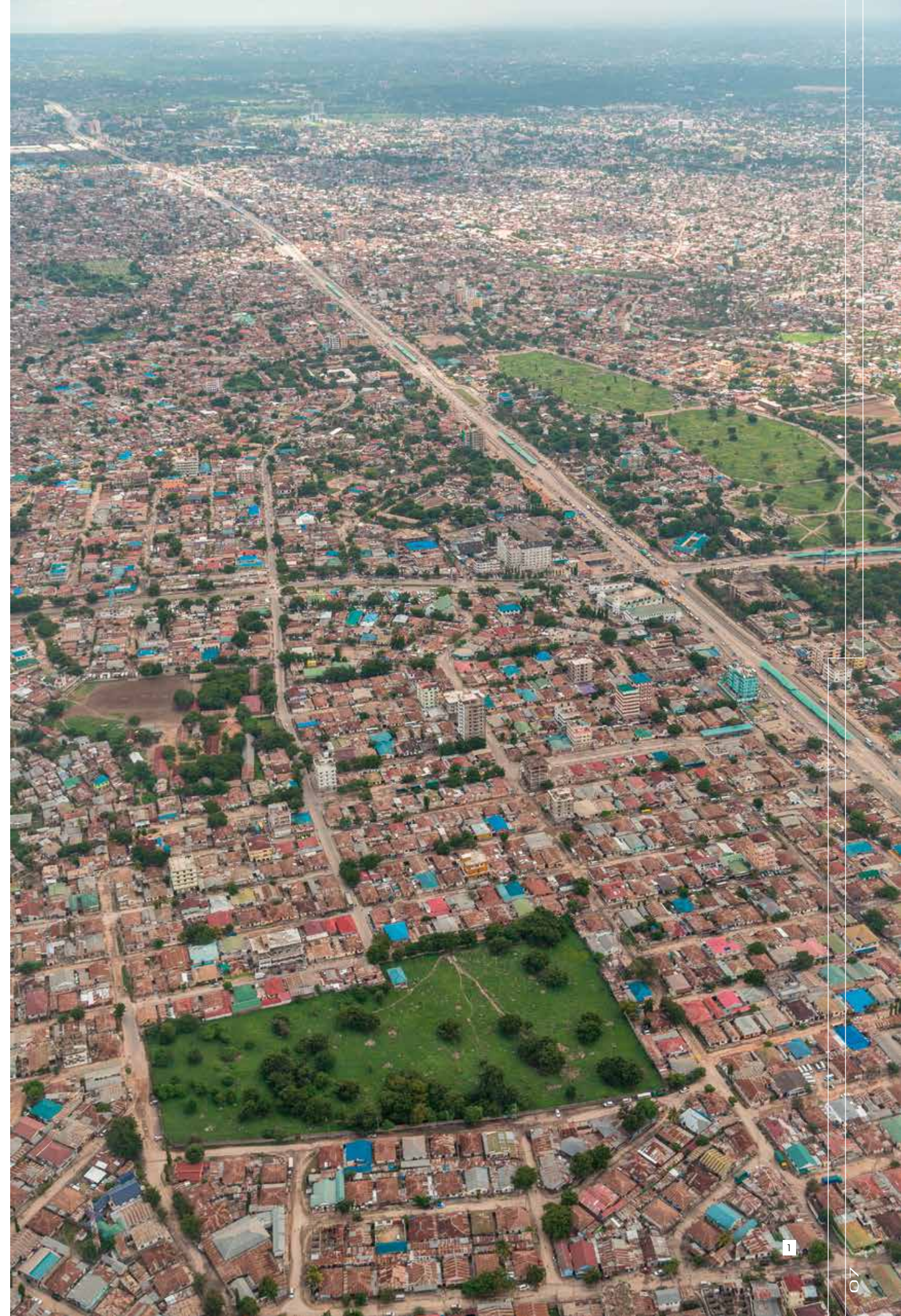
Central to the project is the concept of Transit Oriented Development (TOD) that seeks to establish a higher-density, mixed-use development around transit nodes with a walkable and pedestrian-centered environment, encouraging soft mobility and public transit use.

