Exploring the Interface and Lessons for Resilience-focused Urban Planning in Zimbabwe

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Abstract

This article argues that urban areas face a multitude of risks that are likely to worsen, due to climate change. Traditional blueprint planning commonly practised in cities of the developing world tends to be top-down and not fit for the dynamic urban future. Planners have not kept pace with changing urban systems and processes that have tended to accentuate social and economic risks. A resilience-focused urban planning integrating socio-economic, political and physical drivers of city growth and change enables urban residents to leap forward, rather than bounce back to worse conditions that cause disasters. A resilience-informed urban planning approach should not only focus on the technical or engineering designs of the city, but also on socio-political and evolutionary processes that consider urban settlers as rational change agencies who are capable of defining their future. Challenges, including urban informality, are not necessarily hazards to be ruthlessly dealt with, but potentials to strengthen livelihoods and become pathways to resilience if planners adopt a resilience-focused planning approach. An understanding of disaster risks and city resilience processes and drivers that are normally context specific is pertinent if urban planning is to promote resilience-building and contribute towards sustainable development.

Keywords: *resilience, risk-sensitive, hazard, informality, urban, planning,*

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INTRODUCTION

The urban landscape is not insulated from hazards that may cause disasters leading to loss of lives and livelihoods if there are no adequate preparedness, mitigation and prevention measures. Common hazards that tend to degenerate into disasters affecting urban areas include droughts, floods, earthquakes and epidemics, such as, cholera and dysentery. Social and economic challenges, such as, increasing crime, social unrest, unemployment and weak economic performance, also pose challenges to urban areas, requiring a concerted effort by city authorities to minimise the risk and possible economic and infrastructural damages. Faced with a plethora of urban risks, urban planning needs to be risk-sensitive by adapting to the changing operational environment that, in some cases, has led to increased urban informality as a coping strategy. Some urban authorities and planners consider urban informality as a hazard despite its continued growth in most cities of the developing world.

Despite the conceptual haziness pausing challenges in defining an implementation framework, resilience informed urban planning can be instrumental in breaking the barrier between static blueprint planning and more people-oriented planning which enables urban residents to 'leap forward' in the face of risks and increasing hazards. In this case, risks and challenges, such as, urban informality, become possibilities for sustainable livelihoods, rather than hazards to be ruthlessly erased from the urban landscape. Urban resilience provides

> "an operational framework for reducing the multiple risks faced by cities and communities, ensuring there are appropriate levels or resources and capacities to mitigate, prepare for, respond to and recover from a range of shocks and stresses" (Coaffee and Lee, 2016: 3).

The question addressed in this article is how urban planning which, in most cases, is meant to promote social, economic development of urban settlements can be used to promote city resilience in the context of the growing urban risks and challenges. The tendency for city planners and authorities in most developing countries, Zimbabwe included, has been much focused on spatial planning and bringing 'order' by 'modernising' the city. This bias on city

aesthetic value driven by neoliberal interpretation of city aesthetics seems to put less emphasis on local drivers of city growth and change. Some of the changes that affect city growth may be a result of socio-cultural interpretation of city aesthetic value and land-use, which may contradict the neoliberal bias of city development and its focus on free market as the major driver of change. With continuing risks and challenges in most of the cities of the developing world, it is pertinent to explore how resilience informed urban planning can be instrumental to promoting accountability, partnership and mutual understanding of the multiple city stakeholders characterised by competing and diverse interests and opinions of the city.

METHODOLOGY

The research was conducted through secondary data analysis and key informant interviews in Zimbabwe. Secondary data sources included published books and journal articles on urban resilience and planning and grey literature mostly on resilience and informality from government, non-governmental organisations (NGOs) and other multi-lateral organisations, such as the United Nations publications on resilience. Key informant interviews were carried out with academics from the university and NGOs working on resilience projects in urban areas of Zimbabwe, and some opinion leaders.

