ICLEI Local Governments for Sustainability AFRICA

KONRAD ADENAUER STIFTUNG

URBAN RESILIENCE AND LOCAL GOVERNANCE



Urban Resilience and Local Governance in Tanzania

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ICLEI Local Governments for Sustainability AFRICA

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KONRAD ADENAUER STIFTUNG

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Introduction

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Rapid urbanisation and population growth has increased the vulnerability of cities to multiple systemic risks and triggered complex urban development challenges. In sub-Saharan Africa (SSA) and Tanzania specifically, rapid urbanisation and population growth continues to place pressure on the city urban and natural systems and on their ability to withstand various shocks and stresses. Tanzania is one of the most rapidly urbanising countries in SSA, with 44.6% of its population living in urban areas in 2020, compared to SSAs average of 43.5%. In only ten years, by 2035, six cities in Africa will have more than 10 million people. Dar es Salaam will join other metropolitan cities such as Cairo, Lagos and Kinshasa whilst the region of Eastern Africa is expected to be the region with the fastest growing urban population and an annual population growth of 9% (The Guardian 2022). Africa's youthful, growing cities are seen at the same time as a boundless source of workforce, innovation and creativity, but many see this youth, in case no adequate jobs are created, as dangerous potential for political protests and unrest. Building long-term resilience in cities through integrated urban planning frameworks is thus critical, and to mitigate and prepare for various risks requires visionary and sustainable pro-active governance at the local level.

The concept of urban resilience is used as a guiding approach in this publication. Urban resilience can be defined as a holistic governance approach to tackle and plan for the upcoming multifaceted challenges which city governments are facing in regard to urbanisation in African cities. Resilience can be defined as the ability of a city and its institutional systems to survive, adapt and thrive despite short term shocks and long-term stressors that may destabilize the functioning of a city as well as its people (Resilient Cities Network, 2022). Here, it is especially relevant to plan in a sustainable and holistic approach and not in "silos" as is often the case. Visionary governance is needed, especially in African cities like Dar es Salaam.

Urban resilience takes on many facets, however the key pillars include the natural, economic, social, physical and institutional dimensions. Social connections between people and the relationship between people and institutions, infrastructure and the environment are crucial to addressing urban resilience. To improve their resilience, it is important for cities to take on a holistic governance approach in urban management that assesses capacities and risks involved to ensure that the needs of the most marginalised groups are addressed. Avis (2016:5 defines urban governance as "how government (local, regional and national) and stakeholders decide how to plan, finance and manage

urban areas". Thus urban governance goes beyond the functions of the state, to involve a range of actors and institutions, including the state, local government, private sector, civil society, and the informal sector, with the relationships among them determining how a city develops. Therefore, a holistic governance approach in addressing urban resilience requires concerted approaches by all stakeholders.

This series of thought pieces seeks to explore urban resilience in Tanzania's main urban centres from various perspectives, focusing on ways that urban planning, its related aspects and political stakeholders influence urban resilience. It covers five important thematic areas, namely, politics and planning, informal settlements, food systems planning, urban greening, and community-led urban waste management.

The *Politics and Planning* theme recognises that urban planning processes have maintained power structures that uphold decision-making with urban planning processes being influenced and impacted by political actors. However, localised structures as well as citizens form an integral part of decision-making and should be integrated in the political processes that are central to urban planning. There is an intricate relationship between politics and planning. Political actors are decision makers in the planning process, while the planning process itself is a political process as the citizens are central in decision making. However, conflicting interests often exist between political actors and urban planning practice.

The theme of *Informal Settlements in Tanzanian Cities* acknowledges that these settlements, driven by rapid urbanization, pose a significant challenge in Tanzania, yet are an essential aspect of the urban landscape. Around 70-80% of the urban population resides in informal areas that lack adequate infrastructure and services. Despite a shift from exclusionary to more inclusive approaches towards these settlements, their resilience still poses a significant challenge to achieving sustainable urban environments. Government initiatives, such as the regularisation of informal settlements provide an opportunity to improve informal settlements using an urban resilience lens. However, urban governance is a collective effort, and crucial to achieving greater impact through innovative and coordinated responses by the government, working in partnership with non-state actors to build resilience in informal settlements.

The *Urban Systems and Food and Planning* theme highlights the urgent urban food security challenge in Tanzanian cities due to rapid population growth. Although urban planning is crucial for shaping food environments, it is not well integrated with food systems planning. There are various opportunities for ensuring multi-scalar food systems planning, including integrating strategies for improving food access and nutrition, recognising the significant role of small and medium urban centres, ensuring food affordability, recognizing the positive role of street vending, addressing climate and

environmental constraints, protecting land for urban agriculture, and building capacity for multi-stakeholder policy and action planning.

The *Greening for Urban Resilience* theme uses the case of Dodoma city to emphasise the importance of placing urban greening and green infrastructure at the centre of urban planning as a means of attaining urban resilience. Green infrastructure provides various socioeconomic and cultural benefits to help cities build resilience. Local governments are key actors in championing the green urban development strategy and responding to climate and biodiversity challenges. Therefore, creating an enabling environment which integrates greening will positively influence local governments' abilities to help urban communities become more resilient and achieve environmental, social, and economic benefits.

The *Community-led Waste Management in Dar es Salaam* piece recognises solid waste management as a major issue that local government and urban practitioners are battling to manage in Sub-Saharan Africa and in Tanzania in particular. Of particular concern is the increase in the volume of waste that isn't being directed to existing urban service lines, most of which are inadequate to effectively collect and treat waste, let alone separating and beneficiating valuable material resources. This system failure creates a public health hazard with more exposure to chemicals and disease vectors, while degrading the environment, blocking water drainage and contributing to flooding. This calls for alternative waste management practices which can be further integrated with the existing urban service delivery mechanisms. Instead of large-scale technological interventions, this piece argues for approaches that involve mobilization of communities in development and support of alternative waste collection, separation and treatment. These approaches, which require strong facilitation skills to meet communities where they are, have particularly been seen to be impactful within informal contexts, and have shown strong results in several Tanzanian cities.

Urban planning is often overlooked as a powerful tool by decision makers and sector specialists; through these pieces, it is clear that urban planning (be it top down or community-led), if deployed proactively, and enforced effectively, can guide development pathways, make vital space available for nature and public space, food flows, waste management and many other urban needs. Supporting collaboration within cities to enhance planning capabilities is vital for laying the foundation for sustainable infrastructure and urban development. Further, given limited resources in African cities, we need to improve the imaginative capacity of urban practitioners for how these many different urban sectors can intersect, reinforce and improve outcomes for each other.

ICLEI-Africa is collaborating with Konrad-Adenauer-Stiftung (KAS) Tanzania to publish this series of thought pieces on urban resilience and local governance in Tanzania.



The project draws upon ICLEI-Africa's and partners' vast experience working in Tanzania's urban sector and seeks to explore urban resilience in the country's main urban centres from various perspectives. KAS is a political foundation from Germany, financed through funds from the German Ministry of Economic Cooperation and Development (BMZ) channelled through the German parliament. KAS has been working in Tanzania since the beginning of the 1960´s in the fields of promotion of good governance, rule of law and multi-party democracy. The aspects of urbanisation and urban planning in Africa are analysed and supported by KAS through a political lens since good urban governance is key in all sectors so relevant for the future of African cities. ICLEI Africa supports its local government members to localise global sustainability agendas in ways that are appropriate to their contexts, particularly focussing on five development pathways of low-emission-, circular-, nature-based-, resilient- and equitable-development. It takes their voices to global meetings and advocates for the meaningful participation and acknowledgement of subnational government needs and priorities in national and global agenda-setting.

The formulation of these thought pieces was done through working with organisations and specialists active in the urban sector in Tanzania who contributed to the different thematic areas. We are particularly thankful to the contributors, namely, Prof. Davis Mwamfupe, Mayor of Dodoma; Kain Mvanda and Harold Lema, Rikolto East Africa; Najum Juma, Ardhi Institute Morogoro; and Ana Lê Rocha, Nipe Fagio. to publish a series of thought pieces on Urban Resilience and Local Governance in Tanzania.

POLICY BRIEF:
URBAN RESILIENCE AND LOCAL GOVERNANCE IN TANZANIA

Background

Rapid urbanisation and population growth in sub-Saharan Africa (SSA) and Tanzania are straining urban and natural systems, making cities vulnerable to various shocks and stresses. Tanzania, one of the fastest urbanising countries in SSA, had 44.6% of its population living in urban areas by 2020, compared to SSA's average of 43.5%. Building long-term resilience in cities through integrated urban planning frameworks is critical, and to mitigate and prepare for various risks requires visionary and sustainable pro-active governance at the local level. Social connections and the relationship between people and institutions, infrastructure and the environment are crucial to addressing urban resilience. Improving resilience requires cities to adopt a holistic governance approach to urban management, engaging all stakeholders in coordinated efforts to assess capacities and risks, ensuring that the needs of marginalised groups are effectively addressed.

This policy brief presents outcomes of five explorations[1] that unpack how urban planning contributes to urban resilience in Tanzania's main urban areas. These are through the lens of politics and planning, informal settlements, food systems planning, greening cities, and community-led urban waste management.

At its core is the argument that building long-term resilience in cities requires a holistic governance approach that considers the multi-faceted nature of urban challenges across the urban spectrum, and that seeks interconnections between sectors, stakeholders and government mandates.

Reflections and Policy Recommendations

Politics and Planning. Political actors have shaped and influenced urban planning processes, maintaining power structures that control decision-making. Localised structures and citizens are integral to decision-making and should be integrated in political processes. The intricate relationship between politics and planning however requires addressing conflicting interests.

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1 ICLEI-Africa and KAS Tanzania collaborated with urban practitioners and researchers in Tanzania to develop thought pieces that incorporated research and practice. The thought pieces form the basis of this policy brief.



Recognising the intricate relationship between politics and planning, it is important that physical plans are aligned with political terms and boundaries to ensure political ownership and streamlined implementation. Mainstreaming urban resilience in physical plans is critical to building resilience to urban vulnerabilities such as floods. Physical plans are also a useful tool to address land conflicts. Community participation in the planning process is essential and thus should be enhanced for efficiency and acceptance of physical plans. Urban plans can also be leveraged to generate government revenue for development projects that contribute to building urban resilience.

Informal settlements in Tanzanian cities. Informal settlements in Tanzania house 70-80% of the urban population, representing a clear demonstration of community-driven urbanisations, but posing challenges for long-term planning, environmental protection, and service provision. Government initiatives like settlement regularisation offer opportunities to enhance resilience, but collective governance and innovative mechanisms by both state and non-state actors are essential for greater impact.

Informal settlements are an integral part of the urban fabric, and thus while acknowledging efforts by various actors in building resilience, it is critical to strengthen the government's role as enabler through effective institutional and governance frameworks. This entails planning and providing land and infrastructure, while strengthening regulatory enforcement. Urban resilience must be mainstreamed in policies, legislation and plans and flexible regulations established for informal settlements. Increasing access to secure tenure for residents is essential for empowering communities and strengthening urban resilience. Coordination among sectors and community socio-political structures must be enhanced, and bottom-up approaches and local autonomy prioritised. The co-creation of solutions is key and requires involving Civil Society Organisations (CSOs) and Community Based Organisations (CBOs) in community-led planning. Collaboration with local leaders must be pursued as they are important for data collection. Non-governmental organisations (NGOs) are critical actors, and thus funding to NGOs must be increased and their convening power leveraged to map social capital opportunities. The private sector are strategic actors and thus their investment in informal settlement upgrading initiatives, including innovative financial solutions, must be encouraged to strengthen community resilience efforts.

Urban Food Systems and Planning. The urgent urban food security challenge in Tanzanian cities due to rapid population growth makes urban planning crucial for shaping food environments. There are various opportunities for integrating food systems and planning, and for ensuring multi-scalar food systems planning.

Urban food systems planning is crucial to building resilience and thus requires strengthening through integrating planning strategies to improve food access and

nutrition outcomes. The significant role of small and medium-sized urban centres in shaping food demand and production dynamics must be recognised, and food affordability prioritised in urban food planning initiatives. Street vending plays an integral role in urban food environments and thus requires recognition and regulation as a legitimate form of employment and trading. An enabling environment must be created to protect land for urban and peri-urban agriculture. Strengthening urban food systems also requires building capacities to support multi-stakeholder policy formulation and action planning.

Greening for Urban Resilience. Dodoma's experience underscores the importance of prioritising green infrastructure in urban planning to boost resilience. Green infrastructure helps cities address climate and biodiversity challenges while offering socioeconomic and cultural benefits. Local governments are key to driving these strategies and building resilient communities.

Green infrastructure has proven to be essential to building urban resilience. Therefore, efforts should be made to integrate greening into urban planning for environmental improvement. Prioritising school greening for ecological, educational, and social benefits, linking greening to livelihoods, such as urban agriculture, to alleviate poverty, and raising environmental awareness and empowering communities to manage green spaces are some strategies that can harness wider societal contribution to greening. Greening efforts can also be improved by enhancing inclusive governance and empowering non-state actors to enforce regulations. Private sector involvement must be harnessed to bridge financing gaps and enhance risk-sharing. Greening efforts must also be broadened to include preserving natural flora in ecologically significant areas.

Community-led waste management. Solid waste management is a major challenge of rapid, unplanned urbanization, with the increased volume of unmanaged waste posing public health risks. Approaches that mobilise communities as development partners and stewards of alternative waste management practices have been impactful within informal contexts. In Nipe Fagio's zero waste approach, two key factors for resilience are waste segregation at source, combined with a social justice approach which benefits communities and supports broader societal goals. This method enabled the registration of Tanzania's first robust waste cooperative, opening doors for more waste-related cooperatives and waste picker groups.

Effective waste management is vital for resilience, especially in informal contexts. Community-led approaches thrive when integrated with urban systems, support a circular economy, and align with national policies. Systemic waste management problems require systemic solutions that are collective and locally driven, addressing redesign, repurposing, social justice, and job creation. Segregation at source is key to any zero

waste solution whether centralised or decentralised. For decentralised waste management approaches to work, they must recognise the need for community involvement and people's central role. Effective methods include mobilising communities into cooperatives and recognising the critical role of waste pickers. A key entry point to community engagement is understanding their needs and values. Greater collaboration can be achieved through bottom up approaches and purposeful integration with the community, embracing what organically emerges. In the context of varying value propositions, the strengths of different organisations must be recognised and aligned with the elements required to positively transform systems. Thus, partnerships and honest engagement are important.





CONCEPTUALISING POLITICS AND PLANNING IN TANZANIA

Najum Juma



Abstract

Recently it was observed that there are conflicting interests between political actors and urban planning practices, where political actors who are the decision makers have been seen to lose interest in physical plans and other urban planning activities. This has prompted the sprouting of different views and opinions from actors responsible for urban planning practices who perceive political actors as an obstacle to the implementation of physical plans. This paper presents the conceptualisation of politics and urban planning practices in Tanzania. This work was accomplished through practical experiences and a literature review of secondary data such as the Dar es Salaam Master Plan of 2016-2036 (2020) and other published articles. However, it should be taken into consideration that studies on politics and planning have focused on the activities and experiences of planners through their engagement in the planning process, and thus identify a gap that exists between planners and political actors who are the decision makers. The study revealed that there is a loss of interest in urban planning practices by political actors as a result of many factors, among which are: political boundaries of urban plans influencing interest by political actors, urban plan preparation and review timelines conflicting with political terms/timeframes, misalignment between urban and economic plans , the static nature of urban plans, limitations of urban plans in addressing land conflict issues, inability of urban plans to take into account informality as a key challenges in urban development and lack of participation of multiple stakeholders during plan preparation. To address the abovementioned factors, the study proposes: to align urban planning works with political timeframes and boundaries, to enhance public participation in planning processes, to improve collaboration between political actors and planning processes, and to improve legal procedures to address land conflicts.



1. Introduction

Urban planning as a means of managing and coordinating land use development has become a very important part of human progress. Experience shows that, both planned and unplanned settlements have over time provided human habitation and have increased the housing stock. However, it is clear that planned settlements offer many benefits to residents, the state and environment compared to unplanned settlements. Planned settlements offer access to basic social services, security of tenure, a source of land tax for the government, environmental conservation, and resilience to urbanisation challenges and to the impacts of climate change. In trying to formalise informal settlements, the government has tried to use different approaches to reduce the rate of growth of informal settlements, but the results have not yielded the expected results (Juma, 2020). There are several reasons why the approaches have failed to yield the expected results, among which are political factors.

With reference to different authors, urban planning simply refers to the technical and political process of ordering human settlements with all necessary infrastructure facilities, while politics refers to the activities which are associated with the governance of certain geographical areas of various spatial scales which can be a ward, district, town or city, region, or country.

Politics and planning are closely related in many ways. First of all, political actors are a very important part of the government as they are attached to high positions in administration, from sub-ward to the national level, such as ward councillors, members of parliament and ministers. Through these positions, political actors are also decision makers involved in the preparation, financing and implementation of plans. Planning is a technical process requiring the technical knowledge of planners, and it is a political process because the beneficiaries of the plans are centered in decision making as they answer questions about how people will live, work and play in a given area. Landowners have the power to decide what is to be done on their land while planners only act as facilitators in the planning process. Citizens have the power to accept or reject the proposed plans for where they reside. For instance, the Ministry of Land, Housing and Human Settlements Development has experienced objections by citizens to proposed plans, such as the Kigamboni Master plan. Therefore, the whole process of planning requires negotiation with different actors for it to be successful.

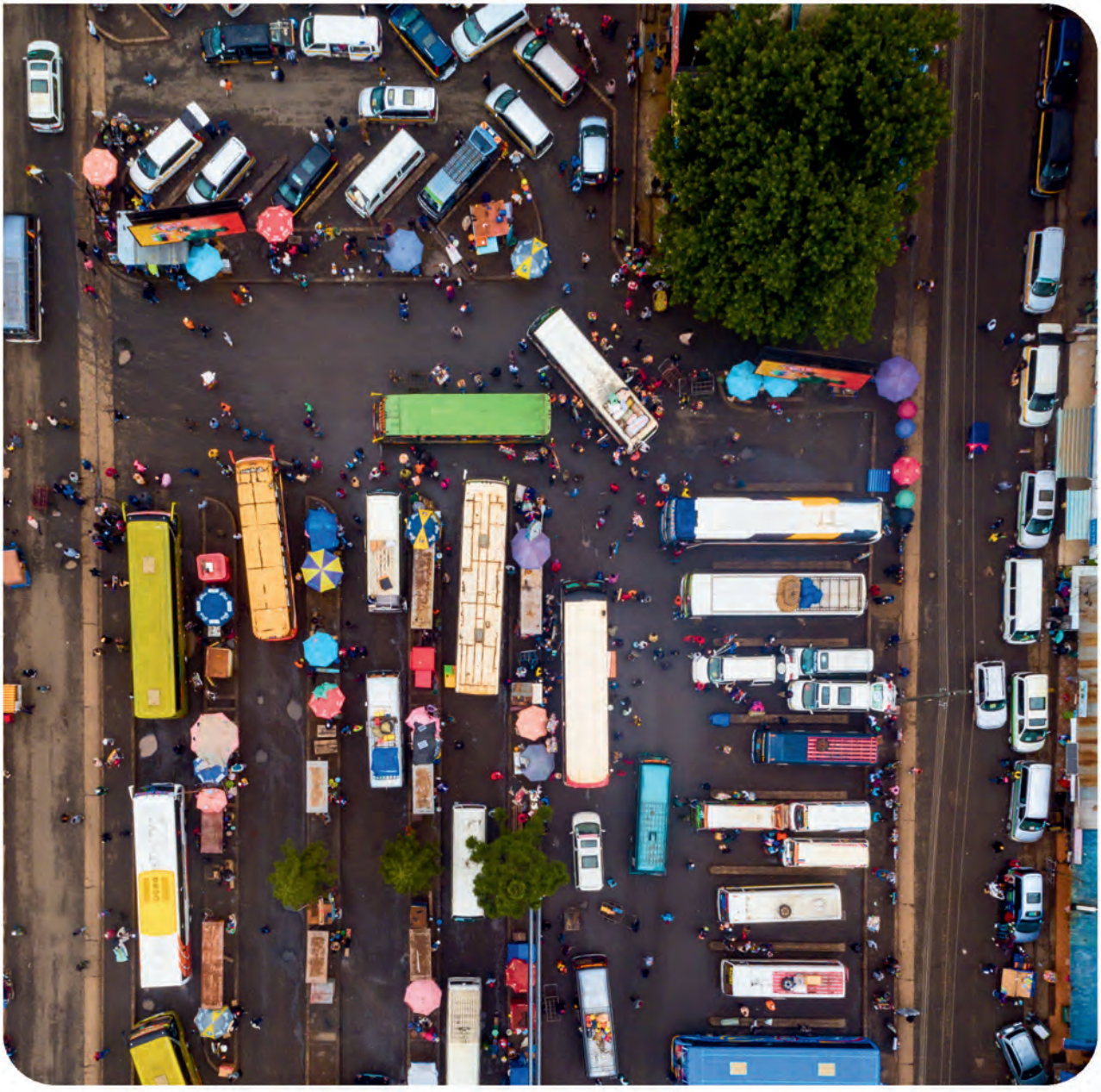
1.1 Urban planning practices during and after the colonial period

In Tanzania, urban planning and politics have a close history and have been inextricably linked before and after independence. This closeness can be viewed through different perspectives, but history shows that during the colonial era, the government used urban planning as an instrument for economic development and state control. According to the Dar es Salaam City Master Plan of 2020, the first urban planning scheme was designed in 1891 when Dar es Salaam was declared as the capital of German East Africa. To ensure state control, Germany used the scheme to segregate residential zones for various racial groups: Europeans, Asians and Africans. This was followed by the Dar es Salaam Master Plan of 1949 which also emphasised the zoning of residential areas as it was done before (URT, 2020). Therefore, through urban planning, the colonial government managed to control state-owned resources, and even after independence the Tanzanian government continued to use physical plans to control state resources and development, for instance, operations aimed at the massive villagisation of people in 1973 (Raikes, 1978). During villagisation, the Tanzanian government managed to pull together all scattered villages to facilitate the provision of social services.

A few years after independence, the Dar es Salaam Master Plan of 1968 was prepared to open up immediate impact regions of Dar es Salaam such as Kisarawe and Kibaha, thus reducing population pressure into the capital city of Dar es Salaam. However, in 1979 another master plan was prepared as a solution for the influx and proliferation of unplanned settlements in the capital city. Also, this master plan focused on solving the challenges of the stagnation of employment and deterioration of the city's infrastructures (URT, 2020). Moreover, the plan encouraged industrial development through the provision of many industrial areas in the capital city to reduce travel time and cost. With this background, it is evident that urban planning frameworks were a very important tool for the government in controlling state development by dictating what could be done. Furthermore, it was also a useful instrument that provided a framework for economic growth. However, urban planning processes have over time been influenced and impacted by political actors attached to high positions in administration of the government such as at the ministry level.

Recently, there are conflicting interests between political actors and urban planning practices, where political actors who are the decision makers have been seen to lose interest in the physical plans and other urban planning activities. This has prompted the sprouting of different views and opinions from actors responsible for urban planning practices who perceive political actors to be an obstacle to the

implementation of physical plans. Studies on politics and planning have focused on the activities and experiences of planners through their engagement in the planning process, and identify a gap that exists between planners and political actors who are the decision makers. This paper presents the conceptualisation of politics and urban planning practices in Tanzania.



2. Land policy reforms and decentralisation

During the colonial era and soon after independence, the government managed to decide on what to do and succeeded, although challenges emerged in certain processes such as the slum clearance that took place between 1967 and 1972. The method was costly and was implemented in a top-down manner which resulted in a lack of ownership and which was difficult to maintain.

With the increasing demand for housing stock in a context where the government didn't control much of the land, the state then started to acknowledge informal settlements as part of the existing housing stock (Juma, 2020). This contributed to the proliferation of informal settlements in many urban areas where unplanned settlements were seen to be affordable for many low-income earners who perceived informal settlements as an alternative way of accessing housing in urban areas. Furthermore, physical plans were separated from other development instruments such as strategic plans and five-year national development plans, which turned the focus of many political actors to short-term plans that had an element of income generation, rather than physical plans whose focus was on long-term physical development. Following the urban development trends resulting from the policy reform, the price of land escalated while the growth rate of informal settlements increased. This has had several implications in the country socially and economically, as most physical infrastructure development depends on the physical planning status of the state.

