

# Socio-Economic Pathways to Urban Climate Resilience:

## Exploring Governance and Incentives for Equitable Climate Action in Global South Cities

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## Abstract

This study investigates the socio-economic pathways to urban climate resilience in the cities of Mbabane and Manzini, Eswatini, focusing on the role of governance and socio-economic incentives in fostering equitable climate action among marginalized communities. Utilizing a mixed-methods approach, the research reveals a significant gap in the integration of urban populations, particularly informal sector actors, within existing climate resilience initiatives, which predominantly target rural areas. Key findings illustrate that while socio-economic incentives—including capacity-building programs, financial support, and community engagement opportunities—are perceived as effective by 82.4% of respondents, a substantial portion of the informal sector remains unsupported by municipal authorities. Barriers such as lack of legal recognition, limited access to information, and complicated application processes hinder access to these incentives. The study underscores the importance of community engagement and culturally relevant approaches in enhancing resilience and highlights the need for improved governance frameworks that facilitate inclusive participation. Recommendations for policymakers emphasize the need for decentralized governance, integration of local knowledge, and strengthened multi-stakeholder collaboration to enhance resilience-building efforts in urban settings.

**Key words:** Urban resilience; Climate action; Socio-economic incentives, Informal sector, Eswatini

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# 1. Introduction

The Kingdom of Eswatini is increasingly vulnerable to recurrent climate-related shocks and stressors, which are becoming a prevalent challenge for cities. As cities become frontline responders to climate change, the implications for climate justice and action are particularly pronounced among informal sector actors who play a vital role in the urban economy. Current climate resilience initiatives in Eswatini primarily target rural areas, leaving urban populations—especially those in the informal sector—under-prioritized in resilience planning.

Climate hazards such as severe heatwaves, unpredictable precipitation patterns, intense storms, and flash floods find expression in the main urban centers of Eswatini—Mbabane (the capital) and Manzini (the commercial center)—which are particularly susceptible to these climate extremes. These hazards threaten urban infrastructure and disrupt essential services such as transport, power, water supply, and waste management, in addition to disrupting lives and livelihoods. The high population densities and inadequate drainage systems in these cities exacerbate vulnerabilities, particularly for marginalized communities that often lack access to resources and support systems (Da Silva et al., 2012). Despite these challenges, current climate resilience initiatives in Eswatini continue to have a strong rural bias, further exposing marginalized urban populations and urban spaces to climate risks and hazards (Marschütz et al., 2020), thereby undermining the country's progress toward achieving the Sustainable Development Goals (SDGs).

This research aims to address the critical need for understanding the effectiveness of socio-economic incentives—such as financial support, capacity-building programs, and community initiatives, microfinance schemes, tax incentives, and risk insurance mechanisms—in enhancing resilience among individuals, households, and small businesses in the informal sector. By identifying the success factors that drive the effectiveness of these socio-economic 'boosts,' this study will provide insights into how urban governance frameworks can either facilitate or hinder the implementation of pathways to resilience.

The increasing frequency, severity, and intensity of climate-related hazards in Eswatini's cities continue to pose significant threats to the lives and livelihoods of urban dwellers, highlighting the urgent need to invest in building resilient urban environments to ensure that cities are safe spaces. Enhancing urban resilience is crucial for safeguarding the functionality and sustainability of cities amidst these challenges, ensuring that urban systems can adapt to a rapidly changing climate. International frameworks, such as the Sendai Framework for Disaster Risk Reduction, the New Urban Agenda, and the adoption of the SDGs, emphasize the critical role of cities in climate mitigation and adaptation to

create inclusive, safe, resilient, and sustainable environments (UN-Habitat, 2016; UNDRR, 2015). These frameworks advocate for integrated urban governance, inclusive and proactive (rather than reactive) national policies, and sustainable urban financing to foster climate-resilient cities.

Through case studies in Mbabane and Manzini, the research will explore strategies that cities can employ to integrate socio-economic incentives into their climate action plans. Ultimately, this study seeks to identify best practices and institutional arrangements that promote equitable climate governance, ensuring that marginalized communities are not left behind in the face of climate change. By contributing to a deeper understanding of the synergies between socio-economic resilience and urban climate governance, this research aims to offer actionable insights for policymakers to enhance climate adaptation strategies in global South cities.

## 2. Literature Review

### 2.1 Climate Change

Climate change is amongst the most important global environmental issues with unique characteristics. The UNFCCC explains climate change as the changes in the climate system resulting from human activities which alter the composition of the global atmosphere over comparable time periods (United Nations, 1992). It is global, long-term and includes complex interactions between climatic, environmental, political, economic, institutional and technological pressures. Climate change has substantial international and intergenerational effects on equity and sustainable development. Furthermore, decisions and actions to stabilize climate change are affected by; uncertainty and risks associated with projecting changes in climate; potential impacts on natural and socio-economic systems; and population and economic growth. The effects of climate change are estimated to be greatest in developing countries with regards to loss of life and effects on investment and the economy. Thus, developing countries have a larger urgency in developing strategies to mitigate and adapt to climate change (Ravindranath et.al, 2002). These anticipated climate change risks pose significant threats to sustainable development and environmental management (Ciullo et al., 2025). The high poverty rates for sub-Saharan Africa countries including Eswatini, mean that there is increased community climate vulnerability to external shocks such as droughts and floods.

Eswatini has experienced an increased incidence in the climate related hazards of droughts, heat waves, wildfires, floods, and storms and other extreme weather events. These events have had detrimental effects on critical sectors such as agriculture, water, tourism, health, and infrastructure, thereby impacting the country's economy negatively.

Droughts are the major hazard experience and are of concern due to rising temperatures and decreasing precipitation levels. Historically, droughts in Eswatini were recorded in 1981–1984, 1990–1992, 2001–2003, 2006–2008, 2011–2013, 2015–2016, and 2018–2019. Even though limited data has been recorded on heat waves in Eswatini, it is expected that climate change will increase the likelihood of extreme heat events as temperatures increase (Mkhatshwa et.al, 2024).

### **Urbanization and Climate change in African cities**

Rapid urbanization and climate change are matching global challenges as pronounced by Agenda 2030 of the 17 Sustainable Development Goals (SDGs). Climatic hazards, including floods, drought, sea level rise, storms and heat waves, are the highest on the list of exposure to economic and social risks in cities (World Bank 2019). More than half of the world's population lives in urban areas, with urban population projected to rise to over 70% by 2070. According to the UNDESA, 2024 World Urbanization Prospects data, Africa's urban population is projected to rise from approximately 33 million in 1950 to 744 million in 2030, and over 1.2 billion by 2050. This urban growth is partly due to migration from rural areas; however it is also increasingly being driven by natural population increases. Urbanization can intensify the likelihood of disasters, while the concentration of infrastructure and people increase exposure to hazards and the extent of their impact. Urban development modifies land surfaces and disrupts systems and natural processes, increasing the likelihood of flooding, covering ground with hard surfaces such as roads and pavements also increases run-off (ActionAid, 2006). Activities such as road construction, wetland reclamation for residential and commercial use and resource extraction also reduce ecosystem services such as flood regulation and protection (UNISDR, 2012). The expansion of towns and cities comes with increasing land prices, thus in the absence of affordable, well-located land, poor households frequently have little choice but to live on marginal land which is usually vacant because it is unsafe. In many African countries, urban populations are growing at a faster rate than the capacity of the authorities to maintain and expand infrastructure as well as provide essential services (Holloway et al, 2013).

As precipitation and temperatures shift over time, scientists are arguing that urban areas will need to cope with a multitude of events, including increased frequency and incidence of heat waves, water shortages, storm surges, and other natural hazards. These events will have negative impacts on the supply of food and water resources and increase of the frequency and scale of floods, cause infrastructure damage, increase tax services, and thus in the process, create health, housing, and livelihood challenges for the most vulnerable residents (Carmin et al, 2012).

There is increasing international concern about how to address the effects of climate change for urban areas, especially in developing countries, where cities are rapidly growing and a high proportion of the urban population is poor or otherwise vulnerable to climate-related disruptions. The increased vulnerability of urban areas to climate change over the past decade, coupled with the challenges that it will bring about, has been the force behind all scales of governments to generate activities, innovations, and transformative changes to assist cities address the impacts of climate change (Lin et al, 2021).

## 2.2 Urban Governance Frameworks

Urban areas are increasingly being seen as having a distinct role on the climate agenda, in terms of both mitigation and adaptation. The 21st session of the Conference of the Parties (COP 21), highlighted the need to establish a global goal on adaptation to enhance adaptive capacity, strengthen resilience and to reduce vulnerability to climate change. The Paris agreement also references cities as relevant actors by acknowledging the need for non-Party stakeholders to address and respond to climate change. Further, The Assessment Reports of the IPCC also emphasized the importance of cities with the Fifth Assessment Report of IPCC 2014, stating that implementing effective urban adaptation is possible and can be accelerated. Moreover, the Sustainable Development Goal (SDG 11) also states that sustainable cities and communities need to address the challenges that are caused by rapid urbanization, which include limited access to space, poor waste management practices, and unsustainable urban infrastructure. In response to this, United Nations International Strategy for Disaster Reduction (UNISDR) adopted a resilience-based approach and acknowledged the need for urban adaptable policies and processes to address climate-related issues (UNISDR 2009). One example of approaches to urban resilience is the 'Making Cities Resilient' program, implemented in 2010 by the United Nations Office for Disaster Risk Reduction (UNDRR) and its partners to build capacity of town leaders and local governments on strategies and tools for urban risk reduction (UNISDR 2012b). Thus, given the need to address and respond to climate change in cities, urban governments are the key to successful urban climate adaptation.

Building resilience requires capacity of both National Governments and local Governments, to profile and address risk drivers in the short and long term (Mensah et al, 2021). Universities in African countries including the University of Eswatini are providing a valuable resource through supporting research and developing degrees and short-course programs on risk profiling, reduction and management informed by local conditions. Tackling risk holistically and developmentally requires work across government institutions, including departments responsible for basic services, planning and technical functions. This calls for creating awareness and ownership of risk reduction strategies and facilitating coordination across sectors. An increasing number of countries have therefore

established and funded national disaster management authorities and climate change offices, demonstrating a national commitment to disaster risk reduction, climate adaptation, and resilience. These efforts to strengthen risk reduction and adaptation provide entry points for tackling the governance aspects of risk.

Climate resilient urban development should be underpinned by responsible governance of land and mainstreaming climate risk factors into land administration and management to allow for complex decisions about development and climate change adaptation to be made. Urban governance and mainstreaming of climate change calls for strengthening urban and land use planning, and enforcement of appropriate building standards to encourage urban resilience building (Friend et al, 2020). Strengthening urban land use planning can reduce exposure to hazards, through preventing the development of settlement and business areas in hazardous areas and increasing the supply of safe urban land for the poor. These measures increase the incentives for informal settlers to reduce their risk to natural hazards and undertake climate change adaptation measures (Yilmaz et al, 2021). Effective control of land use is also necessary to safeguard and increase natural buffers as a defense for cities and their surroundings, protect key ecological services and systems as well as ensuring development occurs in appropriate locations (Satterthwaite et al., 2009).

Urban planning and regulatory frameworks need to be developed and supported by accountability of government institutions and private developers for poorly located, illegal or low-quality buildings. It is important that these planning and regulatory frameworks safeguard human rights and entitlements as communities residing in high-risk locations usually live there because they have no alternative. Thus, reducing risk while at the same time protecting the rights of the most vulnerable people calls for identifying feasible, fair and equitable solutions to vulnerable people's housing needs. It is important to understand that urban planning and land use initiatives are also political processes. Such initiatives should therefore involve different stakeholders and strive to empower poorer and vulnerable citizens through inclusive and proactive engagement. Evidence from other countries shows that where urban land-use planning has been effective it supports low-income communities to inhabit land that is not exposed to hazard risk, and encourages improvements to land tenure security (UN-HABITAT/IIED, 2012). Windhoek in Namibia is one example of where effective land-use planning has controlled the increase of slums onto hazard-prone land and allowed for improvements to tenure security for the urban poor. Regulations changes regarding infrastructure standards and minimum lot sizes significantly reduced the prices of the land, making them more affordable (Quan and Dyer, 2008).

## 2.3 Socio-Economic Incentives

Resilience incentives are part of the mechanisms used to encourage proactive measures that enhance the ability of urban systems to withstand and recover from disturbances, thereby promoting long-term sustainability. Providing such incentives shifts the focus from reactive responses to preventative strategies, fostering a more robust and adaptable approach to climate change impacts.

### 2.3.1 Risk Assessment and Mapping

Risk assessment and mapping are powerful information-based incentives for building urban climate resilience, especially in developing countries where data gaps and informal settlements complicate planning. Understanding this need for risk knowledge, many cities around the world have taken steps towards enhancing their resilience through risk assessment and mapping. These assessments have been instrumental in defining the risks, understanding characteristics of potential hazards (such as frequency and severity), and identifying vulnerable communities and potential exposure to given hazards (Liu et.al, 2019). Risk assessments help in developing informed priority measures for risk management, carefully considering the probability and impact of potential events, calculating cost-effectiveness of preventative measures, and resource availability. Moreover, local authorities can use the assessment results to track achievement of resilience-building initiatives, engage different stakeholders in their resilience-building efforts, and improve transparency of the decision-making processes. Risk assessments provide an incentive to local communities in providing a better understanding of the major risks and vulnerabilities they are prone to and relevant resilience-building activities that can be implemented to address them. It is through continued engagement with communities and stakeholders that better approaches for enhancing urban resilience can be designed (Sharifi, 2016).

It is important that local governments recognize the importance of involving the public in urban risk assessments planning to assist in defining feasible programs for reducing risk and strengthening program implementation and monitoring. Engaging with community groups and non-governmental organizations to provide necessary inputs to a risk assessment has the advantage of not only data and maps they may help generate, but also for the support in identifying and acting on risk and vulnerability. Public consultation supports the credibility of the assessment, encourages awareness of prevalent risks, and supports in identifying potential actions to reduce communities' vulnerability. Risk assessments also provide a foundation for cultivating long-term sustainable risk reduction strategies that address vulnerabilities to natural hazards. The key to making a risk assessment successful is completing the assessment and then creating and implementing a

risk-reduction plan, through the knowledge gained. The action plan will ideally begin the process of mainstreaming risk reduction in municipal planning and service delivery (Grafakos et.al, 2016).

In the island city of Tumaco, Colombia which is one of the country's most vulnerable urban areas, the government conducted its risk assessment and used the results to develop initiatives to reduce their vulnerability to risk. The assessment results showed that the city is exposed to risks of earthquakes and tsunamis and sea-level rise. The city was found to only be accessible through two bridges at opposite ends of the island. Through evaluating the city's potential for flooding from the risk of rising sea level which presents a potential need to evacuate the city in the event of floods actually happening, investments were made in widening the shortest bridge. The widening of the bridge accommodated greater pedestrian and vehicle mobility, and evacuation simulations were run to increase residents' awareness. The case of Tumaco demonstrates that risk informed urban planning can play an important role in deciding what actions to take to reduce the relative degree of risk faced by urban residents (Dickson et.al, 2012).

### **2.3.2 Community Engagement and Participation**

Collaboration is increasingly being regarded as a critical component to build resilience in urban areas through creating durable and effective decision making, addressing diverse aspects of a variety of sectors (Few et al., 2007). The ability of the city stakeholders in different sectors of society such as private organizations, government and academia to collectively act to support each other and work together helps in building resilience. Among these actors, community participation, more especially those in vulnerable communities, is increasingly important. There is therefore a need to expand the understanding and awareness of communities in climate risks in order for them to meaningfully participate, engage and collaborate in building resilience. Resilience requires public engagement and the capacity building of city stakeholders and communities, enhancing their knowledge and skills and improving their ability to participate (Esteban, 2020). Incentivizing community involvement in resilience planning and implementation through the provision of grants or credit notes for community-based adaptation projects also increases community's eagerness to participate in climate action.