LITERATURE REVIEW

The 21st century has experienced an escalation of urban challenges which, in some cases, have accentuated urban risks (Dickinson *et al.*, 2012; UNISDR, 2013; Lehmann, 2015). Some of the common urban risks include high incidences of diseases mostly linked to poor sanitation and contaminated drinking water, food insecurity, particularly challenges of food access and utilisation, which may lead to malnutrition and even death, increased flooding which in some cities has been worsened by increased rainfall associated with climate change, social and political instability and economic decline (Dodman *et al.*, 2013; UN-HABITAT, 2016; World Bank, 2013). The 2010 cholera outbreak in Zimbabwe, which led to about 4000 deaths is a case in point of how hazards can easily degenerate into disasters (Mason, 2009). Increased urbanisation and the heightened mushrooming of unplanned settlements in vulnerable locations in some urban areas is likely to have severe consequences

for management of cities. This is mostly due to pressure on service delivery, such as provision of water and sewage facilities. Kibera, a slum settlement in the city of Nairobi in Kenya with an estimated population of over 200,000 and the largest informal settlement in Africa, also continues to experience water and sanitation problems leading to episodic cases of typhoid and cholera (Amélie and Sophie, 2011).

In Zimbabwe, the increased mushrooming of informal settlements, increased informal urban agriculture and resource extraction, particularly in the ecologically-sensitive environments around cities such as Harare also pause risks of disasters that may have long-term impacts on city residents. By 2050, about 60% of the world's population is projected to be living in cities with more than half found in cities of the developing world (UN-HABITAT, 2016). Scott and Storper (2015) assert that increase in urban population and uncontrolled physical expansion of cities, are likely to exacerbate risks and vulnerabilities of urban populations, especially, if planning efforts do not meet the increasing needs of city residents. More people in urban areas may lead to pressure on services that include, housing, food, water and health needs. With an estimated 40% of the world's urban expansion taking place in slums, unsanitary conditions are worsened, leading to the spread of diseases such as cholera and diarrhoea (Scott and Storper, 2015).

While different strategies have been implemented to address the challenges and minimise urban risks, chief among them being preparedness and response strategies, there are still gaps in defining effective solutions to disaster risks in most urban areas. Some of the identified gaps in minimising urban risks include fragmented solutions to socio-economic and environmental problems, lack of active citizens participation and/or involvement in designing and implementing solutions, corruption of urban local authorities leading to poor and inadequate service delivery, rigid policies and planning practices which normally lag behind urban socio-economic and political changes (UN-HABITAT, 2015; Coaffee and Lee, 2016). There is also a strong focus on traditional disaster management approaches that are heavily inclined towards response leading to pronounced gaps in addressing urban risk challenges in most cities of the developing world (Etinay and Murray, 2018).

As a shift from traditional disaster management mostly dominated by response, resilience-thinking and processes have been widely applied in urban planning and interventions to enable disaster affected people prepare for, respond to, recover from and adapt to disasters (Sheriff, 2016). Meerow *et al.* (2016) correctly observed that urban resilience has become increasingly a favoured concept as cities continue to grow and grapple with uncertainties and challenges. The same view is echoed by Batty (2008) who noted that resilience has emerged as an attractive perspective in studying cities, which tend to be complex and adaptive systems. However, Desjardins (2015) notes that while resilience is increasingly presented as one of the approaches and solutions to addressing ever-increasing urban risk, the term is clouded in vagueness. This makes application of resilience approaches to address urban disasters and challenges clouded with challenges. Scholars have questioned if the overuse of the term is not going to undermine its value (Davoudi, 2012; Benson and Craig, 2014; Davidson *et al.*, 2016). Meerow *et al.* (2016: 39) note that resilience suffers from 'conceptual fuzziness' making it applicable to a wide range of disciplines in both theory and practice. The possibility of wide application can, however, pause challenges in agreeing on a common measurement or standard of resilience.

Unlike Meerow *et al.* (2016), Brad and Jax (2007) argue that malleability of resilience allows multiple stakeholders to come together around a common terminology without requiring them to agree on an exact definition. Brad and Jax, however, acknowledge that this vagueness can make resilience difficult to operationalise, a view supported by Gunderson (2000). Manyena (2014: 2), highlights the same complexity surrounding resilience when he refers to resilience as having 'multiple faces' and 'multiple spaces' and having 'become ubiquitous'. Despite the seemingly increased focus on promoting resilience as a solution to some of the urban disasters, the diverse conceptualisation and interpretations of resilience by scholars and practitioners reveal the loaded nature of resilience and conceptual haziness, making application and measurement of resilience in urban settings problematic.

What can be deduced from the various resilience views is the common acceptance that whatever way the term is conceptualised, one cannot ignore resilience's central role in urban planning and response and preparedness to

address some of the myriad of urban risks likely to be worsened by climate change. It is, therefore, pertinent to explore and understand the current and possible future etymological and practical application of resilience in urban environments and how it is promoted or hindered by urban processes and practices such as urban planning and the growth of urban informality, particularly informal urban agriculture and settlements in some of Zimbabwe's urban areas.