Global reform advocated the change from traditional planning which was a top-down approach to a postmodern approach where decisions were made from the bottom up. Consequently, practices started to change after the implementation of the National Land Policy of 1995, like other reforms in the 'new wave of land reforms' which have taken place in sub-Saharan Africa. Tanzania's reform decentralised land administration and encouraged land registration and titling in both urban and rural areas, and local governments were heading the process of recognising existing rights and issuing titles (Pedersen, 2010). This led to the devolution of the power of the government to dictate land development. The devolution of power involved the inclusion of local government actors in decision making to enhance participation where landowners had the power to decide upon the plans that affected their lands.

Contrary to the previous practice where land could be taken by the government

for public interest without compensation, the reform exposed land to the free market where any process of land acquisition had to involve fair compensation as stipulated in the Land Acquisition Act of 1967. As a result, land became expensive to acquire, creating challenges in the provision of infrastructure facilities, especially in areas developed informally. Most land was privately owned, with less land controlled by the state due to limitations in compensation funds. As a result, the government lost power over the land.



3. Loss of political actors' interest in urban planning practices

As explained in the previous paragraphs, the land policy reform empowered citizens in the planning process. Since the government had no more power to use urban plans as tools for state control, political actors who were influential in government lost interest in urban plans. This loss of interest was also due to the reasons described below.

3.1 Misalignment between physical plans and political boundaries and timeframes

Many physical plans do not align with political boundaries and timeframes, thus causing political actors to lack direct ownership in the implementation of their development agendas. This fact has prompted political actors to avoid directly referencing plans such as neighbourhood or master plans to address the prevailing challenges in their communities in their political boundaries and timeframe. Also, the lack of correlation between the coverage of physical plans and political boundaries has made political actors focus on other development projects such as roads, health and education facilities which are perceived to have immediate impacts on society. These kinds of projects can be easily recognised by community members rather than projects derived from physical plans whose recognition is mostly dependent on the perspective of the particular society.

3.2 Misalignment between urban and economic plans

Traditionally, physical plans are not income-generating instruments. As a developing country that faces several socioeconomic and infrastructure shortfalls, priority is always made to those plans which address such challenges, or which generate income for implementing other development projects. Separation of physical plans and other development instruments such as strategic plans which depict the ways through which financial flows can be generated have prompted many political actors to focus on strategic plans which are observed to have an element of increasing the income of Tanzanian institutions.

On the other hand, community members perceive the planning process as an attempt to create a mechanism for the government to collect revenue from landowners. This perception is valid since people living in planned settlements pay land taxes to the government while those living on unplanned land don't pay land tax. With the intention of being excluded from land tax payments, many people have

persisted in using their power over land without legal ownership. Furthermore, in several instances plan implementation is a big challenge due to the lack of funds to compensate landowners who would be displaced in the process.

3.3 Static nature of urban plans

Cities have become less resilient to the ongoing effects of climate change where, despite having urban redevelopment schemes, several parts of Dar es Salaam still experience flooding during heavy rainfall. Added to this, the country continues to face challenges in providing social services and urban basic services to some informal settlements in the cities due to over-densification of houses where the acquisition of the land for providing such services is always difficult. This has forced a large number of people in urban areas to live in places which lack adequate social services and infrastructure, thus making those settlements vulnerable to disasters such as floods and fire outbreaks.

Physical plans have failed to make these urban areas resilient to the ongoing impacts of climate change. Inadequate capacity of physical plans to mainstream resilience to climate change impacts has brought about the perception that the planning profession has failed to protect the cities. Under normal circumstances, physical plans should act as disaster and risk management tools to protect the built environment, and failure to do so has made political actors and others see the plans merely as paperwork with little impact on the sustainable development of the land.

3.4 Limitations of urban plans in addressing land conflict issues and rising informality

Another issue is the prevalence of land conflict and informality due to the failure to interpret urban plans. Most plans are too technical for an ordinary person to interpret and implement correctly. Conflicts between pastoralists and crop growers continue to occur in the urban peripheral and rural areas. These conflicts have escalated and in some cases, people have even killed each other. At first, it was believed that having physical plans in these areas could help to solve the land conflicts between different segments of society, however, these land conflicts still exist. Thus, the failure of physical plans to address these pertinent issues has made decision makers uninterested in prioritising their preparation and implementation.

3.5 Lack of participation of multiple stakeholders during plan preparation

Despite the requirements of the urban planning guidelines for a public hearing on the preparation of urban plans, there is still a culture and history of secrecy around processes of preparing urban planning documents that should be made public like Master Plans. As a result, plans remain in the hands of responsible authorities and citizens

lack any ownership. Due to this reason, implementation of the plans always faces several challenges due to lack of awareness among citizens, which normally prompts objections to those plans.

The lack of citizen participation in the preparation of urban plans has prompted political actors to lose interest in them. Public participation promotes a positive relationship between a government and the public by communicating effectively and solving conflicts in a cooperative manner. In many cases when urban planning decisions are made without public engagement, the desired results are not achieved and this normally leads to negative impacts on society, which breeds unrest. Ensuring that a wide variety of opinions are considered helps decision makers in better understanding the interlinkages and nature of problems facing the city (UN-Habitat, 2018).



4. Enhancing interest of political actors to urban planning practices

Planning decisions are taken by a public authority, and someone must be accountable for those plans: political influence is unavoidable in providing that accountability. From this perspective, planning is subordinated to political constraints, and at the same time, is shaped by the political system (Scott, 1972).

The conflict of interest between urban planning activities and politics is experienced in several ways. These include political interference in urban planning, which occurs when the administrative arm of the government uses its power and influence to disturb or hinder the process of urban planning that prevents the natural flow of desired outcomes. Also, political interference in urban planning can occur through political decisions that affect the activities of urban areas and the administration of those decisions through government agencies.

Moreover, it should be taken into consideration that urban planning is not an independent field, but rather the opposite. Unlike other industries such as civil engineering and architecture, urban planning is a field with transcendental repercussions in all sections of society, going beyond what is built. Urban planning is also a double-edged sword in that it can be used to recuperate a town's economy, or it can be used to destroy a local economy by eliminating zoning diversity. Urban planning can bring communities together through safe and welcoming public spaces, or it can separate them with a six-lane highway (Caro, 1974, as cited in Teaford, 2008). Therefore, to incentivise the political interest in urban planning works, the following initiatives should be taken into consideration.

4.1 Alignment of urban planning with political terms and boundaries

Many urban plans require long-term implementation plans. This is because of many factors, among which is the need for large investments to facilitate implementation, such as for the Master Plan. Therefore, to ensure that planners and political actors are taking the same path in the implementation of urban planning tasks, there is a need for planners to align plans with political timeframes to give the most chance for positive results which attract politicians.

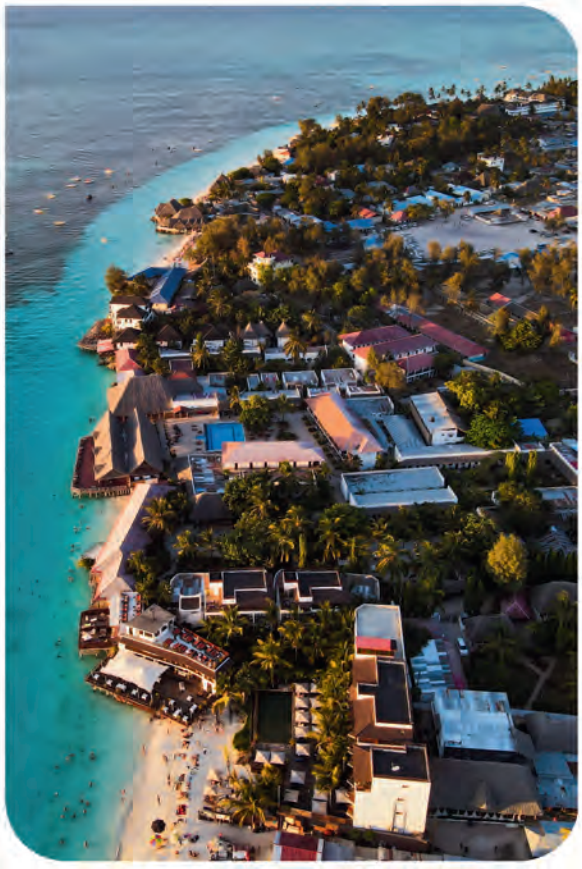
If neither master plans nor detailed plans align with political boundaries, political actors lack direct ownership of the plans. Therefore, to attract political interests there is a need to change the traditional planning approach and have physical plans created for ward level

and other political levels such as constituency.

4.2 Enhancement of public participation in planning processes

Community participation is based on the principle that the built and natural environments work better if citizens are active and involved in their creation and management instead of being treated as passive consumers. Therefore, if citizens are engaged in planning and design decision-making processes, it is more likely they will work within established systems when seeking solutions to problems. Also, it provides citizens with a voice in planning and decision making in order to improve plans, decisions, service delivery, and overall quality of the environment. Community participation in urban planning promotes a sense of community by bringing together people who share a common goal. Lastly, community participation should be active and directed, leading those who become involved to experience a sense of achievement. Through community participation, efficiency in the planning practices will be improved and plans will be developed which are more resilient to ongoing urbanisation challenges and reduce land and land use conflicts.

Legal and institutional frameworks for the preparation of urban planning works, for example, the Urban Planning Act of 2007 through to the Guidelines for the Preparation of General Planning Schemes and Detailed Schemes for New Areas, and the Urban Renewal and Regularization of 2007 require all planning processes, whether General or Detailed Planning Schemes to conduct community participation before approval of the plans. The aim of community engagement at different stages is to receive the opinions of citizens and also to create awareness on the impacts of the plans on the citizens before implementation. However, experience shows that citizen participation in planning has been different to what is directed by the guidelines. In many cases, citizens have been involved as part of fulfilling legal obligations but not as the primary stakeholders in the planning process, even though the land for which the plans are being made is their property.



5. Politics and planning practices: Case studies

Despite the interference of political actors in urban planning practices, there are still some best practices that can be found where politics and planning have worked together in harmony.

5.1 Alignment of politicians and planning authorities

There are some cases where political actors align with the decisions of planning authorities. For instance, there are conflicts that emerge when citizens establish illegal settlements on land they do not own or which is protected, e.g. a conservation area. In this kind of case, political actors usually collaborate closely with the planning authorities to evict people from those areas in various ways. A good example is the eviction of occupants who encroached on the Ranges of Mount Uluguru in the Morogoro Region. It was observed that encroachment by human activities had led to the disruption of the natural vegetation and water sources. Therefore, the planning authority, through the Morogoro Master Plan (2016-2036) proposed a new boundary to protect the mountain ranges. Through the new boundary of the conservation area all people found within the boundary were evicted and resettled to other places.

However, when citizens have invaded private, industrial or institutional areas and established settlements, political actors usually align with the citizens. A good example of this is the conflict between citizens at Chasimba who were compensated but still refused to vacate from the area owned by Tanzania Portland Cement Company (TPCC). According to the judgement on the legal suit filed by TPCC in October 2006, the High Court labelled the sitting land occupiers as trespassers as they had been compensated but had not vacated the land. However, settlers in that area maintain that they are neither invaders nor trespassers. Many asserted that they were occupying their ancestral land; others argued that they have been legal occupiers of the disputed land since 1976 when their land holdings were registered under Boko Village, a village established under the Ujamaa Village No. 21 of 1975, with certificates No. VIJ of 1976 (Kombe, 2010).

The conflict assumed political overtones when the opposition political parties, namely, the Civic United Front (CUF) and the Chama Cha Demokrasia na Maendeleo (CHADEMA) successfully took advantage of the conflict to mobilise political capital by supporting the residents in Chasimba to stand firm and resist eviction (Kombe, 2010). Following this, the Regional Commissioner and the Commissioner for Lands intervened and suspended the decision to execute the 'court order'. As

noted, the intervention came at the height of the partisan-orchestrated changes in the Chasimba area. Wazo Hill sub-ward leaders asserted that since the government leaders stepped in to stop the execution of the court order, many people restored their trust to the ruling party CCM leaders. One of the leaders noted, "CCM is our party, we are still living here today because of the party concern and support." (Kombe, 2010).

5.2 The 20,000 Plots Project in Dar es Salaam and other projects in Dodoma

Through compensation, planning authorities managed to overcome the constraints of political action in different projects in Dar es Salaam and Dodoma. This can be witnessed through several examples such as the 20,000 Plots Project that took place in the early 2000s in the city of Dar es Salaam. Through the Ministry of Land, Housing and Housing Settlement Development (MLHHSD) in collaboration with the planning authorities, the government managed to acquire land through compensation and was able to plan the respective areas effectively. Similarly, after acquiring land by compensating the landowners, the planning authorities in the capital city of Dodoma managed to implement a large urban planning project at Msalato with successful results. The lesson learnt through both projects is that adequate funding to planning authorities always contributes positively to the success of projects.

Between 2017 and 2020, the city of Dodoma decided to engage community members living on the periphery of the city in the planning and servicing of the land as demonstrated by the Capital City Masterplan (2019-2039). Due to limited financial resources, responsible authorities did not intend to implement the project through compensation. Rather, the planning authorities entered into an agreement with the citizens: the planning authorities had to provide experts while citizens were required to contribute 30% of their land to cover the cost of planning and servicing it. The 30% taken by the planning authorities was used for the provision of community facilities and also to cover other planning costs such as labour charges, beacons, and plan preparations. This project was mostly successful, although challenges emerged when some of the citizens were resettled from their plots to distant plots for no apparent reason, which led to land disputes as citizens began to boycott those plots.



6. Conclusion and recommendations

6.1 Conclusion

Traditionally, political interference in planning has been seen as a cause of many challenges that hinder the implementation of urban planning projects. However, as explained in the literature and relevant planning guidelines, the planning profession is difficult to separate from political actors. Also, urban planning projects are dependent on political will because political actors influence decisions on the use of public resources for various activities such as urban planning projects. Therefore, it is not only the political actions that affect execution of urban planning projects, but also the lack of adequate funds to planning authorities for the implementation of planning activities that has been a main cause.

Since most of the urban planning projects involve expropriation of the land, planning authorities need to have sufficient funds to help pay a fair compensation to those whose land is affected by the intended project. If government authorities can allocate a budget for electricity and water projects, for example, then the same should be true for urban planning projects on which all other infrastructure facilities depend.

A large part of urban land in Tanzania is owned by ordinary citizens who acquired those land parcels in various ways. Private landowners have the right to initiate planning processes of their land as directed by the Urban Planning Guidelines. However, experience shows that most of the plans prepared by private landowners tend to maximise individual interests, for instance the provision of land uses for commercial purposes. For this reason, such plans have been lacking social and community facilities such as open spaces and institutional areas. This is therefore different from urban planning projects initiated and managed by planning authorities where social and community facilities are prioritised for the purposes of serving the community needs.

Moreover, if planning authorities are to be empowered effectively through budget allocation, implementation of urban planning projects will be possible without causing conflicts of interest between political actors and planning authorities. By implementing such an approach, planning authorities will have the power to manage land development and also reduce the challenge of colliding with citizen interests in the implementation of urban planning projects.



6.2 Recommendations

To enhance political support of urban planning practices, the following actions are recommended:

- Prepare physical plans that align with political boundaries and timeframes to ensure that political actors have direct ownership of the proposed plans.
- Prepare plans to enable Tanzanian cities to be resilient to the ongoing urbanisation challenges and natural disasters such as floods.
- Prepare plans to act as a tool for solving land conflicts which prevail in some parts of the country.
- Enhance community participation in urban planning practices to increase efficiency and acceptance of the proposed plans.
- Give consideration to how urban plans can generate revenue for the government, which would enable accumulation of the funds for implementing other development projects. This would foster political actors' interest in the plans and facilitate their implementation.



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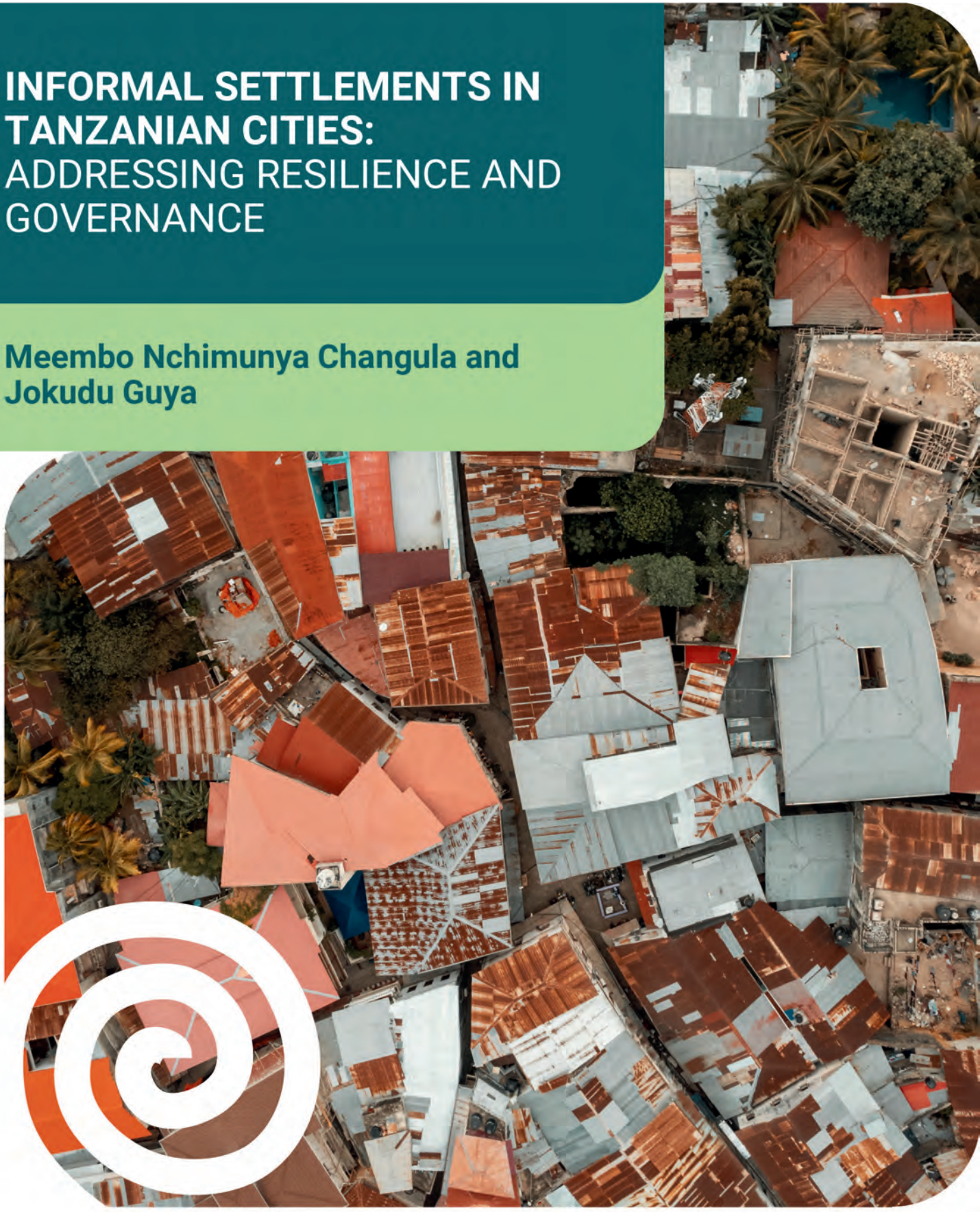


ICLEI Local Governments for Sustainability AFRICA

KONRAD ADENAUER STIFTUNG

INFORMAL SETTLEMENTS IN TANZANIAN CITIES: ADDRESSING RESILIENCE AND GOVERNANCE

Meembo Nchimunya Changula and Jokudu Guya



1. Introduction

The challenge of informal settlements has gained significant attention over recent decades, leading to various approaches to tackle their increasing prevalence. Globally, there has been a shift from exclusionary to more inclusive approaches (UN-Habitat, 2003; Kachenje, 2020), including in Tanzania, where informal settlements pose a significant challenge amid rapid urbanisation. Tanzania is among the fastest urbanising countries in sub-Saharan Africa, with about 44.6% of its population residing in urban areas, exceeding the continental average of 43.5% (UN-Habitat, 2020). This rapid urbanisation and population growth strains planning, land management, infrastructure, and service provision, fuelling the expansion of informal settlements.

The 1995 Urban and Housing Indicators Programme indicated that 70% of Tanzania's population lived in informal settlements, a figure that has since risen sharply to 80% according to recent studies (Magina, Kyessi, & Kombe, 2020). Between 40% and 80% of built-up areas in Tanzania are classified as informal, with most urban households residing in such settlements (Zhang et al., 2020). Factors such as a growing urban population, limited planned land availability, and high land acquisition costs have pushed many low- and middle-income households into these settlements lacking proper planning, secure tenure, and essential services. This situation exposes residents to environmental and health risks and hazards.

The increase, and precarity, of informal settlements thus poses a significant challenge to achieving sustainable urban environments in Tanzania. Urgent policies are needed to preserve existing liveable urban ecosystems and ensure the creation of more safe, sustainable, resilient, and liveable housing and communities. Resilience, often viewed from the perspective of affected and vulnerable populations (Vertigans, Mueller-Hirth and Okinda, 2021), highlights the need for innovative responses to environmental and socioeconomic challenges in informal settlements. Government or non-state actors' support is crucial for residents facing such challenges. What remains paramount however, is how quickly a community is able to respond to crises, evidenced through their level of community engagement and rapidity of collective response.

UN-Habitat describes several approaches that governments have taken to address informal settlements used over the last few decades, from negligence, eviction and demolition, self-help and in situ upgrading, enabling, resettlement or relocation, and participatory planning and reblocking approaches (UN-Habitat, 2003, 2015). Cities Alliance expands on these with various forms of upgrading, such as

transformative, comprehensive community-led with a resilience lens, comprehensive community-led, comprehensive, more complete upgrading, rudimentary, and eviction-based upgrading. Increased recognition of the positive role of informal settlements by governments and global frameworks such as the 2030 Agenda for Sustainable Development and the New Urban Agenda has led to a progressive shift from models of *forced removal and relocation towards models of in-situ upgrading and securing tenure.*

In Tanzania, the past 60 years has seen a range of strategies to address urban informality, including slum clearance, community infrastructure upgrading, and regularisation - currently seen as the most effective option (Magina, Kyessi, and Kombe, 2020). The approaches have taken two general forms: top-down approaches led by the state with little attention to community participation; and bottom-up approaches driven by locally based or community-based organisations (Magina, Kyessi, and Kombe, 2020). Despite a shift to more progressive approaches, informal settlements are still generally seen as unacceptable, and face increased vulnerability to resilience issues. This paper argues that given the significant portion of the population living in informal housing without alternatives, informal settlements should be normalised and accepted as integral parts of the urban fabric in SSA. Rethinking urban regulations is necessary to create sustainable human settlements aligned with people's needs. Addressing climate-related challenges, which disproportionately affect informal settlements due to their vulnerability, requires resilience-focused approaches. In Tanzania, where rapid urbanisation exacerbates development challenges, prioritising urban resilience in the informal sector is crucial. Leveraging community knowledge and existing socio-political structures can ensure a more bottom-up and inclusive approach to improving living environments for all.

This paper therefore seeks to explore the approaches implemented by the Tanzanian government to address informal settlements, and the extent to which these approaches have worked from the perspectives of governance and resilience-building. Based on these, the paper includes recommendations for policy uptake in the context of Tanzania and other sub-Saharan African countries.



2. Overview of informal settlements in Tanzania

2.1 Defining and characterising urban informality in Tanzania

The definition of informal settlements has evolved over the years to better represent communities. Terms such as slums and squatters have been central to debates on dignified settlement, because they fail to dignify and humanise the people living in them. However, the United Nations has since 2003 adopted a standard definition of the phenomenon. Informal settlements are defined as areas lacking essential infrastructure and socioeconomic services, and characterised by "five key deprivations" of which one or more may be lacking, namely: insufficient water provision; inadequate sanitation and related infrastructure; poor housing quality; overcrowded settlements; and inadequate tenure security (UN-Habitat, 2003).

