# Designing Urban Resilience-building Programmes in Zimbabwe: An Exploratory Review

INNOCENT CHIRISA[1], TARIRO NYEVERA [2] AND ANDREW CHIGUDU[3]

## Abstract

**This article is an attempt to explore the urban resilience programme for Zimbabwe's urban areas. This is against the background that Zimbabwe's urban areas are facing several challenges that stem from social, spatial, economic and political dimensions. In summary, the challenges are the failure to adequately treat sewage, failure to provide clean water to residents, failure to maintain clean environments through refuse collection and disposal and failure to maintain decent infrastructure. Confronted by complex and diverse social, economic, environmental, political and spatial problems, resilience offers an opportunity to have systems that change, adapt, and, crucially, transform in response to stresses and strains. The emphasis of this study is on how to strengthen the resilience of urban areas by making sure that basic services are provided to all societal groups and that there is good governance in the provision of basic services. In addition, the guide stresses empowering urban areas to pursue comprehensive investment programmes to strengthen resilience and access a broad range of financing options. However, strengthening urban resilience is a complicated process as it is faces problems in different socio-economic and political sectors.**

[1]Department of Demography Settlement and Development, University of Zimbabwe

[2] Development Governance Institute, Harare

[3]Department of Architecture and Real Estate, University of Zimbabwe

***Keywords:*** *society, policy, institutions, management, development, infrastructure*

## INTRODUCTION

Resilience-building has gained attention at global level. This is because the world is confronted by complex and diverse social, economic, environmental, political and spatial problems (World Bank, 2016). There are interconnections between the diverse challenges faced at different levels. The linkages between the social, economic, environmental, political and spatial problems may be looked at using the systems approach lenses. Critical to note is that the problems are being faced at different levels, and the levels have interconnections. The differences include global, regional, national, local, country and individual levels (UNDP, 2009). Addressing these challenges may require looking at the system holistically. Based on policy, development and academic literature and experiences in different contexts across the globe, the purpose of this study is to explore options for designing a programme that builds resilience in the wake of complex social, economic, environmental, political and spatial problems in Zimbabwe (Dube, 2019).

The emphasis of this study is on how to strengthen the resilience of urban areas by making sure that basic services are provided to all societal groups and that there is good governance in the provision of basic services. The services have to be provided benchmarking on the needs and vulnerabilities of communities (World Bank, 2012). There are different vulnerabilities and community needs and these will need to be identified for purposes of designing 'fit-for-purpose' interventions and programmes. This will support the implementation of global frameworks, such as the New Urban Agenda, Sustainable Development Goals, and SENDAI Framework, particularly regarding the adoption and implementation of disaster risk reduction and management, vulnerability reduction, social protection improvement, the building of resilience and responsiveness to natural and man-made hazards and fostering mitigation and adaptation to climate change (UNDP, 2009; World Bank, 2012; McGregor and Chatiza, 2020). At a national level, resilience-building is grounded primarily on the Constitution of Zimbabwe which elaborates the basic rights of citizens, such as the right to clean water and shelter and the

fundamental freedoms that all citizens have (McGregor and Chatiza, 2020). Based on that, where the rights and freedoms are upheld, societies should be able to bounce back even after experiencing shocks. There are national and local policies that are crafted to enhance resilience and sustainability in different sectors. One of the key challenges is, however, the unclear interconnections and linkages between sectors at the policy and governance levels.

## DEFINING URBAN RESILIENCE

There exist complexities, contradictions and ambiguities in defining the concept of resilience. Resilience has been most frequently defined as positive adaptation despite adversity (Davoudi *et al.,* 2012). While the original definition of resilience that emerged in the field of engineering dwelt much on objects returning to their original state after there are shocks, in social sciences, the definitions have evolved a bit. Emphasis is not only on returning to the original state but, rather, on having a better and progressive future (Foa, 2009).

The concept of resilience emerged in the physical science field to describe how springs return to their original form after being stretched (Davoudi *et al.,* 2012). Resilience was first used by physical scientists to denote the characteristics of spring and describe the stability of materials and their resistance to external shocks (Foa, 2009). In the 1960s, along with the rise of systems thinking, resilience entered the field of ecology where multiple meanings of the concept have since emerged, with each being rooted in different world views and scientific traditions (Doorn, Gardoni and Murphy, 2009). These new dimensions of the resilience concept are presented in Table 1.