The difficulty in pinning down a common understanding of resilience seems to stem from the original use and application of the term. Scholarly and practitioners' definitions of resilience tend to reflect disciplinary focus and biases. Some of the definitions are based on natural sciences such as ecology, engineering and physics, while others stem from social sciences that include sociology, psychology and political sciences. In some cases, an inter-disciplinary approach that integrates both natural and social sciences, for example, urban geography, is also applied in conceptualisation of resilience. Overall, there is a common understanding among scholars that the term resilience seems to have originated from Latin *resilire* which means to 'leap back' or bouncing back to a steady state (Coaffee *et al.*, 2008; Norris *et al.*, 2014). From this perspective, resilience has been defined as the measure of a system's or part of a system's capacity to absorb and recover from the occurrence of a hazardous event (Timmerman, 1981).

While some scholars acknowledge Holing's (1973) use of the term on systems ecology as the possible genesis of more systematic thinking, Alexander (2013) believes that the concept has its origins in medical science. This view is supported by psychologists Bonanno and Yehuda (2014) who, also adopting a healthy perspective on conceptualising resilience, state that resilience should be considered as a stable trajectory of healthy functioning after a highly adverse event. Some scholars are of the view that resilience originated from ecology, for example, Batabyal (1998), while others like Van der Leeuw and Leygonie (2005) link it to physics. An etymological analysis of resilience that spells out some of its traits, as presented by different scholars and practitioners, is pertinent in clarifying the conceptual understanding of resilience and how it has evolved over time. Table 1 provides some selected definitions which illustrate the diversity of views and contrasting conceptualisation of resilience.

Table 1: Resilience Definitions and Disciplinary Focus. (Definitions from several sources while classification was done by author).

	Resilience definition	Author	Disciplinary focus
1	The ability to withstand stress, survive, adapt and bounce back from a crisis or disaster and rapidly move on.	Kammouh et al. (2017)	Engineering
2	The capacity of a complex ecological system to persist or to change while preserving its structure and function.	Holling (1973)	Ecological
3	Resilience implies learning lessons from the disruptive event and adopting adaptive transformative approaches that lead to long-term incremental evolution.	Shariff (2016)	Multi-disciplinary
4	Resilience involves the ability of systems to restart quickly after a hazard has struck and to adapt existing resources and skills to new systems and operating conditions, the ability of an actor to cope with or adapt to hazard stress. The concept is similar in some way to the idea of capacity.	Canon (2008)	Socio-ecological
5	The ability of an urban system and all its constituent socio-ecological and socio-technical networks across spatial scales-to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change and to quickly transform systems that limit current or future adaptive capacity.	Merrow et al. (2016)	Urban (Multi-disciplinary)
6	Resilience is the capacity of a system to absorb disturbance and reorganise while undergoing change to still retain essentially the same function, structure, identity and feedbacks.	Walker et al. (2004)	Ecological
7	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.	UNDRR (2018)	Multi-disciplinary

The resilience groupings above fall into five broad categories that are engineering, ecological, socio-ecological, political economy and evolutionary.

A brief outline on each of the resilience categories and its implication to urban planning is presented below.

The engineering approach to resilience considers resilience as the ability of a system to return to an equilibrium or steady state after a disturbance/shock (Holling, 1973). The emphasis is on stability of a system, and single equilibrium. According to Davidour (2012), the disturbance could be a disaster such as an earthquake or social-related challenge such as banking crises or social upheavals. The engineering view focuses on how fast the disturbed system returns to its original state, or to use Sharif and Yamagata (2016:10) terminology 'rapidly return to equilibrium'. In addition to the emphasis on equilibrium or stable state after disturbance, other attributes of the engineering resilience construct include persistence, efficiency and predictability (Gardoni, 2018).

Unlike engineering resilience which emphasises has its own stable equilibrium, the ecological resilience approach acknowledges the possibility of systems shifting to a new equilibrium state if they are to retain their pre-disaster functionality (Sharif and Yamagata, 2016). The ecological view of resilience attempts to address the weaknesses inherent in the single stable state and equilibrium, including multiple stable states which may not lead to equilibrium (Davidson *et al.*, 2016).