While insufficient water provision, inadequate sanitation and overcrowding are prevalent in Tanzania's informal settlements, a study by UN-Habitat indicated that the informal settlements in Tanzania are unique in three key aspects, namely, security of tenure, structural quality of housing, and the nature of the population (Zhang & Sheuya, 2010). Informal settlements in Tanzania thus refer to unplanned settlements where land tenure is secured through informal means; there are challenges in service provision, and quality of life is largely a combination of low- and middle-income groups (Rasmussen, 2013; Iddi, 2022; Zhang, et al, 2010). With cities like Dar es Salaam having approximately "100 unplanned settlements" (Rasmussen, 2013:2), haphazard settlement growth with little or no consideration to future functional structure is also a growing challenge (Iddi, 2022).

2.1.1 Characteristics of informal settlements

The form of the settlements in Tanzania, as is common in sub-Saharan Africa, does not conform to the social, economic, or environmental characteristics of sustainable urban development. Studies have thus pointed to the need to optimise the form and structure of informal settlements, in addition to formalisation projects, in order to attain sustainable and socioeconomic development goals. The characteristics of informal settlements in Tanzania cannot be said to be homogenous across all informal settlements because of their varied levels of settlement consolidation. However, the informal settlements are characterised by a number of common attributes as explored below:

(i) ***Nature of people residing in informal settlements:*** *An exceptional characteristic of Tanzanian informal*

settlements is that mixed socioeconomic groups, ranging from rich to poor, reside together. This is attributed to the relative ease of access to land for housing in the informal market, favourable land policy, and push for security of tenure which encourages the use of permanent building materials. Notably, property owners are both small-scale and large-scale landlords, while tenancy is the dominant form of rental accommodation (Teyanga and Mrema, 2018; Adegun, Mbuya and Njavike, 2022).

(ii) ***Socioeconomic characteristics:*** *The socioeconomic environment of informal settlements is characterised by housing shortages, high levels of urban poverty, high unemployment rates, poor accessibility to economic opportunities, rising cost of living, and general economic recession, among others. Most of the households are low-income earners that work either as wage labourers or in informal sector enterprises, largely earning wages that are at or near minimum wage. The settlements have a number of livelihood activities comprising mostly informal activities developed along their borders (Rasmussen, 2013).*

(iii) ***Location:*** *Most informal settlements are located in environmentally vulnerable areas such as unstable slopes, in proximity to coastal zones, rivers, and channels, and areas prone to erosion, flooding, mudslides, faulting, strong winds and high temperatures among other vulnerabilities (Teyanga and Mrema, 2018; Hambati, 2013; Hambati and Yengoh, 2018). Many settlements have also been developed on land that is unsuitable for urban development or reserved for alternative land uses (Teyanga & Mrema, 2018).*

(iv) ***Housing and structural quality:*** *Single storey traditional 'Swahili houses' make up the average housing configuration in informal and unplanned settlements in Dar es Salaam (Rasmussen, 2013; Adegun, Mbuya, and Njavike, 2022:3). These settlements are typically highly dense, compact, and lacking structural integrity (ibid.). The majority of informal settlements are built using permanent and modern local building materials, mainly influenced by the ideal of perceived tenure security, and their densities increase in settlements that are closer to the city centre.*

(v) ***Services and infrastructure:*** *Infrastructure provision at the city level in Tanzania is indicative of unsatisfactory scenarios in the less-serviced informal settlements where only 13% of the city's residents are served by adequate sewerage systems, and 37% of solid waste is properly collected (Erman et al, 2019). Informal settlements are inadequately provided with other network infrastructure such as water supply, sanitation, roads and drainage systems, waste collection, electricity, and social infrastructure such as schools and health centres (Teyanga and Mrema, 2018). Most residents with access to electricity lack access to alternative*

electricity sources, for example generators or solar power (Adegun, Mbuya, and Njavike, 2022).

Most tenants access water from municipal-supplied water, community boreholes, hand-dug wells, streams, and bottled/sachet water (Adegun, Mbuya, and Njavike, 2022). Traditional pit latrines are the most dominant sanitation system, used by over 90% of urban population (Kasala, Burra, & Mwankenja, 2016). In areas prone to flooding, groundwater recharge raises water tables causing pit latrines to overflow, which adversely affects sanitation (Kasala, Burra, & Mwankenja, 2016). Waste collection services are mostly absent, relying on community responsibility (Rasmussen, 2013).

(vi) ***Varied settlement consolidation:*** *Iddi (2010) observes that Tanzanian informal settlements can be categorised into three consolidation zones, each exhibiting different characteristics. The inner zone comprises informal settlements with high densities and chaotic structures which make service delivery a challenge. (2) The intermediate zone has informal settlements that are consolidating at a fast pace without planning authority guidance. (3) The peri-urban zone comprises the urban poor who are unable to afford land in the intermediate and inner core city areas, and is also targeted by middle-income households that purchase relatively larger plots for multiple uses which may include urban farming.*

(vii) ***Tenure security:*** *The tenure structures in Tanzania have strongly influenced the emergence of informal settlements and their characteristics. Customary, quasi-customary and informal tenure are the dominant forms of land tenure in Tanzania's informal settlements, where statutory tenure rights do not generally apply (see Figure 1) (Zhang & Sheuya, 2010). This lack of statutory rights does not lend itself to tenure security for informal settlement dwellers. Insecurity of tenure is thus a characteristic common to all informal settlements. Zhang and Sheuya (2010) note a 'perceived' security of tenure by residents of these informal settlements mostly due to government's policies of tolerance since the 1970s, and the state's inability to pay compensation for land. However, through the government's strategy of regularisation of informal settlements launched in the 2000s, where informal settlements have been regularised, residents now have access to residential licences (RLs), an intermediate short-term form of tenure security, or Certificates of Right of Occupancy (CROs), which are the ultimate goal of formalisation (Zhang and Sheuya, 2010; Collin, Sandefur and Zeitlin, 2015). These are explored further in the section on informal settlement strategies and their legal, policy and planning frameworks.*

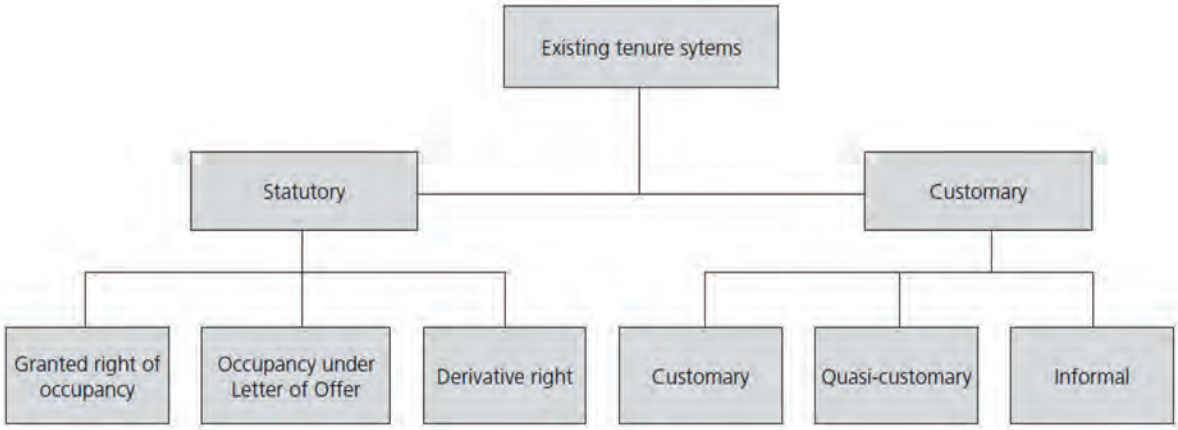


Figure 1: Existing Tenure Systems in Tanzania

Source: *Shabaan Sheya (2009) as cited in Zhang & Sheuya, 2010*

2.2 Drivers of urban informality

The growth of informal settlements in Tanzania has been attributed to urbanisation and governance-related issues, including land administration and planning, the failure of public authorities to provide serviced land, and the coexistence of multiple tenure systems (Teyanga and Mrema, 2018; Nuhu, Munuo and Mngumi, 2023). Public authorities' inability to provide adequate and affordable housing, including serviced land, has led to overcrowding and the development of permanent informal housing structures in poorly serviced areas.

Weak institutional frameworks, slow economic growth, and high urbanisation rates have driven most Tanzanians to rely on informal means for housing finance (Zhang and Sheuya, 2010). This has particularly limited low-income households' access to secure tenure. Since the collapse of the Tanzania Housing Bank in 1995, housing finance opportunities have been scarce. Although microfinancing options have emerged, most people cannot afford them or are reluctant to accept high interest rates (Zhang and Sheuya, 2010). Consequently, most houses are constructed or renovated using informal financing methods like family savings, inherited land, and informal credit associations (Magina, Kyessi and Kombe, 2020; Zhang and Sheuya, 2010).

Access to land is another major driver of informal settlement growth and is a function of the land delivery system and land ownership status, which comprises customary land tenure and statutory land tenure (Nuhu 2019; Kironde, 2015; President's Office on Regional Administration and Local Government [PO-RALG], 2021). Land under customary land tenure is sold through the informal land market, and is more easily accessible compared to the formal land delivery system (Zhang et. al, 2010; PO-RALG, 2021). Furthermore, the friction between the system of

market control tied to state hegemony on land ownership on the one hand, and the market economy with the increasing participation of the private sector in urban development and the land market on the other hand, has also resulted in the dominance of informality in the land market where land sales are hardly captured and shared (PO-RALG, 2021).

The lack of planned and surveyed land has specifically been cited as one of the largest contributors to urban informality (Magina, Kyessi and Kombe, 2020; Nuhu, Munuo and Mngumi, 2023). As of 2016, 85% of land remained unsurveyed and much of this land was located in poorly serviced areas vulnerable to natural and human-induced hazards (Magina, Kyessi and Kombe, 2020).

Poor enforcement of urban planning related laws, regulations and frameworks is another major driver of urban informality. Related to this, traditional master planning approaches and the absence of up-to-date master plans in most cities, have led to the burgeoning of informal settlements. A major contributor is the shortage of urban planning professionals, and the low technical capacities of local government authorities to ensure effective and efficient planning and implementation which have contributed to the high rate of informal settlement growth (Iddi, 2022). On the other hand, the perception by informal settlers and the public on how to develop and plan their neighbourhoods is quite often contrary to the provision of the laws (Iddi, 2022).

Enforcement of laws and regulations has also proved insufficient or ineffective in preventing encroachment into many hazard-prone areas or to ensure adherence of developments to adopted master plans (PO-RALG, 2021).

There has been a general failure in the governance system to address the above challenges and to ensure adequate land administration and planning processes. Thus, over the years, urban residents have both taken opportunities to adjust to these circumstances by providing more accessible tenure options, or leveraged the informal means of accessing land tenure to meet livelihood needs.



3. Institutional and governance framework of informal settlements

The planning, development and regulation of human settlement activities in Tanzania falls under the mandate of two main institutions: The Ministry of Land, Housing and Human Settlement Development (MLHHSD) and the President's Office-Regional Administration and Local Government (PO-RALG). The MLHHSD handles urban planning functions, while the PO-RALG oversees the administration of human settlements (Teyanga and Mrema, 2018). Their goal is to ensure fair land distribution and access while promoting sustainable human settlement development for all income groups, guided by the National Land Policy (1995), Human Settlement Policy (2000), and related legislation (Iddi, 2022). These responsibilities are executed through Local Government Authorities (LGAs), including city councils, municipal councils, town councils, and township authorities (Mussa, 2022).

In the LGA, the urban governance structure starts at the sub-ward level called the mtaa (meaning "streets" in Kiswahili), comprising several 10-cell units, then progresses to the ward, division, municipal council, and finally the city. The mtaa is led by a community leader elected by residents, who collaborates with a municipal officer (Rasmussen, 2013). Known as the 'mtaa-leader,' this community leader serves a three-year term, with potential for re-election, while a civil servant acts as a secretary, appointed by the municipality. The governance structure extends systematically to settlement and household levels, integrating both formal and informal settlements into the formal urban governance framework (Roy et al., 2018).

3.1 Informal settlement strategies and their legal, policy and planning frameworks

Tanzania's response to urban informality has evolved over six decades through legal, policy, and planning frameworks. Initially ambivalent, these frameworks have shifted towards recognising the rights of informal settlers. Government policy has transitioned gradually from viewing informal settlements negatively to accepting them as integral parts of urban life, necessitating focused interventions to improve living conditions. The impact of these frameworks on strategies for informal settlements is discussed below.

3.1.1 Slum clearance - 1960s to 1970s

Tanzania's post-independence era saw government hostility towards informal settlements, as rapid rural-to-urban

migration in the 1960s that followed lifting of colonial migration restrictions led to unplanned housing and urban sprawl (Peter and Yang, 2019). The government's response, from the 1960s to the 1970s, involved aggressive slum clearance and redevelopment efforts to eliminate what was perceived as eyesores in the cities (Magina, Kyessi, and Kombe, 2020; Iddi, 2022). This included forcibly relocating residents to the urban periphery, where access to public services and job opportunities was limited. Additionally, the government implemented the Ujamaa-villagization scheme from 1973, aiming to resettle urban populations into villages, but this led to the decline of urban centres.

3.1.2 Squatter upgrading - late 1970s and early 1980s

After the shortcomings of slum clearance, the government introduced the squatter upgrading programme in the late 1970s and early 1980s, backed by the World Bank. This initiative focused on enhancing network infrastructure (Magina, Kyessi, & Kombe, 2020), and represented a shift from eviction towards recognising the importance of improved shelter, infrastructure, service delivery, and tenure security in informal settlements (Iddi, 2022). Community participation was integral, with members involved in planning, design, and construction, utilising community labour.

The program emphasised affordability and community involvement in decision making.

3.1.3 Sites and services projects - 1972 to 1990s

The government implemented sites and services projects, akin to the squatter upgrading programme, aimed at providing basic infrastructure, services, and community facilities in new informal areas (Magina, Kyessi and Kombe, 2020; Iddi, 2022). These initiatives also focused on relocating households from hazardous flood-prone areas, particularly in river valleys. However, the projects yielded unsatisfactory outcomes, leading to their discontinuation in the 1990s. By 1988, 3,000 plots remained undeveloped, and five years after completion, only 48.3% of developed plots were occupied, 22% were not yet habitable, and 26.6% remained undeveloped (Magina, Kyessi and Kombe, 2020). The World Bank withdrew support due to poor performance, and by the early 1990s, rapid urbanisation and population growth had outpaced government efforts.

3.1.4 Participatory upgrading approaches - 1990s to 2000's

By the early 1990s, there was a shift in the government's approach to informal settlements in Tanzania, echoing trends

across sub-Saharan Africa. The failure of squatter upgrading led to a shift towards more participatory approaches, emphasising local community involvement. community-based organisations (CBOs), non-governmental organisations (NGOs), and communities collaborated to upgrade informal settlements.

In response to the Habitat Agenda, in 1992 the United Nations Centre for Human Settlements (UNHCS) supported *environmental planning management (EPM)* which sought to improve on the traditional master planning approach and emphasise building partnerships with CBOs and providing a forum for common priority-setting with communities (Iddi, 2022). An example was the Hanna Nassif CBO Upgrading Project implemented under the Sustainable Dar es Salaam Project (SDP).

The *Community Infrastructure Programme (CIP)* was also implemented to carry out basic infrastructure improvements using mostly community labour and a microcredit program (Iddi, 2022). The *Community Infrastructure Upgrading Program (CIUP)*, initiated around 2003 under the Local Government Support Program (LGSP), focused on upgrading and upscaling infrastructure and services such as roads, drainage, water, sanitation, waste management, and street lighting (Iddi, 2022; Ndezi, 2022).

3.1.5 Comprehensive land reform and regularisation of informal settlements, 2000 onwards

Another major shift was the government adopting comprehensive land reform to integrate urban/informal and rural/customary tenure into modern land administration systems (Collin, Sandefur and Zeitlin, 2015). This led to a *neoliberal land formalisation programme* from the mid-2000s, aimed at addressing insecure tenure in informal areas and reducing poverty and underdevelopment (Peter and Yang, 2019). Affordable housing schemes were introduced to tackle improper land use, meet housing demand, and curb the growth of informal settlements (Peter and Yang, 2019).

The reforms had a major aspect of pursuing a strategy of *regularisation of informal settlements*, supported by urban planning policy and legislative changes. The *1995 National Land Policy* prohibited the removal of informal settlements and mandated their upgrading, except in hazardous areas (Peter and Yang, 2019). The Land Acts No. 4 and 5 of 1999 introduced a regularisation strategy, focusing on titling properties and plots (Magina, Kyessi and Kombe, 2020), along with individualised land tenure for informal landowners. The Lands Act recognised the rights of informal landowners and introduced two new forms of formal land tenure: the *Certificate of Right of Occupancy (CRO)*, providing a leasehold of urban land for 33-99 years and the

ultimate goal of formalisation, and the *residential licence (RL)* (Collin, Sandefur and Zeitlin, 2015) an intermediate form of tenure for properties not meeting CRO requirements.

Section 4.1.4 of the *National Human Settlements Development Policy of 2000* similarly prohibited removal of informal settlements, and further committed to upgrading and regularisation by residents through community-based organisations (Peter and Yang, 2019; Magina, Kyessi and Kombe, 2020). Section 23 of the *Urban Planning Act No.8 (2007)* also recognises informal settlements as planning areas and provides for their regularisation and preparation of regularisation schemes (Magina, Kyessi and Kombe, 2020).

The government thus launched the *property and business formalisation programme* (MKURABITA) in 2004, implemented in 2008. Through this programme, residents in regularised informal settlements can obtain derivative rights of occupancy via renewable RLs, initially valid for 6 months but later extended to 2 years, with provision for extension up to five years (Zhang and Sheuya, 2010; Collin, Sandefur and Zeitlin, 2015). However, while RLs are more accessible and affordable, there has been limited progress in extending access to CRO for informal residents despite its greater benefits. Despite implementation challenges, regularisation is seen as the most effective approach to formalising informal areas.



4. Vulnerability of informal settlements

Informal settlements are vulnerable to natural disasters, climate change, and man-made disasters which are expected to keep increasing in both frequency and intensity (Hambati, 2013; Williams, Manez Costa, Sutherland, Celliers, and Scheffran, 2019). These varied events have the potential to negatively disrupt activities in informal settlements, and at times result in new and innovative solutions to adapt to challenging circumstances. Tanzania has experienced a 1°C rise in temperature over the last six decades which affects informal settlement residents the most (Irish Aid, 2015). The extent to which this, and other climate change events impact informal settlement residents in Tanzania has not yet been extensively studied (Hambati and Yengoh, 2017; Sakijege, Lupula and Sheuya, 2012). However, various authors have explored the impact of disasters to give insight into the challenges faced and the ways in which Tanzanian informal settlement dwellers have adapted to these vulnerable conditions.

4.1 Factors influencing vulnerability

The physical conditions of a settlement can impact vulnerability, especially when settlements are located in climate-vulnerable areas such as flood-prone zones. A common challenge faced by residents of urban informal settlements is the lack of basic infrastructure. Informal settlements often lack wide roads and spaces for movement, and as such there is limited space for physical amenities such as parks, and street furniture. It also becomes challenging for services such as water, sewerage, and drainage systems to be provided. In line with the vulnerability to environmental hazards, residents in informal settlements find themselves prone to flooding, sewer overflow, poor drainage, and pollution (Roy et al., 2018). Increasing urbanisation rates and climate change further undermine efforts to recover by compounding the impacts of hazards (Williams et al., 2019).

The approach by public authorities to disasters is reactive rather than proactive, and as a result the response systems are inadequate in alleviating the pressures and impacts of the hazards in a timeous manner. A missed opportunity is in the provision of green infrastructure which plays a critical role in communities because they create opportunities that improve the well-being of urban residents, while improving climate change adaptation. Roy et al. (2018) look at the challenge of infrastructure in informal settlements through the lens of urban green spaces. They highlight that urban green services in Dar es Salaam are declining, and therefore are leading to greater

vulnerabilities and challenges for residents to adapt to environmental changes.

Resilience of households may be measured in terms of access to finance to recover from disasters, and the poor are noticeably less resilient. Erman et al. (2019) observe from their study of flooding incidents in Dar es Salaam that 29% of affected households had not recovered from shock, leaving them more vulnerable to the after-effects of the disaster. These households refer to the poorer of affected households who live in low elevation areas with relatively poor-quality infrastructure, including poor access to in-house piped water and electricity. Often, families do not have disposable income to replace or repair damaged property. They also note that low-resilience households have systematically lower access to finance, rely more on self-generated income and less on private companies, and informal lending remains an important driver of recovery for them.

Resilience efforts can be strengthened when undertaken at the wider community level. The role of community support and networks extends beyond financing into sharing of resources, labour and time to help each other rebuild after a crisis. Erman et al. (2019) point out that community saving groups are a positive tool to assist households with recovery, but may not be an ideal instrument to deal with aggregate shock, mostly due to the strain put on resources when many members are affected at the same time. A more ideal method to help the saving groups manage risk better could be the pooling of resources across more than one community or insuring community groups against aggregate shocks. In other instances where individuals fail to recover from disasters, NGOs and CBOs invest in community upliftment programmes that focus on improving the resilience of communities by addressing the vulnerabilities of the settlement. While various actors play a key role in supporting the efforts of individuals and communities, they often face challenges in accessing readily available data.

4.2 Vulnerability of residents to flooding

The vulnerability of informal settlements can be understood from the context of flooding which is highly prevalent in Tanzania - the most flood-affected country in East Africa (Erman et al., 2019). Flooding is estimated to be the costliest hazard nationally, accounting for 62% of losses from natural disasters in the period 1990 to 2014 (Erman et al., 2019). It is also one of the biggest environmental challenges that informal settlement residents face in Tanzania.

A recent World Bank study established that flood risk in Dar es Salaam goes hand in hand with informality, directly affecting households which have more insecure tenure arrangements (Erman et al., 2019). Flood-affected households also tend to be located in areas with

poor access to services such as low-quality waste collection systems, lack of access to reliable infrastructure, low-quality water and sanitation, and bad drainage systems. An example of such has been documented in Magomeni Suna, Dar es Salaam. This informal settlement is vulnerable to flooding and heat, amongst other environmental crises. A study by John (2020) found that 93% of residents in the informal settlement experienced the impacts of flooding on an annual basis. With limited governmental support, affected households in Tanzania are often left to absorb the costs of flood damage and to protect themselves from future exposure (Erman et al., 2019).

Informal settlement residents respond to vulnerability to flooding with both permanent and temporary solutions. The most common measures to prevent flood damage include the use of sandbags and tree logs, raised pit latrines, installing water outlet pipes, constructing embankments, elevating foundations, and boiling or chemical water treatment (Erman et al., 2019). In the construction phase, residents build their homes at least one metre above ground, construct permanent embankments, and raise their doorsteps to ensure that they are protected from flooding. In instances of severe flooding, additional protective walls are temporarily built for added protection. Despite this, residents are often displaced from their homes and lean on friends and family for housing until water levels reduce.

In her study, John (2020) showed that the larger the household, the more they were vulnerable to flooding, which was attributed to the fact that such households would also be lower-income households. Interestingly the study also found that the same households were better positioned to adapt to flooding because they were able to lean on social networks for support in preparing for floods and in rebuilding to normalise living conditions (John, 2020). In the World Bank study by Erman et al. (2019), a relationship between poverty and flood risk in Dar es Salaam was observed, with results pointing to the poor being disproportionately affected by flooding. The poorer households also tended to settle in areas with high risk, while the flood-affected households were also significantly more food insecure than non-affected households. Furthermore, female-headed households with insecure tenure, residing in areas with low-quality waste collection systems were more likely to be directly affected by floods than male-headed households.



Residents adapt to flooding in the Keko Machungwa informal settlement

Residents in informal settlements across Tanzania have adopted similar coping strategies. Keko Machungwa, an informal settlement located in Temeke Municipality, has not only been affected by environmental changes, but as a wetland, has often been affected by water logging. This informal settlement lacks critical infrastructure. The settlement has uncoordinated stormwater drainage, poor waste management, and no reliable sanitation facilities. During seasons of rain, 25% of the settlement, closest to the valley, often floods severely. The main cause of flooding has been the lack of a proper stormwater drainage system, people encroaching the river valley, and the clogging of existing drainage systems with solid waste (Sakijege et al, 2012). The flooding causes diseases, water and air pollution, and water logging.

Residents of the informal settlement have developed some permanent and temporary strategies to manage flooding. When building homes, doorsteps are raised, protective walls are built, and building foundations are raised to ensure that no water, or as little as possible, floods the building. Pipe outlets are incorporated into the construction to help filter out water. Often residents are also either temporarily displaced or make the choice to find a new home.

