



## Review Article

## Barriers to environmental governance for sustainable urban development

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## ABSTRACT

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Cities globally are estimated to double their population by 2050 thereby increasing the necessity to underscore sustainability. Projections of economic growth, social equality, infrastructural development in urban centers and cities highlight the precept of environmental governance in attaining sustainable urban development. Untold impacts of unstructured urban development become barriers to environmental governance particularly on pillars of governance such as transparency and equity. Further, these barriers to environmental governance focus on institutional, financial and policy frameworks that have not been developed for sustainable urban development. The implied cost of urban planning and reduced urban personnel enhance barriers for environmental governance and sustainable urban development. The study utilized an exploratory research design which employed secondary data for analysis and desktop reviews on environmental governance and sustainable urban development for emerging cities globally and those in existence. Findings of the study illustrate the pivotal role of environmental governance for sustainable urban development with a keen focus on institutions, financial prudence and enhanced policy frameworks. The findings further underscore the necessity to amalgamate environmental governance and urban development with a view of fostering sustainability in an increasing urban and city population. Overcoming the barriers to environmental governance cements sustainability for urban centers and safeguards the future growth of sustainable cities.

## 1. Introduction

City populations anticipated to live in cities and urban centers are expected to raise to about 85% by the end of the century (Hansson et al., 2019a). Notably, developing countries' cities suffer from a myriad of problems associated with urban management and development (Jiboye, 2011; Meyer & Auriacombe, 2019). These problems have a huge toll on the environmental performance of those urban centers and more so cities with no governance structures (Angoua et al., 2018; Hansson et al., 2019a; Meyer & Auriacombe, 2019). Recently, Kenya has been undergoing rapid urbanization and industrialization since the onset of devolution in 2013 and creation of county governments (Myers, 2015; Nairobi Metro 2030, 2008; UN-HABITAT, 2009).

A retrospect review of the urban development of Kenya and more so Nairobi city explicates various undesired effects on the environment resulting from these urban development (Nyström et al., 2005; Rasoolimanesh et al., 2019; Stepputat et al., 2016). In fact, it could be alleged that urban

development processes, pegged on national policy over the past decade, are associated with a wide range of problems and impacts on the environment (Hegazy et al., 2017; Meyer & Auriacombe, 2019; Nairobi Metro 2030, 2008; Stepputat et al., 2016). In this respect, sustainability remains the most trending issue in developing urban communities globally with a view of sustainable urban development (Myers, 2015; Nyström et al., 2005; Stepputat et al., 2016).

Great efforts have been made through sustainable urban design to enhance the quality of life through creation of greener spaces which foster an enhanced environment in urban centers (Meyer & Auriacombe, 2019; Rasoolimanesh et al., 2019). Furthermore, it is advocated that to make these communities sustainable, a comprehensive management of their systems is essential coupled with financial management and a robust urban policy framework for sustainable urban development (Evans, 2019; Macke et al., 2019; Webb et al., 2018). Interestingly, urban population movement and growth contributes to the dramatic growth of cities

and generally, having an immense environmental problems emanating from weak governance structures (Myers, 2015; Webb et al., 2018). Like cities in developing countries, Nairobi city suffers from deterioration in all life systems of the built environments with its transition from the 'green city in the sun to a concrete jungle (Jiboye, 2011; Meyer & Auriacombe, 2019; Myers, 2015).

Furthermore, focusing on the institutional barrier to environmental governance for sustainable urban development, there have been numerous environmental problems caused by poor environmental planning and lack of environmental issues being fully studied and considered during the preparation of spatial and detailed plans (Angoua et al., 2018; Darhamsyah, 2019; Rasoolimanesh et al., 2019). Further, institutions like NEMA that are mandated to oversee Environmental Impact Assessments and environmental audits are plagued by lack of clarity on environmental issues arising from unplanned rapid urban development. Nairobi County urban planning documents require a collaborative approach with NEMA to cater for the environment impacts as evidenced by the rapid urban development (Meyer & Auriacombe, 2019; Steputat et al., 2016; Webb et al., 2018). In addition, what exacerbates the problem is the gap between theoretical sustainable systems and corresponding practical systems aggravated by non-comprehensive urban development policies and regulations (Darhamsyah, 2019; Hansson et al., 2019a; Macke et al., 2019).