**Table 1:** *Dimensions of resilience* (Davoudi *et al*., 2012)

| Dimension | Description |
|---|---|
| Engineering Resilience | This refers to the ability of a system to return to equilibrium or steady-state after a disturbance that could be either a natural disaster such as flooding or earthquakes or social upheavals, such as banking crises, wars or revolutions. The resistance to disturbance and the speed by which the system returns to equilibrium is the measure of resilience. The faster the system |

| | |
|---|---|
| | bounces back, the more resilient it is. The emphasis is on return time, "efficiency, constancy and predictability", all of which are sought-after qualities for a "fail-safe" engineering design. |
| Ecological Resilience | Ecological resilience defines the magnitude of the disturbance that can be absorbed before the system changes its structure. The emphasis, in this case, is on defining resilience according to how long it takes for the system to bounce back after a shock, and how much disturbance it can take and remain within critical thresholds. Ecological resilience focuses on the ability to persist and the ability to adapt. |
| Evolutionary Resilience | Evolutionary resilience challenges the whole idea of equilibrium and advocates that the very nature of systems may change over time with or without an external disturbance. In this perspective, resilience is not conceived as a return to normality, but rather as the ability of complex socio-ecological systems to change, adapt and, crucially, transform in response to stresses and strains. Systems are conceived as complex, non-linear, and self-organising, permeated by uncertainty and discontinuities. In that instances, it is difficult for systems to return to their original forms, but they have to assume new forms that are responsive to the changing environment. |

The world continues to face serious climate-related and natural related hazards and disasters. These include floods, droughts, earthquakes and tsunamis (IPCC, 2012). Disasters displace many people, increasing socio-economic vulnerabilities. Disasters can have complex and deeply disruptive effects on livelihoods – further disadvantaging those who are already in a vulnerable situation (World Bank, 2016). Between 2013 and 2015, for example, globally, natural disasters displaced 60.4 million people. Extreme weather and slow-onset disasters are becoming more complex with large-scale impacts (Doorn, Gardoni and Murphy, 2009). Exposed to natural hazards, countries are at-risk from man-made disasters through wars and violent conflicts. There are man-made disasters, such as civil wars and challenges emanating from the change and drift in policies (United Nations, 2009). Civil and ethnic wars are increasing and influenced by the control and management of resources. This point toward poor governance mechanisms at the national, local and community levels (UN HABITAT, 2009).

## WHAT DOES IT TAKE TO DESIGN A PROGRAMME?

Designing urban resilience programmes is driven by the belief that a resilient future for our cities is possible (*ibid*). Emphasis will be on empowering urban areas to pursue comprehensive investment programmes to strengthen resilience and access a broad range of financing options. However, strengthening urban resilience is a complicated process as it is faced with problems in different socio-economic and political sectors (Figure 1). Developing, piloting, evaluating, reporting and implementing a complex intervention can be a lengthy process.

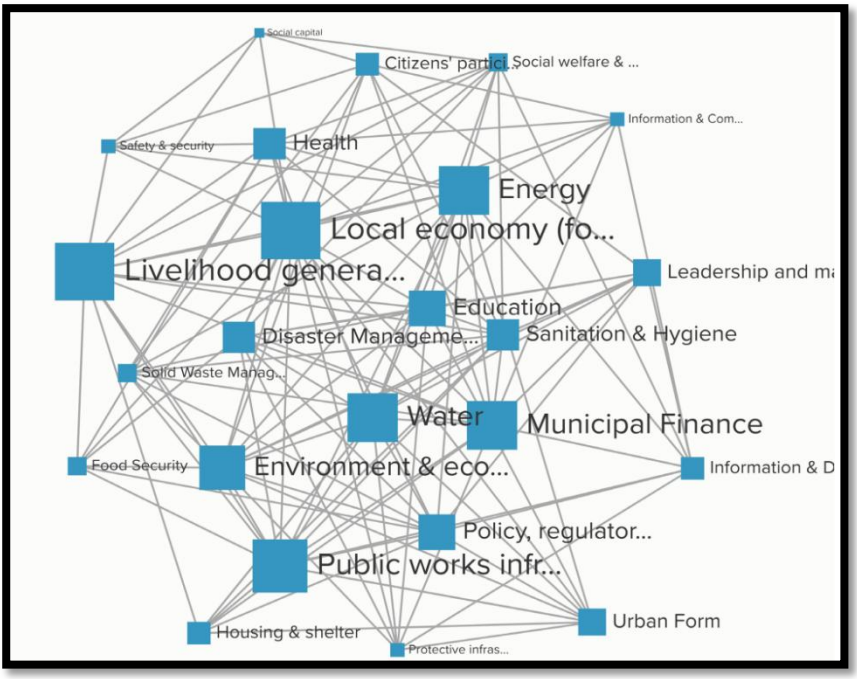


**Figure 1:** *Interactions and interconnections of sectors* (World Bank, 2016: 20)

Designing urban resilience programmes is complex work (Center for Urban Studies, 2006). It requires considering the many stakeholders and factors that could affect outcomes, having a deep understanding of people while seeing the bigger picture, gaining clarity and conviction despite

incomplete information, and discovering and choosing interventions that have an impact, on the multitude of possibilities (United Nations, 2009; Doorn, Gardoni and Murphy, 2019). When designing urban resilience programmes it is important to be principally concerned with the final results of interventions (programmes, projects, policy measures, reforms) on the welfare of communities, households, and individuals (Davoudi *et al.,* 2012). Disproportionate impacts on different sectors and people will need to be ascertained (UNDP, 2009).