These experiences highlight that, there is not one single approach that can be taken to addressing the challenges in informal settlements, and all solutions need to be developed in collaboration with informal settlement dwellers who best understand the dynamics of the settlement. The section to follow considers whether the approaches to addressing these challenges have worked thus far.



5. Are the approaches to informal settlements working?

The context of informal settlements in Tanzania certainly has unique characteristics. One cannot speak about urban informality without speaking about the intricacies of land tenure in Tanzania. As detailed above, the history of urban planning and development control has had varying effects on access to land tenure. The difficulty in accessing tenure through the system in place has made it challenging for the majority of the Tanzanian urban population to access long-term tenure options, but subsequently birthed a system in which people have been able to by-pass government processes to meet their housing needs. The dynamics observed in Tanzania offer a perspective on how formal and informal systems can exist in harmony. There are merits to identifying opportunities to embrace the elements of urban informality which allow life to take place in Tanzania. This presents a challenge for us to think of ways in which we can embrace informality and change our world view, without romanticising the shortcomings of informal settlements. This section of the thought piece adopts a resilience perspective to unpack the role of governments, NGOs, private sector, CBOs and informal settlement dwellers in addressing challenges experienced in Tanzanian informal settlements.

5.1 A resilience approach to urban informality

A critique of existing models for informal settlement resilience has been that focus has largely been placed on the ability of urban residents to adjust to changes in the environment. Resilience is typically explored through the perspective of those affected and vulnerable to a crisis, therefore it can be determined by how people adapt to a crisis (Vertigans et al, 2021). When we determine resilience, we consider how quickly a community is able to respond to a crisis with the aim of normalising their living conditions, and it is observed when there is evidence of community activities and engagement. This can include food gardens, playgrounds, and other activities which encourage the community to engage with each other (Vertigans et al, 2021). While changes in climate negatively disrupt communities, it is during these circumstances of vulnerability that the resilience of residents is observed as they work towards normalising living conditions.

The question that remains is whether the approaches that Tanzania has adopted have improved the living conditions of informal settlement residents and whether the approaches to urban planning are facilitating the

development of sustainable human settlements or further entrenching lack of access to secure tenure for the majority of the population. This is particularly necessary given that the responsibility of ensuring sustainable and liveable human settlements is mandated to governments at a constitutional level.

5.2 The role of government

The provision of housing, infrastructure and socioeconomic services has long been seen as a government responsibility, although in recent decades governments have taken up the role of 'enabler' in meeting the needs of populations. The enabling approach towards informal settlements can be traced back to the World Bank's shift, in the 1980's, away from the upgrading and sites-and-services approach, to a more programmatic-oriented approach that advocated for institutional development and reform. UN-Habitat later introduced the enabling approach in the 1996 Habitat Agenda and popularised it in its first global human settlements report of 2003, the *Challenge of Slums*. This approach requires governments to provide institutional, legislative and financial frameworks to enable individuals and communities working with the private sector to take a leading role in the development of urban housing.

Therefore, when it comes to informal settlements and resilience, the governance role is thus critical as 'enabler' or 'facilitator', as it determines the extent to which other actors can play their roles. Fukuyama (2013:350), defines governance as "a government's ability to make and enforce rules, and to deliver services, regardless of whether that government is democratic or not". Avis (2016:5) further defines urban governance as "how government (local, regional and national) and stakeholders decide how to plan, finance and manage urban areas". This view expands urban governance to involve a range of actors and institutions, including the state, local government, private sector, civil society, and the informal sector, with the relationships among them determining how a city develops. Thus, as an 'enabler', the government has a strategic role of forging partnerships with and among the various stakeholders.

An analysis of the approaches taken to address informality in Tanzania reveals two general forms: *top-down approaches* which are led by the state with little attention to community participation; and bottom-up approaches which have been driven by locally based or community-based organisations (Magina, Kyessi and Kombe, 2020). While the majority of approaches have been top-down, evidence points to bottom-up approaches as being more sustainable and successful at driving socio economic upliftment in informal settlements. Facilitating bottom-up approaches requires that urban governance is decentralised and local

autonomy strengthened. However, governance and local autonomy are amongst the major challenges facing informal settlements in Tanzania. Despite the existence of urban governance structures (from the central government to the lowest sub-ward level), many scholars and decision makers in the urban space have argued that with rapid urbanisation, the demands of the urban population have been unmet by these structures (Teyanga and Mrema, 2018). They cite several managerial shortfalls including over-dependence on central government; unguided urban development; non-coherent regulatory frameworks along with rigid and unaffordable standards; lack of coordinated efforts by actors; continued top-down planning with inadequate participation of local citizenry; and high urbanisation amidst poverty (Teyanga and Mrema, 2018).

The centralisation of land-use planning activities has been found to create multiple barriers to efficiency in bureaucratic processes. Research has however highlighted the potential of local autonomy particularly in improving engagements with community stakeholders, further suggesting that with the current financial, management, and executive capacity constraints in government, planning rights could be moderately decentralised and encourage local autonomy, taking advantage of local knowledge (Zhang et al., 2020). It has been argued that despite the inability of local government units to deal adequately with urban planning and land administration matters, they are in a greater position to do so than the central government, owing to their ability to respond speedily and more affordably. Sub-ward leaders have been known to step in to cover government deficiency in planning, and have the advantage of being able to authenticate land ownership and local residents' identity.

Therefore, this paper argues that to improve the governance of informal settlements, the role of government as enabler requires strengthening in terms of institutional and governance frameworks, as well as legal, policy and planning frameworks. Due attention should be paid to ensuring effective cross-sectoral and multi-governance coordination, and coherent legislative frameworks that have a bearing on informal settlements. Furthermore, the decentralised urban governance structures provide a good basis for bottom-up governance, but requires that local autonomy is strengthened, particularly in terms of decentralising decision making related to planning and devolving resources to lower-level governance structures. However, local governance structures require capacity strengthening not only in urban planning and land administration matters, but in management capabilities. A study by PO-RALG (2021) acknowledged that urban development management in Tanzania could benefit from integrating with existing local administrative structures, and that ward and

mtaa-level institutions–who are at the lowest levels of these structures–provide untapped potential.

The lack of tenure security has been a key issue forming the core of efforts to improve informal settlements, and at the centre of the government's informal settlements regularisation programme since the 2000s. However, although regularisation has been considered the most effective method of formalising informal areas, the regularisation programme has faced challenges in meeting its objectives of regularising land in unplanned areas (Magina, Kyessi and Kombe 2020). There has also been little community involvement in the implementation of regularisation projects leading to sub-standard implementation. Furthermore, despite the importance of RLs in granting security of tenure, access to credit and property value enhancement, there has been a low application rate and uptake by property owners. Deterring factors include short licence-holding period, exposure to land-related taxes and rent, complex application process, limited acceptability of the licences by financial institutions, as well as their inferiority to CROs which have stronger security of tenure as they are issued for a much longer lease term (Kusiluka and Chiwambo, 2019). Property owners in informal settlements generally see RLs as a temporary measure with not much value addition to the property as their issuance is not normally accompanied by settlement upgrading (Kusiluka and Chiwambo, 2019).

This paper acknowledges that informal settlements are an integral part of the urban fabric, and as such the need to increase access to security of tenure for their residents, and to shift from providing temporal tenure options to long-term options, remains critical to addressing their urban resilience challenges. Access to secure tenure will increase the ability of residents and communities at large to improve their resilience as they will have greater motivation to do so, including greater access to financing support. Affordability of tenure is key to increasing access, and thus making the entry-point RLs and CROs affordable will help increase their uptake. Greater efforts need to be made in extending access by informal residents to CROs as a more permanent form of tenure and as the ultimate goal of formalisation, as this will greatly improve the value of their properties and thus the financing opportunities available to them. It is notable that the implementation of the regularisation programme has placed greater emphasis on tenure security than the actual upgrading of settlements which would help build resilience at a community-scale. It is thus important that increasing tenure security is done in tandem with actual settlement upgrading, and at the centre of these efforts should be community involvement.

A critical aspect of urban governance relates to land administration and planning.

Notably, the failure of public authorities to provide planned, surveyed and serviced land, has been observed to be driving the growth of informal settlements. Government as an enabler should step up its role to plan for urban growth, and provide the necessary land, infrastructure and services to support the creation of a sustainable living environment for the growing urban population. This should be done from the lens of building urban resilience, which should be mainstreamed in all its initiatives, particularly in addressing the vulnerability of informal settlements. For instance, the provision of green infrastructure can help improve climate adaptation while improving the living environment in informal settlements.

The strides the government has made to address the challenges faced in informal settlements through the development of policy and legislative frameworks are commendable and if well implemented, can greatly enhance the quality of life of residents of informal settlements. However, poor enforcement continues to be a challenge. Furthermore, in the delivery of services, governance challenges such as a lack of accountability and transparency have been found to contribute to and facilitate urban informality despite the availability of policies and regulations for urban development. Thus, strengthening enforcement of urban planning related laws, regulations and frameworks, and improving government accountability and transparency to its citizens in the provision of critical urban services is cardinal.

5.3 The role of communities and NGOs

The transitions in policy and legislation in the late 1900s and early 2000s represent a key value addition by government which enabled non-government actors to take agency to provide necessary support for informal sector actors. Often, the approaches taken to address resilience have leaned on civil society organisations and NGOs at large. NGOs have thus taken the role of offering technical and financial support to those negatively affected by climate-related disasters in informal settlements, and others have offered services to improve resilience (Vertigans et,al. 2021). It is well understood that the majority of informal settlement dwellers are also low-income earners and are often one of the most vulnerable groups in society (Global Centre on Adaptation, 2022).

Vulnerability is further entrenched by the inability to plan long term as a result of insecure tenure and low income. Although people are negatively affected by social, economic and environmental challenges, the evidence has shown that people find innovative solutions to adapt and build resilience (Hati, 2021). Individuals within communities come together often to address challenges through social networks. Social networks refer to the relationships between actors in society, highlighting the ways in which they engage with each other, build relationships, exchange resources and/or experiences, and rely on each other in

times of crisis or need (Morgner, Ambole, Anditi and Githira, 2020). Social networks can therefore be a critical tool necessary to facilitate access to support, services, and opportunities where formal structures for doing so are lacking. Research has shown that social networks are beneficial to implementing both long- and short-term solutions necessary for overcoming challenges, including more resilient, effective, and budget-friendly solutions.

In the case of Magomeni Suna, as documented by John (2020), residents support each other after flooding episodes to clean up and repair damage. Residents also depend on less-affected family and friends to accommodate women and children when family homes are flooded. Given the frequency and growing intensity of floods, this often happens on an annual basis. While informal and unplanned settlements are often the most affected by climate hazards, the strong social networks that develop help communities during the rebuilding process.

This role is one that cannot be undervalued, but should not be positioned as the primary response to addressing the socioeconomic and environmental challenges that affect informal settlement residents. As previously mentioned, the capacity of communities to respond to a crisis often focuses on meeting immediate needs, but shortcomings are then observed in the longer term or once there is a need to address aggregate shocks (Erman et al. 2019). Individual resources can no longer be stretched further, particularly when financial pressures start mounting. Despite the availability of traditional solutions such as microfinancing to help ease pressure, informal settlement dwellers struggle to access these opportunities. The discussions around finance and access to tenure indicate that informal settlement dwellers in Tanzania are not only unable to access microfinance solutions but are reluctant to do so, given that this does not yield enough benefit to justify taking on a loan. As a result, what we see emerging in the context are different ways of adapting to urban life which are often looked down upon and discouraged because they do not align well with formal systems.

Clearly, social capital is essential and approaches that promote inclusivity through community participation are likely to have greater success in improving the resilience of informal settlements. Morgner et al. (2020) explain that social networks can also be understood through the social ties that connect individuals in a community, each type serving a different purpose. Strong ties create a sense of community and produce social gatekeepers who have strong relationships with many members of the community (Morgner, et al. 2020). On the other hand, weak ties create opportunities for community members to remain connected and engaged with

each other, resulting in quick and simple solutions to general challenges such as creating a community savings pocket for short-term emergencies. The role that NGOs play in strengthening these networks has been observed in Tanzania with a number of organisations often embedding their work in informal settlements by offering solutions and directly engaging with informal settlement dwellers to understand daily living and to collect data.

NGOs are well positioned in that they are able to engage directly with informal settlement dwellers to understand lived experiences, and also well positioned to engage with the government to influence legislation and policy. Both globally, and in Tanzania, NGOs have influenced policies and established platforms for collaboration. They have further been able to contribute to strengthening the agency of dwellers, and furthermore leveraged funding for larger scale upgrading initiatives with the aim of dignifying settlements.

5.4 The role of the private sector

The enabling approach identified the private sector as a key actor in the development of urban housing. As pointed out by Fukuyama (2013), urban governance involves a range of actors beyond the state that include the private sector. This paper has observed the growth of informal settlements, partly attributable to the failure of public authorities to provide planned, surveyed and serviced land, as well as housing opportunities for the majority of the urban population. This failure has led to the 'minimal state' approach to urban development, where the state has taken a regulatory role, while the private sector takes an active role in service provision.

In the case of Tanzania, government has, through the Urban Planning Act No. 8, 2007, allowed the private and popular sectors to take part in urban development including regularisation of informal settlements to help reduce the widening gap between demand and supply of planned, surveyed and serviced land (Kasala, Burra, & Mwankenja, 2016; Nuhu, Munuo & Mngumi, 2023). Over the past two decades, public private partnerships (PPP) in the delivery of planned, surveyed and serviced land, where the Ministry of Land Housing and Human Settlements Development and local authorities have collaborated with private firms, commercial banks, public pensions funds, and private companies, has resulted in a marked increase in housing supply. PPPs provide mutual benefits. On the one hand, PPPs benefit local authorities through accessing areas for public services freely, saving resources, technology transfer, enhanced revenue collection, the actual delivery of planned and serviced land, and ultimately the controlled expansion of informal settlements. On the other hand, the private sector benefits professionally and financially, while landowners benefit in terms of value

addition on their land, addressing land use conflicts, and having their lands registered.

The regularisation of informal settlements in Tanzania provides opportunities for increased self-builders' incremental investments in informal land and housing, which have been linked with household wealth accumulation processes (Andreasen, Mcgranahan, Kyessi and Kombe, 2020). There are opportunities for the private sector to leverage on the incremental housing approach, which would allow them to provide partly-constructed housing at a far lower and affordable cost, and enable owners to invest overtime in completing their house (Collier, Glaeser, Venables, Blake & Manwaring, 2019). This has been applied with success in informal settlements in countries such as Zimbabwe, Uganda, South Africa, Chile, and Malaysia.

As previously mentioned, private sector investors and financiers avoid investing in the informal sector due to high risks and lack of collateral, leaving informal sector dwellers to rely on community finance mechanisms for upgrading their homes and responding to risks. Through collaboration, private sector and community actors can come together to improve access to finance which includes a range of activities such as saving, raising capital to meet financial obligations, or pooling funds to benefit from easier access to higher capital (Shand, et.al, 2017). Shand et.al (2017) highlight the growing pressure of urbanisation on urban economies, noting that improving access to finance is necessary irrespective of the innovative solutions that informal settlement residents have created to enable them to contribute to development or meet their basic needs. They recommend that the private sector should consider innovative solutions to providing access to finance, which should be developed through collaborative engagement with informal settlement residents. This is necessary to "mitigate real and perceived risks associated with underserved markets" (Shand, et.al, 2017:6).

Innovation in providing financial services requires an understanding of the target audience and their needs. An important starting point is risk reduction for the urban poor which can be achieved through data analysis on the patterns that show how the urban poor, including informal settlement dwellers, access money, build savings portfolios, and use funds (Ibid.). Data insights can support the curation of savings and investment plans for the urban poor seeking to engage in activities that build their local economies. Building a strong evidence base for formalising tenure for informal settlement dwellers can encourage regularisation. Furthermore, efforts to regularise tenure access helps residents to build collateral which can be used to access further funding for investment in the economy. informal sector. This is necessary to "mitigate real and perceived risks associated

with underserved markets" (Shand, et.al, 2017:6).

While the expanded involvement of the private sector and other actors in urban development have reaped dividends globally, there are criticisms that these have not catered for the poorest segments of the urban population or translated into pro-poor, affordable housing (UN-Habitat, 2015). In the context of Tanzania, partnerships should not absolve the state of its responsibility. It remains critical that the state takes up a greater role in improving informal settlements and addressing their vulnerabilities. Furthermore, it must be noted that the private sector is profit-oriented, and thus often has its focus on the economic benefits while social and environmental aspects are neglected. In the context of building resilience in vulnerable informal settlements, it thus becomes crucial that the public sector puts in place mechanisms to ensure that the private sector gives priority to social and environmental needs, while adopting a resilience lens to investments in informal settlements.

5.5 The role of data as a decision-making tool

Data collection in informal settlements does not happen regularly and is usually a challenge to collect given the urban fabric. Lack of data to adequately plan for and respond to crises thus increases the vulnerability of residents. Active community engagement in this context is necessary to obtain up-to-date insights regarding the impacts of the environment on residents that can be used in decision making. Often quantitative data is the primary data source used to support decision making and planning but the role of qualitative data is a necessity in the informal sector space where resources and capacity to collect quantitative data is often lacking.

Data which provides insight into understanding why people choose to live in a specific location, understanding how community engagement happens, analysing the social networks, testing solutions which can be improved on, and deciphering what community knowledge is held by residents can often unlock insights into what people need rather than offering solutions derived from theory. Where relocation is not ideal for reasons unrelated to the environmental impacts, learning how life functions in informal settlements can support the development of practical solutions which dignify informal settlement living.



6. Recommendations

The approaches to upgrading informal settlements in Tanzania have progressed over the past few decades, but despite this, various factors continue to impede on the ability of various actors to address informality and its consequences. This has implications on the resilience of these already vulnerable settlements against various shocks and stresses. Concerted efforts by all actors, and enhancement of mechanisms and strategies to improve the living environment in informal settlements will be necessary. Below are some recommendations that could strengthen current strategies and approaches to improving informal settlements.

Government

- Strengthen the role of government as enabler in terms of institutional and governance frameworks; create coherence in legal, policy and planning frameworks; and improve urban planning and land administration.
- Step up the government's role as an enabler to plan and provide the necessary land, infrastructure and services to support urban development, ensuring urban resilience is mainstreamed in all its initiatives.
- Pay attention to ensuring effective vertical and horizontal multi-sectoral and multi-governance coordination.
- Prioritise bottom-up governance approaches by strengthening local autonomy in decision making for planning and urban growth. Doing this requires technical and financial capacity. Furthermore, prioritise devolving decision-making power and resources to empower local governance structures to lead decision-making processes.
- Improve coordination at the local governance level by integrating formalised institutional arrangements with existing local administrative structures at ward and sub-ward level. Officials at this level are critical government actors that have influence over local communities and are carriers of local knowledge.
- Let the government play the leading role in coordinating collaboration between different actors, including the public sector, private sector, NGOs, CBOs, communities and citizens.

Communities and NGOs

- Provide support for the co-creation of solutions to urban informality challenges by including CSOs and CBOs in partnerships for community-led planning and development of informal areas.
- Provide greater support with more funding to NGOs with a proven track record for improving resilience in communities to address informality.



- Leverage the convening power of NGOs to bring together various actors (including CSOs and community leaders) to map social capital opportunities that can improve community resilience.
- Collaborate with local community leaders in data collection to leverage local knowledge, and build a centralised database which captures basic data on informal settlement such as population, household typologies, water and sanitation, waste, and quality of life.

Private sector

- Involve the private sector in informal settlement upgrading initiatives by inviting them into strategic planning discussions.
- Pursue PPPs that provide mutual benefits to local authorities, the private sector, and residents of informal settlements.
- Ensure the private sector leverages flexible development methods employed by informal settlement dwellers, such as the incremental housing approach to provide affordable options for housing and service delivery.
- Encourage the private sector to consider innovative solutions to providing access to finance, which should be developed through collaborative engagement with informal settlement residents.
- The public sector should establish mechanisms to ensure that the private sector gives priority to social and environmental needs and adopts a resilience lens.

Mechanisms for informal settlement upgrading

- Establish more flexible regulations for informal and unplanned settlements that facilitate long-term interventions. This requires acknowledging informal settlements as an integral part of the urban fabric, and reframing perspectives of the formal and informal dichotomy by incorporating aspects of informality that work into mainstream planning.
- Strengthen enforcement of urban planning related laws, regulations and frameworks. This may include training more planning professionals and improving local government technical capacities for effective and efficient planning and implementation. Additionally, sensitise communities to adjust their perceptions on the importance of urban planning rules and regulations.
- Increase access to long-term security of tenure by making the entry-point RLs and the CROs affordable, and shifting from providing temporal tenure options to long-term options. Increasing tenure security should be done in tandem with actual settlement upgrading.
- Encourage private sector actors to invest in appropriate areas adjacent to informal settlements. Revenue

from rates derived by the government can be reallocated to informal settlement upgrading initiatives.

- Encourage the private sector to implement flexible and affordable methods for housing development, infrastructure improvements and service delivery that leverage on current informal resident approaches such as incremental housing.
- Support collaboration amongst socio-political structures at the community level to ensure more bottom-up and inclusive approaches to improving the living environment in informal settlements.
- Build socio-political infrastructure by strengthening socio-political norms, values, rules, and relationships that underpin existing efforts towards inclusive and resilient informal settlements.
- Invest in innovative financial solutions that address the impacts of aggregate shocks, as opposed to leaving communities to their individualised resilience-building efforts to address short-term impacts.
- Mainstream urban resilience in policies, legislative frameworks and urban plans to improve the living environment in informal settlements
- Further invest in and mainstream community-based informal settlement upgrading initiatives, given that these have registered success where they have been implemented.



7. Conclusion

Rapid urbanisation and population growth in Tanzanian cities as in much of SSA has strained planning, land management, infrastructure, and service provision, fuelling the expansion of informal settlements. These are mostly located in areas vulnerable to environmental and climate-related challenges, and lacking in tenure security, and essential infrastructure and service provision. Informal settlements have historically been frowned upon and yet they house a significant portion of the urban population. The resilience of these settlements thus poses a significant challenge to achieving sustainable urban environments. This paper has thus argued that informal settlements should be normalised and accepted as integral parts of the urban fabric and their resilience prioritised. The regularisation of informal settlements by the Tanzanian government provides an opportunity to improve these settlements using an urban resilience lens.

This paper has argued that urban governance is a collective effort, and greater impact can be achieved through innovative and coordinated responses by the government, working in partnership with non-state actors to build resilience in informal settlements. Therefore, the role of the government as 'enabler' or 'facilitator' is critical for other actors to effectively play their roles. This includes establishing more flexible regulations for informal and unplanned settlements that facilitate long-term interventions, and mainstreaming urban resilience in policies, legislative frameworks and urban plans to improve the living environment in informal settlements. Communities are essential social capital, and their knowledge, strong social networks and socio-political structures, as well as their abilities to mobilise and rebuild when faced with crises, should be leveraged for more bottom-up and inclusive approaches. NGOs are well-positioned to establish platforms for collaboration in communities, and positively influence policies. Private sector has an important role to play in in service provision through investments and PPPs, and in providing innovative financing solutions co-created with communities, but their investments must be pro-poor, and prioritise social and environmental aspects. Additionally, data is a critical decision-making tool, and active community engagement in its collection is necessary to obtain up-to-date insights into their vulnerabilities.