Due to the emphasis on stability, the engineering and ecological resilience approaches have been criticised for being too conservative with a tendency of focusing much on endogenous (internal) stressors and little attention to external stressors (Davoudi, 2013). In addition, Davoudi (2013) points out that the approach fails to account for political and power relations and social dynamics within complex systems that tend to characterise urban systems.

Brown (2013: 109) notes that the ecological approach to resilience tends to promote a technical approach 'imposed rationality that is alien to the practice of ordinary people'. The technical approach seems to be influenced by the hazard conceptualisation of disasters which seems to focus more on scientific solutions to disasters, without considering the diversity of disaster causes and their trajectories. Some of the disaster causes that affect urban systems could

be political or socio-cultural and may not be easily amenable to technical solutions. The limitations of the engineering and ecological approaches to understanding resilience, particularly failure to factor in the human elements in determining change of any system, led to the socio-ecological approach. Urban systems are not static and the dynamic nature, due to diversity of stakeholders with competing interests and opinions. This makes an engineering resilience approach inadequate to address the needs of urban systems. Hazards also tend to evolve, particularly in the context of climate change and assuming that systems will return to a stead state, as envisaged by engineering focused resilience may fail to factor in unforeseen changes that may be accentuated by climate change and may disrupt what was perceived as the initial steady state.

The socio-ecological typology analyses issues of ecology and infrastructure concerns in resilience and how they relate to psychological, sociological and political factors. This integration of society, the economy and the biosphere has also been generally called panarchy, which refers to the structure in which systems are interlinked in continual adaptive cycles of growth, accumulation, restructuring and renewal (Gunderson and Holling, 2002). The central issue of Holing's argument is the dynamic non-linear and iterations of socio ecological systems that leads to collapse, reorganisation and new growth (Walker and Cooper, 2011).

Socio-ecological conceptualisation of resilience emphasises the adaptive and dynamic nature of urban resilient systems which constantly undergo transformations (Coaffee and Lee, 2016). The system may not return to an equilibrium or stable state after the disturbance, but is characterised by self-organising capacity and learning, which enables the resilient system to not only bounce back, but also bounce forward (Sharifi and Yamagata, 2016; Coaffee and Lee, 2016). External shocks are regarded as central to creating new opportunities for resource exploitation. Beilin and Wilkinson (2015) question applicability of the socio-ecological approach to urban and regional planning, which they note does not address the questions of resilience of 'what to what'. This view seems to be prompted by consideration for technical and/or engineering issues in the urban system where resilience can also be perceived to be resilience of urban buildings to disasters such as earthquake

impact. In this case, the social component may not be the focus and, considering socio-ecological approach, may then miss the point when working on strengthening infrastructure resilience. However, a narrow view of the cause and effect relationship, since buildings are constructed for a purpose that, in most cases, is for human use. Hence, focusing on resilience of building and/or 'cities' from only an infrastructure point of view, may be grossly inadequate.

The socio-ecological system approach to resilience remained dominant with little contestations until later in the 2000s when the socio-political or political economy resilience discourse also gained prominence (Coaffee *et al.*, 2008b). The socio-political resilience discourse amplifies the dynamic trait of resilience and power relations and governance, which can cause a system to adjust and cope with disturbance. This contrasts with the ecological and, to some extent, the socio-ecological which viewed resilience as politically neutral (Adger, Brooks and Kelly, 2005). The issue of how resource distribution is affected by political power relations may also have significant bearing on resilience processes and has proved to be a lacuna in holistic understanding of resilience beyond the engineering and socio-ecological conceptualisation (Bonanno *et al.*, 2014, Zhang *et al.*, 2018). In some cases, political situations can worsen hazards and disasters, particularly conflicts and wars. In some of Zimbabwe's urban areas, particularly Harare, political expediency has also played a role in land allocation and subsequent land-use (Munyaradzi, 2018). This has resulted in land for housing and informal urban agriculture being allocated in fragile environments, particularly wetlands in Harare, which Mawoneke (2000) has termed 'the ecological lungs' of the city. Disaster affected people in fragile environments may not have time to develop coping capacities, adapt to impact of hazards or positively transform that are some of the tenets of resilience.

The main challenge with the socio-political approach to resilience is the top-down approach (Chandler, 2014), which relegates the resilience process to almost a unidirectional and linear process. Manyena and Gordon (2015) dispute the linear conceptualisation of resilience by indicating that terms used in resilience conceptualisation such as 'organising', 'capacity' and 'adaptation' suggest that reality which, in this case, determines the resilience processes is non-linear and multiple and complex and random. Socio-political drivers can

be just one component of the complex and dynamic urban resilience drivers which warrant research and understanding, not only at the larger city level but also within the different city zones.