The city of Durban, formerly part of the 100 Resilient Cities initiative and now a member of the Resilient Cities Network, has used credit note incentives in its climate protection program led by the Environmental Planning and Climate Protection Department. The program had an emphasis on municipal ecosystem-based adaptation, and community-based adaptation, and also focused on developing new tools of mainstreaming climate protection into city operations. One of the programs was related to reforestation which

was implemented in the Buffelsdraai community, where local households grew native tree seedlings in exchange for credit notes. The local facilitators championed sponsoring children's school fees using these credit notes, which resulted in beneficial impacts on the local community. This initiative led to the birth of many tree planting entrepreneurs who became aware of the benefits behind the reforestation project. This demonstrated that if an ecosystem-based adaptation to reducing the impacts of climate change approach is to affect local understanding of climate change impacts, they need to be at the forefront of the projects (Archer et.al, 2014).

Traditional approaches to climate risk management have generally focused on the top-down and scientific assessment of climate risks to the neglect of the local communities, who bear both the brunt of climate change and the costs of actions. Bottom-up resilience-based approaches emphasize the importance of citizens, and the need for their active involvement. In the pursuit of resilience-building knowledge, it is also essential to acknowledge and incorporate local perspectives. Local knowledge, which is often referred to as Indigenous or traditional knowledge, is a source of local insights developed over time through direct and indirect relations with various crises and their impacts (Ford et al. 2020). Such knowledge is rooted in the cultural, social, and ecological context of a community, making it uniquely relevant and adaptive to local challenges and changes. It plays a crucial role in community-led resilience-building, as it provides an enabling capacity for people to sustain their livelihoods and adapt to changing circumstances (Shava et al. 2009)

Lindell, et al 2019 state that institutional planning for urban resilient cities in Africa, calls for the active engagement, participation and knowledge from informal city residents and businesses, such as street vendors and neighborhood associations. Informal businesses in urban areas represent a critical source of income in the absence of jobs in the formal sector. Therefore, a critical element of the resilient urban areas is targeted support for informal activities by means of suitable interventions to address certain vulnerabilities and insecurities of income and livelihood that undermine the resilience of urban population to bounce back after a shock. This also institutes an effective way for local governments to decrease poverty and promote economic justice for the most vulnerable economically active urban residents (UN-Habitat, 2015). Municipal interventions to improve informal economies should include establishing more and inclusive legitimate workspaces, facilitating the integration of informal economic actors in urban and regional supply chains and markets, upgrading facilities and improving sanitary and health conditions by building covered markets and manufacturing workshop hubs with suitable water and related infrastructure, and providing access to shared or hired equipment (UN-Habitat, 2022).

Any such new facilities and regulations need to be designed and constructed in a co-production with the informal or small entrepreneurs on a participatory or co-design basis so that their requirements can be met, and the process can provide a foundation for developing more positive working relations. Indeed, a helpful way to achieve this is to regard informal enterprises as one category of micro-enterprises. Small, affordable user charges for services that informal traders feel are appropriate and helpful can help to offset municipal costs. These practical guidelines conform to the principles of good practice for inclusive local economic development within integrated urban planning developed by UN-Habitat. Urban economic resilience is crucial for the ability of a city's economy to withstand and recover from climate shocks and the provision of such incentives can have a positive impact on building resilience (UN-Habitat, 2022).

### **2.3.3 Grants and Subsidies**

There are a number of grants programmes provided through social protection mechanisms aimed at supporting vulnerable groups that have been used by African countries to support resilience-building throughout the continent. Social protection has become a popular mechanism to address multi-dimensional livelihood and life cycle risks and vulnerabilities, and as a means of accelerating progress on the Sustainable development goals as part of overall national poverty reduction strategies. Social protection has become an important mechanism to support poor and vulnerable households to safeguard their assets and adopt efficient coping strategies to address challenges arising from climate change, disasters, and economic crises. These provide households with the opportunity to invest in more productive livelihood strategies (Bonfiglioli, 2011). Social protection mechanisms and tools can be contributory and non-contributory. Social assistance measures commonly include non-contributory social transfers such as cash transfers, food assistance and nutrition supplementation, fee exemptions, and social pension grants, which are popular public initiatives to offer safety nets against extreme poverty. Specialized social services include those directed to particular vulnerabilities such as the disabled, elderly or protection for children and women against violence or neglect. Examples of social protection programs in African countries include the Child Grants Program in Lesotho, the Social Cash Transfer Program in Malawi, expansion of Social Welfare Grants in Namibia and orphaned and vulnerable School Bursary Scheme, elderly and disability grant in Eswatini (Mensah et al, 2021).

The basis of social protection programs can be adapted to respond to specific climate-related risks and vulnerabilities. This calls for the strengthening of coordination and integration between social assistance, humanitarian response, and risk reduction approaches to reduce risk and improve resilience. In a crisis like drought or flooding, social protection programs should be able to effect shock-responsive modifications, according to

the type of shock and people affected. Such modifications can be done through increasing the size or frequency of payments to beneficiaries in existing programs if they are most at risk or horizontal expansion for payments to newly vulnerable households and drawing on existing administrative structures to provide new forms of assistance. A number of countries applied one of these adjustments during the COVID-19 pandemic (Gilligan, 2022).

Governments have also been steering urban sustainability and resilience through subsidies. These subsidies are often in the form of financial support that is aimed at promoting beneficial economic or social outcomes. Subsidizing the Instalment of solar panels by households, for instance, has been done in countries like Germany, USA, Spain and Portugal. Such subsidies may serve different goals which include supporting the market for solar panels through increasing household demand; supporting a transition to renewable energy; and changing people's attitudes towards solar panels by making them a more normal part of daily life with more and more people installing them on their houses.

While subsidies seem like an easy tool for governments to foster urban sustainability and resilience, there is also some controversy in their implementation. There is a risk that they may not achieve their intended goals and regulatory outcome is not achieved. Subsidy programs are also critiqued for favoring the better off in society, making them better positioned. For instance, in the installment of solar panels, such subsidies are available only to those who can afford the upfront costs of solar panels (van der Heijden, 2017).

### **2.3.4 Microfinance**

Microfinance involves small loans support and financial services to the poor to build their assets, develop or further establish their businesses and protect against risk. This is one of the incentives that is used by countries like Bangladesh and Zimbabwe to foster resilience building. According to Hammill et al. (2008), The benefit of micro financing in building resilience is the ability of microfinance to accelerate livelihood diversification and accumulation of assets. Studies reveal that microfinance can help improve household consumption and asset accumulation and increase entrepreneurship as well as improve households' ability to cope with climate risk.

Microfinancing can be accessed through the entities providing products and services, ranging from community- based organizations to formal institutions such as non-governmental organizations (NGOs) and banks to strengthen the coping capacity of vulnerable urban populations from climate impacts. Typical microfinance products that can be provided include credit, insurance schemes, savings, education loans, health loans and social services which may be combined to some degree with non-financial services like

health and education, to provide a more integrated approach (Ledgerwood, 2013). Micro Financial Institutions (MFIs) not only deliver financial resources, but they also offer training, technical support, and advisory services to improve communities' understanding and response to climate risks. In Zimbabwe MFIs also collaborate with local organizations and government agencies to provide training programs on water conservation methods, and disaster preparedness strategies among other topics.

Microfinance programs are mostly targeted towards women as they are mostly vulnerable to climate change and they make up a large percent of the informal sector. Women are also more credit constrained than men and therefore more likely to engage in microfinance initiatives as well as regularly participate in any related training and meetings (Hammill et al., 2008). Providing access to microfinance institutions as an incentive for the vulnerable urban population to build their resilience involves ensuring programs influence beneficiaries to reduce their exposure to climate and environmental hazards, and targets their adaptive capacity. Integrating climate resilience into microfinance programs calls for partnerships to incorporate climate data and other services. A study on climate adaptation microfinance in Zimbabwe also highlighted the importance of supportive regulatory frameworks in enabling MFIs' effective engagement in climate adaptation financing. It stresses the need for clear guidelines, incentives, and policy provision to encourage MFIs to prioritize climate-related lending and investments (Hlatshwayo et.al, 2024).

### **2.3.5 Tax Incentives and Tradable Permits**

Tax incentives involve the reduction of taxes for businesses and individuals with the aim of achieving specific desirable climate resilience actions or investments. The main purpose is to encourage those businesses and individuals to employ behavioral strategies that are socially responsible and/or benefit the community's resilience. The Government of Louisiana for example offers individuals a tax reduction of 50% of the cost to be paid to upgrade and retrofit their homes to comply with the upgraded building code and also provides sales tax exemptions to residents who purchase and install storm shutters in windy areas (Adams, 2015). Likewise, in Japan, homeowners who retrofit their homes against earthquake risks are given a 10% income tax reduction as well as low-interest-rate financing by the government.

Governments are also issuing tax incentives to encourage the application of green environmental protection technology in order to encourage enterprises to innovate in production technology while lowering their carbon emissions (Song & Wen, 2023). Such incentives can improve enterprise participation in innovation related to green and environmental technologies to a certain extent. These policies encourage enterprises to actively undertake and fulfill environmental responsibilities and improve performance. It

offers multiple benefits: reducing environmental pollution and lowering costs associated with governmental environmental regulations, improving production efficiency, promoting industrial optimization and upgrading, enhancing competitive advantages, and supporting the long-term, stable development of enterprises (Jiang, 2023).

Some Governments use taxes to correct the prices of production and consumption by including the costs of negative externalities. For example, in some European countries, environmental taxes are applied to the extraction of sand, gravel and rock for the cement industry. The costs to the environment for such activities would not normally be included in the price of cement, therefore such taxes then seek to address this particular issue. There has been criticism of such taxes in that they give the illusion that harmful activities are accepted because it is paid for and large companies may consider such taxes as one of the costs of doing business (van der Heijden, 2017).

Tradable permits also seek to overcome market failures by not only correcting the price of production and consumption, also seek to put a limit on the number of negative externalities. One example of trade permits is carbon emission which have been implemented in the cities of Tokyo and Beijing, where they introduced city-wide carbon trading schemes in 2014. Under these carbon emission trading schemes, a city may set a maximum to the carbon emissions it expects to be produced. It then issues permit that allow the holder to produce a certain amount of carbon emissions. For example, the city's major commercial property owners will receive a permit that specifies the amount of carbon their buildings are allowed to emit. If a permit holder produces less carbon emissions than it is allowed, it can then trade its permit with a producer that seeks a quota of carbon emissions larger than it currently holds under its own permits. This trade will be at a price that is equivalent to the market costs of carbon emissions. Furthermore, tradable permit schemes seek to encourage producers to be innovative and find cost effective modes of production that reduce their carbon emissions below the cost of buying permits, for instance through owning or occupying energy-efficient buildings (van der Heijden, 2017). The application of carbon trading schemes is a new approach which still remains to be evaluated on whether it will achieve the desired outcomes. Again, such schemes can be critiqued for creating the notion that undesired behaviour is allowed as long as one pays for it. The maximum emission rate may become a preventative measure to industries reducing their carbon emissions to zero as long as the costs for emissions are lower than the cost of preventing them (Gunningham et al. 1998).

### **2.3.6 Resilience through Risk Insurance**

Climate risk insurance plays a crucial role in transferring and mitigating risk. It increases risk awareness, offers incentives for risk mitigation, and supports economic growth and

capital mobilization. However, cities have continued to underutilize insurance, with only a few including insurance components in their local resilience strategies. Insurance plays an important role in transferring and reducing risk and resilience building by encouraging risk reduction through risk-based premiums and premium discounts (Rezvani et al, 2023).

One example of using insurance in resilience building is weather related insurance payouts for communities. There is great potential in developing community-based risk management arrangements and products to alleviate idiosyncratic risks with the aim of mitigating poverty traps after climate shocks. This would include the provision of index-based insurance schemes, which have payouts that are triggered in accordance to established local weather thresholds. (Wang, Karu-aihe, Young, & Zhang, 2013). These weather-based insurances are based on local climate patterns or trends such as rainfall or temperature recorded in a particular weather station over a certain period of time. A threshold and a limit for that specific weather event are established from such observations so as to create a range for insurance claims (Barnett & Mahul, 2007). Therefore, whenever the threshold is reached and exceeded, policy holders automatically receive an indemnity up to the amount insured and to the established limit.

For businesses investing in risk insurance is economically beneficial because it reduces the costs associated with business interruption and other losses Risk insurance for Small and medium enterprises (SMEs) has been used in Asian countries to reduce the economic losses caused by climate hazards and help them recover quickly. In Indonesia, micro businesses insurance was introduced by the Ministry of Cooperatives and SMEs in cooperation with the insurance association. This insurance covers losses caused by hazards such as tsunamis. It is applied for protection of business equipment, business premises, inventories, and (Japhta et al., 2016). However, unlike business insurances for eventualities such as fire, business insurance for climate risks has a low purchasing rate. One of the reasons for the slow uptake of business risk insurance has been the perception that it is an additional unnecessary cost. Another reason has been the absence of customized insurance products that are relevant to smaller companies' needs. Governments therefore, still have to urge insurance companies to establish targeted insurance products with lower premiums. Governments should also take responsibility to strengthen and promote the adoption and use of this kind of risk insurance.

## **2.4 Challenges Faced by Developing Countries in Urban Resilience**

The complex climate vulnerabilities of African urban areas are evident today. African urban areas are burdened with aging and poor infrastructure, which hinders the effective implementation of climate adaptation strategies (Addaney et al., 2017). Urban areas are on

the rise globally, and African cities face the risk of rapid, unplanned expansion without proper resilience measures. This unplanned growth directly impacts communities, emphasizing the urgency for inclusive approaches that prioritize local needs and safeguard residents. The continued rise of informal settlements underscores a pressing need for vital services and infrastructure, highlighting deficiencies in urban governance structures. African land tenure dynamics further complicate policymaking and often lead to conflicts between marginalized groups and dominant urban stakeholders (Mwenje & Kumar, 2024).

Local Governments need to understand the risks and hazards profile threatening the city and populations within the city as well as the potential climate impacts to develop informed resilience strategies. However, local governments especially in developing countries, may not have access to risk modelling and technical assessments of possible climate impacts. Moreover, even when they do understand the risk profiles, they may have uncertainties that make their integration into planning and infrastructure investments difficult. Urban planning systems also have to deal with the uncertainties that come with climate change. Although awareness about climate change and its effects is increasing (van Buuren et.al, 2016), there is still a degree of uncertainty regarding the time, intensity and manner in which climate change will affect local communities. There remains a degree of uncertainty regarding the time, intensity, and manner in which climate change will affect local communities. While such uncertainties can act as barriers to action and lead to indecisiveness, they also underscore the importance of resilience frameworks, which move beyond adaptation to allow greater flexibility in responding to climate challenges, including those never before encountered (Giddens, 2009).

Climate resilience has to compete with other interests in the local spatial planning processes; thus, a cost-benefit balance must be considered. Climate resilience measures typically require a long-term investment and can therefore transform into a weak interest in local decision-making processes. This can be seen through noticeable inclination towards prioritizing economic growth over environmental issues. This not only risks compromising long-term climate resilience building but also has the potential to negatively impact already vulnerable communities (Mwenje & Kumar, 2024).

## 3. Material and Methods

### 3.1 Study Area and Research Design

The research study was conducted in Eswatini's two principal cities—Mbabane, the capital of the Kingdom of Eswatini, and Manzini, the country's economic hub. These urban centers host the majority of the nation's informal traders, many of whom operate in precarious locations and have repeatedly been affected by climate-induced hazards and

disasters. Such events have become increasingly frequent and severe in recent years. For instance, Mbabane experienced significant flooding in 2020, resulting in property and infrastructure damage and disrupting both informal and formal businesses. Earlier, in 2015, a severe drought brought the city to a standstill due to acute water shortages, contributing to national economic losses exceeding USD 47 million (UNDRR & CIMA, 2019; Duclos & Pullanikkatil, 2020). Similarly, Manzini has faced recurrent flooding, droughts, and intense storms, all of which have disrupted urban operations and affected livelihoods across both formal and informal sectors (Mamba, 2019; 2020).