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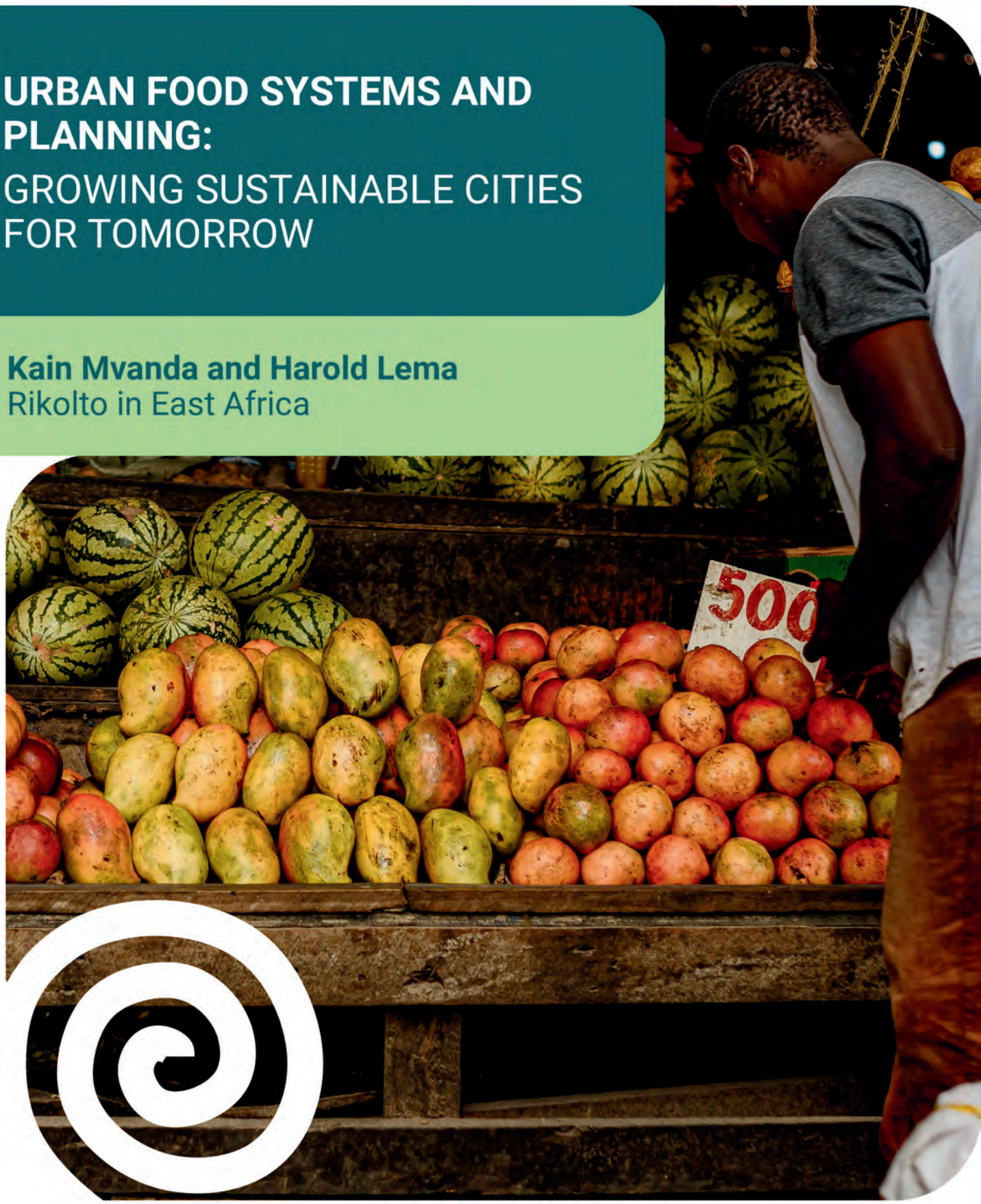
ICLEI Local Governments for Sustainability AFRICA

KONRAD ADENAUER STIFTUNG

URBAN FOOD SYSTEMS AND PLANNING:

GROWING SUSTAINABLE CITIES FOR TOMORROW

Kain Mvanda and Harold Lema
Rikolto in East Africa



1. Introduction

The urban food security challenge in Tanzania is both distinct and urgent (Wenban-Smith, 2016). It is estimated that Tanzania's urban population will increase by a further 125% (145% for Dar es Salaam) by 2030. According to UN data, the city of Dar es Salaam will have 8,161,000 inhabitants in 2024, having grown by 60% in the last decade; other cities that have experienced rapid growth include Mbeya with 680,000 inhabitants (53% growth), Arusha (25% growth) and Songea (79% growth) in the last 10 years. Urban food demand is therefore expected to increase by at least this amount.

The disparity in food expenditure between rich and poor households, particularly in urban areas, underlines the critical importance of integrating food considerations into urban planning. While affluent households in the Global North spend a smaller proportion of their income on food, the situation is dramatically different for poor households in the Global South. In developing countries such as Dar es Salaam, Bangkok and Kinshasa, a significant proportion of income - up to 85% - is spent on food for the poorest segments of the population.

This disparity in food expenditure highlights a challenge for urban planners: ensuring that food is not only affordable for the majority of city dwellers, but also accessible to the poor and very poor. Recent research by organisations such as the Asian Coalition for Housing Rights (ACHR) highlights the disproportionate burden of food expenditure on the urban poor and very poor households. In countries such as Nepal, Thailand, Sri Lanka and the Philippines, households spend more than 40% of their monthly expenditure on food and drinking water, with the figures significantly higher for the very poor.

From an economic perspective, these findings challenge the conventional view that housing, basic services and neighbourhood improvement are the primary drivers of urban economic development. Instead, food emerges as a key economic driver, particularly in low-income neighbourhoods. For very poor urban households, expenditure on food far exceeds expenditure on housing.

Urban food planning must therefore prioritise affordability to ensure equitable access to nutritious food for all urban residents, especially the poor and very poor.



2. Food systems planning

In light of the challenges highlighted above, urban planning emerges as a potential solution, with both direct and indirect impacts on the food environment and access to nutritious food. Factors such as geographical proximity to nutritious food, land-use planning, zoning regulations, food infrastructure and regulations that promote efficiency in food logistics (especially the last mile) all contribute to shaping the food environment. Changing these factors can influence consumers' food choices and the overall quality of their diets.

In essence, urban planning interventions have the potential to address complex food security and nutrition issues by reshaping the physical and social landscapes that influence food access and consumption patterns.

In Tanzania, as in other developing countries in Africa, the concept of food systems and planning is not well translated into action for various reasons, including lack of funding. This is worrying considering that Tanzania is facing rapid urbanisation due to high fertility rates and sustained rural-urban migration (Kombe, 2001; Mkalawa and Haixiao, 2014; Wenban-Smith, 2015; Farrell, 2017; Nuhu, 2018). As a result, urban land use planning capacity has not kept pace with peri-urban growth, with current demand for urban planning outstripping the capacity of urban authorities to deliver land services (UN-Habitat, 2016; Kasala and Burra, 2016; Makundi, 2017). To remedy the situation, the Tanzanian government enacted the Urban Planning Act of 2007, which encourages private sector participation in the delivery of land services, including planning and surveying.

However, the process of delivering serviced land often encounters challenges such as unregulated land markets, politicisation of land delivery, sporadic land use patterns especially in peri-urban areas and inappropriate standard procedures for land use planning and surveying (Kironde, 2009; Babere and Ramadhani, 2018). As a result, most private companies do not consider food system planning.

Kevin Morgan (2013) suggested that food planning should involve more than professional planners; in fact, it is a very diverse social movement in which planners are one group in a cocktail of organisations from the professions, civil society organisations and local government departments, all of which can claim to be part of the food planning movement.

Rositsa T. Ilieva (2016) emphasises that food systems planning is a 'social innovation' in which government planners, architects, researchers and activists step out of their daily routines

and the traditional remits of their professions to engage with food systems goals. Therefore, the concept of multi-scalar food systems planning plays a key role in ensuring systems thinking in food systems planning. According to the FAO (2018), multi-scalar food systems planning consists of three distinct and closely interrelated spheres, as follows: the first concerns the entire food cycle and includes the full range of activities involved in the production, processing, marketing, consumption and disposal of goods derived from agriculture, forestry or fisheries. The second involves all the actors involved in food: people of different ages, faiths or cultures (as producers and consumers), social economy enterprises and businesses, government institutions at local, regional and national levels, research centres and academics, and so on. Food systems planning is therefore a multi-stakeholder and community-based process that will progressively involve wider circles in a truly public exercise. The third sphere concerns the multiple spaces and scales at which institutions, people, businesses, etc. develop activities related to the food cycle, from the street to the community, neighbourhood, city, town or region. These different spatial scales and their multiple relationships justify the description 'cultivated areas and a rural hinterland'. This third component applies the principle of food subsidiarity, a concept at the heart of the decentralisation process that is gradually taking place worldwide.

In Tanzania, the concept of multi-scalar food systems has been partially initiated by different institutions, deliberately or by default, with the main entry points being safe food, nutrition and hunger. However, the approaches have not considered the engagement of key stakeholders. The FAO (2018) suggested that food systems planning lies at the intersection of these different domains and is primarily concerned with envisioning a future shared by multiple actors. It is also concerned with defining what activities should take place to achieve the goal of food security and good nutrition for all. Finally, it must define and guarantee where these activities should take place.

2.1. Entry points for integrating food into urban planning

The intersection of food systems and urban planning in Tanzania has historically been characterised by a lack of integration, leading to inefficiencies and challenges in ensuring food security in urban areas. This section explores the link between food systems and planning by looking at the principles of food systems planning and how they can be seamlessly integrated into urban planning processes.

Food systems planning involves a comprehensive understanding of the entire food supply chain, including production, distribution and access to food in urban areas. By considering food production and distribution

systems, urban planners can strategically identify areas suitable for agricultural production, promote urban agriculture initiatives, and develop infrastructure to facilitate the efficient transport and distribution of food throughout the city. Equally important is addressing inequalities in access to food among urban residents.

Several thematic entry points or challenges can trigger local authorities to engage in a more formal process to integrate food into their planning processes e.g. the need to safeguard land for urban agriculture or to protect and expand important market infrastructure for nutrition.

2.1.1 Urban food systems planning as a process

Urban agriculture is an industry located within or on the outskirts of a city or metropolitan area, which grows and rears, processes and markets a variety of food and non-food products, largely using human and material resources, products and services found in and around that urban area, and in turn largely supplying human and material resources, products and services to that urban area (Mougeot, 2005).

According to the FAO (2018), urban agriculture is a catalyst, at least in the early stages of a food planning process. Understanding this role helps to reconcile urban agriculture promoters and activists with rural or food security advocates who may underestimate the role of urban agriculture as a catalyst for integrating food into wider urban planning processes.

In Tanzania, urban and peri-urban agriculture is practiced by workers and residents facing a high cost of living, which compels them to engage in urban agriculture for self-sufficiency by reducing food purchase costs. However, the lack of infrastructure hinders them from achieving the intended impact (Katera, 2021). Urban farming is fragmented and has not been taken seriously by local authorities as part of their commitment to the sustainable development of urban areas.

However, successful food planning processes in some cities have produced formal outputs (food charter, food strategy, land use plans, zoning ordinances, etc.) and involved planners, food actors and policy makers (FAO, 2018).

Therefore, in order to improve urban food systems planning as a process in Tanzania, all urban stakeholders are required to play their role in planning sustainable multi-scalar food systems.

2.1.2 Healthy food distribution

The food distribution component plays a key role in food system planning (Sonnino, 2014). Belo Horizonte in Brazil is an outstanding example from the Global South of a systemic approach to food distribution that includes a variety of initiatives aimed at improving

citizens' access to sufficient, affordable and nutritious food and linking food needs to other planning outcomes (FAO 2018).

In Tanzania, Rikolto is piloting a systemic approach to food distribution in Arusha and Mbeya called the Participatory Food Security Systems (PFSS) approach. This is a localised quality assurance and distribution system inspired by the organic movement's Participatory Guarantee Systems approach, which is cost and time efficient for value chain actors.

The objectives of PFSS include: to make safe food available, affordable and guaranteed for all; to build trust in food safety claims in the field and in markets; to create a common understanding of the need for and potential of a participatory food safety system based on concrete experiences; and to achieve the desired impacts in the city-region food systems in terms of food safety ensuring environmental sustainability, organisational strengthening and market access, institutional support and better livelihoods for farmers and market vendors.

In addition, this approach ensures efficient availability of safe and nutritious food to low-income consumers who purchase their products from local markets as opposed to supermarkets, as it creates direct linkages between producers, transporters and market food vendors. In addition, Rikolto (in collaboration with other SMEs such as East African Fruits Limited, and Mesula) has designed a short-term food distribution model that is interested in logistics and distribution systems that guarantee good prices to the smallholder farmers who sell directly to the SME and also affordable and healthy food to consumers due to the efficiency of the distribution system.

2.1.3 Food retail distribution planning

Food retail distribution planning has an impact on access to nutritious food (FAO 2018). In Tanzania, common food distribution channels involve farmers and brokers. The brokers aggregate food products from smallholder farmers and distribute them to other food actors, including formal food vendors, informal food vendors and food processors, while farmers deliver their products directly to markets, where the products are sold to vendors through market brokers. The brokers receive a commission from the farmers based on the price of the produce sold. In urban areas, food vendors involved in the distribution of fresh produce include street vendors and market vendors. However, food markets and food vendors lack important hygiene facilities, leading to both chemical and microbial contamination.

In 2003, the Business Licensing Act abolished the peddling licence (Nguvukazi), hence making street-based trade illegal. Street traders still operate under unclear judicial procedures (Steiler and Nyirenda 2021). The

majority of street food vendors in Tanzania are informal: they do not have a business licence, are unregistered with municipal authorities, do not pay tax, and operate without social security such as health insurance coverage. They tend to sell food in temporary structures, under trees, in unfinished buildings, or in front of and behind construction sites, and some are mobile, using wheelbarrows. They are constrained by financial exclusion and generally limited business skills (Rumanyika et al. 2019). Despite the legal exclusion facing the sector, street food vending continues to employ millions of people in urban Tanzania, responsible for cooking, serving, cleaning, security, and other tasks.

Integrating informal food systems into urban planning should go going beyond simple regulation, implementing scattered food safety interventions or assigning public spaces for production or trade. It requires understanding the roots of informality which often reflect a weak institutional environment that generates barriers such as complicated registration and licencing mechanisms and unaffordable taxation. Reversing the underinvestment of resources in informal food systems is a tremendous challenge. Collaborating with informal actors can be difficult due to their sometimes poor organization, busy lives, and distrust of authorities, leading them to prefer self-organisation. Seeking invisibility is a common strategy to avoid control and harassment (Vorley, 2023).

Rikolto, in collaboration with the Tanzania Horticultural Association (TAHA) and Trias, piloted the mobile street food vending kiosks and designed the quality market food vending kiosks in Arusha city. The main objectives of these initiatives were to demonstrate the access of consumers to fresh, safe and nutritious food in Arusha to underserved areas. A similar scenario was reported by the FAO (2018), who found that mobile street food vendor 'food carts' can be an additional innovative solution to increase access to fresh foods in underserved areas.

It is worth noting that most street food vendors and those selling their products outside markets are informal, meaning they do not pay rent or taxes. Informal vendors face challenges in terms of food safety as they often lack access to basic sanitation infrastructure and equipment. However, they play a crucial role in offering food at lower prices to consumers. The question remains how food systems planning can be designed to formalise these groups to ensure that they provide safe and nutritious food while maintaining low food prices to benefit consumers. The planning tools that address food insecurity therefore need to take into account the local context. The FAO (2018) proposed food system planning tools and instruments which have been designed, experimented with, and adapted to local realities. These tools and instruments clearly demonstrate that food actors and policy makers should be technically

equipped to address food security challenges in cities and to shift from limited scale to multi-scalar food systems planning.

2.1.4 Land regulations, land zoning and land use

Land regulations, land zoning and land use which takes into account land for production, retail and wholesale markets, mobile vendors or agro-industrial zones are important tools for urban planners and other food system stakeholders (FAO, 2018).

Tanzania's Urban Planning (Zoning of Land Use) Regulations, 2018 specify uses of land that are permitted and those that may be permitted under special circumstances by the planning authority in different zones. The land uses include: residential, commercial (retail and wholesale), industrial (light, medium, heavy and service), institutional, public utility, beach, open space and recreational, transportation, communication and microwave towers, agricultural, water bodies, conservation and economic development. Despite these regulations, implementation is minimal due to various reasons including lack of finances. As a result, most urban areas are informal and unplanned and lack food systems infrastructure.

However, in 2015 Arusha joined the Milan Urban Food Policy Pact which has been signed by 115 cities worldwide. The pact promotes city-to-city learning on developing and implementing sustainable food policies and it is an important component for the integration of urban planning and food systems into a neo-realisation of the city (Rikolto, 2018; FAO, 2018).

2.2. Multi-stakeholder and community participatory planning

Multi-stakeholder policy formulation and action planning (MPAP) is one of the most widely employed method to integrate food into urban planning (Cabannes and Marocchino , 2018). The method draws from a vast array of pre-existing partial methods and was implemented by Resource Centers on Urban Agriculture and Forestry (RUAF) and its partners over a period of 10 years in 20 cities across 17 countries (Dubbeling et al., 2011).

With exception of the Arusha and Mbeya regions, in Tanzania multi-stakeholder policy formulation and action planning. In 2019 and 2020, in Arusha and Mbeya, respectively, Rikolto supported the establishment of multi-stakeholder platforms to coordinate actions towards a more sustainable food system in both cities. The main objective is to promote more sustainable and inclusive food production, distribution, and consumption in Arusha and Mbeya, and collectively address key challenges in their food system. The two platforms involve working groups of various stakeholders, including government agencies, NGOs, farmers, businesses,

and community groups, working collaboratively to achieve common goals related to food security, environmental sustainability, economic viability, and social equity. Figure 1 below summarises the structure of the Arusha Sustainable Food Systems platform.



Figure 1: Structure of a Sustainable Food System Stakeholders Platform

In Arusha the platform is coordinated by Rikolto and has four working groups: safe production, food safety and standards, consumer awareness, consumer sensitisation, and youth in agriculture. The Arusha Sustainable Food System Platform plays a key role in planning the food system in a multi-dimensional way. For example, in 2018, Rikolto, in collaboration with ICLEI, as part of supporting Arusha in fulfilling its commitment to the Milan Urban Food Policy Pact (MUFPP), supported the inter-city exchange between Arusha and Antananarivo to promote cross-learning between the two cities on how to address food system constraints in the two cities. This exchange culminated in the Arusha Food Policy Pathways. Through this initiative, the Arusha City Council established strong links with various stakeholders in the local food system in its efforts to develop a food policy to support transformation and sustainability in Arusha. The peer-to-peer exchange with the city of Antananarivo identified seven key areas for action to transform Arusha's urban food environment. These were: involving stakeholders and building partnerships; strengthening capacity, education and skills; vertical and horizontal coordination; developing infrastructure; ensuring effective governance; accessing timely information; and securing funding from internal and external sources. Part of this exchange was to reflect on existing food system policies and to think critically about possible improvements to these policies.

Investment in roads and their maintenance, improving storage facilities, modernising abattoirs and building and rehabilitating urban markets were consistently identified as top priorities in Arusha. However, translating these priorities into meaningful projects and implementation has been slow due to high investment costs and the complexity of planning, which often involves multiple departments at the local level and even across government levels and sectors. Nevertheless, the Arusha City Council has turned its attention to social interventions. These include increasing revenue collection to support market operations and providing support to vulnerable groups to enable their active participation in food system activities.

For more information in how to engage stakeholders in the planning and implementation of food systems initiatives using systems thinking approaches, access the toolkit through this link https://www.rikolto.org/downloads/msp-toolkit.



3. Recommendations from best practices

In conclusion, the urbanisation trend in Tanzania presents significant challenges for ensuring food security and nutrition in its cities. With the urban population expected to double by 2030, addressing issues such as growing food insecurity, undernutrition, overnutrition, urban poverty, informal food sectors, climate change impacts, and access to secure urban land for food-related activities becomes imperative. To effectively tackle these challenges, urban food planners need to adopt a holistic approach that integrates urban planning with food system planning. This involves recognising the interconnectedness of various factors influencing food production, distribution, consumption, and waste within urban environments. Additionally, there is a crucial need for increased research, policy development, and community engagement to inform sustainable urban food planning initiatives.

Furthermore, fostering partnerships between government agencies, non-governmental organisations, academia, and local communities can facilitate the implementation of innovative strategies to enhance food security, promote nutrition, and create more resilient urban food systems. By prioritising inclusive and participatory planning processes, Tanzania can pave the way for more equitable, healthy, and sustainable urban food environments for its growing population. The following subsections present the main recommendations emerging from the above discussions.

3.1 Integrate planning strategies to improve food access and nutrition outcomes

To address the complex challenges of urban food insecurity and malnutrition in Tanzania integrated urban planning strategies that specifically focus on improving food access and nutrition are needed. This entails developing comprehensive food policy frameworks: establishing and implementing policies that integrate food security and nutrition considerations into urban planning processes. This could include zoning regulations that prioritise the establishment of food markets, community gardens, and urban farms in strategic locations to ensure equitable access to fresh and nutritious foods for all residents.

3.2 Recognise the significant role of small and medium-sized urban centres

Recognising the significant role of small and medium-sized urban centres in shaping food demand and production dynamics, Tanzania stands to benefit from tailored food planning strategies that capitalise on the unique

advantages of these areas. In contrast to large cities, smaller urban centres boast distinct characteristics such as proximity to hinterlands, peri-urban areas, and available land, presenting opportunities to emerge as food security hubs and net food producers. A nuanced approach to food planning is essential, focusing on localised assessments of foodscapes, mapping out food flows, production sites, and challenges to inform targeted interventions. By promoting agro-economic diversification, strengthening local food value chains, and fostering capacity building and knowledge sharing, Tanzania can empower small and medium-sized urban centres to play a pivotal role in enhancing food security and resilience across the country.

Embracing tailored food planning strategies not only addresses the specific needs and potentials of small and medium-sized urban centres but also contributes to broader development objectives. By investing in infrastructure, market linkages, and agricultural extension services, Tanzania can support smallholder farmers in peri-urban and hinterland areas to access markets and increase their incomes, thereby fostering economic growth and poverty alleviation.

3.3 Prioritise food affordability in urban food planning initiatives

In countries like Tanzania where there's a significant gap in food expenditure between affluent and impoverished households, prioritising affordability in urban food planning initiatives is paramount. A key recommendation is the implementation of targeted interventions and policies aimed at alleviating the financial burden of food expenditure on vulnerable populations, especially the poor and very poor. This can be achieved through subsidised food programmes that aim to improve the efficiency of food production and distribution, thereby making healthy and nutritious food more accessible and affordable for low-income households. Collaboration with smallholder farmers, local markets, food retailers and community organisations are important to expand the reach and potential impact of such programmes, also in other outcome areas (e.g. market access for local producers).

In addition, public support for community-led initiatives such as community gardens, urban farms and food cooperatives can provide residents, especially those in underserved neighbourhoods, affordable and locally sourced food options, but also build community resilience and social cohesion. In addition, the establishment of mechanisms to monitor food prices and regulate food markets to prevent price manipulation and ensure fair pricing, especially for staple and essential foods, is essential. This approach can help mitigate the negative impact of food inflation on low-income households and contributes to

improving overall food security. Finally, providing subsidies for public transport or improving transport infrastructure can significantly reduce transport costs, including post-harvest losses, associated with accessing food markets and shops, especially for residents of peri-urban and informal settlements.

3.4 Recognise street vending as a legitimate form of employment and trading

Based on the challenges and importance highlighted in the discussion of street vending and informal food systems in Tanzania, we recommend that street vending street vending be recognised as a legitimate form of employment which contributes significantly to access to nutrition food. This includes reviewing and possibly amending laws and regulations to provide clear guidelines and pathways for street vendors to operate legally, including simplified registration processes and fair taxation mechanisms. Investment in training and capacity-building programmes for street vendors can improve their business skills, food safety practices and financial management thereby strengthening their role in delivering nutritious and safe food. This could involve partnerships with local NGOs, vocational training institutes and business development organisations. In Arusha, for example, Rikolto works with a vocational training institute to train food vendors in various aspects of food handling and recipes. This should be combined with programmes to facilitate access to finance and micro-credit schemes tailored to the needs of street food vendors, enabling them to invest in equipment, improve infrastructure and expand their businesses. This could include enhancing collaboration between microfinance institutions and government agencies to develop inclusive financial products.

In addition, infrastructure needs to be improved in urban areas to provide safe and hygienic spaces for street vendors. This includes the provision of designated vending zones with basic amenities such as sanitation, waste disposal systems and access to clean water. Institutional support for street vendors needs to be improved by creating platforms for dialogue where vendors can engage with local authorities, share concerns and contribute to decision-making processes. This could include the creation of street vendor associations or cooperatives to collectively represent their interests. Finally, it is also important to advocate for the extension of social protection mechanisms, such as health insurance and pension schemes, to street vendors and their employees. This could involve working with government agencies and social welfare organisations to design inclusive social protection programmes. All of this is possible by integrating informal food systems into urban planning processes, recognising their importance in ensuring food security, employment and economic resilience.

This includes integrating informal food markets into spatial planning frameworks and promoting inclusive zoning policies that accommodate street food vending activities.