**WHAT IS URBAN RESILIENCE PROGRAMMING?**

Urban resilience programming is driven by the belief that a resilient future for our cities is possible. The overarching aim of urban resilience programming is to empower cities to pursue comprehensive investment programmes to strengthen resilience, and to access a broad range of financing options for sustainable development (*ibid*). Strengthening urban resilience is a complicated process. What is critical is to effectively bring in a broad set of actors and sectoral expertise to help cities integrate climate/ disaster and risk scenarios into their upstream urban planning (Doorn, Gardoni and Murphy, 2019).

A resilience programme is a product of deliberate actions that comprehensively addresses the problems faced in societies (UNDP, 2009). This is because the poor are often looking for areas that have no development restrictions and where land is cheap. This negatively impacts the vulnerability of such groups of people and the time needed to recover from shocks. Deliberate efforts are needed in designing resilient settlements to make sure that they are actively included and are participating in the programmes (World Bank, 2012).

Planning is important in designing urban resilience programmes (United Nations, 2009). Planning is about proposed actions that address present and future problems. It is about learning from the past to influence the future (UN HABITAT, 2009). Past events should be used as a benchmark for today's decision. At the same time, decisions have to be influenced by future modelling processes. This means that planning is futuristic (Doorn, Gardoni and Murphy, 2019). The policies, plans and

actions should draw lessons from past events and be predictive of the future (UN HABITAT, 2009).

Resilience is an inherently interdisciplinary topic (Doorn, Gardoni and Murphy, 2019). Resources from different sectors will need to be committed to addressing problems from different sectors. Programming urban resilience brings a pragmatic, implementation-focused approach to discussions about resilience and facilitates strategies to provide communities with strategic guidance on how to reduce the vulnerability of their residents, properties and businesses, spearheading the implementation of new policies, programmes and infrastructure investments (UN HABITAT, 2009). It is important to further the knowledge available on resilient land use, development and design, taking into account opportunities relevant at the city, district and site scales. The business case for cities and the private sector to invest in resilient development approaches needs to be considered in urban resilience programmes (United Nations, 2009). The majority of citizens, including the marginally excluded citizens, will need to have increased awareness of resilient development approaches through outreach and involvement (Center for Urban Studies, 2006).

Resilience is an inherently interdisciplinary topic. Resilience has become a fundamental paradigm for thinking about risks and safety threats, ranging from climate change and natural hazards to threats related to economic crises, migration and globalisation (*ibid*). This guide builds on the notion that resilience ultimately aims at promoting societal well-being (where that is a function of the well-being of individuals). This guide argues that societal well-being depends on (1) the resilience of the physical infrastructure and (2) the socioeconomic context, that in turn affect (i) how the impact and recovery of the physical infrastructure translate into societal impact and recovery and (ii) the ability of individuals to recover/ adapt independently from the recovery of the physical infrastructure (UNDP, 2009; Foa, 2009; World Bank, 2016). The social-economic context (which includes, for example, the financial resources and know-how) affects the resilience of the physical infrastructure since physical infrastructure often requires human interventions to recover (Doorn, Gardoni and Murphy, 2019).

In a nutshell, resilience is achieved if human communities can withstand external shocks or perturbations to their infrastructures, such as environmental variability or social, economic or political upheaval and recover from such perturbations (*ibid*). Communities are made up of the population with the following variables: age, gender, occupation, education, health status, and many more. The ability and capacity of the population to recover from shocks are influenced largely by population variables (Foa, 2009). There are the income and revenue variables that influence the resilience levels of different countries, regions, communities, families and individuals. These variables include employment, enterprises, occupation, rates and taxes, capital building and profits, rent, wages, profit, and interest (World Bank, 2012). The deliberate infrastructure development, such as roads and pathways, bulk infrastructure and housing, are critical factors in understanding the resilience at national, local and sub-national levels (UNDP, 2009).

Resilience thinking describes important attributes of ecosystems, materials and human beings, that is, the ability to cope with and recover after disturbance, shocks and stress (Foa, 2009). However, with popularity, comes the risk of blurring and diluting the meaning. This calls for adequate preparedness and planning by responsible authorities. Preparing and planning by the authorities will need to be done with all the citizens in the communities (Centre for Urban Studies, 2009). This will facilitate coming up with sustainable and applicable migatory measures against risks, hazards and disasters and early warning systems (UN HABITAT, 2009).