According to the UNDRR disaster risk profile, both cities are highly exposed to climate-related risks such as floods, droughts, and storms (UNDRR, 2018; UNDRR & CIMA, 2019). With projections indicating an increase in climate-induced disasters, the informal sector in these urban areas remains particularly vulnerable. This underscores the urgent need for scholarly research that will inform targeted climate resilience initiatives to safeguard marginalized urban populations amid a rapidly changing climate. The study adopted both positivist and interpretivist research paradigms, employing mixed methods approach—integrating qualitative and quantitative techniques—to assess climate governance in Eswatini’s urban centers. This methodological blend enabled a comprehensive understanding of the issues by leveraging the strengths of each approach.

Methodological triangulation was used to enhance analytical depth and reliability. By combining quantitative trend analysis with qualitative insights, the study was able to explore a wide range of variables and uncover dimensions of urban climate resilience that would be difficult to capture through a single method. Quantitative methods were particularly effective in identifying socio-economic patterns and disparities in climate resilience across urban communities. Structured household questionnaires administered in Mbabane and Manzini gathered data on the types and frequency of socio-economic incentives received—such as financial support, training programs, and community-based initiatives—as well as the drivers of vulnerability and factors influencing the uptake of resilience measures. These findings provided statistical evidence of how different demographic groups engage with urban climate adaptation strategies. Quantitative assessments are crucial for revealing inequities in access to resilience-building resources and for informing inclusive urban governance (Da Silva et al., 2012; UN-Habitat, 2016).

Complementing this, qualitative methods offered rich, contextual insights into how urban residents interpret and respond to climate resilience initiatives. Interviews with key informants—including local government officials, community leaders, and informal sector actors—illuminated socio-cultural and institutional barriers to effective implementation. These included limited trust in governance structures, ambiguity in incentive mechanisms, and cultural norms, such as that influence perceptions of risk and adaptation. Qualitative

inquiry is essential for unpacking the lived experiences of marginalized urban populations and for understanding how governance frameworks can either facilitate or hinder equitable climate action (Marschütz et al., 2020).

### **3.2 Data Collection and Analysis**

This research utilized both primary and secondary data sources to explore the socio-economic dimensions of urban climate resilience in Eswatini's cities—Mbabane and Manzini. Secondary data included academic literature and grey sources relevant to urban climate governance, socio-economic incentives, and resilience-building strategies in the context of marginalized urban populations. Key documents reviewed included the Eswatini Climate Change Adaptation Plan, National Emergency Response Mitigation and Adaptation Plan, Eswatini National Urban Development Strategy, and relevant reports such as the Eswatini Vulnerability Assessment and Analysis (VACs) reports, Drought Assessment reports, and reports from UN-Habitat and UNDRR among others. Recent published journal articles, book chapters, and internet sources relevant to the assignment were also consulted to gain a comprehensive understanding of urban climate governance, socio-economic incentives, and resilience-building strategies among marginalized urban populations. These sources provided a foundational understanding of the policy landscape and institutional arrangements shaping urban climate action in the Global South.

Primary data collection involved both quantitative and qualitative methods. A structured household questionnaire was administered to urban residents, particularly those operating in the informal sector—to assess access to socio-economic incentives, perceptions of climate risk, and engagement with resilience initiatives. The questionnaire was pre-coded and digitized using the Kobo Toolbox platform to ensure data accuracy and consistency. Quantitative data was analyzed using statistical tools such as SPSS to compute frequencies, perform cross-tabulations, and establish relationships between variables. Qualitative data were gathered through in-depth interviews and focus group discussions (FGDs) with key stakeholders, including informal traders, youth, elderly residents, and people with disabilities, and was examined through thematic coding and content analysis. These discussions explored lived experiences, governance challenges, and barriers to equitable climate action in urban settings.

### **3.3 Sampling and Sample Size Determination**

For the purposes of quantitative data collection, a representative sample was drawn from the two targeted urban jurisdictions (Manzini and Mbabane) through a multi-step sampling procedure, which involved spatial sampling of 24 enumeration areas (EAs) within the two urban areas. A total of 236 households were then selected using stratified simple random sampling (see sample size determination formula to be used), targeting low-income

households and small business owners operating in the informal sector in the urban spaces of Manzini and Mbabane.

$$n = \frac{z^2 \times p(1-p)}{\epsilon^2}$$

Where:

**z** is the z score

**ε** is the margin of error

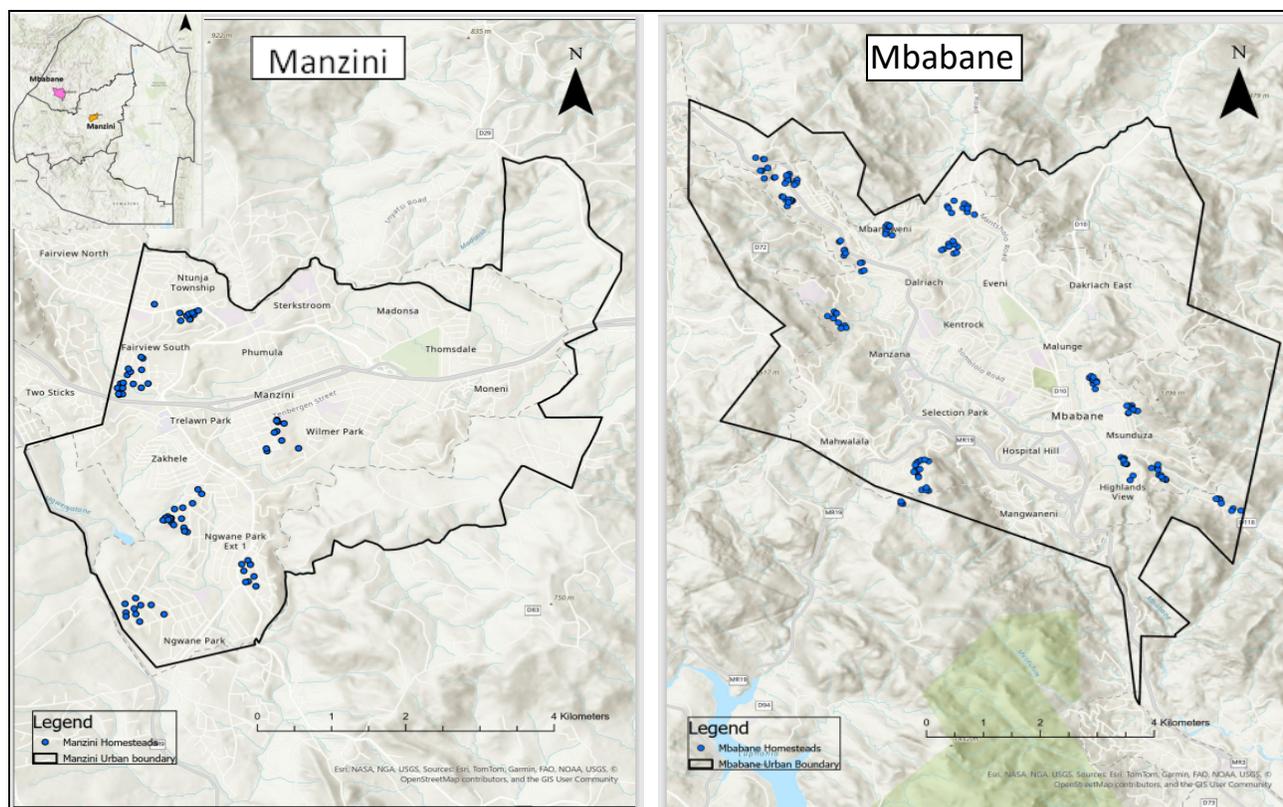
**n** is the population size

**p** is the population proportion

*Table: Targeted Sample in Mbabane and Manzini cities*

Urban areas	Households	Sampled households
Mbabane	174	120
Manzini	166	116
Total sample	340	236

For the purposes of qualitative data collection, a total of 10 key informant interviews (6 females and 4 males) were conducted with representatives from the Municipal Council of Manzini and Mbabane (2), the Department of Meteorological Services (1), National Disaster Management Agency (1), local authority/leadership (e.g., ward development committee representatives/ward counselors) (2), and representatives of informal traders (4). These organizations and individuals were purposefully selected based on their valuable knowledge and insights regarding the effectiveness of available socio-economic incentives—such as financial aid, capacity-building programs, and community initiatives—in strengthening climate resilience among individuals, households, and small businesses in the informal sector. Additionally, they provided insights into how urban governance support or hinder resilience efforts.



Map 1: Map showing sampled households in the Mbabane and Manzini cities

### 3.4 Ethical Consideration

The study adhered to ethical standards governing research involving human participants. Prior to data collection, permission was sought and obtained from relevant municipal authorities, community leaders, and urban representatives in the study areas. Ethical clearance was also granted by the Human Subjects Research Ethics Committee (HSREC) of the University of Eswatini, in accordance with the institution’s ethics policy. This regulatory framework ensures that informed consent is obtained in a manner that respects the autonomy and rights of participants. It also outlines the procedures and regulations that govern ethical research conduct, ensuring that participants are fully informed about the study, its potential risks and benefits, and their right to withdraw at any stage without consequence. These measures were essential in safeguarding participants and maintaining the integrity of the research.

Participation was strictly voluntary, with informed consent obtained from all respondents. The study’s objectives and procedures were clearly explained, and participants were given the opportunity to ask questions and decline participation if they wished. Privacy was respected throughout the research process—from data collection to the final survey product. Interviews were conducted in quiet, private settings to minimize external

influence and ensure respondent comfort. These steps also served as quality assurance mechanisms, enhancing the reliability and validity of the data collected.

### 3.5 Limitations of the Study

**Narrow Participant Scope:** The study focused primarily on low-income households and informal sector actors in two urban centers. While this group is highly vulnerable, the findings may not fully capture the diversity of urban experiences across Eswatini or other Global South cities.

**Cross-Sectional Design:** The study relied on cross-sectional data, limiting the ability to track changes in resilience behavior or governance effectiveness over time. Longitudinal research would be beneficial for assessing the evolution of urban climate adaptation strategies.

## 4. Results And Discussion

### 4.1 Demographic Characteristics of Surveyed Households

The demographic profile of the sampled population reflects a fairly balanced representation of male and female respondents, at approximately 53.4% and 46.6%, respectively. The cities of Manzini and Mbabane exhibit a relatively even distribution of household heads, with male-headed households being slightly more common. Most households in the urban areas are small-sized (1–5 members) or medium-sized (6–10 members), accounting for 77.1% and 21.6%, respectively. Only a small proportion of households (1.3%) consist of more than 10 members. It is important to note that the cities accommodate populations across various age groups, with a larger share of households (43.6%) headed by individuals aged 40–59. The study area also includes a notable elderly population (20.8%) aged 60 and above. Additionally, youth representation (4.2%) among household heads is low, particularly in Manzini (3.4%) (Table 2). The age distribution indicates that the majority of household heads fall within the economically active range of 25–59 years (75%), which carries implications for resilience planning and socio-economic targeting.

Educational attainment among respondents is also diverse, with only 3.8% having completed tertiary education and 26.7% reporting no formal education. However, a considerable proportion (33.1%) of households have attained secondary or high school education, while 14.8% possess vocational training. These figures help explain the socio-economic positioning of urban households and underscore the importance of inclusive capacity-building and climate literacy initiatives. A greater proportion of household heads in the study area are married (40.7%), with smaller percentages being widowed (10.2%) or single (39.8%) (Table 2). These marital patterns may affect household decision-making and

access to support systems, which are essential in shaping urban climate resilience strategies.

*Table 2: Demographic characteristics of respondents*

Variable	Manzini		Mbabane		Total	
Household Head:	(f)	(%)	(f)	(%)	(f)	(%)
Male	61	52.6%	65	54.2%	126	53.4%
Female	55	47.4%	55	45.8%	110	46.6%
Total	116	100%	120	100%	236	100%
<b>Household size</b>						
1 – 5	92	79.3%	90	75.0%	182	77.1%
6 – 10	22	19.0%	29	24.2%	51	21.6%
10<	2	1.7%	1	0.8%	3	1.3%
Total	116	100%	120	100%	236	100%
<b>Age:</b>						
≤18	0	0%	0	0%	0	0%
18-24	4	3.4%	6	5.0%	10	4.2%
25-39	35	30.2%	39	32.5%	74	31.4%
40-59	57	49.1%	46	38.3%	103	43.6%
60≤	20	17.2%	29	24.2%	49	20.8%
Total	116	100%	120	100%	236	100%
<b>Education level</b>						
Primary	36	31.0%	15	12.5%	51	21.6%
Secondary/high	24	20.7%	54	45.0%	78	33.1%
Vocational	22	19.0%	13	10.8%	35	14.8%
Tertiary	2	1.7%	7	5.8%	9	3.8%
No education	32	27.6%	31	25.8%	63	26.7%
Total	116	100%	120	100%	236	100%
<b>Marital status</b>						
Single	45	38.8%	49	40.8%	94	39.8%
Married	46	39.7%	50	41.7%	96	40.7%
Cohabiting	11	9.5%	3	2.5%	14	5.9%
Separated/divorced	3	2.6%	5	4.2%	8	3.6%
Widowed	11	9.5%	13	10.8%	24	10.2%
Total	116	100%	120	100%	236	100%

The demographic composition of the surveyed households in Manzini and Mbabane provides valuable insights into the socio-economic pathways that underpin urban climate resilience in Global South cities. The near parity reflected in the balanced gender distribution of household heads suggests a gender-inclusive urban context and presents

opportunities for inclusive governance and gender-sensitive climate interventions—particularly in urban settings where female-headed households may experience intersecting vulnerabilities (Chant, 2013). Similarly, the demographic spread revealed by the age distribution indicates that most household heads (75%) fall within the economically active range of 25–59 years, a factor with direct implications for resilience planning, socio-economic targeting, and governance engagement. In addition, the uneven and varied levels of educational attainment observed in the study reveal disparities that shape urban socio-economic positioning, emphasizing the need for inclusive capacity-building initiatives and climate literacy programs that accommodate diverse educational backgrounds and promote equitable participation in resilience efforts.

The relational dynamics reflected in the marital status patterns of household heads in the cities offer valuable insight into household stability and social networks, which influence decision-making, access to resources, and vulnerability profiles. These are key considerations in the design of inclusive urban climate policies and incentive structures, as social capital and household composition are critical determinants of urban vulnerability and resilience, as noted by Satterthwaite (2008). Overall, the demographic characteristics of urban households in Manzini and Mbabane reveal both opportunities and constraints for equitable climate action. Governance frameworks must be responsive to the socio-economic diversity of urban populations, leveraging demographic insights to inform targeted interventions that strengthen resilience across age, gender, education, and household structure.

## 4.2 Experience of Disasters and Drought Impacts in the Study Area

To assess the vulnerability profile of the study area, it was essential to document the spectrum of natural hazards affecting local communities. This facilitated a clearer understanding of the hazard landscape shaping exposure and resilience, particularly in urban settlements across the Manzini and Mbabane cities. The data reveals that droughts (and prolonged dry spells) are the predominant hydrological threats, accounting for approximately 60.2% of reported disaster experiences. Floods follow as the second most significant hazard at 31.4%, underscoring the dual burden of water-related extremes. Other events reported by households, though less frequent—include hailstorms (3.0%), heatwaves (2.0%), tropical storms (1.1%), thunderstorms (1.0%), fires (0.8%) and landslides (0.5%), each contributing to localized disruptions and compounding vulnerability (see Figure 2).