3.5 Integrate climate and environmental constraints into food systems planning

Considering the growing risks related to climate change and environmental degradation, planners should integrate climate and environmental risks into food systems planning. This includes incorporating climate change projections, such as increased temperatures, extreme precipitation, and drought/flood patterns, into urban development plans to better anticipate and mitigate their impacts on urban and peri-urban agriculture. Cities' climate action plans should include provisions to address food-related challenges exacerbated by climate change. This may include initiatives such as promoting resilient agricultural practices, strengthening food security measures and reducing the environmental footprint of food production, distribution and waste management. Urban planners should also prioritise better integration of urban agriculture into spatial planning processes. This includes identifying suitable areas for urban and peri-urban agriculture, promoting the establishment of nutritious food outlets and farmers' markets, and supporting community gardens and rooftop farming initiatives.

Promoting short supply chains can also help localise food production in and around cities, reducing the environmental impact of food transport and waste. This includes supporting small-scale farmers and producers, facilitating direct marketing channels between producers and consumers, and incentivising sustainable agricultural practices. Sustainable post-harvest logistics and efficient food distribution mechanisms are also essential to minimise food loss and ensure food security. Planners should work to improve infrastructure and transport systems to increase the efficiency and sustainability of food distribution networks. Embracing the circular economy model can help reduce food waste and promote resource efficiency in the food system. This includes initiatives such as composting organic waste, redistributing surplus food to those in need, and recovering valuable nutrients through innovative recycling methods. Urban planners should facilitate partnerships between local stakeholders and government agencies to jointly address food security and climate resilience challenges. This may include the establishment of food councils or similar mechanisms to involve different stakeholders, including communities, farmers, businesses, and civil society organisations, in decision-making and implementation.

3.6. Create an enabling environment to protect land for urban and peri-urban agriculture

Urban agriculture in Tanzania faces significant challenges, particularly in

terms of access to land and tenure security. To address this, urban planners and policy makers need to prioritise measures to secure land access and tenure rights for urban farmers. This includes conducting comprehensive land tenure assessments, regularising informal land use arrangements and establishing clear tenure rights for agricultural activities. In addition, backyard farming regulations need to be developed and enforced to ensure sustainable practices and equitable access to resources. Local authorities should implement bylaws on plot size, livestock ownership and environmental considerations to support the viability of backyard farming. Recognising the importance of urban agriculture in open spaces, especially for vulnerable populations without access to land, is crucial. Efforts should be made to identify suitable open spaces for agricultural use and to support informal urban farmers through training, access to resources and infrastructure development.

Conservation of peri-urban agricultural land is also essential, as it contributes significantly to the urban food system and household livelihoods. Urban planners should prioritise the conservation of peri-urban agricultural land through appropriate zoning regulations, land use planning and land acquisition strategies. A holistic approach to food system planning is also needed. This involves integrating food-related considerations into broader urban development strategies, promoting diversified agricultural practices, and ensuring that residents have access to healthy, culturally appropriate and sustainably produced food. Strengthening cooperation and partnerships between government agencies, civil society organisations and other stakeholders is essential for effective urban agriculture planning. Continued investment in research and innovation is also critical to identifying sustainable practices and mitigating the impacts of climate change and urbanisation on food production. By implementing these recommendations, urban planners and policy makers can contribute to the development of resilient, equitable and sustainable urban food systems in Tanzania, ensuring food security and improving the well-being of urban residents and communities.

3.7 Build capacities to support multi-stakeholder policy formulation and action planning

In Tanzania, particularly in the Arusha and Mbeya regions where Rikolto has extensive experience in food system stakeholder engagement, the implementation of multi-stakeholder policy formulation and action planning (MPAP) methodologies has highlighted several challenges in translating priorities into concrete projects and effective implementation strategies. For example, in Arusha, in collaboration with ICLEI, extensive work was done to engage stakeholders to develop food

system pathways, but these pathways still need to be taken by stakeholders to implement the planned interventions. To overcome these hurdles, it is imperative to invest in capacity-building programmes for local stakeholders involved in food system platforms. Providing training on project formulation and management, stakeholder engagement and financial planning can significantly improve their ability to plan and implement food system initiatives efficiently.

In addition, streamlined coordination mechanisms are crucial to foster collaboration between different government departments, NGOs and stakeholders involved in food system planning. Establishing clear communication channels, holding regular meetings and implementing joint decision-making processes will ensure that priorities are aligned and resources are used effectively. Promoting public-private partnerships can further leverage resources and expertise from both sectors, especially in critical areas such as infrastructure development, which requires significant investment. Rikolto's Multi-Stakeholder ToolKit can be used to build the capacity of stakeholders or development partners to develop strong stakeholder engagement in the planning and implementation of the initiative.

Innovative financing models also have a key role to play in addressing the challenge of high investment costs associated with food system transformation. Exploring opportunities for public-private financing partnerships, seeking grants from international organisations, and implementing community-based financing mechanisms can provide sustainable sources of funding for effective food system planning in Tanzanian municipalities. In addition, strengthening community engagement and advocating for supportive policies at local and national levels are essential steps towards building sustainable and resilient food systems in Tanzania. By implementing these recommendations, stakeholders can address the challenges identified and accelerate progress towards achieving food security and sustainability goals.



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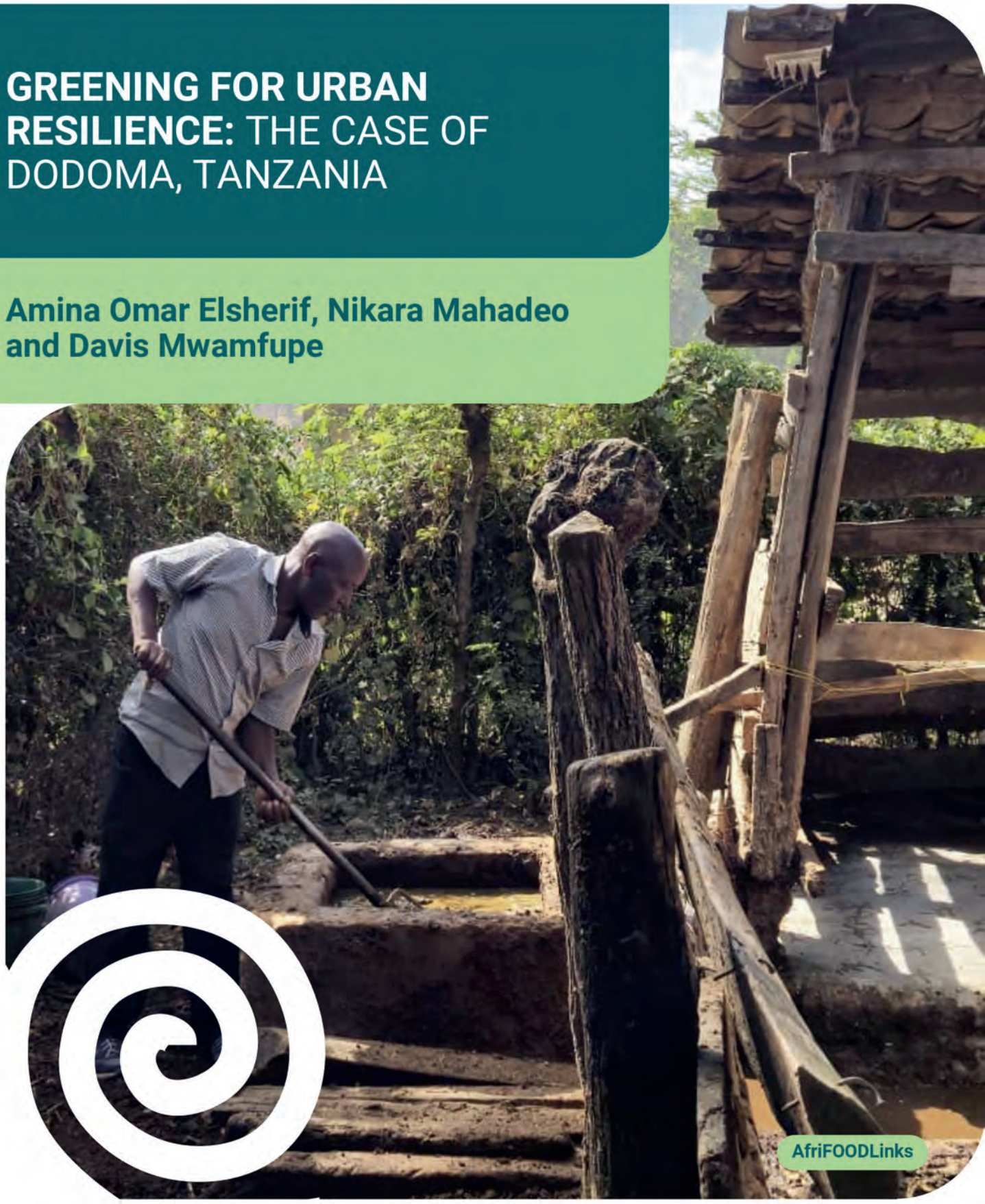
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GREENING FOR URBAN RESILIENCE: THE CASE OF DODOMA, TANZANIA

Amina Omar Elsherif, Nikara Mahadeo and Davis Mwamfupe



AfriFOODLinks

1. Introduction

Climate change, biodiversity loss and rapid urbanisation are global challenges articulated by the 17 Sustainable Development Goals (SDGs) of Agenda 2030 and the Kunming-Montreal Global Biodiversity Framework (GBF). Climatic and biodiversity threats, including floods, droughts, water stress, sea level rise, heat waves, and storms, are also highest on the list of economic and social risks in cities (Senadeera, 2023; WEF, 2024; IPBES, 2019;). Climate change and biodiversity loss are compounding the unprecedented rapid urbanisation experienced in Africa, and contributing to the rapid degradation of natural assets, increasing the vulnerability of urban communities. In response, many African governments have adopted a greening agenda to enhance urban resilience, and reduce the impacts rapid urbanisation and environmental threats. If prioritised and effectively implemented, greening programmes have the potential to create a harmonious relationship between the natural and built environments in cities.

While the process of greening cities worldwide spans nearly all governance levels, local governments remain among the key actors championing the green urban development strategy. Local governments are crucial in addressing vulnerabilities through green infrastructure and public services, land use planning, green building regulations and protecting natural public space or wilderness. In practice, however, we must be aware of opportunities and challenges regarding greening initiatives.

In the case of Dodoma City, it is essential to take stock of what has been done towards green infrastructure planning. We need to capitalise on opportunities to build clean and efficient cities that are resilient to natural disasters without sacrificing sustainable development. The challenges of green infrastructure planning (e.g. institutional barriers and competing priorities) will help identify the issues that need to be addressed as we seek to enhance the ability to address increasing environmental threats. Against this background, this piece seeks to examine the opportunities and challenges related to green infrastructure planning for urban resilience that Dodoma has to offer, discerning lessons on green infrastructural planning that could be relevant to other cities in Tanzania and across Africa.

Defining "green infrastructure"

According to the United Nations Environment Programme (UNEP), green infrastructure is "a network providing the 'ingredients' for solving urban and climatic challenges by building with nature (including stormwater management, climate adaptation, less heat stress, more biodiversity, food

production, better air quality, sustainable energy production, clean water and healthy soils, [...] increased quality of life through recreation and providing shade and shelter in and around towns and cities. Green infrastructure also serves to provide an ecological framework for the social, economic and environmental health of the surroundings." (UNEP, n.d.)

2. Innovative planning towards greening for urban resilience

The contribution of cities in addressing global environmental challenges has long been recognised (Bulkeley & Betsill, 2003). SDG 11, which aims to make cities and human settlements inclusive, safe, resilient and sustainable, recognises that cities are places where economic and technological interventions for climate change adaptation and mitigation have the best potential to be implemented and scaled up. To do this, however, adequate solutions, resources and policies are required.

African cities are undergoing rapid and unplanned land use changes, predominantly due to unprecedented urban expansion. Unplanned growth of cities poses an increasing threat to biodiversity, particularly in peri-urban, rural and conservation areas on urban fringes. African cities often cannot adapt at a rate that enables them to reap positive socioeconomic outcomes from urbanisation, like elsewhere in the world (Dorosh and Thurlow, 2012 cited in Sakketa, 2023; Page et al., 2020). This is primarily due to (i) a sectoral approach to urban planning and development instead of an integrated spatial planning and management approach, and (ii) underinvestment in fundamental physical and social infrastructure for sustainable growth (African Development Bank Group, 2023). Further, inner-city green open spaces are often not maintained or are encroached on by unplanned expansion. Yet, these green open spaces serve as green lungs in the cities, providing ecosystem services (Figure 1) to urban residents. Green infrastructure provides various socioeconomic and cultural benefits to help cities build resilience (Pamukcu-Albers et al., 2021). These benefits include, but are not limited to: cleaner air and water; recreation spaces; flood protection; diverse habitats; and beautiful green spaces (EPA, 2024). Furthermore, green infrastructure creates diverse green spaces in cities that promote urban biodiversity by providing habitats for an array of species (Kattwinnkel et al., 2011; Jim and Chen, 2008). From a health perspective, green infrastructure can encourage a healthy lifestyle through physical activity or relaxation for urban residents.

Urban greening and green infrastructure should be at the centre of urban planning, and should be understood as a vital means of attaining urban resilience (Ramyar, Ackerman and Johnston, 2021). With rapidly growing concerns about climate change and natural degradation in urbanised areas, urban planners urgently need to adopt

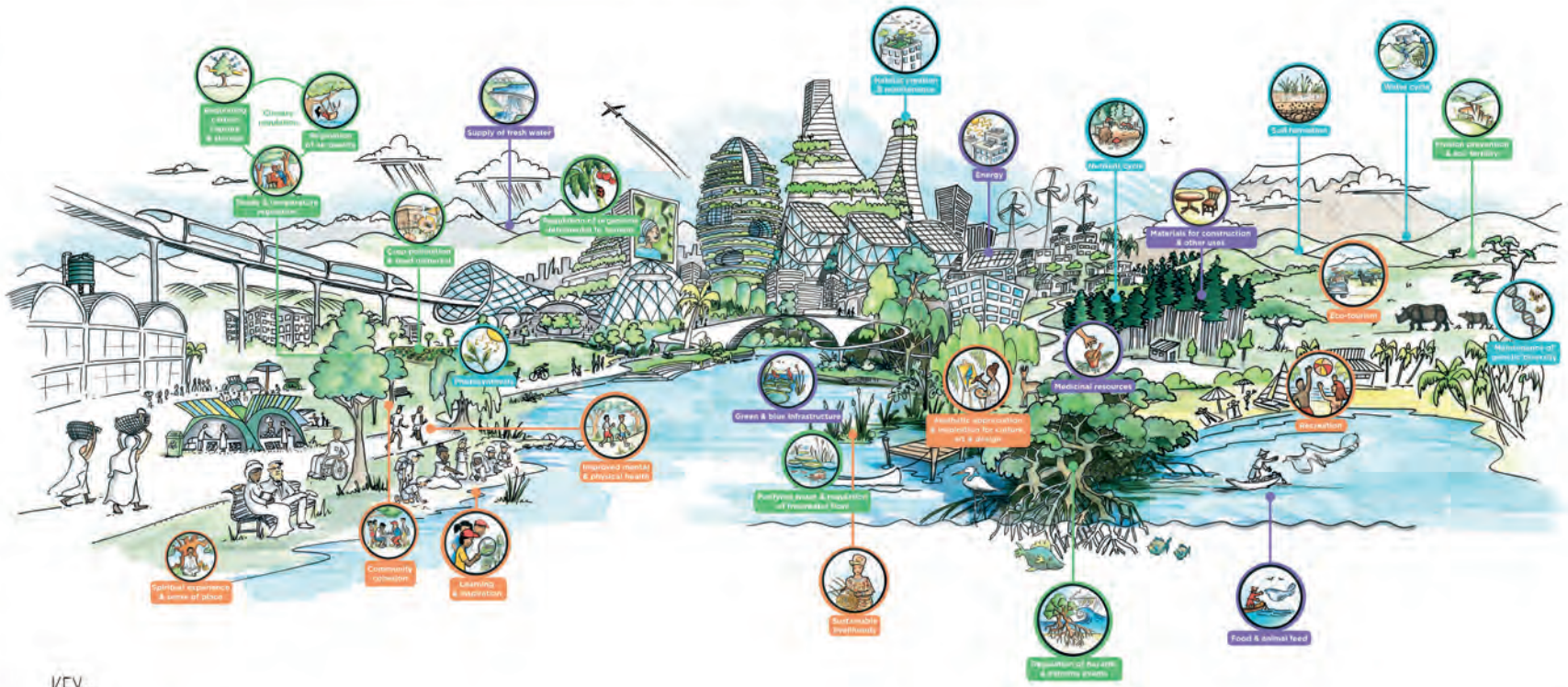
more integrated, adaptive approaches and utilise more innovative tools and methods to enhance urban sustainability and resilience. Urban green infrastructure planning has valuable potential for planners to direct development in ways to buffer cities in the face of adverse impacts through the diverse delivery of ecosystem services.

"Green infrastructure is a game-changer for our cities and communities. It is all about using nature to make our urban areas better for everyone" (Karnik Aswani, 2023).

Figure 1: Ecosystem services derived from urban nature (Source: CBC ICLEI)

THE VALUE OF NATURE IN URBAN LIFE

Nature provides diverse life-supporting and life-enhancing contributions to people in cities and towns. These gifts from nature make human life both possible and worth living. All cities critically depend on healthy interconnected ecosystems within and around them, so it is essential that nature is fully integrated into urban planning and development. There is a growing urgency for collective and large-scale action to protect the biodiversity in and around cities to prevent irreversible loss and damage to the natural systems we depend on.



KEY:

- TANGIBLE THINGS FROM NATURE THAT MEET HUMAN NEEDS
- BENEFITS OBTAINED FROM THE PROCESSES THAT REGULATE THE NATURAL ENVIRONMENT
- NATURE'S GIFTS THAT ENRICH OUR LIVES
- SUPPORTING THE LONG-TERM HEALTH OF THE PLANET

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Greening in Tanzania

Tanzania offers good case studies where investments in green infrastructure result in substantial benefits to cities. For example, the European Union-funded project "Green and Smart Cities" aims to raise the quality of life in cities through green infrastructure investments, local economic growth, circular economy, and e-governance, as part of efforts to improve urban resilience and economic sustainability in Mwanza, Tanga, and Pemba (Amir, 2023).

In addition, Arusha and Moshi are actively developing green cities through various initiatives that promote environmental sustainability, energy efficiency, and green infrastructure projects to create more livable and resilient urban environments in Tanzania. Arusha and Moshi have been recognised as the greenest cities and municipalities in Tanzania respectively. Arusha, located in the northern zone of Tanzania, was awarded the title of the greenest city on Environment Day in 2015. This recognition highlights their efforts towards environmental sustainability and green initiatives. Moshi has frequently won the title of the cleanest municipality in Tanzania. In 2015, it participated in the Earth Hour City Challenge with other Tanzanian towns, such as Dar es Salaam and Mwanza. Moshi outperformed other regions and became the number one cleanest town/municipality in Tanzania (Tunza Eco-generation, 2022).

2.1. The role of local governments in urban greening

Local governments are key actors in their role as planners for sustainable urban development and are at the forefront of responding to climate and biodiversity challenges by providing resources and protecting urban green spaces (WHO, 2016). Local governments can improve urban nature through the development of greening plans, strategies and policies. Green infrastructure planning enhances the ability to deal with climate change on an urban scale, by producing a variety of ecosystem services and having a proactive multi-function and multi-discipline approach. Furthermore, creating an enabling environment which integrates greening will positively influence local governments' abilities to help urban communities become more resilient and achieve environmental, social, and economic benefits.

In addition to developing greening strategies and policies, local governments need to ensure that there is adequate knowledge and capacity to manage and maintain the various forms of greening that are integrated into urban spatial planning. Working with key stakeholders such as local communities can ensure that various aspects of a green infrastructure network (green spaces, food systems, walking and cycling zones, and urban heat island management) are developed and maintained, making urban environments more resilient.

Local governance in Tanzania

In Tanzania, the local government authorities are mandated to maintain good governance; to promote the economic and social welfare of the people in their jurisdiction; and to ensure effectiveness and equitability of quality services delivery. In addition, however, the National Environment Policy (2021) clearly states that local government authorities shall be responsible for implementing all environmental issues in their respective areas of jurisdiction. This would include mainstreaming environmental issues in their development strategies, plans, programmes and projects; promoting protection and conservation of the environment; and raising awareness of environmental management issues in their geographical jurisdiction. Local governments therefore become among the key actors in championing a green urban development strategy for developing a win-win solution that creates a harmonious relationship between the natural and built environments of the cities.

2.2. Green infrastructure in cities

The loss of natural ecosystems in cities makes it more challenging to solve urban problems such as air pollution, the urban heat island effect, water scarcity, local flooding, loss of nature, and lack of social cohesion. Some of these problems can be addressed using conventional engineering, such as stormwater systems or dams; however increased hard surfaces in cities has been shown to increase water runnoff speeds and flooding, reducing infiltration and recapture of water sources, and exacerbating heat-island effect. The increasingly attractive alternative is to use green infrastructure. This is challenging where cities are already built up, such as inner-city areas with concrete paving and dense, high-rise buildings. In these instances, cities can be retrofitted with green infrastructure or natural areas to access the associated benefits through man-made ecosystems. Some examples of green infrastructures that should be included in urban development are:

Green roofs are spaces on top of buildings covered in vegetation, planted in a growing substrate. They are an increasingly popular measure to introduce more greenery in densely built-up areas, without placing demands on additional space. Green roofs have various benefits such as reducing energy consumption, improving air quality, reducing air and noise pollution and the urban heat island effect, and attenuating stormwater runoff (Iwaszuk et al., 2019). They also provide aesthetic improvements, environmental protection, contribute to more urban biodiversity and green spaces in cities, and can improve urban quality of life and human well-being.

Green walls or vertical gardens refer to vegetated vertical surfaces, which are

partially or completely covered by greenery. They are often created by growing plants vertically across a wall or a building facade (Iwaszuk et al., 2019). Given the amount of available wall space, it is considered a sensible strategy for greening dense cities. As with green roofs, vertical gardens are expected to reduce the urban heat island, energy consumption and stormwater runoff. Green walls can also support biodiversity in cities by acting as a "corridor" or "stepping-stone" to facilitate the movement and dispersal of species.

Sustainable Urban Drainage Systems (SUDS) involves the strategic design and use of green infrastructure in urban areas for stormwater management. Often, green infrastructure and built systems are combined to create a hybrid drainage system. The adaptability and flexibility of SuDS mean that it can be incorporated into any environment. Flooding and urban stormwater management are becoming increasingly prevalent in cities, in the face of the changing climate and biodiversity loss. SuDS reduce, slow and retain stormwater runoff, particularly during high rainfall events. Examples of SuDS in urban areas can include constructed wetlands and rainwater harvesting.

Constructed wetlands consist of saturated soils with varying shallow water levels and abundant vegetation. Rainwater harvesting involves capturing and storing stormwater runoff from a roof or other surfaces. This can then be used as a source of water supply for mostly non-potable needs and can also be stored for future use. It has the potential to contribute to improved water supply (particularly in arid regions) and can also be a solution to food security by increasing water supply for urban agriculture and enabling homestead gardening.

Permeable paving allows surface water runoff to infiltrate through the surface, into the ground, by having open parts or using porous materials in its design. It offers several benefits, such as the elimination of surface water runoff, recharging of groundwater, trapping of suspended solids and pollutants, reduction of surface temperatures and reducing the need for retention basins and water collection areas (Iwaszuk et al., 2019).

The integration of greening and green infrastructure has the potential to create a harmonious relationship between the natural and built environments of cities. Many governments across the world, and in Africa, have started to adopt a greening agenda which includes green infrastructure, to enhance urban resilience. While the process of greening cities worldwide spans nearly all governance levels, it is recognised that local governments are crucial in addressing risks and vulnerabilities, by providing green infrastructure and public services, land use planning, and policies and regulations.

3. Growth and greening in Dodoma

Throughout its rich history, the City of Dodoma has recognised the need for greening. Dodoma is in a semi-arid or dry-land environment, therefore the most notable environmental challenge there is drought. This is accompanied by changing rainfall patterns and a destabilisation of cropping and harvesting seasons. In addition, severe land degradation due to overexploitation of natural resources and deforestation, resulting in reduced fuel wood, flooding, and soil erosion are also noted challenges (Currie, 2021). However, greening has long been a part of the Dodoma City Master Plan which was first approved in 1976. The initial plan outlined the need for tree planting and greening initiatives, which have since been undertaken in several ways to address deforestation and land degradation across the city.