To ensure the project properly understands the city's issues and priorities, the project has taken an innovative approach to collecting and analyzing data. Land use and transport models based on a series of data-rich base maps in Geographic Information System (GIS) were developed which can then be used for testing of different transport movement and real estate development.

The Transit Oriented Development (TOD) Matrix is a decision-making tool that assimilates the data from the analysis work and outputs a series of scores for the performance and potential of each of the 32 stations found along the Phase 1 line of the BRT. This interactive tool aimed at planners and decision makers scores each station area in terms of its readiness and development potential, as well as their compatibility with TOD principles. The indicators used, build on the vision and objectives of the city and corridor and are weighted by their importance in achieving the goals of the project.

It is a unique proposition for Tanzania, bringing together insights from socio-economics, real estate, urban planning, transport and infrastructure to form a joined-up and integrated design approach. Diverse

indicators such as public transport catchment and travel times, population and employment densities, land value, access to utilities or even how easy it might be to assemble the land for development, can be combined and assessed to categorize the stations. This will provide a foundation for planning and investment at the city, corridor and station level. It can stimulate priority investments and guide developments to achieve the TOD. The aim is to ensure the return on high public sector investment, benefiting the city and the entire community.



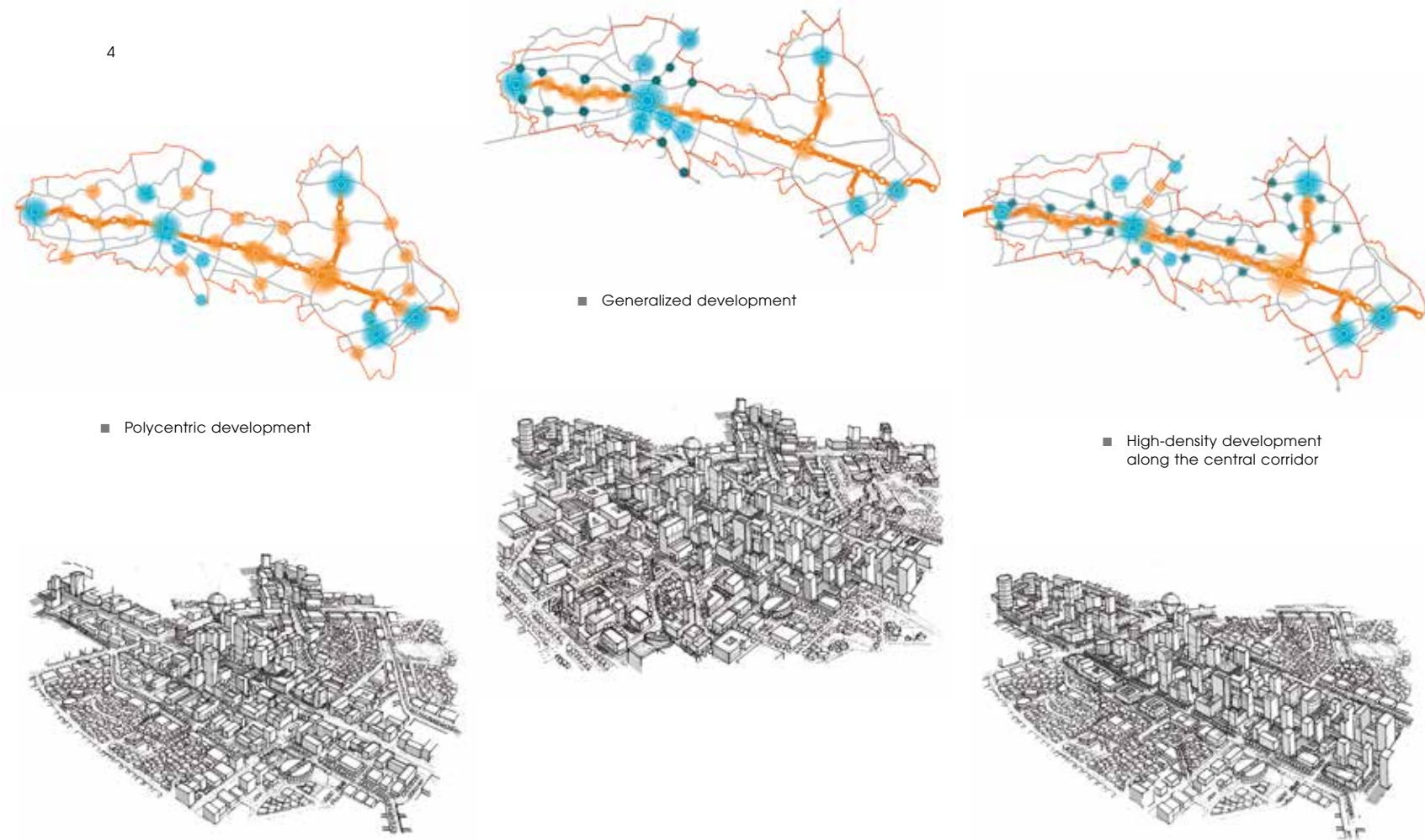


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A project underpinned by engagement

A critical aspect of this project is stakeholder, community and end-user engagement. Empowering the community, engaging the private sector and actively involving institutional agencies is an essential ingredient to successful city planning. Illustrating development possibilities through a range of engagement activities ensures the project reaches a variety of audiences and offers an increased level of feedback.

Four interactive workshops have taken place, engaging with a range of technical agencies who are involved in planning and implementation of the strategies within the city of Dar es Salaam. These have run in parallel with public exhibitions and detailed community and user-group surveys designed to incorporate the views of hard-to-reach local residents, while being shared through social media such as Facebook.