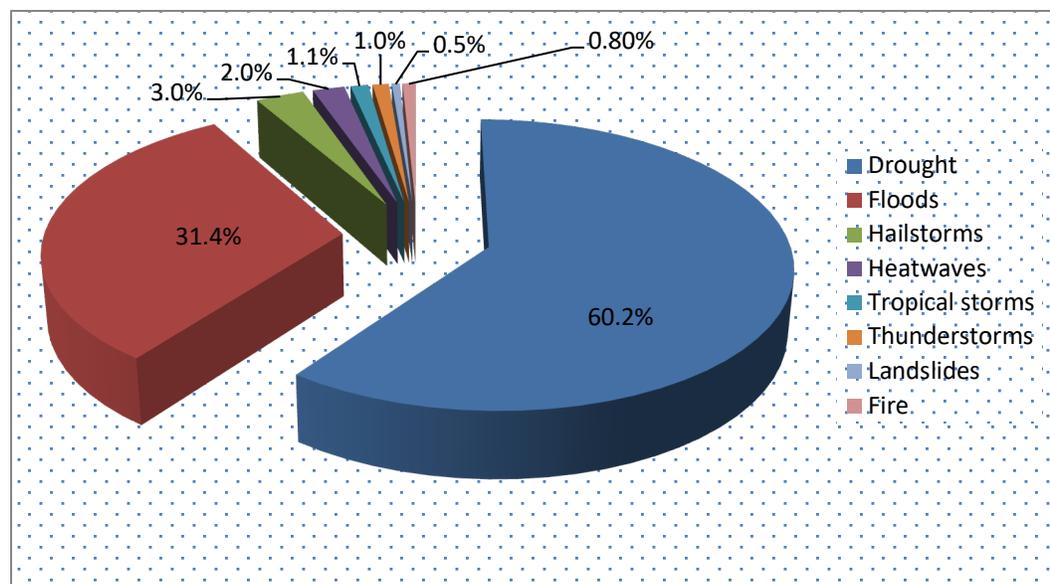


Figure 1: Types of natural hazards experienced in urban Eswatini

While the study area has experienced multiple types of disasters, it is important to highlight the dual hydrological burden faced by Eswatini’s urban centers: high flood exposure, particularly in Mbabane, and chronic drought stress, predominantly in Manzini. According to the UNDRR disaster risk profile, and in alignment with these findings, both cities are highly vulnerable to floods, droughts, and storms (UNDRR, 2018; UNDRR & CIMA, 2019). This vulnerability was further confirmed by a representative of the Municipal Council of Mbabane during the recent SADC Disaster Risk Reduction Forum held in Eswatini, where it was noted that:

*Our cities—Mbabane and Manzini—are increasingly exposed to a range of climate-related shocks. These include fires, thunderstorms, hailstorms, and, most notably, droughts and floods. Due to its geographic location in the Highveld, the wettest region of Eswatini, Mbabane has long been known for recurring flood episodes. However, in 2015/16, the city experienced a devastating drought that redefined the nature of disasters in the area. In contrast, drought has historically been a common feature in Manzini, owing to its position in the lower Middleveld. With the evolving climate, we are now witnessing a shift in disaster patterns across urban spaces—becoming increasingly unpredictable and complex. This calls for a reimagined and adaptive approach to disaster risk reduction in our cities (Rep. Municipal Council – Mbabane).*

The results above provide compelling evidence of the disasters that have recently redefined climate-related shocks and risks in urban landscapes in Eswatini, and the associated exposure of the urban populations, especially the marginalized urban poor who, most often than not, tend to be highly exposed, due to their location in precarious sites,

coupled with their low coping capacity. This aligns with findings by Dodman et al. (2019), who emphasize that urban vulnerability in the Global South is deeply rooted in socio-spatial inequalities and inadequate infrastructure, making low-income communities disproportionately susceptible to climate hazards. This evidence underscores the need for a multi-hazard approach to disaster risk reduction and urban resilience strategies that effectively balance stormwater management with water conservation and supply diversification. As climate-related shocks become increasingly unpredictable and hydrological extremes intensify, cities like Mbabane and Manzini must adopt integrated approaches that address both flood mitigation and drought preparedness. Ziervogel et al. (2016) advocate for such integrated urban climate responses, highlighting the importance of combining infrastructure investment with institutional coordination and community engagement.

Key interventions include investing in adaptive infrastructure, enhancing early warning systems, promoting sustainable land use planning, and engaging communities in risk reduction efforts. These align with the recommendations of UN-Habitat (2020), which stresses the role of inclusive governance and participatory planning in building urban resilience. Socio-economic incentives—such as access to basic services, livelihood support, and capacity-building—can further promote resilience-building initiatives aimed at making cities safe and inclusive spaces. Such actions contribute directly to the achievement of Agenda 2030, particularly Goal 11 of the United Nations, which emphasizes the importance of making cities inclusive, safe, resilient, and sustainable. As Leichenko (2011) argues, only through holistic and forward-looking strategies can Eswatini’s urban centers build resilience against the dual threats of water scarcity and excess.



Picture showing flooding in Eswatini's capital - Mbabane

### 4.3 Availability and Effectiveness of Socio-economic Incentives in Enhancing Urban Resilience

One of the objectives of the study was to evaluate the availability, types, and effectiveness of socio-economic incentives aimed at enhancing resilience among individuals, households, and small businesses in the informal sector in Manzini and Mbabane cities. Before these incentives were explored, it was necessary to first establish the proportion of informal traders in the study area who receive assistance of any form from urban authorities. Just like in most cities in the Global South, the informal sector in Eswatini has not yet been institutionalized nor has it been integrated into existing formal urban structures, regardless of its meaningful contribution to the urban economy in Eswatini and in most Global South cities. The results reveal that majority of respondents in the informal sector (68.6%) reported not to receive any assistance of any form from municipal council with a few (31.4%) who reported to receive assistance, more so in Mbabane where the proportion of respondents who don't receive assistance from city authorities was higher (71.9% vs 68.6% for Manzini) (Figure 2).

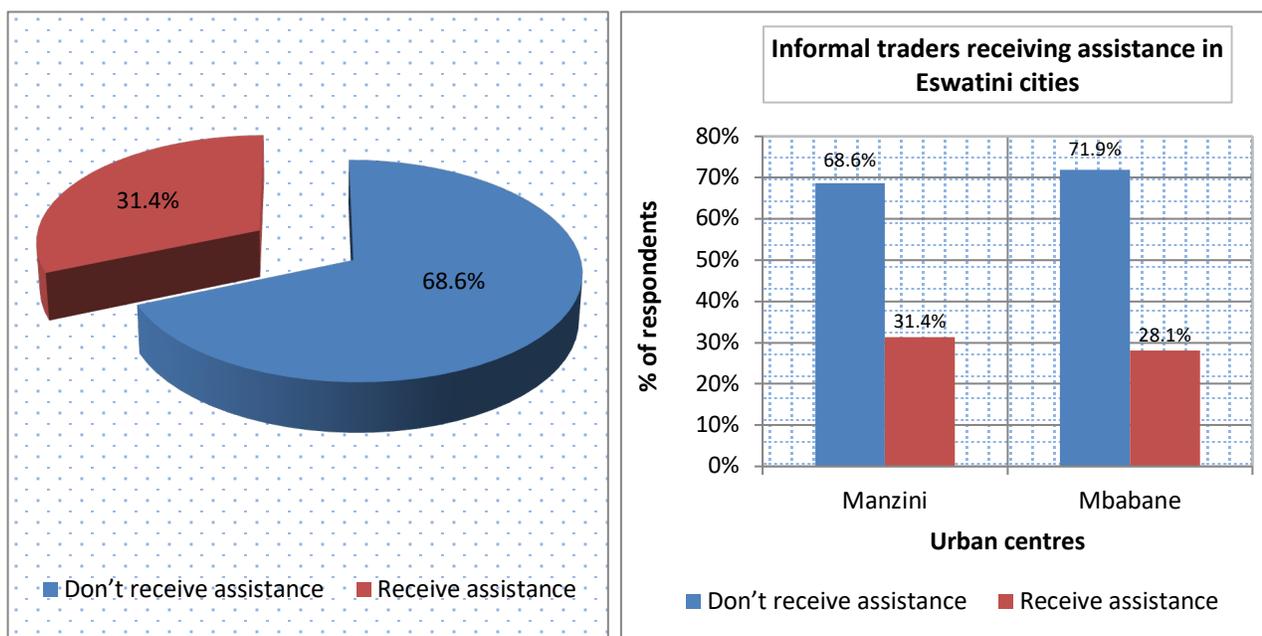


Figure 2: Proportion of informal traders receiving assistance from urban authorities in Eswatini cities

The finding that 68.6% of informal traders in Manzini and Mbabane receive no municipal support reflects a broader governance gap common across African cities and the Global South more generally. Informal traders often operate outside formal planning frameworks due to outdated by-laws, fragmented policies, and limited institutional engagement (Mudau & Kona, 2021; Mlotshwa, 2020). Despite employing a substantial share of the

urban workforce—many of whom are women—and contributing meaningfully to the urban economy, the informal sector remains under-supported (Skinner, 2008). As Khan et al. (2023) rightly observe informal economic activities are frequently stigmatized, criminalized, and subjected to hostile urban policies and practices, making it difficult for traders to earn a dignified living. Municipal responses often oscillate between neglect and punitive regulation, undermining the effectiveness of socio-economic incentives and exacerbating trader vulnerability (Clark & Potter, 2018).

While limited engagement with the informal sector by municipal councils is a common feature in many cities across the Global South—often reflected in the low proportion of informal actors reporting to receive assistance—the situation in Eswatini reveals a deeper disconnect. Urban authorities may perceive interventions such as zoning and the designation of trading spaces as supportive measures, intended to foster collaboration, shared experiences, and agglomeration benefits among informal vendors. However, informal traders often interpret these actions differently. Many view such relocations as a form of sabotage, believing they are being displaced from high-traffic commercial areas where business thrives. Adding to this tension, informal traders and entrepreneurs are frequently subjected to spatial restrictions imposed at the behest of the formal sector, which fears being undercut by alleged unfair competition. As a result, informal vendors are often prohibited from operating in areas of high footfall, further marginalizing their economic activities and reinforcing their vulnerability (UN-Habitat, 2022).

The lived experiences of informal traders in Manzini and Mbabane further illustrate this disconnect. One vendor remarked:

*Maspala<sup>1</sup> doesn't even want to see us here (referring to the city/urban area). Don't be surprised when you see us running away as soon as we spot the Manzini City Council security patrol vehicle. We're always on the lookout because they can come at any time and beat us up. We're now used to this kind of life. What can we do? Nothing. This is all we can do to put food on the table (Female Street Vendor, Manzini).*

Another respondent shared:

*I don't get any support from Maspala and have never received any. I hear that in other countries, informal traders get assistance and support. I also hear some people—even here—saying they once got something. I've been running my business for over 20 years*

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<sup>1</sup> *Maspala* is a commonly used local and SiSwati name to refer to Municipal Council. It is more of a direct translation of 'Municipal Council' to the local language and is now a common and popular term used across the country and in all the country's 14 urban jurisdictions, and is most popular with informal traders and the less educated, though its use is not restricted to these groups only as a term that is gaining popularity.

*here in Mbabane, and I've never received anything from Maspala. All they know is how to collect levies—that one they never forget to do (Female respondent, Mbabane).*

These accounts reflect not only the traders' feelings of helplessness in the face of law enforcement and punitive regulations, but also their exclusion from urban support initiatives. Although some traders are aware of support programs available elsewhere, they remain sidelined in Eswatini's urban governance landscape. It was found that existing support in the cities is largely unstructured and selective.

This concern was echoed by a representative from the Deputy Prime Minister's Office (Disaster Department), who noted:

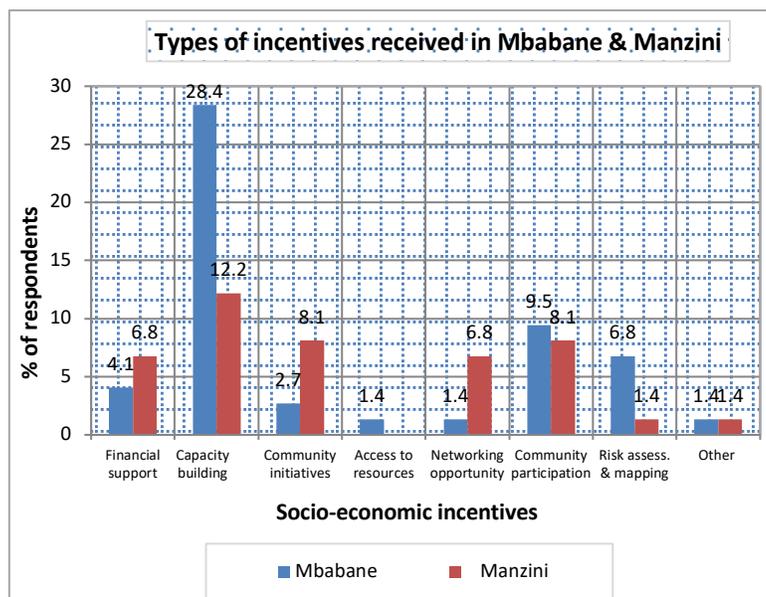
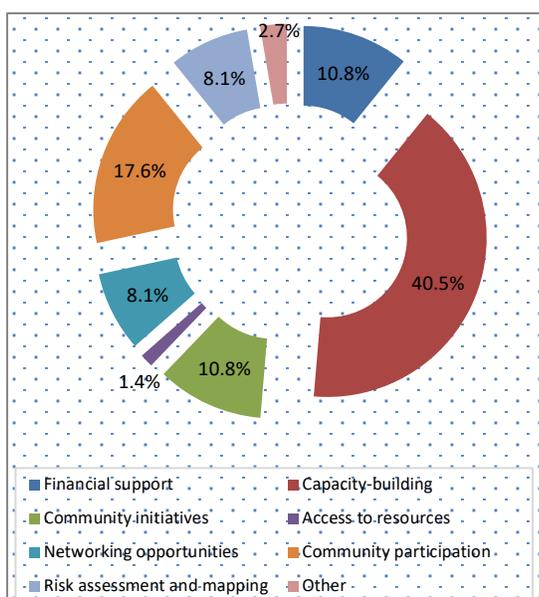
*For the longest time, urban dwellers have not been considered in resilience-building initiatives, as they were misperceived as self-sufficient and resilient—until 2020/2021, when the COVID-19 pandemic highlighted their vulnerability. Since then, the country has recognized that urban populations are equally vulnerable and has begun including them in resilience-building programs, though such programs remain highly fragmented and largely unstructured (DPMO, Disaster Department Rep.).*

Lindell et al. (2019) reveal that a critical element of resilient urban areas lies in providing targeted support for informal activities through appropriate interventions that address vulnerabilities and income insecurities. These challenges undermine the ability of urban populations to recover after a shock. To strengthen urban resilience, a regulatory framework is needed—one that acknowledges both the role and contribution of the informal sector to the urban economy, and the fact that urban populations are equally susceptible to climate-induced shocks and disasters. Such a framework would empower municipalities to shift from reactive regulation to proactive facilitation. This could involve integrating informal sector needs into Integrated Development Plans (IDPs), co-designing support schemes with trader associations, and leveraging national frameworks to promote inclusive urban development, economic justice, and climate adaptation (Brown et al., 2015).

Respondents were asked to share the types of socio-economic incentives they receive from local government, particularly those who reported receiving support from Municipal Council Authorities in both cities. Residents identified several forms of support, with the most dominant being capacity-building initiatives, reported by 40.5% of respondents. This type of support was prevalent in both cities but more popular among Mbabane residents, where approximately 28.4% of surveyed individuals reported receiving it, compared to 12.2% in Manzini. Other notable forms of support included community participation or involvement opportunities in disaster risk reduction initiatives (17.6%), community-based resilience initiatives and financial support (10.8%), and risk assessment and mapping to

identify high-risk areas and inform decision-making processes (8.1%). Additional initiatives, considered equally important, included networking opportunities and access to resources, among others. It is important to note the variation in the utilization of these support systems between the two cities. While Mbabane prioritizes capacity-building, community participation, and risk mapping (28.4%, 9.5%, and 6.8% respectively), Manzini invests more in community initiatives, networking opportunities, and financial support (8.1%, 6.8%, and 6.8% respectively).

Gender-based disparities also emerged in the distribution of socio-economic incentives. Overall, women reported lower access to most forms of urban support compared to men. Male respondents dominated in areas such as access to resources (3.5% vs. 1.3%), community participation (10.4% vs. 6.5%), risk assessment (6.5% vs. 1.3%), networking opportunities (6.5% vs. 1.3%), and financial support (6.5% vs. 3.9%). Conversely, women were more likely to benefit from capacity-building initiatives (21.4% vs. 15.6%) and community initiatives (7.8% vs. 2.6%) (Figure 3). These findings highlight the need for tailored approaches to urban support systems that account for both city-specific priorities and gender-based differences, ensuring that socio-economic incentives are equitably distributed and responsive to the unique challenges faced by different groups.