From an urban planning perspective, the Dodoma City structure plans are outlined in the Dodoma National Capital City Master Plan (2019-2039) prepared by the Capital Development Authority (CDA), providing a framework for developing Dodoma as the national capital over a twenty-year horizon (refer to Box 5 below). The plans focus on various aspects of urban development, including land use, transportation systems, connectivity to neighbouring regions, and providing services to residents.

History of Dodoma

The Dodoma region is located in the heartland of Tanzania at 6°10'23"S; 35°44'31"E. It is approximately 455 km west of the former capital, Dar es Salaam, and 441 km south of Arusha. Dodoma, officially Dodoma City, is the national capital of the United Republic of Tanzania (Capital Development Authority, 2010). The region is administratively divided into seven districts: Bahi, Chamwino, Chemba, Dodoma, Kondoa, Kongwa, and Mpwapwa.

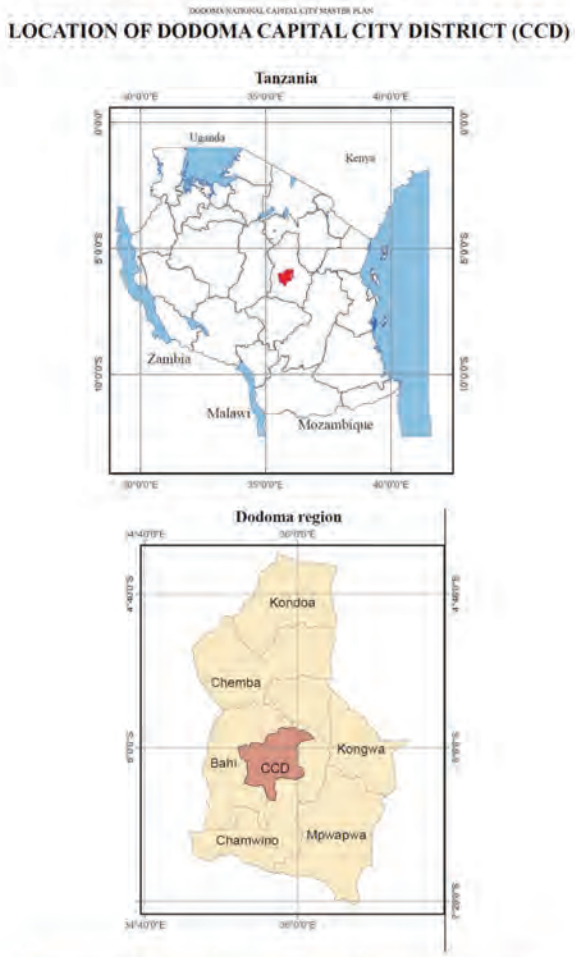


Figure 2: Dodoma City location map (Source: DNCCMP)

Originally a small market town known as Idodomya, the modern Dodoma was initially founded by German colonists in 1907, during the construction of the Tanzanian central railway (Huang et al., 2017). In 1961, Tanzania became an independent republic. Later, in 1973, the Tanzanian government announced the decision to move its capital city from Dar es Salaam to Dodoma. The decision to move the capital was reached democratically following a national referendum, with the main reasons being to create significant social and economic improvements for the central region, establish a regional administrative centre for building states, and capitalise on the centrality and accessibility of Dodoma in the national context.

A state agency (Capital Development Authority) and ministry were established to oversee the transfer and were mandated to prepare plans for the development of Dodoma as the national capital of Tanzania. Due to various reasons, however, the transfer took almost 50 years to complete. The city needs to meet the rapidly rising demand for utilities and community infrastructure and address challenges around infrastructure, transport systems, water supply, and housing, to accommodate government workers and residents alike, amidst the climate and biodiversity crises.

Since the initial Dodoma City Master Plan in 1976, various tree planting and greening initiatives have been undertaken to address deforestation and land degradation. For example, the government, in collaboration with external organisations, made efforts to work on environmental conservation through the Hifadhi Ardhi Dodoma (HADO) project. The project engaged in soil conservation in the Kondoa district and some parts of the former Dodoma Rural District. In addition, to implement Julius Nyerere's vision of transforming Dodoma into a green city, environmental restoration was implemented through tree-planting campaigns. This included the propagation of 335,000 plants and trees, maintenance of natural vegetation, reforestation of 150 hectares, establishment of two horticulture nurseries, and development of controls against tree felling. However, these projects were designed with minimum involvement of the people in the local areas. Furthermore, they were not sustainable, as there were missing links in planning, decision-making, and project implementation (Xinhua, 2017).

The Dodoma Master Plan

Developing plans enable areas of the natural environment to avoid fragmentation and allow land uses to be demarcated to preserve and conserve green areas to prevent encroachment by urban development and to mainstream

urban resilience (Dodoma National Capital City Master Plan, 2019). Aspects of the urban edge and urban-rural linkages are important to consider as they guide the interrelationship between urban and rural land and the complexities surrounding them.

In 1976 a Master Plan was developed for Dodoma. The lack of progress in implementing this plan led to a review and revised plan, which considered the new economic realities in Tanzania (CDA, 1983) providing insights into the shifting urban development strategies. The 1988 structure plan was prepared by Cameron McNamara of Brisbane, Australia, who used the strengths of the 1976 plan to produce a better plan providing an alternative urban concept which could fit better with local culture, the economics of development and the physical terrain surrounding Dodoma. New towns were created of between 90,000 - 120,000 people instead of the organic growth concept of the 1976 plan (CDA, 1988). The concept had the advantages of (i) reducing infrastructure and development costs; (ii) a much larger population that can support a more diversified and larger employment, commercial and services base; (iii) a major centre which forms a central place: (iv) creating a choice of settlement areas in Dodoma; (v) avoiding a monotonous linear expansion of communities; and (vi) recognised a high proportion of people that can only afford to walk or cycle to work.

This plan has since been updated, the most recent version being the Dodoma National Capital City Master Plan (2019 - 2039). This plan includes a landscape improvement plan, which looks at making Dodoma a "biophilic city" through the concept of "greening and bluing the semi-arid Capital City of Dodoma". The concept underscores the fact that while greening evokes all notions of green structures and elements (trees, shrubs, grasses, etc.), bluing refers to creating and utilising water bodies to enhance the landscape quality of the city. As a result, a total of 6,573,292 trees are to be planted across Dodoma Capital City, an average of 1,643,323 trees planted every five years in addition to creating and expanding more water bodies where topography allows. The recommended comprehensive tree planting is consistent with the programme of greening the capital city of Dodoma (Dodoma National Capital City Master Plan, 2019).

In 1988, when the master plan was first revised, more than 20,000 hectares were already developed into forest zones, providing greenery in the areas directly surrounding the city of Dodoma (Lupala & Lupala, 2003). Additionally, a city open space system has been developed, and efforts have been made to monitor the growth and health of young plants.

Despite these efforts, deforestation continues to be an issue, particularly in areas surrounding Dodoma. Vegetation has been cleared for agricultural activities and this trend has aggravated deforestation to devastating scales by causing soil erosion. In addition, the problem of domestic fuel deficiency drives firewood harvesting, exacerbating deforestation through tree cutting (NBS, 2003). Kayombo et al., (2020) and Gayo (2021) also note that many forest patches of native species in the urban areas of the city have been cleared for infrastructure development and fuel wood consumption.

To remediate this, tree planting campaigns in and around Dodoma City have intensified. For example, with financial assistance from Chadwick Textiles, more than 30,000 trees were planted alongside other stakeholders in Dodoma from 2021 to 2022, through the KeshoTutachelewa (Tomorrow is Too Late) campaign. Almost half of these trees were planted during an activity coordinated by the Dodoma City Council and Tanzania Forest Services Agency (TFS), which involved the Human Dignity and Environment Care Foundation (HUDEFO) and Local Government Authorities (LGA). In addition, from 2018 to date, the Greening Dodoma campaigns have been spearheaded by the country's Vice President's office but with a wider scope to cover the whole of the Dodoma region. The campaign is to re-green the country and mitigate against climate change. In schools, a campaign named "Study with a Tree" aims to encourage students to cultivate a culture of protecting the environment. In recent decades, a call for greening the drylands in the country has been prompted by the need to mitigate the effects of climate change and biodiversity loss.

While there has been a strong focus on tree planting in Dodoma and the surrounding regions, there are several other greening initiatives that should be recognised. For example, the Dodoma region is the only place in Tanzania where grapes are grown, but these farms are more concentrated in Dodoma Urban, Bahi, and Chamwino districts. Peri-urban settlements around Dodoma City, such as Mpunguzi, Nkulabi, Hombolo Bwawani, Veyula, Makutupora, and Chahwa, are also famous for vineyards. These farms encourage and promote green open spaces in Dodoma whilst supporting the livelihoods of peri-urban farmers.

Partnerships have also played a pivotal role in greening efforts around Dodoma, such as the greening campaign being implemented in the Medeli Investment area, the University of Dodoma, Magufuli Government City in Mtumba, the Mzakwe catchment basin, and areas surrounding Makutupora National Service camp. Other areas include Njedengwa, Ipagala, the stretch of road from St. Peter Cleaver School (Ihumwa) to the University of Dodoma, and nearly all school compounds in the city. In addition, the Tanzania Urban Resilience Program (TURP) (July 2016 - January 2023) was established to support the government's efforts to increase

resilience to climate and disaster risk. The programme has involved various activities, including flood risk mapping and developing use cases for the data collected to support resilience-building efforts (Tanzania Urban Resilience Program, 2019). Lastly, the Tanzania Green Solutions for Sustainable Urban Development in Dodoma City project, supported by the African Development Bank, has been pivotal in bolstering urban governance, upgrading infrastructure, and enhancing essential services within the city (Green Solutions for Sustainable Urban Development in Dodoma City, 2023). A significant milestone in this endeavour has been the development of a robust policy framework for climate change adaptation and sustainable land management. This framework has been instrumental in reducing pressures on critical infrastructure, safeguarding environmental resources, and fortifying the city's resilience to climate-related risks (Policy Framework in Dodoma, 2022).

Collaboration with international organisations and partners such as the World Wide Fund for Nature, UN-Habitat, and the United Nations Development Programme (UNDP) offers an important opportunity worth developing. A case in point is the partnership between the Institute of Rural Development Planning of Dodoma, the UNDP, UN-Habitat, and the office of the Dodoma Regional Commissioner, which together implemented a robust project for making the capital city green. This project, known as the Ilazo-Swasa Stormwater Project, is part of the Dodoma National Capital City Master Plan (2019 - 2039). This will involve creating a recreational park on the site surrounded by greenery.

CASE STUDY
Greening Dodoma Project

The Greening Dodoma Project is an example of the role private sector firms play in greening initiatives. The Vodacom Tanzania Foundation (VTF) signed a grant agreement with the World Wide Fund for Nature (WWF) to provide USD 131,700 to plant over 71,000 trees across 116.1 hectares in support of the 'Greening Dodoma Project' which is championed by the Vice President's Office (Langen and Savinus, Vodacom Tanzania Foundation and WWF Tanzania, 2019). The project's objective is to support the government's efforts in implementing eco-friendly programmes for tree planting initiatives, solid waste management, control of plastic bags usage, and diversification of livelihoods. Furthermore, it promoted the government's national tree planting initiative and women and youth economic empowerment, through the Plastic Bag Control Program and Solid Waste Management in Dodoma (Langen and Savinus, n.d.). Other key project implementing partners are the City Council of Dodoma (CCD), Tanzania Forest Services Agency (TFS), academic institutions, and local community youth and women groups.



Figure 3: The project's progress (Source: Story Maps Arcgis)

CASE STUDY:
Msalato Community Farm in Dodoma

The Msalato Community Farm in Dodoma was implemented through the INTERACT-Bio project which is funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection through the International Climate Initiative (IKI). This specific project, coordinated by ICLEI Africa and ICLEI Cities Biodiversity Center, together with BORDA Africa and Inhabit Earth, represented a holistic approach to sustainable urban development, integrating components to create a regenerative and productive landscape which mimics natural ecosystems to cultivate diverse, closed-loop systems without waste. This approach promotes sustainable food production and enhances soil health and ecosystem resilience.

Central to the success of the project was the community, who were equipped with the skills and knowledge necessary to cultivate regenerative livelihoods, who contributed to the broader initiative. The residents also actively engaged in the design and implementation process. By empowering the community, the project fosters a sense of ownership and responsibility, ensuring long-term sustainability and success.

The Msalato Community Farm ultimately forms part of a larger vision to establish foodways across Dodoma, which are corridors of productive landscapes that regenerate human communities and natural systems. Furthermore, the project's emphasis on food security and sovereignty resonates with global efforts to build more resilient food systems in the face of environmental challenges and climate change. Through the establishment of productive landscapes and the promotion of regenerative agriculture, the Msalato Community Farm showcases how sustainable food production can be integrated into urban environments, ensuring access to nutritious food for all residents. Furthermore, it exemplifies an innovative and integrated approach to urban development, demonstrating how regenerative agriculture, community engagement, and sustainable resource management can create vibrant and resilient urban landscapes. Serving as a model for other communities paves the way for a greener and more sustainable future for Dodoma and beyond (ICLEI CBC, 2017).



Figure 4: *The site of Msalato Community Farm (Source: ICLEI CBC)*



Figure 5: The community getting involved in discussions on the community farm in June 2021 (Source: ICLEI CBC)

CASE STUDY:
Greening of Nyerere Square

In collaboration with the INTERACT-Bio project, the City Council of Dodoma and environmental stakeholders initiated the greening of Nyerere Square to enhance urban resilience and promote nature-based solutions. Nyerere Square was chosen due to its public accessibility, proximity to amenities, and suitability for revitalisation. Implemented in 2019, by ICLEI Africa, BORDA Africa and city officials, the project design incorporated sustainable irrigation, native flora integration, and community engagement.

One of the project's innovative aspects was implementing subsurface irrigation systems and green roof structures. Greywater collected from nearby handwashing facilities was integrated into the irrigation system as a solution to conserve potable water. This sustainable approach minimises water consumption and contributes to the overall resilience of the green space by providing additional ecosystem services, such as rainwater retention and temperature regulation. In addition, an array of native trees, shrubs, and grasses were planted to enhance biodiversity by attracting pollinators and improving ecological resilience.

Community engagement was paramount throughout the greening process. Stakeholders, including local residents and authorities, were involved in decision making and implementation. This fostered a sense of ownership and ensured sustained maintenance and stewardship of the green space. The launch event, attended by the Lord Mayor of Dodoma and local representatives, underscored the importance of public participation in urban greening initiatives.

In addition to community engagement, the project focused on education and awareness. Information and education materials such as signage and posters were strategically placed to raise awareness about environmental benefits and foster appreciation for nature in urban settings. The greening of Nyerere Square has yielded significant benefits for urban resilience. Ecologically, it has enhanced biodiversity, mitigated urban heat island effects, and improved air quality in Dodoma. Socially, the revitalised square has become a communal gathering space, fostering social interaction and community cohesion. Economically, its enhanced aesthetics and functionality have attracted tourism and stimulated economic activity, promoting sustainable urban development.

The greening of Nyerere Square exemplifies the transformative potential of nature-based solutions in building urban resilience and fostering sustainable development in Dodoma and beyond (INTERACT-Bio, 2021).



Figure 6: Press conference at the Nyerere Square with the Lord Mayor of Dodoma and the project team (Source: INTERACT-Bio webpage)



Figure 7: The site during the construction and greening work (Source: INTERACT-Bio team)



Figure 8: The site after construction while in use by residents (Source: INTERACT-Bio team)

Green open spaces in Dodoma exist in many forms. These initiatives, however, have not been without their challenges, due to limited livelihood opportunities for residents, issues such as livestock grazing, tree felling for fuelwood, demand for land for urban farming, and limited surface water and rainfall (Dodoma City, 2021). What is evident, though, is that by harnessing the power of nature, cities such as Dodoma can create vibrant, resilient, and liveable environments. It is becoming increasingly recognised that further efforts are required specifically to integrate green infrastructure into development priorities and to create green spaces within existing areas of the region and city. The successes of the many greening initiatives position Dodoma as a model city for similar initiatives across Tanzania.

3.1. Challenges and opportunities related to Dodoma's greening initiatives

Reflecting on the implementation of various greening initiatives, some valuable insights for policymakers and urban planners can be discerned. Significant challenges need to be addressed continuously. At the same time, there exist many opportunities to ensure that greening efforts are not futile and are sustained over the long term. Some of these challenges and opportunities are highlighted below.

3.1.1 Challenges

Financial and institutional capacity constraints: Establishing and maintaining green infrastructure requires adequate and sustainable sources of finance. However, with long lists of priorities for local government authorities in most African countries, financial limitation is the most significant challenge affecting the implementation of green initiatives in cities. For example, the Environmental Unit of the City Council of Dodoma receives a minimal budget for greening campaigns. Given the problem of limited funds from the local government authorities, monitoring greening activities suffers the most, as it becomes difficult to conduct follow-ups on initiatives once implementation has concluded.

Lack of integration of greening in urban planning: Drawing from experiences in other parts of Africa, Wijesinghe and Thorn (2021) argue that integrating urban green infrastructure into local government mandates, spatial planning, and targeted action plans remain limited, and Dodoma is no exception. Greening and green infrastructure are not often integrated into spatial and urban planning and are an afterthought, once plans are already in place. This lack of strategic planning has rendered greening campaigns unsustainable. The success of greening cities should benefit from having a medium-term to long-term strategic plan to guide action, which is part of the spatial development

plan and frameworks. This is also partly the reason for the limited budgetary allocation to environmental protection.

Policies and governance: local government authorities have an important role in their respective cities' greening agendas. This role is best realised through different policy development, which earmarks land for greenery and protects it from invasion for other urban land uses. Having a substantial amount of land for green spaces is one thing, but instituting governance measures to protect these spaces is another. It is in the latter that we note some challenges. The governance approach still needs to be revised despite the collaboration between the government and non-governmental actors in the greening of Dodoma. The government still plays a dominant role in developing and managing green urban infrastructure. The collaboration has not gone deep enough to include members of the local communities – the key beneficiaries of the greening initiatives. Empowering local communities to lead and maintain green open spaces could help the city council with management of these areas.

Public awareness: Social constraints on urban greening include the need for more interest from the general public. This is more evident given the relatively dry land conditions in Dodoma. A lack of public awareness of the benefits of urban green spaces may limit public support and funding for green infrastructure projects. The City Council of Dodoma must do more to create awareness among the city's residents. Sometimes, local knowledge and expertise gained from lived experiences are overlooked. Members of the local communities should be asked to host special events, rather than just being invited. The current top-down approach to engaging the local communities is not sustainable and does not empower the communities to appreciate and maintain their open spaces.

Spatial constraints: Tree planting in Dodoma is also hindered by the compactness of the residential plots. Citing experiences from other parts of the developing world, Burton (2002) and Jenks et al. (1996) argue that compact cities have the challenge of limited space to integrate greenery. This could also be evident in some parts of Dodoma where buildings and roads occupy a high proportion of the land surface. This presents constraints for greening, which is further compounded by infrastructural layouts such as electricity cables and water pipes.

Open space management: Sustainable management of green urban spaces poses a significant challenge as cities expand due to population increase. Peri-urban green spaces particularly are threatened due to urban sprawl and densification processes such as infill development (Byomkesh et al., 2012). In addition to the lack of financial resources and capacity, management of green open spaces becomes difficult,

leading to the degradation and encroachment of many such areas.

3.1.2 Opportunities

Newness of the city Dodoma is a relatively new capital city with more land to be planned. This brings the opportunity to allocate more land for green urban spaces and protect it from transformation and invasion. Even with the infrastructural developments currently undertaken in the city, there are opportunities to insist on solutions, such as rainwater harvesting, that would contribute to greening initiatives. Indeed, this is an opportunity that the City Council of Dodoma needs to utilise.

Effective urban planning: The Dodoma City Master Plan for 2019-2039 provides for open spaces for urban and peri-urban agriculture. This is an opportunity that, if correctly harnessed, can contribute to the city's greening efforts. Urban and peri-urban farming have been allocated land in various locations in the city and grape farming is of great significance. This crop not only contributes to greening the city, but it is also an essential source of income for the city's farmers and wine processing industries. Hombolo, Matumbulu, Msalato, Mbabala, Vikonje, and Mapinduzi are all famous for grape farming and are noted for their green environment and contribution in bringing nature into the city. Dodoma's wine industry contributes to the region's cultural identity: the Dodoma Wine Festival is an annual event that promotes the local wine culture and environment. Besides grape farming, areas such as Zinje, Msalato, Mapinduzi, Vikonje, and Hombolo are also crucial for urban and peri-urban agriculture, producing vegetables, fruits, poultry, and dairy products. The City Council of Dodoma needs to ensure that as the city expands outwards, more land is allocated to urban and peri-urban agriculture to bring nature into cities.

Government support and political will: The national government is giving its full support to the greening agenda, and this is noted through the launching of tree planting campaigns, not only in Dodoma but countrywide. In addition to this, the government has occasionally issued policy directives to local government authorities that require them to plant trees to combat the effects of climate change. Tanzania Forest Services (TFS), is a semi-autonomous executive agency tasked with conserving, developing, and utilising national forest and bee resources to meet present and future social, economic, ecological, and cultural needs. In addition, the ruling party, Chama cha Mapinduzi (CCM), has urged the government to take measures to protect the environment and address climate change and its environmental impacts. With a shared political will and continuing support, the City Council of Dodoma can tap into this opportunity to develop green infrastructure strategies and ultimately build urban resilience.

Municipal by-laws: A suitable regulatory environment in the form of by-laws is necessary to support the greening agenda. Despite weak enforcement of by-laws by the City Council of Dodoma, there are still opportunities to strengthen their enforcement. The city council has instituted a requirement for building permits in which one must plant five trees within a residential compound.

Private sector involvement: The private sector's involvement in managing green urban spaces helps to overcome budget constraints and allows better risk-sharing across a long-term investment. The National Microfinance Bank (NMB) stands out in terms of the private sector's contribution to greening initiatives in Dodoma city. The bank's environment conservation initiatives have also added significant value to national and worldwide efforts to preserve the natural world and reverse the impacts of climate change in Dodoma City. NMB is partnering with the Tanzania Forest Service Agency (TFS) and several ministries, including the Ministry of Regional Administration and Local Governments (PO-RALG), to plant at least 1.5 million trees in every local government authority throughout the country.



4. Closing Reflection: The future of greening investments and developments

It is imperative to take a holistic and collaborative approach in envisioning the future of Dodoma's green investments and developments. Such an approach must acknowledge the manifold benefits of green spaces and actively engage the community while leveraging innovative financing mechanisms.

Start early in schools: It all starts within educational institutions. School grounds can be considered as sites that can be cultivated for ecological, pedagogical, and social transformation. Focusing on greening efforts within and around school campuses, rather than solely in students' residential areas, offers distinct advantages. School administrators wield greater control over these spaces, facilitating decision making regarding greening initiatives. Moreover, greening school grounds necessitates minimal financial investment, making it an accessible avenue for initiating change.

Tying greening initiatives to livelihoods: Recognise the symbiotic relationship between green infrastructure and local livelihoods. In Dodoma, as in many developing regions, green structures can serve as catalysts for poverty alleviation and sustainable livelihood provision.

Urban agriculture, prevalent in African cities, particularly in peri-urban areas and among low-income households, has the potential for integrating green initiatives into livelihood strategies. An example of linking greening initiatives to local people's livelihoods is the Re-greening Dodoma programme which involves championing farmers who share knowledge with rural communities, reaching over 200,000 households and restoring millions of trees through methods like Kisiki Hai (Kihupi, 2020). Additionally, the partnership between LEAD Foundation and Justdiggit in Dodoma aims to restore soils, re-green the area, and improve land productivity by training local farmers in techniques like farmer managed natural regeneration (FMNR) and rainwater harvesting, resulting in the regeneration of millions of trees and increased drought resilience, food production, and household income.

Amplifying incentives: Incentive mechanisms serve as indispensable complements to regulatory frameworks. Beyond driving positive change, incentives bolster public acceptance of regulatory interventions. This approach is especially pertinent in developing contexts like Dodoma, where familiarity with green infrastructure may be limited.