A key part of resilience is the existence of good governance which can be identified as a process of decision-making that is accountable, transparent, just, responsive and participatory (McGregor and Chatiza, 2020). The governance process centres on a governing body, whether the organisation is a geopolitical entity, such as a nation-state, a corporation, such as a business or organisation established as a legal entity, or a socio-political entity, such as a community, tribe, or family (Foa, 2009). Governance comprises the rules, norms and actions that each governing body applies to produce, sustain and regulate decisions. The coordination of public-sector authorities to leverage broader public- and private-sector

resources for the greater good is another form of governance. The pursuit of good governance can be a beneficial strategy, involving the building of both formal and informal institutions and relationships that are implemented at the state, community and individual levels (UN HABITAT, 2009). For proactive planning and to identify flexible options for an unknown and unpredictable future, disaster risk governance is to be strengthened both vertically and horizontally. Therefore, good governance is the need of the hour, and it would play a critical role in the effective management of disaster risks (Davoudi, 2012). The development and application of good resilience governance can reduce the risks from disasters. The United Nations Development Programme has attributed the increasing levels of disaster risk to poor governance combined with substantial population growth (United Nations, 2009).

Institutional capacity is critical in the development of urban resilience programmes. However, the capacity constraints that exist, particularly in developing countries, are well documented (United Nations, 2009). It is imperative for capacity assessments of all the institutions and stakeholders involved in resilience programmes. The institutions and stakeholders that need capacity development will have to be identified and the programmes for capacity development be initiated (UNDP, 2009). The urgent need for governments to build resilience has frequently led to a reliance on short-term and ad hoc efforts to boost capacity. Institutional capacity-building is therefore, one of the main purposes of the urban resilience programme (World Bank, 2016). It is imperative to think through how to engage individuals, organisations and the wider systems that create incentives for the processes, resources, norms and values of institutions (Foa, 2009).

## EXPECTED OUTCOMES OF BUILDING URBAN RESILIENCE

Urban resilience results in strengthened social protection systems and social development. Social protection programmes, such as social assistance, labour market and social insurance, have the objective of reducing vulnerability and when targeted at poor households and vulnerable populations, enhance opportunities to implement resilience-building measures (Davoudi, 2012). This is especially the case when social protection programmes are designed with consideration of vulnerability

due to climate change and disasters and implemented in close collaboration with programmes focusing on early warning systems, resilient livelihoods, and disaster risk financing (World Bank, 2016). The poor and vulnerable populations are typically the recipients of social protection programmes that are designed to reduce overall vulnerability (UN HABITAT, 2009). Social protection is defined as a set of policies and programmes designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people's exposure to risks and enhancing their capacity to protect themselves against hazards and interruption or loss of income (Foa, 2009).

Urban resilience results in reduced risks and losses of life and property (Davoudi, 2012). By helping urban areas both avoid losses from disasters and prevent affected citizens from sliding into poverty, improved urban resilience can safeguard development gains for the future (Foa, 2009). This is achieved through urban stakeholders understanding risks and acting to reduce them. Better early warning systems, comprehensive evacuation plans and more robust cyclone shelters, lead to significantly lower levels of deaths and injury (World Bank, 2012).

Urban resilience maintains a certain level of community functionality despite having the shocks (Foa, 2009). The application of resilience to cities becomes key to responding and adapting to different types of potential disasters, whether of natural or human origin and maintaining a reasonable level of functionality (World Bank, 2016). In the current context, with climate change adding more pressures and uncertainties, knowledge of urban resilience is crucial for the development of cities.

Urban resilience programmes reduce the monetary losses that are encountered if there are no meaningful investments in urban resilience (Foa, 2009). Natural disasters – such as Hurricane Matthew – and climate change are having devastating effects on cities and the four billion people who live in them today (World Bank, 2016). By 2030, without significant investment into making cities more resilient, natural disasters may cost cities worldwide $314 billion each year, up from around $250 billion today, and climate change may push up to 77 million more urban residents into poverty (Davoudi, 2012).

## PROGRAMMING URBAN RESILIENCE IN ZIMBABWE

Zimbabwe's urban areas face several challenges that stem from social, spatial, economic and political dimensions (Mbiba, 2017). In summary, the challenges are the failure to adequately treat sewage, failure to provide clean water to residents, failure to maintain clean environments through refuse collection and disposal and failure to maintain decent infrastructure (Chirisa *et al.,* 2016). Water supply in most of Zimbabwe's Urban Local Authorities is erratic and this has presented a challenge to the supply of quality/potable water to individual properties (Mbiba, 2017). The main water sources in Zimbabwe's urban areas include municipal sources through reticulated systems, community boreholes, private boreholes, protected and unprotected wells at dwellings, and open sources that include rivers. The municipal water supply has been erratic. Urban areas have been experiencing water challenges over the years due to recurring droughts and a shortage of water treatment chemicals, coupled with low revenue (Munzwa and Jonga, 2010). As a result, community water points have become the main source of water in most urban areas. Wastewater management in Zimbabwe's urban centres, such as Harare, has become a challenge.