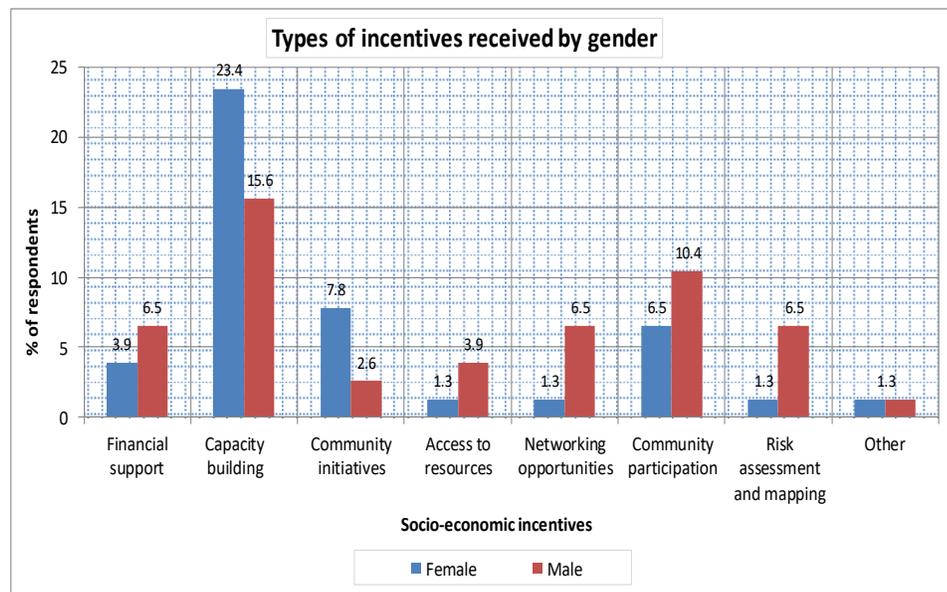


Figure 3: Socio-economic incentives received by Manzini and Mbabane cities

The results above reflect the commitment of local government to building the resilience of its urban population in the informal sector—an often neglected yet economically vibrant segment. Although such support still needs to be scaled up to benefit a larger portion of the informal sector, several lessons can be drawn. The prioritization of capacity-building initiatives such as training, workshops, and skill development in both cities reflects the value that local authorities place on awareness-raising and knowledge-sharing campaigns as critical tools in disaster risk reduction (DRR), with the hope that such knowledge will translate into actions that minimize risk exposure. As Esteban (2020) observed, there is a need to expand communities’ understanding and awareness of climate risks to enable meaningful participation, engagement, and collaboration in building resilience. This approach aligns with the work of Belaïd et al. (2024) and Wisner (2009) and Allen et al. (2017) who argue that empowering communities through education and participatory governance is central to reducing urban vulnerability, emphasizing that capacity-building in informal settlements is essential for fostering locally led adaptation and resilience, particularly in contexts where formal planning systems are weak or exclusionary.

The popularity of this incentive in Mbabane illustrates the city’s intentional shift from a previously reactive approach to disaster management toward a more proactive stance (anticipatory action), driven by persistent and recurrent flooding episodes and the associated economic losses incurred over the past years. This was highlighted by a representative of the Mbabane Municipal Council, who noted:

*As a city, we have realized that the reactive approach to disasters is very costly. We have lost significant amounts of money in the recovery process following flooding and*

*storm events in the city. Everyone knows that in Mbabane, flooding has become a common disaster—damaging infrastructure, properties, and sometimes resulting in the loss of lives and livelihoods. Yet, people continue to build in risk-prone areas such as floodplains. We have now decided to prioritize awareness-raising and education so that we can minimize flood-related casualties. Slowly, we are beginning to see a change in attitude and behavior. Although we cannot say we have successfully stopped people from settling in flood-prone areas, we are seeing the results of our efforts in the form of a reduction in the pace and number of newly built homes in these high-risk zones. Traditional authorities are also gradually recognizing the importance of ensuring that such areas are avoided at all costs (Rep. Municipal Council – Mbabane).*

A representative of the National Disaster Management Agency (NDMA) also added:

*We now prioritize education and awareness-raising to reduce disaster-related casualties. We have also conducted risk profiling for Mbabane and Manzini, and we inform residents by notifying them of high-risk areas so that these zones can be avoided. As the NDMA, we have spent substantial resources on response and recovery efforts, and we now intend to adopt a proactive approach to reduce the number of disaster victims. Those who intentionally persist in settling in flood-prone areas will not be compensated (Rep. NDMA).*

The extracts above vividly highlight Eswatini’s anticipatory approach to disasters, demonstrated by its proactive orientation—rather than a reactive stance—toward disaster risk management, with awareness-raising and capacity-building as central pillars. This shift mirrors broader trends in urban risk governance, where cities increasingly adopt forward-looking strategies that integrate early warning systems, community engagement, and adaptive infrastructure (Low et al., 2024). While Manzini is also embracing proactive disaster risk management and prioritizing capacity-building efforts, it is important to note that drought—the city’s predominant hydrological hazards are a slow-onset event whose urban impacts remain poorly understood. In many Global South contexts, drought is still largely viewed as a rural issue due to its strong association with agriculture. However, its effects often spill into urban areas through reduced water availability (resulting in higher tariffs), disrupted rural-urban food supply chains, and rising food prices, which disproportionately affect urban populations, especially the poor (Mamba, 2019).

City residents in Eswatini also reported receiving support in the form of community engagement or involvement opportunities in disaster risk reduction and management initiatives (17.6%). Residents in these cities are given opportunities to contribute to and influence proposed DRR projects that affect them—not only to encourage uptake and sustainability of such projects, but also to improve their design and effectiveness.

According to Ahmed (2022), involving the informal sector in programs that affect them is critical, as there is often weak uptake of initiatives and activities when this sector is excluded. Additionally, residents have the opportunity to participate in local projects such as post-disaster land rehabilitation, benefiting from knowledge exchange and skills transfer.



*Picture of collaborative approach (dredging project) to flood prevention and management in Mbabane*

Respondents also highlighted in-kind support—including technical services like risk mapping and infrastructure improvements—as valuable contributions to urban resilience. Both cities conduct risk assessments and mapping exercises (information-based incentives) to identify high-risk areas, inform informal sector actors, and guide decision-making processes. These efforts educate last-mile urban communities on how to respond during disasters and actively involve them in planning disaster risk reduction (DRR) activities and interventions. This not only promotes public participation—a critical element in DRR and urban management—but also facilitates skills transfer and networking opportunities, enabling residents to exchange ideas and best practices. Such engagement strengthens disaster preparedness and contributes to more effective and efficient risk management for safer urban environments. According to Grafakos et al. (2016), risk assessments provide a foundation for developing long-term, sustainable risk reduction strategies that address vulnerabilities to natural hazards. The key to a successful risk assessment lies not only in completing the evaluation plan but also in using the insights gained to create and implement an effective risk-reduction plan.

Informal sector actors are further supported through the provision of working resources and tools, such as shelter and essential services like waste collection. Due to their operations in open spaces and temporary shelters—often constructed from poor-quality materials, vendors are particularly vulnerable to extreme weather events such as storms, floods, and hailstorms, which frequently result in health risks and even loss of life. Shelter provision, therefore, becomes critical for building the resilience of urban populations working in the informal sector. Improving access to proper sanitation facilities, including waste collection services, is also vital for reducing health risks. These interventions within Eswatini’s cities align with UN-Habitat’s (2022) assertion that municipal efforts to strengthen the resilience of informal economies should include establishing inclusive and legitimate workspaces, integrating informal actors into urban and regional supply chains and markets, upgrading facilities, and improving sanitary and health conditions. This includes building covered markets and manufacturing hubs with adequate water and infrastructure and providing access to shared or rented equipment. It is important to note the variation in the utilization of these support systems between the two cities, reflecting prioritization based on levels of risk exposure and the nature of threats faced by informal urban populations. Equally important is the need to note the gender disparities in the distribution of socio-economic incentives, with women reporting lower access to most forms of urban support compared to their male counterparts. This highlights the necessity for tailored approaches to urban support systems that are inclusive and gender responsive.



*Picture of street vendors operating in open spaces in Eswatini’s capital - Mbabane*

The picture below is an example of shelter provision by the Municipal Council of Manzini for informal traders operating in the city.



*Picture of Manzini market – shelter provision for street vendors in Manzini, Eswatini’s commercial hub*

Urban residents in Eswatini’s informal sector benefit from a range of livelihood support systems—including grants, loans, and subsidies—designed to assist vulnerable groups and promote resilience-building. The primary forms of support include the elderly grant, the Orphan and Vulnerable Children (OVC) grant, and various loan schemes. These initiatives form part of broader social protection efforts aimed at enhancing urban resilience and reducing poverty. The elderly grant is distributed to financially disadvantaged residents aged 60 and above, typically living in low-income urban zones. The OVC grant targets orphaned children (who have lost one or both parents) and vulnerable children (whose parents are unemployed or lack stable income) of school-going age, supporting their education fees and related needs. Although these grants are considered non-contributory—meaning they do not directly advance climate action—they nonetheless strengthen urban resilience to climate-induced shocks such as rising food prices, which strain already fragile household economies and undermine the informal sector’s ability to withstand disruptions.

Complementing these social protection mechanisms, Eswatini has also adopted a recovery-focused approach through the National Disaster Management Agency (NDMA), which provides cash transfers to Small and Medium Enterprises (SMEs) operating in urban areas affected by disasters such as floods, storms, and politically motivated unrest. These events often result in damage to property, business infrastructure, and interruptions to operations. According to the World Bank, the country has invested millions in building urban resilience among vulnerable households to climate-related shocks, with a significant portion of this support channeled through SME-targeted loans as part of broader efforts to strengthen economic recovery and climate adaptation (World Bank, 2022; 2025).

Building on this momentum, adopting a microfinance lens—where small loans are extended to vulnerable urban households—would be particularly relevant in Eswatini. The Manzini and Mbabane Municipalities have recently introduced microfinance schemes primarily targeting vulnerable groups, including youth and persons with disabilities. These programs aim to empower and create opportunities for these populations while strengthening their resilience to disaster risks, enabling them to recover more effectively from aftershocks. This initiative aligns with Hammill et al. (2008), who argue that microfinance contributes to resilience by accelerating livelihood diversification and asset accumulation. Furthermore, microfinance can enhance household consumption, promote entrepreneurship, and improve the capacity of households to cope with climate-related risks. According to Osuma et al. (2025), integrating financial support with training and awareness initiatives helps communities better understand the risks they face, ensuring that interventions are informed by risk knowledge and contribute to long-term resilience. This dual approach—credit and capacity-building—can empower urban poor populations to diversify livelihoods and recover more effectively from shocks.

These are some of the socio-economic incentives contributing to urban resilience in Eswatini, aimed at creating safer urban spaces and aligning the country's cities—and the nation as a whole—with key global frameworks and agendas, such as the United Nations' Agenda 2030, the African Union's Agenda 2063, and the New Urban Agenda. This national initiative is supported by various schools of thought in disaster risk reduction (DRR), which argue that a critical element of resilient urban areas is targeted support for informal activities through suitable interventions. These interventions address vulnerabilities and income insecurities that undermine the ability of urban populations to bounce back after a shock (see [insert source]). UN-Habitat (2015) adds that this approach also provides an effective way for local governments to reduce poverty and promote economic justice for the most economically vulnerable urban residents.

However, despite the country's significant progress in resilience-building through its social protection programs, Eswatini has yet to fully integrate a shock-responsive resilience system. Gilligan (2022) argues that the basis of social protection programs can be adapted to respond to specific climate-related risks and vulnerabilities. This calls for the strengthening of coordination and integration between social assistance, humanitarian response, and risk reduction approaches to reduce risk and improve resilience. In a crisis like drought or flooding, social protection programs should be able to effect shock-responsive modifications, according to the type of shock and people affected. There is therefore a need to strengthen these programs in Eswatini, either through increasing the size or frequency of payments to beneficiaries in existing programs if they are most at risk or horizontal expansion for payments to newly vulnerable households, and drawing on existing administrative structures to provide new forms of assistance. Bridging this gap is

essential to ensure that Eswatini’s social protection system becomes truly shock-responsive, thereby supporting a more effective urban resilience and recovery framework.

Having shared their experiences regarding the various socio-economic incentives available in urban spaces, respondents were asked to reflect on the effectiveness of these supports in enhancing their ability to adapt to climate impacts. The majority (82.4%) perceived the socio-economic incentives to be either very effective (44.6%) or effective (37.8%), particularly in Mbabane, where 44.6% of respondents (25.7% very effective and 18.9% effective) expressed this view. Only a small proportion (4%) felt the incentives were not effective, while 14% considered them somewhat effective (Figure 4).

A gendered analysis reveals that male respondents were more assertive in their assessments, with 21.6% rating the interventions as very effective, compared to 16.2% of female respondents. Conversely, more women than men (27% vs. 17.6%) regarded the interventions as ineffective (Figure 4).

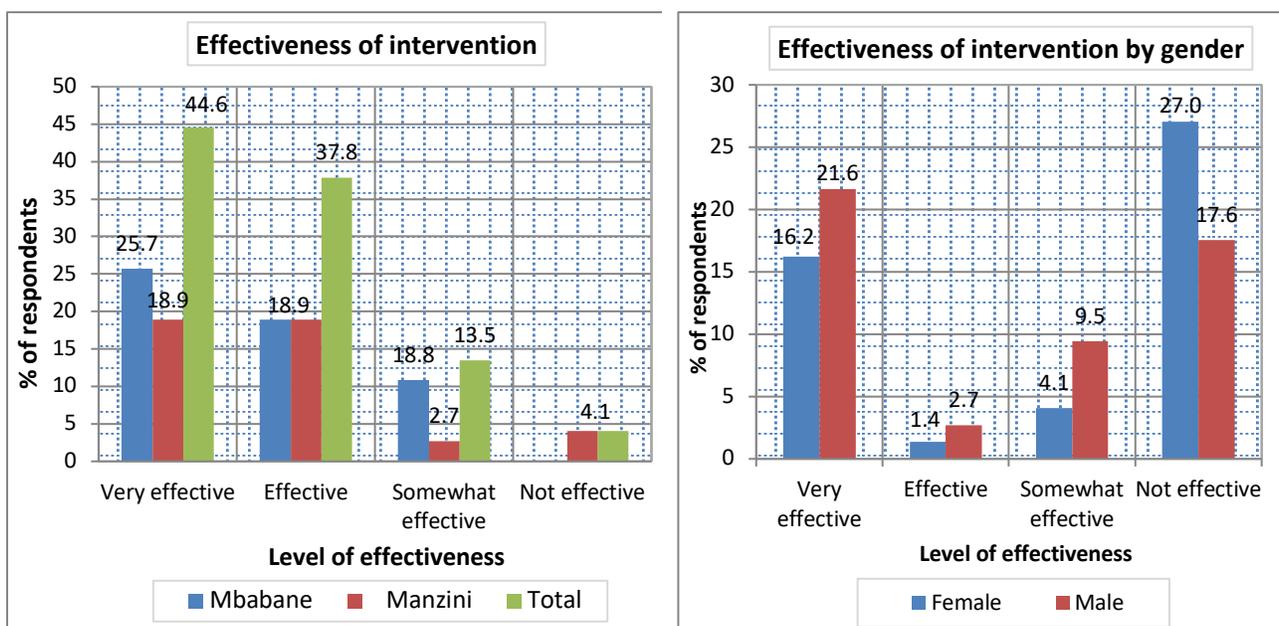


Figure 4: Effectiveness of received socio-economic incentives in urban Eswatini

The findings reveal a generally positive perception of socio-economic incentives among urban residents in Eswatini, with 82.4% of respondents rating these supports as either very effective or effective in enhancing their ability to adapt to climate impacts. This was further supported by the representative of the National Disaster Management Agency who noted that:

*The country is beginning to see positive outcomes from nationwide initiatives, particularly in urban areas such as Mbabane. Unlike in the past, when people were less*

*informed and therefore more vulnerable to disasters, there is now greater awareness. Residents are increasingly avoiding construction in flood-prone areas and actively seeking advice on risk aversion. Those who were previously affected—suffering losses and damage to property and businesses—are now recovering with support from the recovery fund. In collaboration with the Eswatini Environmental Authority, the government promotes the implementation of Environmental Impact Assessments (EIAs) prior to any development activity. This is not only to minimize disturbance to sensitive areas such as wetlands, but also to prevent development in high-risk flood zones, such as the areas along the Mbabane River, which frequently floods. In Mbabane, these zones are typically low-lying and prone to becoming water catchments during periods of intense rainfall. The requirement to conduct an EIA has been integrated into municipal bylaws and is now mandatory—a prerequisite for any development activity within urban areas across the country (Rep. NDMA).*

This aligns with existing scholarship emphasizing the role of targeted socio-economic interventions in strengthening urban resilience, particularly in low-income and informal settings. For instance, Pelling and Wisner (2009) argue that social protection mechanisms—such as grants, subsidies, and access to basic services—can significantly reduce vulnerability and enhance adaptive capacity when integrated into broader urban governance frameworks. The higher effectiveness ratings in Mbabane suggest that localized implementation and contextual relevance may influence how interventions are received. This echoes insights from Brown et al. (2015), who highlight the importance of place-based approaches in urban resilience planning, noting that interventions tailored to local risk profiles and socio-economic dynamics tend to yield better outcomes.