Beginning with incentives before transitioning to regulatory measures not only encourages early adopters but also fosters a foundational knowledge base. Some examples of socioeconomic incentives for greening in Dodoma include the provision of tree seedlings, fertilizer, improved seeds, beekeeping inputs, and education programmes as identified in a study focusing on sustainable environmental conservation in the Kondoa Rehabilitated Areas (KRA) of Dodoma. The Hifadhi Ardhi Dodoma (HADO) project, which commenced in 1973 across various areas of the Dodoma region, aimed to mitigate land degradation through physical soil conservation measures. These measures included afforestation, adoption of appropriate cultivation methods, construction of contour bands to control runoff, and vegetation planting in riverbeds. Notably, as part of the project's interventions, all human activities and livestock were evicted from the 1,256 km2 of Kondoa Eroded Areas in 1979. This proactive step led to swift land rehabilitation, resulting in significant improvements in soil fertility and vegetation growth in the most severely affected regions, later recognised as the Kondoa Rehabilitated Areas (Chami, 2016).

By-law enforcement: Transitioning towards inclusive governance models necessitates robust enforcement of existing by-laws and regulations governing urban green spaces. Empowering non-state actors to actively participate in enforcement mechanisms marks a shift towards collaborative governance. Mechanisms ensuring compliance with city regulations play a pivotal role in sustaining green infrastructure initiatives.

Expanding the definition of greening: Moving beyond conventional literature, the scope of greening initiatives must encompass not only tree planting within urban spaces but also the preservation of existing natural flora in peri-urban areas, riverbanks, and other ecologically significant zones. This inclusive approach can foster broader community engagement and contribute to biodiversity preservation.

It is undeniable that greening Dodoma and other African cities is not only an environmental imperative but also a moral imperative. Concerted efforts are underway in Dodoma to transform the city into a biophilic oasis through the ambitious greening and blueing initiative outlined in the Dodoma National Capital City Master Plan. By planting millions of trees and expanding water bodies, Dodoma aims to harmonise the natural and built environments, setting a precedent for other cities to follow. It is vital to recognise that local governments play a pivotal role in integrating green infrastructure into urban planning frameworks. They have the mandate to enact environmental policies and manage local resources, so they foster partnerships with stakeholders and leverage innovative approaches to drive meaningful change and usher in a new era of sustainable urban development.

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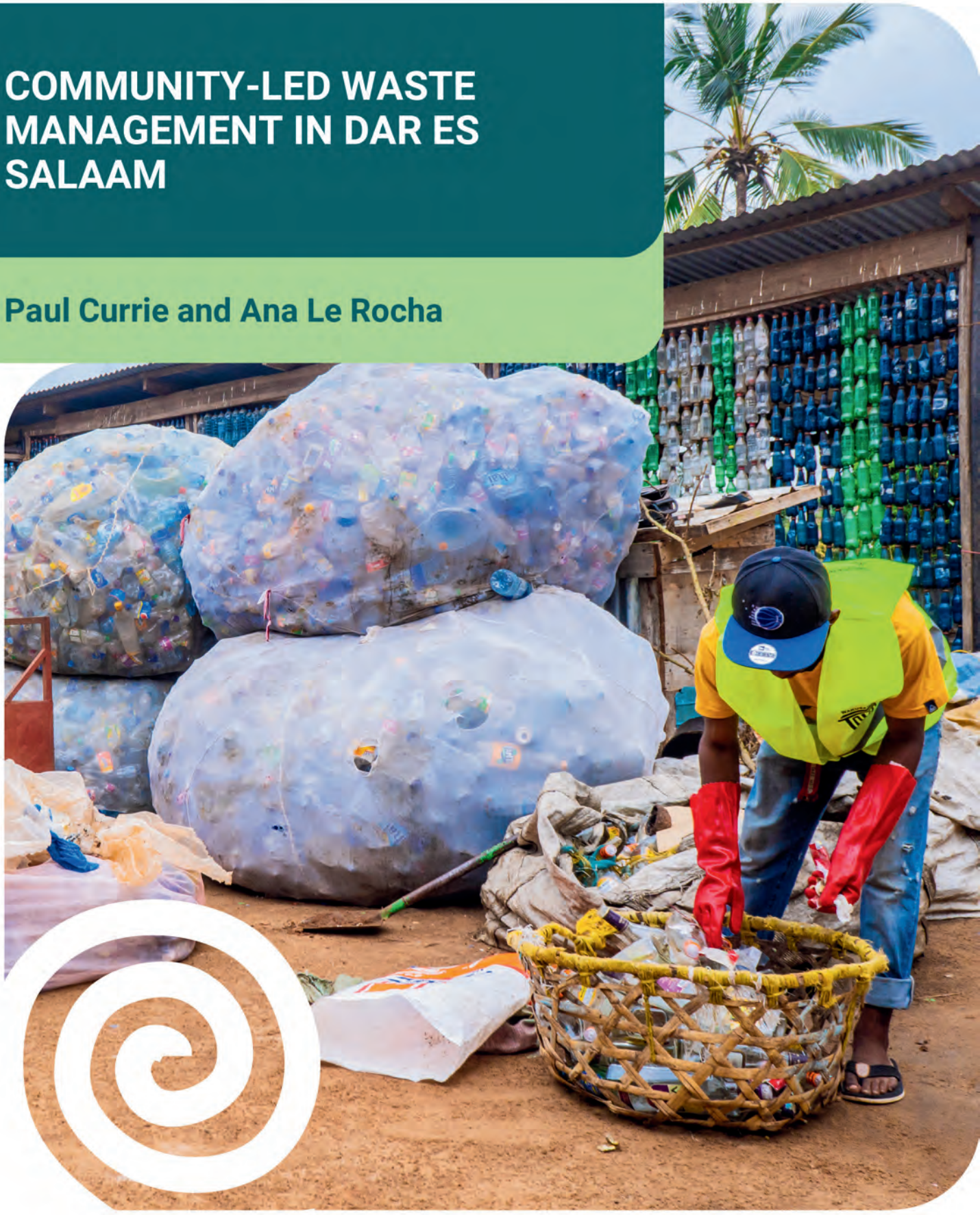
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COMMUNITY-LED WASTE MANAGEMENT IN DAR ES SALAAM

Paul Currie and Ana Le Rocha



> Community-led initiatives often require surrendering the plans to make space for meaningful, collective work.

> Planning is the seed, but relationships are what move this work forward.

> We frequently blame a lack of education or a lack of awareness as the key problem, but this is not really the case. We do not actually provide people with the systems that solve the structural problems.



NIPE FAGIO | ZERO WASTE (TAKA SIFURI)

Context for this conversation

Rapid increases in urban population place demand for urban services beyond a threshold that local governments are able to meet satisfactorily. Additionally, the continued proliferation of informal settlements which are often disconnected from formal service delivery mechanisms excludes residents from the benefits of urban services. Noting that a considerable number of people living in urban areas live in informal settlements, it is important to develop innovative approaches that aim to work with informality rather than against it. Key areas requiring attention in informal communities include access to water and sanitation; solid waste management; and accessibility (roads, public space and storm water drainage). Of particular concern is the increase in the volume of waste that isn't directed to existing urban service lines, which creates a public health hazard, reducing people's immunity to disease with more exposure to chemical pollutants and disease vectors, while degrading the environment, and reducing the aspirational quality of the community.

Approaches that involve mobilisation of communities in development and support of alternative waste management practices have been seen to be impactful within informal contexts. These alternative waste management practices should also be integrated with the existing urban service delivery mechanisms to support a safe circular economy approach that makes use of existing material flows rather than consistently producing more. These should be linked to national level policies that guide waste management practices. The provision of these services also upholds the Constitution of the United Republic of Tanzania under Act no.14, which advocates that "every person has the right to live and to the protection of his life by the society in accordance with the law". This can be interpreted to mean that all citizens are entitled to a healthy environment. Policies highlight the decentralisation of environmental management which encompasses aspects of waste management. Furthermore, the Tanzania National Solid Waste Management Strategy highlights the efforts in engaging with multiple stakeholders including community-based organisations to address and improve solid waste management through a participatory approach. However, an integrated approach involving various stakeholders especially from the community level is imperative to act as a catalyst for the improvement and maintenance of water and sanitation infrastructure in the urban environment.



What follows is a reflective conversation, organised through a series of key questions, that unpacks the tensions between top-down and bottom-up development process, providing insight into how community led processes offer value and require a different worldview to implement effectively.

How are you engaging with the Waste Management issue? And with the interdependencies of waste with other sectors?

Waste management is a problem for which we have never developed real solutions in Tanzania, neither in urban or rural Tanzania: both of them don't actually have solutions for waste management. And traditionally speaking, it used to be a manageable issue because we didn't have the sheer amount of solid waste we currently have and most of the waste then was organic. Now, with the change in production and consumption patterns, this is changing. About 75% of all the waste we find in Tanzania is produced by Tanzanian industry. This modern business model that is centred around disposable, low-value packaging, without a clear recovery plan, means that waste management has become a much more significant problem. In a city like Dar es Salaam, there is a lot of disparity in the way that people live, where you see that people who cannot afford drinking water or sanitation, find themselves drinking water from an environment that's completely polluted with water bottles that are not from their own consumption. Basically, the production model that we have doesn't take people's needs into account and pollutes the environment.

We frequently blame a lack of education or a lack of awareness as the key problem, but this is not really the case. We do not actually provide people with the systems that solve the structural problem. You cannot ask people to be mindful of how they dispose of their waste when they do not have waste collection systems. We cannot ask people not to dump waste somewhere if they don't have collection services. These systemic problems require systemic solutions. If we want to have a solution to this problem, we need to collectively design a system that works for the people and we know, when talking about systems, that everything is interdependent.

Lack of waste management results in environmental damage, results in poor health, results in flooding, creates breeding grounds for mosquitoes, pollutes drinking water and so on. These intersections are frequently overlooked by decision makers and by individuals in the community. What is most upsetting is that despite waste being everywhere and being extremely visible in the country, we have unfortunately reached the point in which we've gotten used to this scene. We've gotten used to seeing waste everywhere, and used to the idea that there isn't a solution to the problem, and

therefore there is a reduced energy to actually find a solution.

The paradigm that you're working on is around Zero Waste. What does this mean? How do we know that we're in a zero waste reality? What does this look like? How has your zero waste work in cities evolved in Tanzania?

The Zero Waste society, or zero waste systems that we're trying to implement are effectively systems that aim to produce zero waste. More ambitiously, they also aim to have zero waste being generated, and this requires that we address both production and consumption systems. There are a whole set of waste streams that we must then engage with and think about how we redesign or repurpose and also regulate production. For example, with organic waste, we can do compost, we can work with black soldier flies, there's biogas and many systems that can effectively treat organic waste and turn it into something useful. These systems can also generate employment and promote social justice. There are some easily-recyclable wastes, but the problem is that we don't have good solutions for removing these recyclable streams from other waste streams. So here, upstream solutions are required for our downstream solutions to work. Unless we change what's being produced, we'll never be able to manage what's being disposed of.

The Zero Waste society is trying to promote a radical perspective that is not afraid of transitioning out of the current waste system or of phasing out specific waste streams that we shouldn't be producing in the first place. Our work is about making sure that people are aware that real waste management only happens if you have a vision of the whole life cycle, tracking these materials from production through consumption and disposal, and trying to insist that there are no simple solutions, like dumping or burning, that will make the whole problem go away. Instead we are showing that you have to tangle with the complexity of the whole life cycle, otherwise we end up shifting the problem from one place to another: solving the waste burden, but creating a health burden or an environmental burden instead. For this work, there is a vital policy component; there's a lot that the government can do just through policy. No one else can do this at all, and it is key to restricting or enabling others to do their work. As we mentioned, community is vital to ensure that such policies are developed in an appropriate way and that they are then implemented effectively.

We started working on the zero waste systems in Tanzania in 2019 and it's been quite a journey so far. We have worked with a couple of communities in Dar Es Salaam, and we now have communities working in Arusha, Zanzibar, and soon, Tanga and Mwanza. Our approach to community engagement is to try and understand, again and again, what people value and use that as an entry point. If you go to

people and talk about the environment and people don't have solutions to their own specific, tangible problems, such as water, food or shelter, then they may not be very receptive to your interest in the environment. But if we talk to people about health, about their livelihoods, that's something more relatable, particularly in low income communities, and so we start there and see how their needs specifically link to the questions that we're exploring about waste and the environment. Once we've explored these system linkages together, and if there is interest to proceed, we support with community education and begin discussions around segregation at source. From here, we form a zero waste cooperative.

Through this method, we've been able to register the first robust waste cooperative in the country, and it basically opened the door for waste-related cooperatives to work in Tanzania and also for waste pickers groups to register themselves. In our framing, the Zero Waste cooperative becomes the head of this waste system because they're responsible for community education and for the actual collection and management of waste. They make sure that segregation at source is being done at household level and make sure that it is accurate. For you to have your waste collected at home, you have to make sure that it is properly segregated. And then each of these four streams are taken to a decentralised material recovery facility that is just for that community and its cooperative members. There, the cooperative separates it even further, beyond what people have already separated at home. In some cases, there's integration with black soldier fly commercial producers that would like the organic waste as feedstock for their processes. Recyclables are all sorted and stored, and then the final worry is the residual waste, which you can't do anything with; that gets stored.

The value addition of this process is threefold: first, there is proper record keeping of each of these streams of waste, giving us a clearer image of production, consumption and waste typologies. When each stream reaches a certain volume - the appropriate volume to sell if it's recyclable, or to fill a disposal truck, if it's residuals - that stored recyclable or residual is then picked up by the company or municipal truck. So, second, we are effectively reducing the number of trips that the municipality has to take from neighbourhood to landfill, and we're ensuring that the municipality doesn't have to worry about last mile collection or household collection. We have seen these trips go down to two trips a month, compared to a trip every couple of days. Third, we are able to recover about 70 to 85% of usable waste out of broader household waste, which is an incredible diversion rate compared to any African city and even global rates, with the co-benefits of health and environmental safety and protection.

The ethos of this approach is to try and

manage as much waste as possible at the local level, particularly through decentralised organic waste treatment processes. But anything that can't be managed at the local level gets passed on to the appropriate destination. The process of storing the waste means that you have a sense of reliability of the quantities of waste that arrive by truck, because it only goes once it passes a certain volume. The thing that I find most beautiful about this system is how Zero Waste cooperative members become integral parts of their community by providing these services to people and demonstrating a very clear value that they're offering, building relationships with the very household they're servicing. Through this, they're regaining a form of social status that has been lost through lack of opportunities. I'm not saying that the value wasn't there beforehand, but it wasn't recognized. Through this form of cooperative that then demonstrates very robust implementation, many communities have fully recognized this value again. There are, of course, variations across cities, across neighbourhoods, because distances to different facilities vary, and in some cases, the recycling is based on what the market needs, not based on what material is actually showing up from the households. So for example, in Zanzibar, they have less recycling infrastructure, so here they're still trying to work out what to do with the recyclable streams. This mismatch of market demand and actual waste creation is something that now benefits from clear environmental policy.

Through this process, what are the links that you see with the Zero Waste work led by communities in terms of improving the resilience in these cities?

Well in this sector, one of the things people frequently say about Tanzania is how hard it is to implement the Zero Waste model or to implement anything solid waste management related, because they usually fail to get the community to embrace it. In my opinion, that's because waste management has typically been undertaken in a top-down model that comes without listening to, or involving or engaging, community in collectively designing the solution. So people see something being imposed from outside that doesn't actually resonate with their articulated needs, particularly their long term perspectives. Therefore it is understandable that they don't embrace it. For example, in Tanzania, we have bylaws that say segregation at source is a requirement, yet the municipalities tend to hire, or give contracts to, companies that undertake collection without the segregation at source embedded in their systems. What this means is that you have a law that compels households to separate but the company will arrive and put each of the separated streams into one truck, which instantly devalues the efforts of the household to separate, and delegitimates the lawful requirement to separate. People are smart enough to notice this. And these simple mistakes

fundamentally reduce buy-in to a systematic approach. It takes a lot of time to rebuild this interest, trust and buy-in.

Our zero waste approach takes on this reality and follows a bottom up approach, starting with the community, interviewing community members, running community engagements to build mutual understanding and arrive at workable solutions from within. By having community level material recovery facilities, people can see how their waste is being separated, stored and processed, and that builds confidence that their efforts are leading to the outcomes that they discussed. Many people in the community now have jobs that provide some income, that allow them to gain a livelihood from the zero waste activities, so wealth is being created within these communities rather than being extracted from them. This very purposeful integration within the community is the heart of the model that makes the Zero Waste approach so successful.

The fact that this integration happens on a daily basis is something visible and tangible, not a simple once off project, but something reliable. Waste collectors come following a certain schedule. They check that separation of the waste has been done in the way that they've guided and if there's any mistake, then they engage people right there about how to do it properly. And this builds a set of trust with the people offering the service to the degree where people are now trusted to enter people's backyards to collect waste when the owner is not home.

What are the principles that you witness that have made your engagements more successful?

Through many engagements we've had with the development sector, it seems that many people don't quite know how to do community engagement very well, even if they speak about it. I think one of the things that we frequently miss when doing community-led initiatives is to trust the process. This requires us to surrender our neat plans to a degree: whatever we've designed or modelled ahead of time may not be what actually emerges when we go into implementation with the community. We need to embrace what organically emerges and how the community interprets and adapts these plans to their own needs. If we remain too rigid about ensuring that the perfectly modelled project must be done our way, it may not be embraced. As I noted, the day to day engagement and arriving at a set of routines with community members allows them to take on this planning approach, contribute to the fundraising, and slowly start to see solutions emerge in the way that they believe they should. Each cooperative will adapt to the specific community that it's engaging with and, again, each neighbourhood will end up having a slightly different approach to the others.

It takes a huge amount of bravery to

invite uncertainty into your organisational planning, to surrender. And I think these approaches are still not mainstreamed. Instead, the main perspective on waste management tends to be about building a large technological waste treatment plant and making assumptions about how the waste will arrive there. This is often imagined through a top-down deployment of expensive collection vehicle fleets, many of which cannot access informal or unplanned areas, and which require external expertise to maintain and repair. The social and institutional work that needs to be done to ensure that people have bought in and that feedstock can be made available for this plant is typically forgotten. I think we need to celebrate and invest in more of these bottom-up approaches that invite uncertainty into the process and demonstrate that community-led initiatives are more viable. We also need to demonstrate that community initiatives also need to be purposeful as they're not simply going to emerge when a new plant is built.

Could you describe a little bit what this has looked like in Dar es Salaam, given that you've been working to convince funders to shift away from a focus on large plants and into a bit more of a decentralised approach?

In general, when it comes to solid waste management, most people agree that it's easier to do when you don't need to handle people, given that people add many layers of complication with multiple perspectives and expectations. But ignoring people simply doesn't work, because people in households are where solid waste will typically emerge and where solid waste management needs to start. You cannot think about solid waste management without separation at source. No matter what solution you are trying to follow, however centralised, expensive or supposedly viable, it simply won't work without segregation at source. Even something as simple as a landfill: these solutions are built and supposed to last many, many years, but suddenly fill up in three to four, because there is no diversion of the valuable elements of waste.

What we argue is that you cannot run before you walk. You cannot implement solid waste management before engaging communities, before engaging people. Thinking about the many, many, many years of solid waste management conversations taking place in Tanzania and in Dar es Salaam, I think we have finally arrived at the realisation that it doesn't matter what type of waste model you're trying to implement, people must be central to how that implementation takes place. Similarly, the idea of decentralised waste management at the community level has become more prominent given the costs associated with transporting waste and the potential value that processing waste can have in the actual community.

How do we go from narrative change to meaningful change on the ground? How are you making the value proposition work for funders?

I do think it's an interesting question about narrative shifts, and that's certainly an important thing for us to do. However, I do think many funders genuinely are interested in working in these areas, but their systems demand a very specific value proposition. So I think the key question that I'm working on is: how do we come up with a clear proposition of value for this type of work?

I believe that every organisation has a specific strength, and we need to acknowledge the different types of strengths that are needed to change an entire system. For me, it's about coming to a common agreement about the specific goal that we're trying to achieve, and having a very clear understanding of what the benefits are from these multiple agendas and making sure that they converge. I think there are many moments where the different players are simply not in agreement. For example, if incineration is brought onto the table, I wouldn't be able to contribute to the broader process. But for 80% of the time, I think there are mainly convergences between the different players who genuinely want to improve waste management in Dar es Salaam. So if we try to allow everyone to play in the space, there's strength in this system, and it's quite robust; we can acknowledge that there are a set of different niches that each organisation fills. I am not the right person to design and build a landfill and the big funders, like the World Bank, are not the right people to do community-led solid waste management. I've already noted the unique position of government to develop policy. By acknowledging this, we can see the instant need for partnership and that we all have a role to play. The funders of large scale infrastructure are vital. The people who mobilise communities are vital, and government who set the policy and enabling environment are vital. By engaging honestly about these different strengths and roles, we can start to see a broader systems change.

I'm actually currently working with the World Bank now because they are finally planning to incorporate our zero waste model into their solid waste management master plan for Dar es Salaam. What we've been working on is engaging with their incredibly centralised, expensive approach that they are quite committed to, but discussing with them some specific concepts. While they are certainly still keen to build landfills, we have an understanding that we will support in ensuring effective community engagement around collection and separation. We also have agreement that we won't continue to work on this, if incineration is considered. So they plan to build landfills, transit stations, the road infrastructure, and many of these other, typically large capital projects. Where we have been advocating with

them, and where there is interest, is around how we engage communities, how we generate employment, and how we ensure that social justice and environmental justice are considered in these journeys. In this way, we are pushing to ensure that the system that's implemented works for the people, and that people will actually embrace it.

So the agreement that we have is that we build the bottom part and they build the top part. And basically we then have a system in which we are managing waste all the way from the household to decentralised material recovery facilities, and they then take on the materials from these facilities further into the broader Waste Management System. This is an experiment. We're trying to make it work for Dar es Salaam.

How does your zero waste approach contribute to urban resilience?

I think for me, what needs to come out of this piece is the fact that you cannot achieve urban resilience without engaging the communities. Resilience is not a top to bottom approach, but needs to be a collectively built process. Without this collective agreement, you can come up with a very convincing system on paper, but people will find a way to ensure that it does not work. That's something we're very good at. If we feel that the system is not of our own making, we're very good at making it fail. This is not just about raising awareness, or about capacity building; it's actually about developing systems that speak to the problems that people have, supporting the specific articulation of those problems, and then ensuring that people can contribute the very solutions that they have been working on already. That's the key route to resilience for me.

In relation to resilience in the waste system, I believe there are two main elements that need to be solved; firstly segregation at source, which is what enables everything else to happen. Without it, you can make many large waste treatment investments but they will absolutely not work. We have a lot of experience in Dar es Salaam with this type of systems failure. I've also shared how we are effectively doing separation.

The second important element is social justice. Social justice in relation to solid waste management has a number of components; here, we're talking about a lot of people who've been neglected by every single system that's been proposed. And so there's something very powerful about going into a low income community where people don't necessarily have access to many services, saying I'm here and I care about you, I care about your environment, I care about your livelihoods, and I'm here to help create a solution together with you, so that we can solve this problem. It's very powerful. Simply, the act of acknowledging groups and offering support is well received in communities that have been neglected for

generations. Again, it takes a while to connect people's own articulations of their challenges to the challenges that you're seeing. But this is often easier than one may expect. I think about a simple example of women looking after children in their house and seeing waste outside. No mother wants their kids to be playing in that waste. So if you can come and offer a proposition that removes that waste, you will have instant buy-in. You don't need to do much to convince a mother who is keeping their kids from playing out in the waste that cleaning the environment is important.

Doing that work together and arriving at the specific solutions or approaches that people feel excited by, or drawing the connections between the solutions that they want to see and the solutions that you're proposing with regards to waste can be very powerful. As I said, people who are providing a collection service may not have been valued before. Through these types of interventions, we can elevate the social status of people doing this work; we can see how important it is for people to have a societal role, and how much harm it does if they feel that they are not contributing to broader societal goals.

Many people in the cooperatives didn't have identification documents, didn't have a birth certificate, and now many of them have passports and have actually travelled outside the country to talk about their work and to help implement Zero Waste processes in other countries and communities. This is something that fills me with hope about this approach; people have seen direct benefit in their own communities. We've seen people who felt purposeless, now taking their purpose to many spaces.

Closing reflection?

If I were to leave you with one closing reflection, it's that, in general, when people are given a good choice, they will take it. We should believe in people more than we do. Yes, they can bring complications because they don't see their own needs represented in externally-led processes. But if you engage earnestly and honestly with what people need, they can become your strongest allies. I have huge faith that people can drive the change that we need to see, as long as we're engaging openly with them and listening to their needs properly.

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