The evolutionary approach to resilience considers the nature of the constantly changing non-equilibrium systems to embrace changes and adaptations that ensure continuous system functionality (Carpenter *et al.*, 2005; Coaffee, 2013). The approach attempts to address limitations of the engineering and ecological resilience approaches that are deeply rooted in the 'bouncing back' conceptualisation of resilience and seem more applicable to the blueprint and master plan focused urban planning approaches. Edwards (2009) correctly highlighted that the bouncing back understanding of resilience is too narrow, a position shared by Shaw (2012a) who also advocates a need to consider a more proactive conception of resilience as 'leaping forward', which seemingly embraces the evolutionary resilience approach. Evolutionary resilience emphasises institutional and governance issues, particularly how organisational flexibility and learning can be promoted together with public awareness (Coaffee and Clarke, 2015).

Some of the major traits of evolutionary resilience as outlined by Kim and Lim (2016), include, adaptability, flexibility, diversity, responsiveness and resourcefulness. Adaptability refers to *'...the capacity of a system to learn by combining experience and knowledge and adjust responses to changing external drivers'* (Folke *et al.*, 2010:18).

Networked linkages and scale of cooperation have a bearing on the type of adaptability, for example, flexible linkages can enhance systems responsiveness. allowing multiple evolutionary trajectories to emerge leading to greater systems resilience (Coaffee and Lee, 2016). Resourcefulness refers to the ability to get back to normal functioning (rapidity) in addition to ability to prepare for, respond to and manage a crisis or disruption. This will depend on a network of actors across different scales that are expected to mobilise assets and coordinate action during or in anticipation of a crises (Carter, 2015). The adaptability and resourcefulness resilience traits may be key traits to analyse in the investigation of resilience of communities engaging in

urban informality that is one of the major urban challenges affecting Zimbabwean cities.

While urban planning is meant to bring order and strengthen systems for urban resilience, one of the major challenges mostly experienced in cities of less developed economies, particularly African cities, is growth of urban informality, particularly informal urban agriculture and settlements. Perceptions and/or conceptual understanding of informality in some developing countries depicts disorder or chaos (Muller, 2017), hazards (Lutzoi, 2016). As alluded to by Pedzisai (2014) and Katsaruware *et al.* (2014), urban agriculture that, in most cases, is informal, dominates urban land-use in most urban settlements of Zimbabwe and yet, is still perceived as a hazard promoting disorder in the city (Kamete, 2014). With services provision continuing to be inadequate and formal employment being scarce, informality continues to expand and yet planning is still obsessed with traditional approaches of modernising the city. The question on how urban planning should address the seeming contradictions and contestations resulting from the constant evolution of urban systems, which reflect qualities of evolutionary resilience, needs to be answered.

RESILIENCE-INFORMED URBAN PLANNING

Porter and Davidson (2012) concluded that resilience-thinking, its approaches, vocabulary and metaphor are rapidly becoming part of the planning lexicon. They further argue that resilience has the potential to reframe planning by opening the traditional, rigid and conservative urban planning practices to new thinking and approaches. Coaffee and Lee (2016), highlighted that urban resilience is ultimately about change and its attainment requires strengthening of planning practices. Question is, what changes in the context of Zimbabwe urban planning?

The elements of evolutionary resilience-thinking that include adaptability, transformation and flexibility, require a review of traditional blueprint approach of urban planning that is also a predominant planning practice in Zimbabwe. The traditional urban planning approach emphasised linearity, order in planning processes and modernisation of the city infrastructure with little consideration for the people (Fisher 2012; Porter and Davoudi, 2012)

and yet, resilience is mostly about people and structures. From a Zimbabwean context, the traditional planning approach is strongly focused on urban zoning and use of master plan, reflecting legacy of the former colonial planning practices (Chirisa and Matamanda, 2018). To address the weakness of rigidity in blueprint urban planning characterised by linearity, a proposal by the Rockefeller Foundation (2013) is for urban resilience planning to consider four key city dimensions that are people, organisation, place and knowledge.