The gendered differences in perception—where men were more likely to rate the interventions as very effective, while women were more likely to view them as ineffective—warrant deeper reflection. These disparities may reflect underlying structural inequalities in access to resources, decision-making, and livelihood opportunities, particularly in societies shaped by patriarchal attitudes, such as Eswatini, where women remain marginalized and constrained by traditional gender roles and responsibilities. As Chant and Datu (2015) observe, women in urban informal economies often face compounded vulnerabilities due to caregiving obligations, limited mobility, and exclusion from formal support systems. Consequently, even when incentives are available, they may not be equally accessible or impactful across gender lines. Moreover, the small proportion of respondents who found the incentives ineffective (4.1%) or only somewhat effective (13.5%) underscores the need for continuous evaluation and refinement of support mechanisms. As Khan et al. (2023) emphasize, resilience-building efforts must be dynamic and inclusive, ensuring that interventions evolve in response to community feedback and shifting climate realities.

Respondents’ opinions on how the support they received impacted their economic stability were also sought to understand whether these interventions have contributed to the economic well-being of urban residents in the informal sector in Manzini and Mbabane. The results reveal a substantial proportion who noted improvements in their economic situation and business stability, with 44.6% reporting significant improvement and 39.2% indicating that their situation had somewhat improved. This was most pronounced in Mbabane, where 22% (compared to 17.6% in Manzini) reported significant improvement. However, some respondents did not observe any change in their situation (6.8%), while 9.5% reported deterioration in their economic condition, particularly in terms of business stability (Figure 5).

The results also reflect gender dynamics in the perceived impact of the received socio-economic incentives. Male respondents appeared to realize more benefits from the received support, with 46% reporting some form of improvement, compared to 37.8% of female respondents who shared the same view. Conversely, 6.8% of female respondents reported a worsening economic condition, compared to only 2.7% of male respondents expressing similar sentiments (Figure 6).

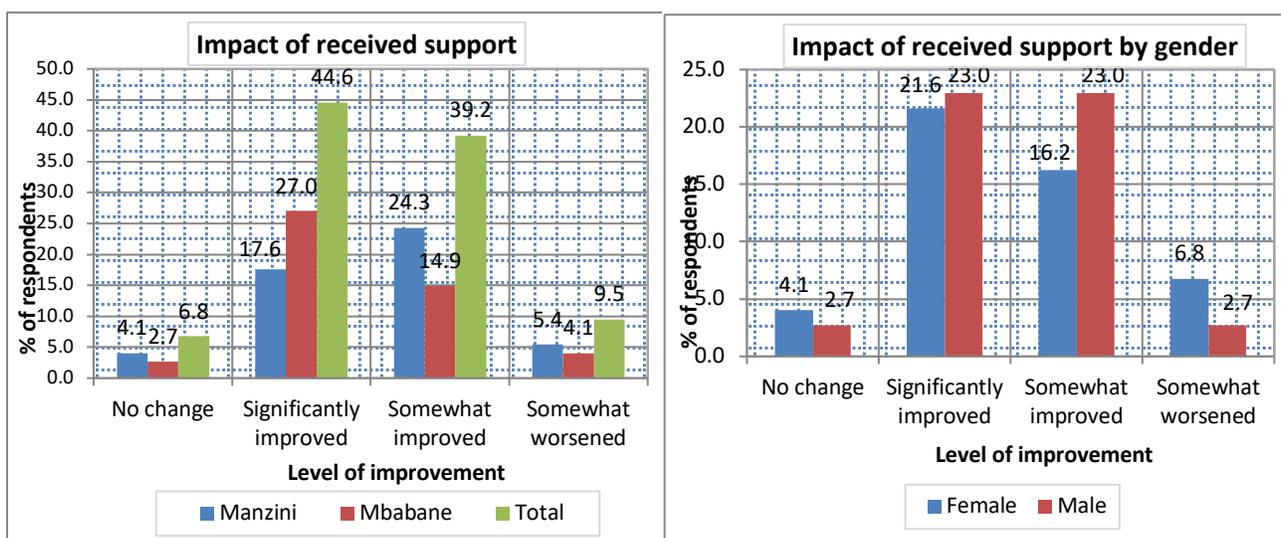


Figure 5: impact of received support on the economic stability of urban residents in Eswatini

The results indicate that socio-economic incentives have positively influenced economic stability among informal urban residents in Eswatini, with 83.8% reporting either significant or moderate improvement. This supports existing research that highlights the role of targeted interventions—such as grants, loans, and infrastructure services—in enhancing livelihood resilience in informal economies (Devereux & Sabates-Wheeler, 2004). The stronger impact observed in Mbabane suggests that localized implementation and contextual responsiveness may enhance effectiveness, echoing Mitlin and Satterthwaite’s (2013) emphasis on place-based approaches in urban resilience planning.

Gender disparities in perceived impact reveal underlying structural inequalities. Male respondents were more likely to report improvement, while female respondents were disproportionately represented among those experiencing deterioration. This reflects broader findings that women in informal urban settings face compounded vulnerabilities due to caregiving responsibilities, limited mobility, and exclusion from formal support systems (Chant & Datu, 2015). Such gender-based exclusions are particularly pronounced in Eswatini, where patriarchal and traditional structures continue to marginalize women. Without gender-sensitive design, socio-economic incentives may fail to reach or empower women equitably. Finally, the minority who reported no change or worsening conditions underscores the need for adaptive program design. As Sabates-Wheeler and Devereux (2018) argue, resilience-building must be dynamic, inclusive, and responsive to shifting risks and community feedback. These findings reinforce the importance of integrating financial support with participatory governance and gender equity to build sustainable urban resilience.

It was also important to establish the barriers that urban populations in the informal sector encounter when accessing support or socio-economic incentives from local government. Identifying these barriers is essential for designing inclusive and effective resilience strategies. Among the major barriers reported by informal sector residents were lack of legal recognition and exclusion, cited by the majority (61.4%) of respondents, followed by limited access to information (22.5%), discrimination (5.1%), and complicated application processes (51.1%), among others (Figure 6). The manifestation of these barriers varies by city. While Mbabane residents felt more affected by exclusion policies than those in Manzini (34.7% vs. 26.7%), Manzini appeared to grapple more with other challenges, including application processes (3.8%), discrimination (3%), and lack of community support—highlighting critical barriers confronting urban residents in the informal sector.

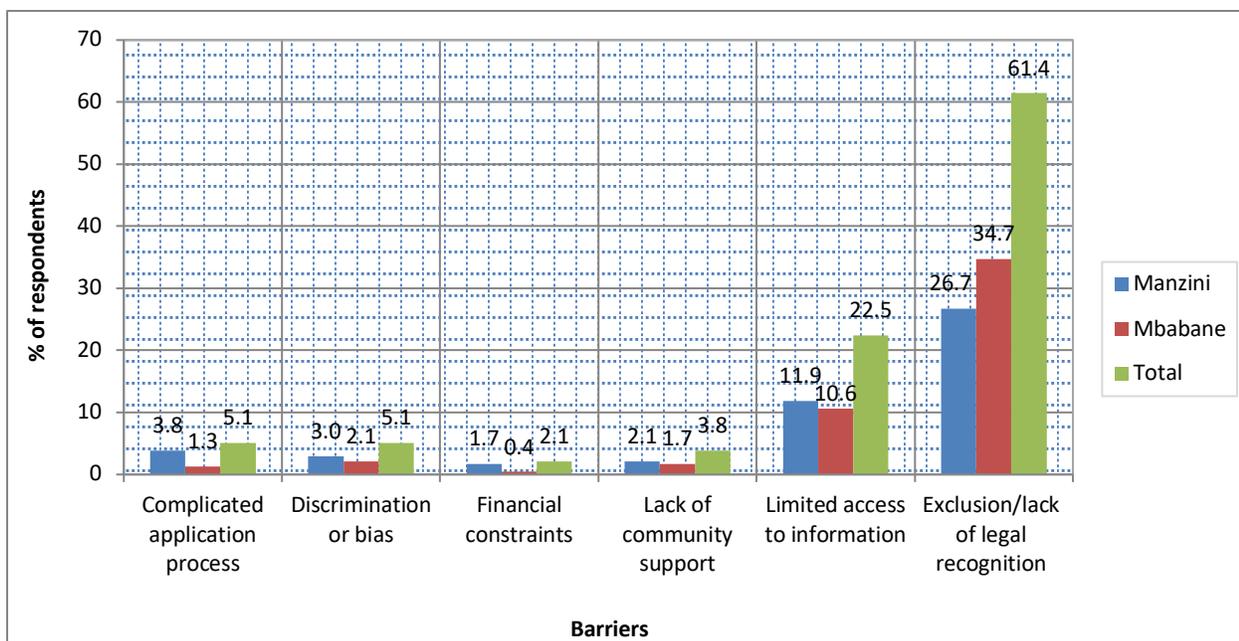


Figure 6: Barriers in accessing socio-economic incentives or support

A disaggregation of these barriers by age and gender reveals notable disparities in access to socio-economic incentives among informal sector dwellers in Manzini and Mbabane. Females reported higher levels of exclusion, with 31.8% identifying lack of legal recognition as a key barrier, compared to 29.7% of males. Other frequently reported barriers among women include limited access to information (12.7% versus 9.7% for men) and discrimination or bias (3.8% versus 1.3% for men), highlighting gendered vulnerabilities in accessing support and positioning female residents as the most disadvantaged. Age-based analysis shows that individuals aged 40–59 and 25–39 face the highest levels of exclusion (27.5% and 19.5%, respectively) and limited access to information (7.6% and 8.5%), alongside notable challenges related to discrimination and complicated application processes (3%). Notably, these age groups represent the economically active urban population. Respondents aged 18–24 experienced lower overall barrier rates, although lack of community support and limited access to information remained relevant across all age groups (Figure 7).

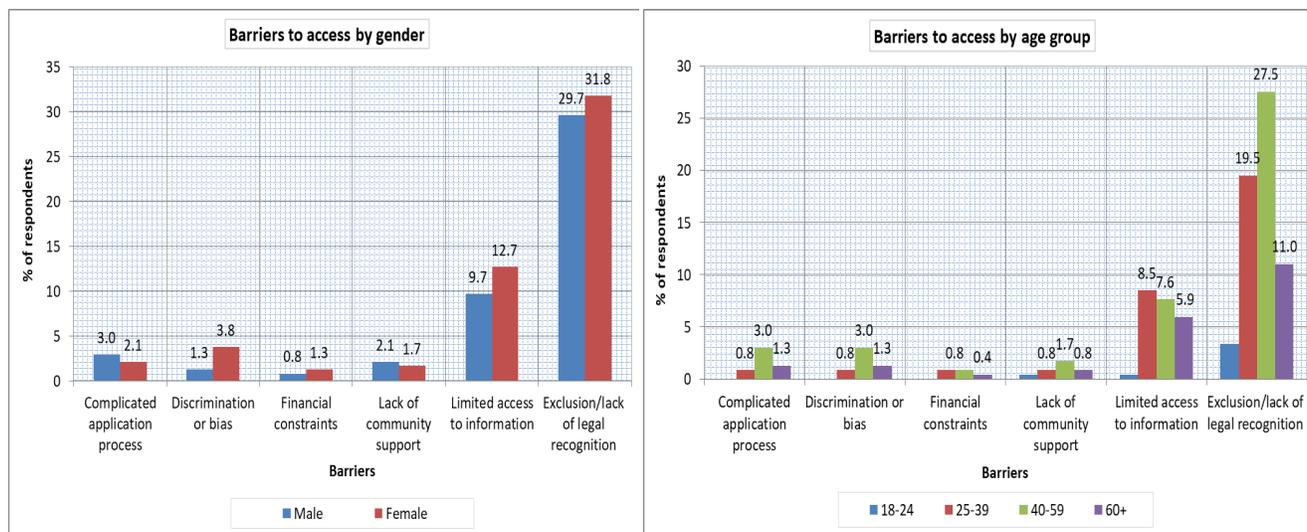


Figure 7: Barriers in accessing socio-economic incentives or support by gender and age group

The results underscore the multifaceted barriers that informal sector dwellers in urban Eswatini face in accessing socio-economic incentives, reflecting broader patterns observed in the literature on urban resilience and inclusive governance. The predominance of exclusion and lack of legal recognition (61.4%) aligns with findings by Mitlin and Satterthwaite (2013), who argue that informality often results in systemic invisibility, where residents are excluded from formal planning, service delivery, and social protection mechanisms. This exclusion is particularly acute in Mbabane, where 34.7% of respondents reported being affected by exclusion policies, compared to 26.7% in Manzini, suggesting spatial variations in governance and policy enforcement. Complicated application processes, reported by 51.1% of respondents, reflect bureaucratic inefficiencies that disproportionately affect informal populations. As noted by Brown et al. (2015), rigid administrative procedures often fail to accommodate the realities of informal livelihoods, where documentation, literacy, and mobility constraints are common. Manzini’s higher reporting of this barrier (3.8%) may indicate localized governance challenges or limited institutional capacity to streamline access.

The gendered dimension of access is also significant. Women reported higher levels of exclusion (31.8%) and limited access to information (12.7%), compared to men (29.7% and 9.7%, respectively), reinforcing the argument by Chant and Datu (2015) that women in urban informal economies face compounded vulnerabilities due to caregiving roles, restricted mobility, and systemic marginalization. Discrimination, though reported at lower levels overall, was more prevalent among women (3.8% vs. 1.3%), suggesting that socio-cultural biases continue to shape access to urban support systems, particularly in Eswatini where patriarchal attitudes, cultural norms and cultural norms and traditions structures continue to reinforce the marginalization of women.

Cultural norms often function as invisible barriers that shape how women are treated and positioned within society. They reinforce exclusion and marginalization by limiting women's participation in decision-making and community leadership. Cultural expectations further restrict women's access to vital information, preventing them from fully engaging in opportunities that could enhance their livelihoods. Discrimination and bias, rooted in long-standing stereotypes, deepen inequality by normalizing unequal treatment in households, workplaces, and public institutions. Education is another area where cultural preferences favor boys, resulting in unequal access to learning opportunities and perpetuating cycles of poverty and disempowerment among women. These norms also extend into environmental and climate-related spaces, where women are frequently excluded from training and decision-making processes, leaving them with limited knowledge and poor understanding of climate risks. Collectively, cultural norms systematically marginalize women, constraining their rights, opportunities, and resilience across social, legal, educational, and environmental dimensions.

Age-based disparities further reveal that the economically active population—particularly those aged 25–39 and 40–59—encounter the highest levels of exclusion and procedural barriers. This finding resonates with Pelling and Wisner (2009), who emphasize that resilience strategies must be tailored to demographic realities, especially for those most engaged in informal economic activities. The persistence of limited access to information and lack of community support across all age groups highlights the need for improved outreach and participatory governance. Overall, these findings reinforce the importance of designing socio-economic interventions that are not only inclusive but also responsive to the intersecting barriers of gender, age, and geography. As Khan et al. (2023) argue, resilience-building must be dynamic and community-informed, ensuring that support mechanisms evolve to meet the diverse needs of urban informal populations.