Wastewater management is poor, as 14.2% of toilets in local authorities are not functional (Dube, 2019). There is very minimal wastewater recycling taking place, as only about 8.1% of wastewater is recycled (Chirisa and Chivenge, 2019). Only about 20.5% of the total wastewater infrastructure across all the urban local authorities, can be regarded as being of high quality. Wastewater infrastructure maintenance is very low at only about 8%, while the sewer charge collection efficiency is only at 30.6% (Dube, 2019). Existing water bodies such as Lake Chivero, have been seriously polluted by large volumes of (partially) treated effluents from wastewater treatment plants in Harare and the neighbouring town of Chitungwiza. Most of the wastewater treatment plants in the lake's catchment are overloaded and experience frequent breakdowns. The negative impacts of this have been reflected in periodic fish kills, the proliferation of algae and water hyacinth and the reduction in biological diversity (Munzwa and Jonga, 2010). Other related problems are difficulties in potable water treatment and clogging of irrigation pipes.

For more than two decades, Zimbabwe has been faced with serious power outages and load shedding. Power outages started in 1997, but with small disruptions to supply. The main issue appeared to be mismanagement (Dube, 2019). Before the year 2000, supply equated to demand, but due to tariff controls, the power utility was constrained to charge a price less than the equilibrium price. This created a situation where demand exceeded supply resulting in increasing outages (Muchadenyika and Williams, 2017). The inadequate supply problem manifested in the non-replacement and maintenance of equipment and the failure to initiate new power-generating schemes by the government and the power utility (McGregor and Chatiza, 2020). In urban areas, this has seriously affected all facets of urban life. Power outages have been high and are still affecting firms (industry), farmers, mines and households. Electricity is an important service in the economy. Severe interruptions in electricity supply in Zimbabwe have attracted a great deal of attention in the country's under-recovery from a decade lost (Dube, 2019.

Most urban roads in Zimbabwe are in a sorry state (Muchadenyika and Williams, 2017). There is a public outcry over the poor state of roads in Zimbabwe that is reflected through potholes and uncut grass at road edges, among several other challenges. A state of disaster was recently declared by the government and specifically meant to address the deterioration of Zimbabwe's road network (Chirisa and Chivenge, 2019). Accusations are that roads have continued to degenerate to alarming proportions where potholes have "graduated" into mini-ponds and in the process become hazardous to the travelling public (Dube, 2019).The situation becomes more dire during the rainy season.

Revenue collection has become one of the urban challenges for local authorities in Zimbabwe. Local authorities have a poor record concerning revenue collection in general. The average collection capacity for local authorities is about 52% (*ibid*). Uncollected revenues among the local authorities would cover about 35% of their estimated total infrastructure requirements (ibid). These authorities are faced with operational challenges and are mainly attributed to their failure to effectively collect revenue. The local authorities are not fully utilising revenue sources at their disposal. This is partly because of the reliance on outdated registers

and billings systems and limited capacity in the revenue collection processes (Chirisa and Chivenge, 2019).

Zimbabwe's urban areas are faced with challenges of urban sprawl and leapfrog developments. These developments are often uncoordinated and they result in increased vulnerabilities for the urban poor (Chirisa *et al.,* 2015). Urban growth processes are characterised by infill, extension and leapfrog developments. Many local authorities in Zimbabwe are suffering the consequences of urban sprawls and illegal settlements (McGregor and Chatiza, 2020). These consequences vary from being environmental, social, political or economic. There are links to political and economic events that happened in Zimbabwe, such as the causal link between the Government of Zimbabwe's Fast Track Land Reform Programme (FTLRP) and urban sprawl in the settlements in peripheral areas (Mbiba, 2017).

Urban areas in Sub-Saharan Africa are confronted with problems, such as rapid population growth, increasing rural-urban migration, the proliferation of informal settlements and epidemics and environmental degradation (*ibid*). Consistent with experiences in Africa, slum development is synonymous with urban growth in Zimbabwe's urban areas. Hundreds of thousands of people live in slums across Zimbabwe that have been subject to wide-scale demolition and a lack of government recognition (Munzwa and Jonga, 2010). Meanwhile, little is being done to improve conditions in the slums. Zimbabwe has a housing shortfall of 1.3 million housing units, according to the Ministry of National Housing (Chirisa *et al.,* 2016). There are scourges of illegal land sales and allocations prevalent in most local authorities to the extent that the Minister of Local Government, Public Works and National Housing sets up land audit teams to investigate issues of illegal sales and developments in the concerned councils when deemed necessary (Muchadenyika and Williams, 2017).