In the interactive workshops, role-play helped to debate and clarify some of the key issues, while benchmarking visits to London's transport hubs showed examples of best practice. A series of focus group sessions in Dar es Salaam offered fresh insights of city life and the testing of early ideas, while the public exhibition at a key BRT terminus attracted diverse interest, dialogue and exchange.

The combination of the anecdotal inputs from the consultation process and the hard data has all been crucial in informing the direction of the project while also raising its profile. One of the major findings was that nearly 95% of all consulted participants said their life has changed for the better because of the BRT project, with less congestion, significantly better connectivity and on-going changes in the range of uses and opportunities found along the corridor.

Africa has the youngest population in the world and this is a project for their future. a project that creates a better environment to live in and cleaner air to breathe, a project that means that children will not have to get up at 5 am for a three-hour journey to school and will create the jobs they need when they reach adulthood.

The investment in the BRT is transforming Dar es Salaam and this project will ensure that every potential benefit is extracted from the initiative with the results already clear to see. It is no surprise that Dar es Salaam is winning sustainable transport awards and will become one of Africa's best practice case studies.

All data based on sample focus groups studies, undertaken by the project team in September 2017.

***James Rayner** is Board Director and leader of the Urbanism and Masterplanning Team at Broadway Malyan, working across city to neighborhood scale planning and development projects. James is a masterplanner and a chartered urban planner and landscape designer with over 25 years worldwide experience in the urban planning and design of complex project types and challenges. James has lived and worked in Asia, Middle East and Europe.

- 1- Aerial view
© derejeb/ fotolia.com
- 2-3 Pedestrians, traffic and shops along the urban streets
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- 4- Possible urban development scenarios along the BRT route
- 5-6 The urban fabric near the Central Business District
Image provided by Broadway Malyan
- 7- Informal settlements along the city's ring road
BBM Explorer / Flickr.com
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- 8- Urban skyline looking towards the Central Business District
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