#### **4.4 Factors Contributing to the Effectiveness of Socio-economic Incentives in Fostering Resilience**

Another objective of the study was to identify the key factors that contribute to the success and effectiveness of socio-economic 'boots' in fostering resilience within the informal sector of Manzini and Mbabane. The results point to strong community engagement (53.4%) as the major catalyst to the effectiveness of the socio-economic incentives in enhancing community resilience in the urban spaces of Manzini and Mbabane where 27.5% and 25.8% of the respondents noted so. Other contributing factors to effectiveness of interventions that were reported by residents in the informal sector include networking and collaboration opportunities they are exposed to in the urban environment (12.7%), cultural relevance and acceptance of the initiatives (12.7%) and government support (8.5%), among other contributing factors (Figure 8).

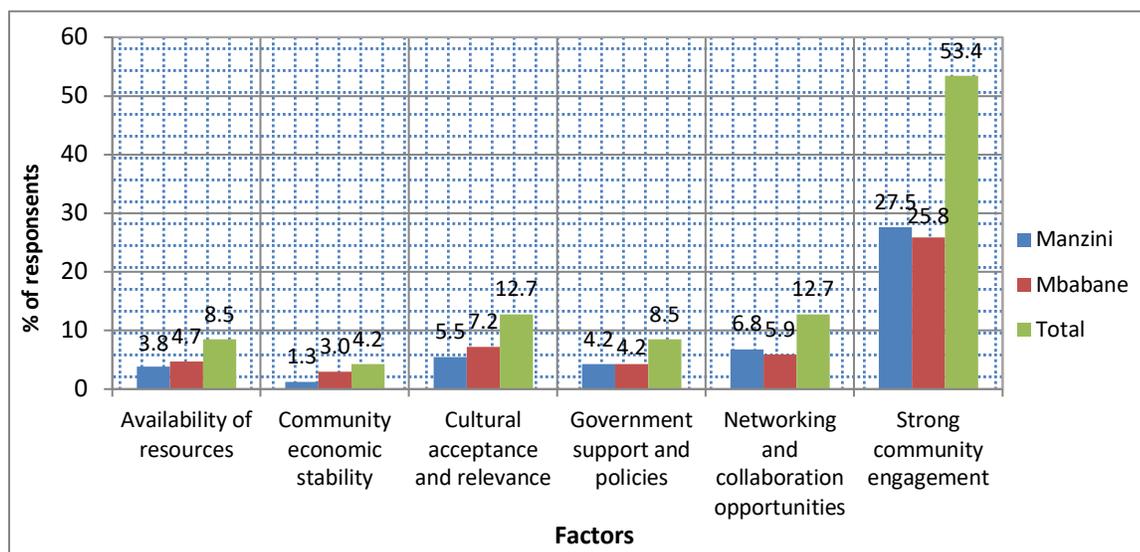


Figure 8: Factors contributing to the success of socio-economic 'boots' in fostering resilience in urban Eswatini

The findings above highlight several critical factors that contribute to the effectiveness of socio-economic incentives in fostering resilience within the informal sectors of Manzini and Mbabane. Chief among these is strong community engagement, cited by 53.4% of respondents, which emphasize the role of participatory governance and community-led initiatives in enhancing urban resilience. Scholars such as Dodman et al. (2013) and Patel et al. (2017) argue that resilience is most sustainable when communities are actively involved in shaping and implementing interventions, as this fosters ownership, trust, and local relevance. This view is echoed by a representative of the Municipal Council of Manzini, who stated:

*Yes, community engagement is integral to our process. We actively seek input and feedback from the public during the development and review of key municipal legislation that guides resilience and urban planning, most notably the city's Integrated Development Plan (IDP) and the Town Planning Scheme (Rep. Municipal Council – Manzini).*

Such institutional endorsement reinforces the importance of embedding community voices in formal planning processes and aligns with broader calls for inclusive urban governance.

The prominence of networking and collaboration opportunities (12.7%) further supports the view that social capital is a key asset in informal urban settings. As noted by Aldrich and Meyer (2015), strong social networks enable communities to mobilize resources, share information, and coordinate responses during crises, thereby enhancing adaptive capacity.

In the context of Manzini and Mbabane, these networks likely facilitate access to informal support systems and amplify the reach of formal interventions.

Cultural relevance and acceptance of initiatives, also reported by 12.7% of respondents, underscores the importance of context-sensitive programming. In a culturally sensitive society like Eswatini, it is critical that resilience strategies resonate with local values, norms, and practices to be effective, acceptable and sustainable (Berkes & Ross, 2013). In urban informal settings, where formal institutions may be viewed with skepticism, culturally attuned approaches can bridge gaps between policy and practice. According to Ford et al. (2020), it is essential to acknowledge and incorporate local perspectives and knowledge in the pursuit of resilience building. Local knowledge, which is often referred to as indigenous or traditional knowledge, is a source of local insights developed over time through direct and indirect relations with various crises and their impacts. Such knowledge is rooted in the cultural, social, and ecological context of a community, making it uniquely relevant and adaptive to local challenges and changes. It plays a crucial role in community-led resilience-building, as it provides an enabling capacity for people to sustain their livelihoods and adapt to changing circumstances (Shava et al. 2009).

Government support, though cited by a smaller proportion (8.5%), remains a foundational element in resilience-building. As highlighted by Pelling and Dill (2010), institutional backing provides legitimacy, resources, and policy continuity, which are essential for scaling and sustaining socio-economic interventions. However, the relatively low percentage may reflect limited trust or perceived inefficacy of government-led efforts in informal zones, a concern echoed in studies on urban governance in sub-Saharan Africa (e.g., Watson, 2009). In a nutshell, the results affirm that effective socio-economic incentives in informal urban contexts depend not only on institutional support but also on deep community involvement, cultural alignment, and robust social networks. These findings contribute to a growing consensus in literature that resilience must be locally grounded, socially inclusive, and contextually responsive.

Given the prominence of community engagement as a critical factor contributing to the effectiveness of socio-economic incentives in fostering resilience within Eswatini's informal sectors, it was necessary to ask respondents to elaborate on how, in their opinion, community participation specifically supports the success of socio-economic initiatives in urban areas. This was especially relevant in the context of Eswatini, where public engagement is highly valued in urban disaster management and planning. A significant proportion of informal sector dwellers cited increased awareness and education (57.9%) as a key contribution of public engagement to resilience-building efforts, particularly in Manzini, where 36% of respondents emphasized this point. Other contributions identified by respondents included improved resource allocation and

enhanced trust in the programs—especially noted in Mbabane. Additionally, some respondents observed that public participation strengthens collaboration among stakeholders (Figure 9).

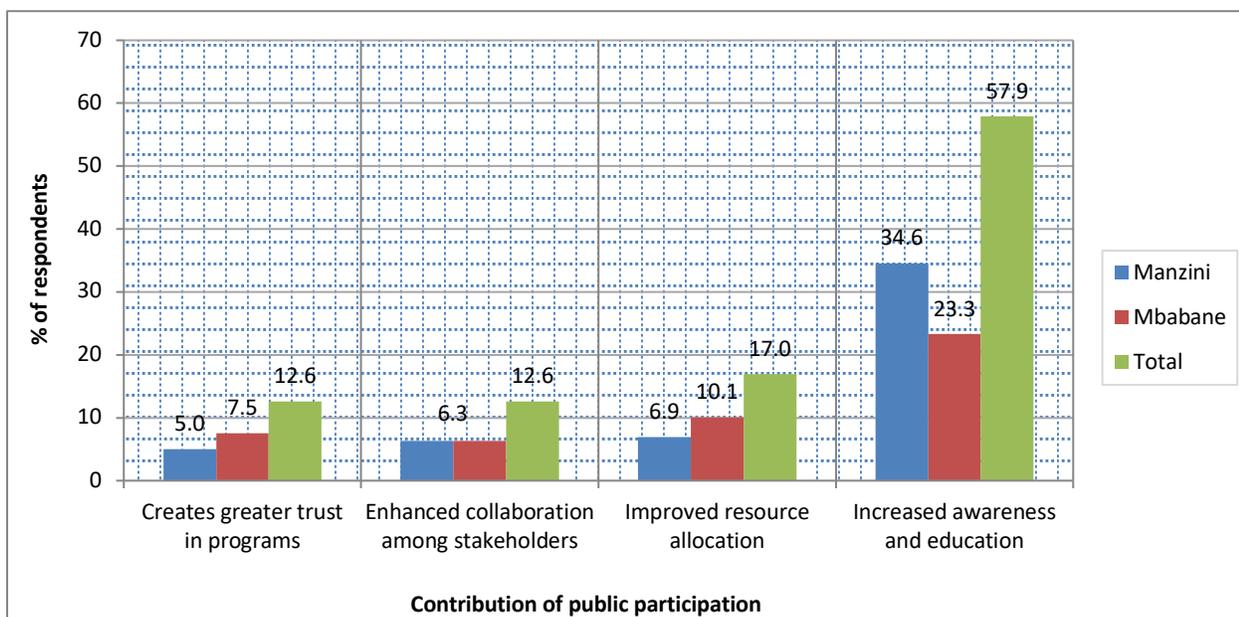


Figure 9: Contribution of community participation to the success of socio-economic initiatives in urban areas

The results underscore the central role of community engagement in enhancing the effectiveness of socio-economic incentives aimed at fostering resilience in Eswatini’s informal urban sectors. The prominence of increased awareness and education (57.9%) as a key contribution of public engagement highlights the importance of knowledge dissemination in resilience-building. As Kangana et al. (2024) and Berkes and Ross (2013) note, community resilience is deeply rooted in the capacity of individuals to understand risks, access relevant information, and make informed decisions—especially when supported by inclusive and culturally sensitive engagement strategies. This perspective was reinforced by a city official who stated:

*Certainly, I believe our community engagement campaigns and the support we receive from government, which is facilitated by the urban legislations are instrumental in the success of socio-economic incentives in our city. Through community engagement as a city, we have been able to increase awareness on disaster risk and facilitated networking and collaboration which are essential tools in resilience building (Rep. Municipal Council – Manzini).*

This statement illustrates how institutional support and participatory processes converge to strengthen urban resilience through informed and connected communities.

Other contributions of public participation identified by respondents include improved resource allocation, enhanced trust in programs, and strengthened collaboration among stakeholders. When communities are actively involved in planning and implementation, interventions are more likely to reflect actual needs and priorities, thereby reducing waste and increasing impact—particularly in informal settlements where resource scarcity and service gaps are prevalent (Mogotsia & Barona, 2025). Literature suggests that in contexts where formal institutions face skepticism, participatory approaches foster legitimacy and encourage sustained involvement (Bokolo, 2024). This reinforces the importance of inter-organizational coordination as a vital component of resilience, aligning with Ansell and Gash’s (2008) model of collaborative governance. In Eswatini, where public engagement is already embedded in urban planning and disaster management frameworks, these findings highlight the need to deepen participatory mechanisms and co-design inclusive, contextually grounded resilience strategies tailored to the urban context.

Regulatory frameworks are also important in fostering and facilitating community resilience, including their awareness by the community. Respondents in the informal sector were asked if they were aware of any local government policies aimed at enhancing climate resilience in the urban space. An overwhelming majority (90%) of respondents reported not to be aware of existing local policies focusing on resilience building against the changing climate. Very few (10.2%) reported to know existing local policies focusing on urban resilience building (Figure 10).

The respondents who reported to be aware of local policies aimed at enhancing climate resilience were asked to how well these policies reflect the needs and priorities of their community regarding climate resilience. This was necessary to determine policy alignment with community needs in order to ensure effective and efficient resilient-building efforts with local relevance. The results reveal a substantial proportion (45.8%) of the informal sector dwellers reporting that the policies are effective, with those who felt these policies are actually very effective, particularly in Manzini where 8.3% held this view. About 33.3% assumed a neutral position noting that the policies are somewhat effective, particularly in Mbabane. Few residents (12.5%) regard the policies not to be effective at all (Figure 10).

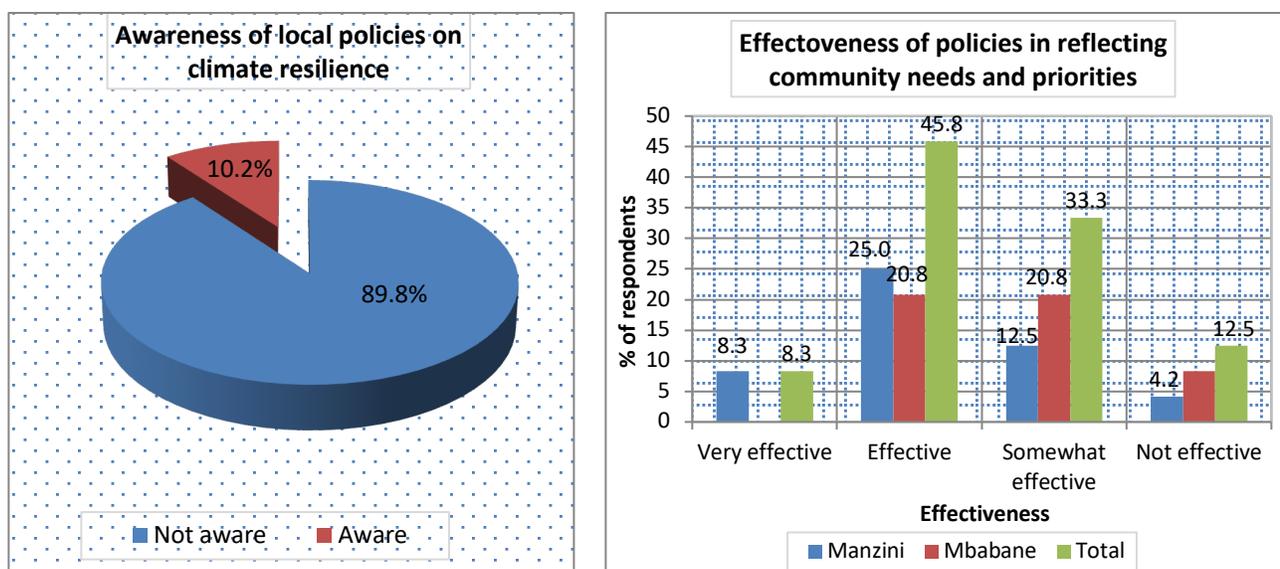


Figure 10: Awareness and effectiveness of local climate resilience policies in reflecting community needs

The findings offer valuable insights into the awareness and perceived effectiveness of local climate resilience policies among informal sector dwellers in Eswatini, revealing both optimism and areas for improvement in aligning policy with community needs. The fact that over 80% of urban dwellers are unaware of any climate resilience-building policies within Eswatini’s cities is concerning and could potentially undermine resilience-building efforts. Eswatini’s urban centers have several policies aimed at facilitating resilience, a point echoed and reinforced by a representative of the Manzini City Council during an interview, where they emphasized the importance of legislative frameworks and their contribution to resilience-building in the city.

That 45.8% of respondents view these policies as effective suggests a moderate level of confidence in local governance and its responsiveness to climate-related challenges. The higher proportion of respondents in Manzini (8.3%) who rated the policies as very effective may reflect stronger implementation mechanisms and localized engagement, consistent with the observations of Chu et al. (2020), who emphasize the importance of place-based governance in climate adaptation. Conversely, the more neutral stance observed in Mbabane (33.3%) suggests a potential disconnect between policy design and community expectations, highlighting the gap between policy rhetoric and practical outcomes. This aligns with findings by Leck and Roberts (2021), who argue that urban climate policies often fall short when they are not grounded in the lived experiences of vulnerable populations.

12.5% of respondents who found the policies ineffective underscore persistent challenges related to inclusivity and relevance in resilience planning. As highlighted by Friend et al. (2020), resilience strategies that fail to engage informal sector actors or address their specific vulnerabilities tend to lack legitimacy and impact. This reinforces the need for co-produced climate strategies, where communities are not merely consulted but actively involved in shaping interventions. Overall, while Eswatini's climate resilience policies show signs of progress, their effectiveness remains uneven and highly dependent on local dynamics. Strengthening participatory mechanisms, enhancing transparency, and tailoring interventions to the socio-economic realities of informal urban populations will be essential for advancing inclusive and sustainable resilience-building efforts.