There is no doubt that protecting the environment through mainstreaming environment into urban development plans and implementing environmental policy and other environmental legislations is significant for urban development and economic growth (Myers, 2015; World Bank, 2020). Sustainable development for urban development depends on the policy, institutional and financial frameworks being merged with environmental governance as well as on the implementation capacity of urban planners (Darhamsyah, 2019; Rasoolimanesh et al., 2019; Sofeska, 2016; Valencia et al., 2019). The major obstacles to sustainable urban development are associated with insufficient implementation of the existing environmental governance framework thus impeding sustainable urban development which relies heavily on institutions, finances and policy frameworks (Darhamsyah, 2019; Valencia et al., 2019).

In addition, weak governance in projects is an undesirable environmental outcome stifling sustainable urban development. Conversely, good environmental governance has potency to regulate and enforce environmentally sound policies and sustainable use of the environment and urban development safeguarding future generations (Rasoolimanesh et al., 2019; Webb et al., 2018). Barriers to environmental governance for sustainable urban development revolve around improved institutional such as NEMA and Nairobi County Urban Planning office, financial and policy frameworks that support the capacity of such institutions in the implementation and enforcement of environmental regulations (Sofeska, 2016; Steputat et al., 2016).

## 2. Materials and Methods

This study used an exploratory research design, taking

into consideration both qualitative and quantitative methods. Data used were gathered from the review of existing literature though not systematically. Desk research and review were also conducted to include barriers, challenges and opportunities from countries with sustainable urban development systems and processes. The main purpose of this study was to identify barriers to environmental governance that hinder sustainable urban development. A review of the existing relevant publications related to urban development, environmental governance and sustainability was undertaken. The study identified a number of factors impacting environmental governance for sustainable urbanization negatively which were grouped as institutional, policy and financial barriers.

## 3. Results and Discussion

It is estimated that the urban growth rate is at 4.23% annually, thus the resulting impact from the urban growth on the environment can't be ignored thereby underscoring the pivotal role of sustainability in urban development in urban development (Sofeska, 2016; Valencia et al., 2019). It is estimated that by 2030, the urban population in Kenya will be approximately 27.4% of the Kenyan population as shown in Fig. 1 which highlights the need for better accounting on environmental sustainability where urban development will take charge of the future populations (Rasoolimanesh et al., 2019; Webb et al., 2018). With an increased urban population, social amenities, housing, transport and various infrastructures will require to be accelerated so as to accommodate the growing numbers.

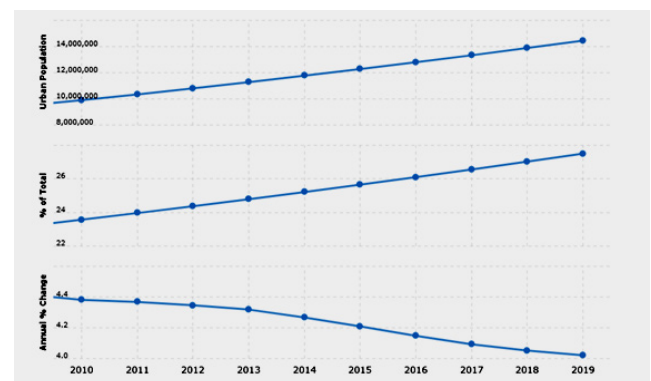


Fig. 1: Annual percentage growth rate of Kenya's urban population (Data source: World Bank, 2020)

In turn the infrastructural developments when not anchored on sustainable principles compound the ensuing impacts on the environment through the growing numbers of informal settlements, increased pollution that is both air and water pollution as a result of unchecked urban development (Abubakar, 2021; Darhamsyah, 2019; Valencia et al., 2019). The pivotal role for environmental governance enhances the sustainability of urban developments which can account for the high urban annual growth rate of 4.23% through ensuring that there is adequate urban planning to cater for the dynamics of population growth (Meyer & Auriacombe, 2019; Rasoolimanesh et al., 2019).