The people dimension relates to health and wellbeing of people living in the city, while the organisation is the social and economic systems that enable urban population to live peacefully and act collectively. The place dimension considers the quality of infrastructure and ecosystems that are utilised by the urban population and knowledge is the capacity to learn from the past and take appropriate action. The proposed city dimensions also resonate with Porter and Davoudi's (2012) conclusion that resilience-thinking by showing the intricate linkage between the social and ecological systems, brings a new dimension and focus of urban planning. The new planning focus which, according to Porter and Davoudi (2012: 330), "breaks planning out of its obsession with order, certainty and stasis," can be instrumental in addressing the complex and dynamic socio-ecological problems that may negatively impact on resilience processes.

Coaffee and Lee (2016) noted that resilience in urban policy and practice should be proactive and anticipatory, rather than reactive. This fits in well with the forward-looking notion and practice of urban planning as advocated by Taylor (1998). Cities can be conceived as socio-ecological systems that reflect changes and interactions of the physical and social entities across space and time (Grove, 2009). This dynamism and change in city systems led to changes in emphasis and approaches to urban planning practices with new planning paradigm focusing more on non-linear, innovative transformative planning approaches (Shaw, 2012). The integrated urban planning approach also reflects basic tenets of resilience, particularly, adaptation, inclusiveness, integration, reflectiveness and flexibility which should also inform urban planning in Zimbabwe.

Historically, urban planning reflected traits of engineering resilience, with focus on city equilibrium or stabilising city structures (Taylor, 1998). The emphasis was on crises and return to pre-existing stability, particularly of urban infrastructure (Flynn and Davidson, 2016). There was very little or no consideration for the human element, particularly the socio-political issues and how they interacted with the structures to influence the perceived city equilibrium (Ernstson *et al.*, 2010; Davoudi *et al.*, 2013). Pike *et al.* (2010) emphasised the need for an integrated and evolutionary approach to urban planning to capture both issues of stability which may be needed for infrastructure resilience and spatial diversity, and non-equilibrium resilience traits of urban populations.

City needs, besides regularly changing, also tend to be medium- to long-term, for example, stable health delivery, food security and adequate water and sanitation. Urban planning methods need to support this longer-term view of a city's needs. Without consideration for the changing city needs, the output of the planning process may often be incomplete or inconsistent and limited in its usefulness for guiding the city to a more resilient future. This can be a result of limited consideration for medium- to long-term risks in planning, a requirement for promoting urban resilience (Coaffee and Lee; 2016, Lorenz, 2010). For most urban centres, risk management planning, a component of overall urban planning, focuses on short-term preparedness and emergency response while issues that may promote resilience such as sustainable health services and knowledge generation to adapt to, or cope with, changing hazards that affect the city, especially, in the context of climate change, tend to require medium to long-term processes. Resilience-focused urban planning must strengthen anticipatory and contingency planning to accommodate risks that may be worsened by climate change. This type of risk-sensitive urban planning promotes adaptation, coping, response capacity and transformation of the urban residents to possible disasters likely to emanate from increasing urban risks.

An integrated and holistic approach to planning enables consideration for resilience-thinking in urban planning. For example, proper urban land-use planning to develop transportation networks, water supply, housing, commercial centres and other community amenities can create large additional

benefits by reducing risk and promoting resilience. Such programmes can provide safety nets for urban citizens affected by disasters, for example, transport networks can facilitate evacuation during emergencies or clean water supply may reduce possible disease outbreaks. The disaster risk management planning in urban environments that comprehensively applies the risk management framework considering issues of mitigation, preparedness, response, recovery and reconstruction phases, may offer practical opportunities and a possible pathway for enhancing resilience.

Land-use planning central to most urban planning practices influences the location, type, design, quality and timing of development (Steiner and Butler, 2012). While land-use planning informs urban spatial development, comprehensive urban risk management planning requires social and economic policies and programmes that will increase the capacity of the urban population to adapt to risks, by so doing promote resilience of urban populations. Porter and Davoudi (2012) provide a succinct summary of resilience and planning by stating that resilience-thinking offers concepts and methods for breaking planning out of its obsession with order and certainty to a more flexible and dynamic processes relevant to the ever-changing needs of the city. This is also in line with Donnelley's position on the need for urban planning to move away from trying to 'predict the future' to trying to 'create it', that is making cities more resilient to future challenges (Donnelly, 2015 as cited in Coaffee and Lee, 2016). Lowenthal (1992) shares a similar position by postulating the "rapture of continuity" argument. The rapture of continuity as advocated by Lowenthal stipulates the need for planning to move away from the modernist, foresight that sought equilibrium towards postmodern form with focus on diversity, complexity and intentionality. The view resonates well with evolutionary understanding of resilience, unlike the ecological and engineering resilience approaches which fits well with the traditional blue-print planning approaches which tend to be rigid.