Political polarity is largely affecting the running of local authority affairs in local authorities in Zimbabwe. Available evidence in Zimbabwe shows that local governance is problematised by unsettled national and local politics (McGregor and Chatiza, 2020). Contesting political parties

include the Zimbabwe African National Union-Patriotic Front (ZANU-PF) controlling the national government and the opposition Movement for Democratic Change (MDC) controlling the majority of the urban local authorities (Muchadenyika and Williams, 2017). Urban areas have been solidly opposition-supporting cities since the year 2000. The ruling party's quest for control was embedded in broader changes to the state, marked by countrywide repression of the political opposition and civic organisations, securitised state institutions, and a shift into patronage and systemic corruption, in a context of repeated economic crises and infrastructural decay (McGregor and Chatiza, 2020).

The acute shortage of urban housing in Zimbabwe is well documented and widely acknowledged. High levels of overcrowding in existing stock, coupled with the government's brutal restriction of squatter settlements, maintained the quintessentially European physical appearance of Zimbabwe's urban areas for a long time after independence in 1980 (Munzwa and Jonga, 2010). Housing production by public authorities has dwindled since the 1990s after the structural adjustment programmes that reduced the Public Sector Investment Programmes (McGregor and Chatiza, 2020). Local authorities embarked on the conversion of rental accommodation to owner-occupation following the homeownership policies. This was in response to the challenges that public authorities faced in the management of public housing (Mbiba, 2017). Housing management is even now reflected by the poor state of public housing, such as council and government-managed flats in urban areas. There are space barons operating in flats, such as the Mbare flats, and these are performing the housing management functions at the expense of the local authorities (Chirisa *et al.,* 2015). In the housing delivery systems, there are land barons that are duping the general public of their hard-earned cash.

Growing overcrowding and the absence of running water, sewerage and electricity service are causing public health crises. The slums are experiencing heightened rates of infectious diseases, including tuberculosis, cholera, hepatitis and typhoid (Muchadenyika and Williams, 2017). Cholera, for instance, was severely experienced in 2008. A severe outbreak of cholera was reported in Zimbabwe in mid-2008, with so far

over 92,000 cases and over 4,000 deaths (Chirisa *et al*., 2015). This outbreak differed from previous outbreaks in being mainly urban and with a high case-fatality rate. A breakdown in the supply of clean water has been the main underlying cause but a breakdown in health service delivery in Zimbabwe has contributed to the magnitude and severity of the outbreak (Chirisa *et al*., 2016). In 2019, the advent of COVID-19 saw serious changes in the way people interact and do business (McGregor and Chatiza, 2020). Urban areas were affected by this new normal as there were increased demands for water, sanitation and hygiene series and infrastructure.

*URBAN RESILIENCE PROGRAMMING IN ZIMBABWE*

Urban resilience programming in Zimbabwe needs to consider many factors that include: current and projected urban challenges, the spatial differences in urban vulnerability, the factors that lead to vulnerability, the population dynamics of affected groups, the capacities that institutions and individuals have and the available opportunities and risks faced by different citizens and institutions (Chirisa and Chivenge, 2019). This comprehensive analysis will be the basis for an urban resilience programme. Strong situational analyses and baseline data are necessary for the project to be sustained beyond the initial period of performance (UN HABITAT, 2009).

Zimbabwe's urban settlements are inhabited, accessed and used by different groups of people (Mbiba, 2017). These people have different capacities and capabilities when it comes to the risks of disasters and the ability to participate in migatory measures and the time taken to respond to shocks. Mapping and analysis of these factors are critical as a key step in making sure that resilient programmes leave no one behind (UNDP, 2009). By including everyone, the resilient programmes will need to benchmark the existing capabilities and capacities of different people.

Local governments in Zimbabwe are facing capacity constraints to fully address current and future challenges that stem from emergencies, disasters and climate change. Limitations of local governments' capacity to address the adaptation needs of the urban poor have led to the recognition of the importance of supporting direct action by low-income individuals,

households and communities (United Nations, 2009). It is, therefore, important to have initiatives that protect and increase or diversify the livelihoods assets and to build community-based resilient management capabilities. This includes developing the ability of local communities to make demands on local governments and, where possible, to work in partnership with them. Urban investment projects can support Non-governmental Organisations (NGOs) and Civic Society Organisations (CSOs), particularly those formed by the urban poor to collaborate with local and national governments to undertake and/or scale-up demand-driven pro-poor activities that build resilience (World Bank, 2016).

Resources for urban resilience programmes will need to be pooled from a wide range of sources that include the state, NGOs, CSOs, and the general public (Center for Urban Studies, 2006). The state, however, should have a clear financial role in the financing of urban resilience. Where the state is more actively involved, ownership of such initiatives improves the success rate of the interventions. State resources are, however, not enough to meaningfully finance urban resilience programmes, hence the need to include non-state sources from the private players, NGOs and development partners (UN HABITAT, 2009). Public private partnerships (PPP) are a useful tool that can be utilised. Making use of grassroots structures is important in ensuring that urban resilience programmes are bottom-up (World Bank, 2012). Local authorities can contribute financially or in-kind towards resilience urban programmes.