### 3.1 Institutional Barriers to Environmental Governance for Sustainable Urban Development

Environmental governance is enhanced through institutional frameworks that are robust and able to cater for the dynamics presented with changing global demands in urban settings (Abubakar, 2021; Hansson et al., 2019a). The efficacy of institutions both for environment and urban planning give room for proper articulation of policies and regulations that underscore sustainability in urban development (Darhamsyah, 2019; Dodman et al., 2014). In Kenya, the institution mandated to oversee the management of the environment is National Environmental Management Authority (NEMA) whose duties and tasks are prescribed in the revised Environmental Management and Coordination Act (EMCA) of 2014 while urban planning falls under the ministry of Lands and Physical Planning (Government of Kenya (GOK), 2010; NEMA, 2009).

In the recent past, urban planning documents in various counties have revealed a shortage in human resources which also is mirrored in the environmental sector postulating the impacts that are evidenced in the rapid urban development which are evidenced by an increase in unplanned growing informal settlements (Abubakar, 2021; Valencia et al., 2019). Using the model for sustainable urban development by UN-Habitat, environmental governance is a key pillar if there is to be sustainable urban development (Darhamsyah, 2019; Webb et al., 2018). It posits that environmental sustainability supports policy interactions, infrastructure, quality of life and equity as well as social inclusion for sustainable urban development as illustrated in Fig. 2 (Hansson et al., 2019a; UN-HABITAT, 2009, 2016).

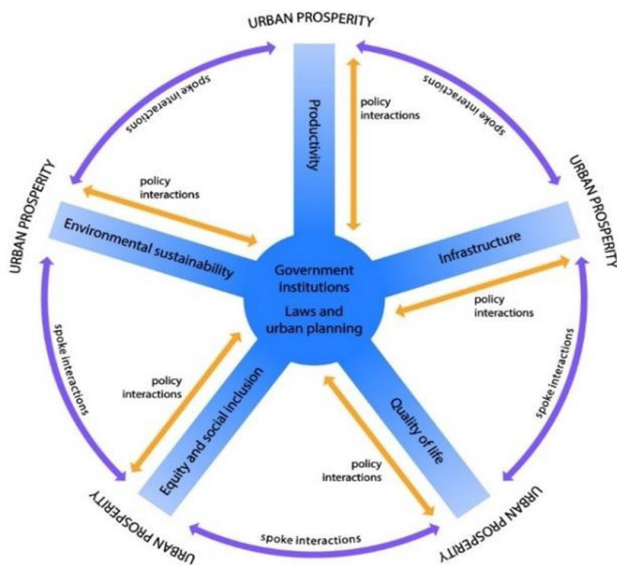


Fig. 2. Wheel of Sustainable Urban Development (UN-Habitat, 2016)

The inadequacies and overlapping mandates by the various institutions hinder environmental governance thereby urban development is marred by wrong practices which consequently have adverse impacts on the environment (Avis, 2016; Mutisya & Yarime, 2014; Sofeska, 2016). The

negative impacts of unsustainable urban development are illustrated by the increased housing demand which translates to housing units that have questionable architectural standards, increased air pollution from the increased motor vehicles which expound the importance of environmental governance for sustainable urban development (Abubakar, 2021; Dodman et al., 2014; Sofeska, 2016).

The institutional barriers paint the grave negative image of what future urban development looks where institutions mandated do not have the required human resources, technological resources and financial resources which is critical for sustainable urban development (Hansson et al., 2019b; Mutisya & Yarime, 2014; Stepputat et al., 2016).