One of the greatest challenges of urban planning in most developing countries is how to deal with urban informality. Urban planning has been used as one of the control measures to address challenges of informality and land-uses in urban areas. While legislation has been enacted to address issues of informality, particularly in informal housing, trading and informal urban

agriculture, such legislation seems not to have kept pace with demand for land, leading to increasing informal activities by city residents trying to address socio-economic challenges (Rogerson, 2016). Despite its dominance and continued expansion in most developing countries, informality in urban planning research has not been understood and poorly neglected (Revell, 2010). Roy (2005) has called urban informality new knowledge to planning, advocating a better understanding of the drivers and processes which traditional planning practices have tended to neglect. She further posits that informality is a mode of urbanisation which determines urban growth in most developing countries. Her argument points to the challenge of limited support from government, hence informality continues to fill the service gap provision, leading to city growth. According to Rukmana (2007), urban planning in developing countries faces problems with informality, rather than seeking to eliminate the problem of the informal sector, planning should try to accommodate it.

Informality, particularly informal urban agriculture and trade in Harare, Zimbabwe's capital city, has become one of the processes that continue to change the urban landscape and processes. While the term urban informality in general conjures negative connotations for planners and urban authorities (Brown 2016; Recio, 2015; Roy, 2005), it remains a reality here to stay (Tawab, 2017). The negative approach to informality has partly been associated with historical planning processes and policies. Most planning policies and practices in Africa show strong connections with colonial planning systems (Watson, 2002; Chirisa and Dumba, 2012). Watson (2002) further indicates that colonial governments used their colonies as 'laboratories' for testing planning ideas. Planning processes promoted segregation with European settlements receiving more attention while native areas were neglected which promoted informality, particularly informal settlements (Mabogunje, 1990; Harris, 2018).

Researchers on urban planning tend to focus on physical space when studying cities with little attention to the political economy reflected as power structures, resistance and culture issues which tend to be deeply embedded in urban informality and likely to have a bearing on resilience (Sioen *et al.*, 2016). Despite the positive contribution of informality such as informal urban

agriculture to food security, household savings, health and nutrition which may have a major impact on resilience, urban planning in Zimbabwe still rarely accommodates urban agriculture as an important urban land-use and possible driver of city development that can promote resilience of urban populations. This is an area requiring more investigation as to whether reacting to informality through radical intervention and hostility may facilitate or inhibit resilience-building.

Building resilience should be considered as integral and complementary to overall urban planning, including urban risk management planning. Urban risk management planning should focus on future hazards which may be a result of urban informality and may lead to pollution and environmental degradation if not well managed. The multi-dimensional nature of resilience (multi-hazard, multi-scale, multi-stakeholders) requires integrated urban planning which considers the dynamic nature and interaction of various entities within a city (Daudey, 2018; Sharifi and Yamagata, 2014; Olazabal, Chelleri and Kunath, 2012). This also resonates with the four dimensions of city resilience that are people, organisation, place and knowledge, as highlighted by the Rockefeller Foundation. Urban systems in Zimbabwe depict multi-dimensional characteristics as they reflect a diversity of inputs, processes and outputs. The processes, including formal and informal processes (such as industrial production, retailing, informal trade and informal urban agriculture) have, a bearing on city growth and development and are greatly influenced by urban planning systems and practices.

CONCLUSION

This article explored the theoretical and conceptual issues of urban resilience and planning. The analysis highlighted the contestations around resilience and urban planning showing challenges of applying the various resilience typologies in urban planning. The discussion and analysis further showed that an integrated and multi-disciplinary approach in analysis of urban resilience is crucial. Taking into consideration the challenges associated with urban planning approaches and processes, several issues still need to be investigated if one is to understand the purpose and process of urban planning as it relates to resilience. It remains undisputable that urban planning in the context of increasing informality can be adapted to be instrumental in promoting

resilience, particularly in Zimbabwe, where urban informality has proved to be one of the fastest expanding urban sector and land-use. Resilience-informed urban planning remains pertinent in addressing evolving risks that are likely to worsen, due to impacts of climate change, hence, the need to understand the multi-dimensional nature of resilience drivers and how they impact on urban planning.

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