The complexity of systems and uncertainty related to the impact of development and climate change affect the way people understand and manage risks when building and developing urban areas (Doorn, Gardoni and Murphy, 2019). Conceptually, it is important to understand and accept that the underlying assumptions could be wrong and the risks of disasters cannot be eliminated. This has two implications for cities (Centre for Urban Studies, 2006). First, rather than focus on "optimal engineering design", cities ought to adopt a robust approach to uncertainty and unknown risks using a balance of ecosystem measures and land use options that incorporate a greater degree of flexibility into designs of engineered measures, and takes into account potential weak spots and failure (United Nations, 2009). Urban planners and managers must understand and incorporate natural ecosystem services into urban

infrastructure and resilience projects. This approach will help cities avoid being locked into financing large-scale investments that might prove obsolete with changes in future risks (UNDP, 2009). Second, the recognition of residual risks implies that cities have to continue improving the quality of risk communication, early warning systems, emergency contingency, evacuation and recovery planning (World Bank, 2012).

Building resilience in cities relies on making investment decisions that prioritise spending for activities offering alternatives that perform well under different scenarios (Centre for Urban Studies, 2006). In managing risks today and planning for the future, a balance must be struck between, on the one hand, common-sense approaches that minimise impacts through better urban management and maintenance of existing mitigation measures and, on the other hand, far-sighted approaches (World Bank, 2016). Long-term views anticipate, defend and build resilience against future hazards by investing in new infrastructure or by altering the urban landscape. The balance will be different for each urban settlement at risk (United Nations, 2009). The overall goal is a preferred strategy that is cost-effective even in the case of uncertain risk.

The Government of Zimbabwe, through the 2013 Constitution, should protect its citizens (McGregor and Chatiza, 2020). This implies that resilience can be seen as a public good, dependent on public funding (Chirisa and Chivenge, 2029). For urban local governments, this implies: planning development; providing safe and affordable infrastructure and services; regulating building design and construction; regulating hazardous activities; influencing land availability and construction requirements; encouraging and supporting household and community actions towards risk reduction; and providing adequate disaster early warning, preparedness and response systems (United Nations, 2009). The urban local governments may utilise the statutory planning tools, such as the master and local planning approaches highlighted in the Regional, Town and Country Planning Act and the non-statutory planning approaches, such as strategic planning. Fulfilling these roles can reduce risk levels for populations and economies (Muchadenyika and Williams, 2017).

Improvements in urban infrastructure in Zimbabwe's cities will go a long way in building resilience. Urban infrastructure - water, sanitation, energy, communications and transportation systems - is critically important for emergency response and the quick recovery of the community and its economy (Munzwa and Jonga, 2010). Vulnerable to a wide range of natural hazards, there are opportunities for enhancing the resilience of critical systems (World Bank, 2016). Residual risks have to be managed in a way that is both flexible and robust. The traditional cost-benefit analysis does not work well when dealing with catastrophic tail risk (Center for Urban Studies, 2006). Critical systems, therefore, need to be designed in a way that they fail "gracefully", striving for a robust design that builds on investments in risk information, strategic communication, cross-sectoral coordination, and a well-planned response and recovery strategy (World Bank, 2012).

## DISCUSSION

In the context of the demographic, urbanisation and climatic trends, policy-makers in Zimbabwe, and many other countries, are facing many difficult decisions over medium and long-term investments in public infrastructure, services and urban management for resilience (*ibid*). Faced with these challenges, innovative and deliberate initiatives are needed to respond to the challenges and build strong communities that withstand the shocks from different dimensions (Centre for Urban Studies, 2006). Zimbabwe's urban areas are facing several key challenges that cut across the social, economic, political, environmental and spatial dimensions (Chirisa and Chivenge, 2019). These challenges and varying degrees of implications affect the recovery of people differently. Social groups such as the poor, women, the elderly, youths, child-headed households, women-headed households, and people living with disabilities and children, bear the brunt of urban challenges and generally have long recovery periods. These groups are, therefore, important to consider in building urban resilience programmes.

There are concrete ways to improve the decision-making process to guide Zimbabwe's urban areas towards the aspired resilience outcomes and benefits. What is important is to build from past experiences and have a better-informed future through deliberate policies, plans and programmes

that are communicated and acted upon by all stakeholders (United Nations, 2009). Resilience has to be built into urban management, critical infrastructure investments, and disaster and climate risk mitigation measures, stretching across sectors and jurisdiction and reaching the communities and the most vulnerable (World Bank, 2016). Integrating risk-based approaches into urban governance and planning processes can help national and city-level stakeholders make complex decisions in a smarter, forward-looking and more sustainable manner resulting in increased resilience (UNDP, 2009).