### 3.2 Governance Barriers to Sustainable Urban Development

Sustainable urban development in essence focuses on the way forward for cities to mitigate climate change through integrated urban places designed to bring people, activities, buildings, and public spaces together, with easy walking and cycling connection between them and near-excellent transit service to the rest of the city (Heijden, 2014; UN-HABITAT, 2016). Governance barriers take reciprocal avenue with the barriers illustrated by drivers, stakeholder engagements/institutions and urban contexts such as service provision as presented in the Fig. 3 (Abubakar, 2021; Hansson et al., 2019b; Mutisya & Yarime, 2014).

In developing countries, sustainable urban development is crippled by governance barriers where the drivers for urban development take various shapes and forms coupled with unaccountable systems of administration in urban development (Dodman et al., 2014; Hansson et al., 2019b; World Bank, 2016). In various contexts explicated by the various urban development growth rates in the country, service provisions such as health amenities, social amenities among others vary depending on the governance structures in place (Darhamsyah, 2019; Mutisya & Yarime, 2014; Stepputat et al., 2016).

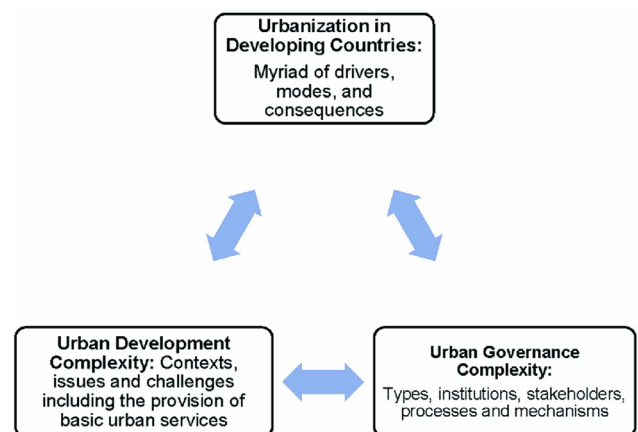


Fig. 3: Governance Barriers to Sustainable Urban Development (Suhartini and Jones, 2019)

The challenges evidenced by the growing number of unplanned informal settlements, mushrooming dumpsites due to overburdened waste management infrastructure, in-



creased prevalence and re-occurrence of water borne diseases which are connected to the governance structures in place (Evans, 2019; Hegazy et al., 2017; Meyer & Auriacombe, 2019).



**Fig. 4.** Framework for integration of environmental, economic, social, and governance dimensions of urban sustainability (Mutisya & Yarime, 2014)

Consequently, the impacts of these negative urban development on the environment are devastating and almost fatal when disasters strike turning back the gains of urban development (Keivani, 2010; Kumssa & Mwangi, 2011; Smit, 2018). Governance barriers also are evidenced in the running and operations of institutions where personnel in these institutions are limited in skill and capacity thereby decisions on processes and outputs limited which in the long run hinder sustainable urban development and environmental sustainability (Macke et al., 2019; Mwau & Thung, 2018; Ogutu, Kimata, & Kweyu, 2021). In Fig. 4, governance is a critical pillar for sustainable urban development and which implies governance barriers can impede innovations, collaborations, and institutional networking imperative for enhancing environmental sustainability and sound urban development (Darhamsyah, 2019; Mutisya & Yarime, 2014; Ogutu et al., 2021).

## Conclusion

Environmental governance plays a pivotal role in sustainable urban development from the onset to beyond the implementation phase. A lack of integration of environmental governance in sustainable urban development has devastating impacts pegged on a rapidly growing urban population. The environmental impacts ensued by negative urban development calls for collaborations and partnerships between urban planning and environmental governance which will underscore sustainability. The synergy between urban development and environmental governance protects the future and caters for the dynamics explicated in an increasing urban population. The environmental governance lays foundation for sustainable urban development which fosters a healthy environment with sustainable urban amenities and better human life.

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