## CONCLUSION

Building an urban resilience programme encourages urban areas to adopt and invest in risk-based approaches and make better use of the technologies and tools available to manage existing and future urban problems and risks. This guide has defined resilience as the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner. Resilience in the context of urban areas translates into a new paradigm for urbanisation and influences the way stakeholders understand and manage urban hazards, and urban planning and management in general. It provides a conceptual framework with practical rules of thumb that can guide stakeholders' decisions to incorporate the management of disasters and climate risks into urban investments. In practice, operationalising resilience is a challenging process. To facilitate this process, this guides how to build urban resilience, primarily in critical infrastructure and the social realm, by reviewing available methodologies, tools and resources.

## REFERENCES


Centre for Urban Studies (2006). Slums of Urban Bangladesh - Mapping and Census, 2005. Centre for Urban Studies.

Chirisa, I. and Chivenge, M. (2019). The 'Concept Urban Resilience': Contextualising to Zimbabwe. *Journal of Urban Systems and Innovations for Resilience in Zimbabwe-JUSIRZ*, *1*(1& 2),1-19.

Chirisa, I, Bandauko, E, Mazhindu, E, Kwangwama, N.A. and Chikowore, G. (2016). Building Resilient Infrastructure in the Face of Climate Change in African Cities: Scope, Potentiality and Challenges. *Development Southern Africa*, *33*(1),113-127.

Chirisa, I, Nyamadzawo, L, Bandauko, E. and Mutsindikwa, N. (2015). The 2008/2009 Cholera Outbreak in Harare, Zimbabwe: The Case of Failure in Urban Environmental Health and Planning. *Reviews on Environmental Health*, *30*(2),117-124.

Davoudi, S, Shaw, K, Haider, J. L, Quinlan, A. E, Peterson, G. D, Hartmut Fünfgeld, H, McEvoy, D, Porter, L. and Davoudi, S. (2012). "Resilience: A Bridging Concept or a dead end?"Reframing" resilience: challenges for planning theory and practise interacting traps: resilience assessment of a pasture management system in Northern Afghanistan urban resilience: what does it mean in planning practice? Resilience as a useful concept for climate change adaptation? The politics of resilience for planning: a cautionary note: edited by Simin Davoudi and Libby Porter." *Planning Theory &Practice* 13(2), 299-333.

Doorn, N, Gardoni, P. and Murphy, C.(2019). A Multidisciplinary Definition and Evaluation of Resilience: The Role of Social Justice in Defining Resilience. *Sustainable and Resilient Infrastructure*, *4*(3),112-123.

Dube, C. (2019). Main Bottlenecks at the Local Authority Level That Could Pose Challenges for Growth and Sustainability. Available online: https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=MAIN+BOTTLENECKS+AT+THE+LOCAL+AUTHORITY+LEVEL+THAT+COULD+POSE+CHALLENGES+FOR+GROWTH+AND+SUSTAINABILITY&btnG=#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3AmktABJioGPIJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Den

Foa, R. (2009). Social and Governance Dimensions of Climate Change: Implications for Policy, Social Development. Paper No 115 of Social Dimensions of Climate Change/June 2009. Washington DC: World Bank.

IPCC. (2012). 2012 Special Report of the Intergovernmental Panel on Climate Change (IPCC) on Managing the Risks of Extreme Events and Disasters to Advance Climate Change

Mbiba, B. (2017). On the Periphery: Missing urbanisation in Zimbabwe. Africa Research Institute. Accessed: 31/07/2021

McGregor, J. and Chatiza, K. (2020). Geographies of Urban Dominance: The Politics of Harare's Periphery.

Muchadenyika, D. and Williams, J.J. (2017). Politics and the Practice of Planning: The Case of Zimbabwean Cities. *Cities*, 63, 33-40.

Munzwa, K. and Jonga, W. (2010). Urban Development in Zimbabwe: A Human Settlement Perspective. *Theoretical and Empirical Researches in Urban Management*, *5*(14),120-146.

UN HABITAT. (2009). Planning Sustainable Cities: Global Report on Human Settlements. London; Sterling, VA: Earthscan.

UNDP.(2009). Urban Resilience Programme Implementation Strategy (URPIS). UNDP and UNICEF: New York.

United Nations (2009). World Urbanisation Prospects: The 2009 Revision. Department of Economic and Social Addairs, Population Division. United Nations: New York

World Bank. (2012). Building Urban Resilience: Principles, Tools and Practice. Available online: https://www.gfdrr.org/sites/default/files/publication/EAP_handbook_principles_tools_practice_web.pdf

World Bank. (2016). Investing in Urban Resilience Can Save the World's Cities Billions Each Year and Keep Millions out of Poverty. Available online: https://www.worldbank.org/en/news/press-release/2016/10/12/world-bank-investing-in-urban-resilience-can-save-the-worlds-cities-billions-each-year-and-keep-millions-out-of-poverty.