## **4.5 Urban Governance, institutional effectiveness, and best practices for equitable climate resilience**

### **4.5.1 Effectiveness of Urban Governance Frameworks in Advancing Climate Action and Justice**

The role of urban governance frameworks in either facilitating or hindering the implementation of socio-economic pathways to resilience was also explored, with particular attention to how these frameworks influence climate action and justice for marginalized communities. Respondents were asked to rate the effectiveness of current urban governance frameworks in supporting socio-economic resilience efforts. The results indicate that local frameworks are generally perceived as effective, with 52.1% of respondents rating them as somewhat effective, 6.8% as slightly effective, 36% as effective, and 4.2% as very effective. These perceptions varied by city (Figure 11), suggesting that local context plays a significant role in shaping governance outcomes.

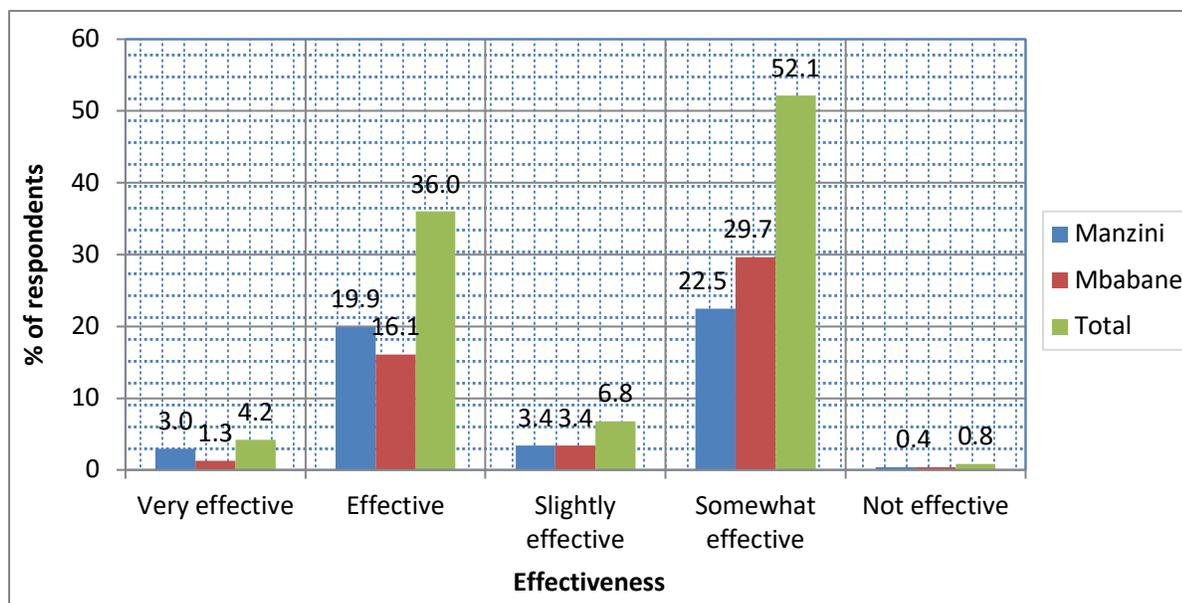


Figure 11: Effectiveness of current urban governance frameworks in supporting socio-economic resilience efforts

The findings suggest that urban governance frameworks in Eswatini are perceived as moderately effective in facilitating socio-economic pathways to resilience, with 52.1% of respondents rating them as somewhat effective and 36% as effective. This indicates a general confidence in local structures, though the relatively low rating of “very effective” (4.2%) and city-level variation point to uneven implementation and limited transformative impact. This perception was echoed by a representative of the Manzini City Council, who noted:

*To begin with, we have local legislations and governance frameworks that support disaster risk reduction and promote socio-economic resilience-building efforts. Such frameworks include, among others, the Draft Disaster Risk Management Plan, the Draft Manzini Drought Management Plan, Standard Operating Procedures for Fire and Riots, and Work Practice for Disaster Preparedness and Response. The Council has not stopped but is still working and is currently developing a Climate Mitigation and Adaptation Strategy. These frameworks are effective and have been very instrumental in minimizing disaster risks and facilitating resilience-building within the city. Urban residents are not aware of existing risks and hazards in our city and the related response mechanisms (Rep. Municipal Council – Manzini).*

This statement underscores both the proactive efforts of local governance and the persistent gap in public awareness, which may explain the moderate ratings observed in the survey.

These results align with existing literature emphasizing that while urban governance frameworks can support climate resilience and social equity, their effectiveness often hinges on inclusiveness, responsiveness, and local relevance. Scholars such as Parnell and Pieterse (2020) argue that governance systems must be adaptive and participatory to address the complex needs of marginalized urban populations. Similarly, Bulkeley et al. (2021) highlights that without deliberate integration of climate justice principles, governance frameworks risk reinforcing existing inequalities.

Respondents were further asked to share their views on the governance practices they consider most effective in promoting climate action for marginalized communities in urban environments. A significant proportion (50%) identified community engagement as a key governance practice, particularly in Mbabane, where 26.7% of respondents emphasized its importance. Educational programs were cited by 34.3% of the surveyed population as the second most important practice, followed by partnerships (10.2%) and policy advocacy (5.5%), among others (Figure 12).

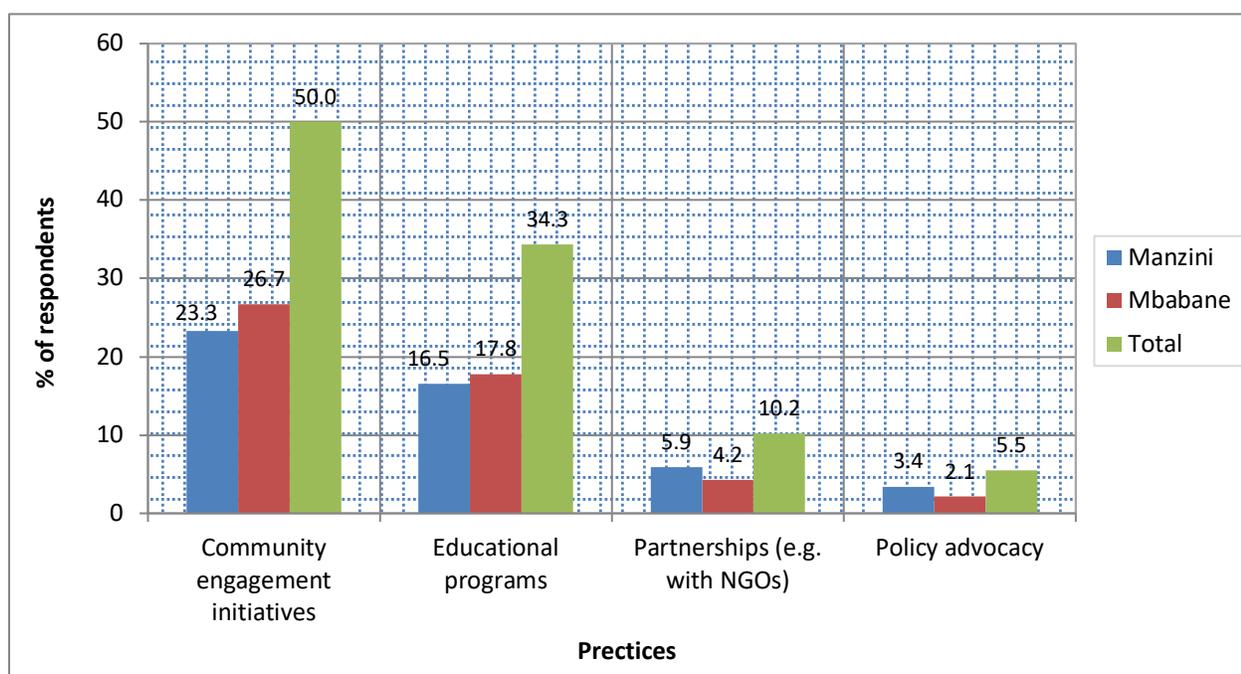


Figure 12: Governance practices believed to be effective in promoting climate action for urban communities

The results highlight community engagement (50%) as the most valued governance practice for promoting climate action among marginalized urban populations, especially in Mbabane. This underscores the importance of participatory approaches, consistent with findings by Archer et al. (2022), who argue that inclusive governance fosters legitimacy

and responsiveness in climate initiatives. Educational programs (34.3%) ranked second, reflecting the role of awareness and capacity-building in empowering communities to act on climate risks (Revi et al., 2020). The lower emphasis on partnerships (10.2%) and policy advocacy (5.5%) suggests potential gaps in cross-sector collaboration and institutional influence, reinforcing calls by Patel et al. (2021) for stronger multi-stakeholder engagement and policy integration in urban climate governance.

It was also necessary to document the challenges faced by local governments in integrating socio-economic incentives into climate action strategies for the benefit of residents in the informal sector. The majority of respondents (63.1%) identified lack of funding as the primary obstacle, particularly in Manzini. Other challenges cited include limited capacity and resources (14.8%), policy barriers (11.4%), and insufficient stakeholder engagement (Figure 13).

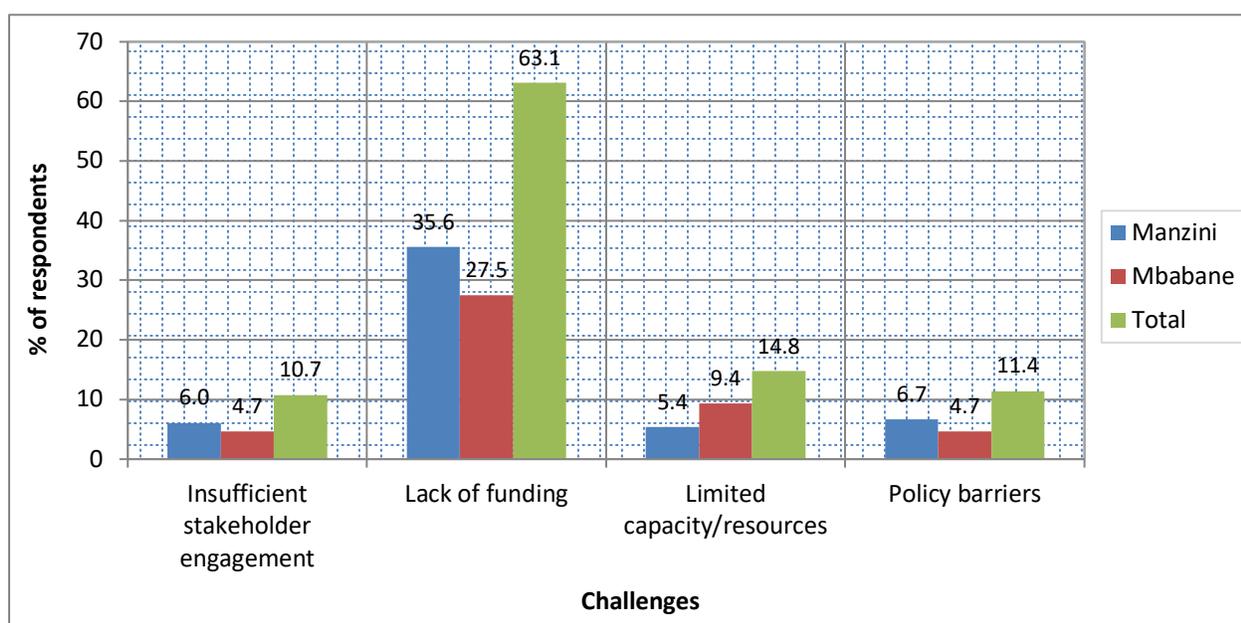


Figure 13: Challenges local government face in integrating socio-economic incentives into climate action strategies

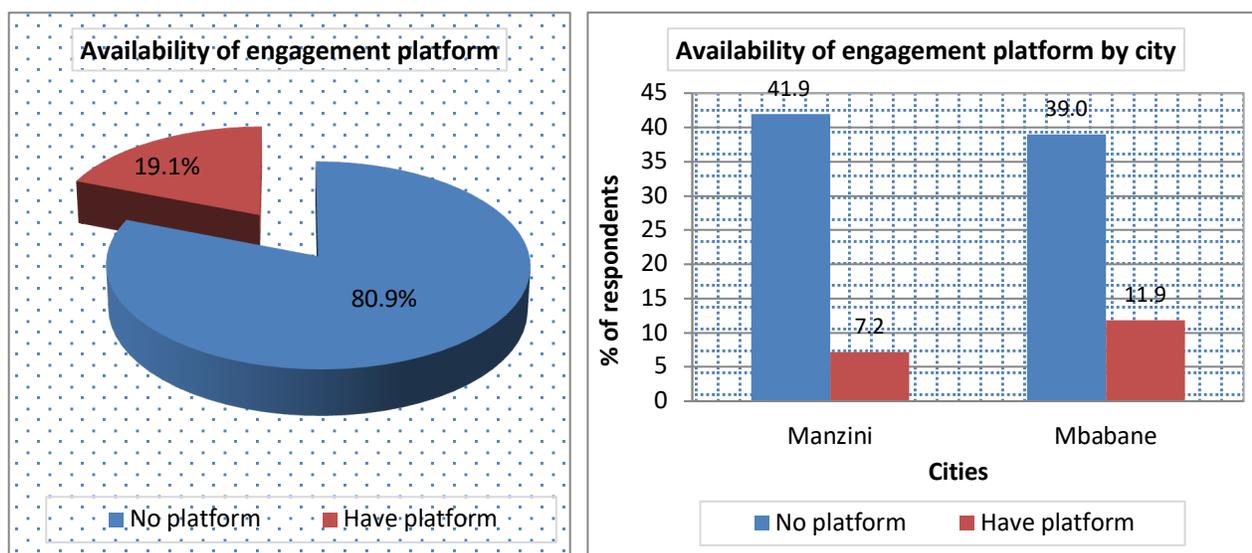
The findings reveal that lack of funding (63.1%) is the most significant barrier hindering local governments from integrating socio-economic incentives into climate action strategies, particularly in Manzini. Funding has long been a persistent challenge in urban areas across Eswatini, where local governments rely almost exclusively on municipal rates for financial sustenance. Unfortunately, the collection of these rates remains problematic in many urban areas, contributing to chronic financial constraints. This aligns with Dodman et al. (2019), who observes that financial limitations are a major impediment to effective urban resilience in Global South countries, often restricting the scalability and

sustainability of climate initiatives. As one city official explained, “the biggest challenges include (1) access to funding, which limits the number of programs specifically designed to implement resilience policies, and (2) the availability of technical expertise within local government to develop, implement, monitor, and evaluate these policies”. This dual constraint—financial and technical—further compounds the difficulty of translating policy into practice.

Additional challenges include limited staff capacity and resource constraints, as well as outdated and rigid policies that continue to marginalize informal sector dwellers. Scholars such as Aguiar et al. (2018) and Tanner et al. (2019) argue that without adequate institutional support and inclusive engagement mechanisms, climate strategies risk excluding vulnerable populations and reinforcing existing inequalities.

### 4.5.2 Best Practices and Institutional Arrangements for Equitable Climate Governance

The study also aimed to map out and document best practices and institutional arrangements that promote equitable climate governance in the context of Global South cities. One critical issue was to determine the availability (or lack thereof) of community platforms for discussing climate change and city development issues. Majority of the respondents (80.9%) reported not to be aware of any community platform for community engagement on climate change and city development issues, particularly in Manzini where about 41.9% shared a similar view. Very few (19.1%) reported having knowledge of an existing platform for engagement on climate change and development in the urban space, with Mbabane residents making a larger proportion of residents confirming knowledge of such platforms (Figure 14).



*Figure 14: Availability of community platforms for discussing climate change and city development issues*

The findings reveal a significant gap in community-level engagement on climate governance in Global South urban contexts. With 80.9% of respondents unaware of platforms for discussing climate change and urban development—especially in Manzini—these underscore limited public participation in climate discourse. Mbabane showed slightly better awareness, yet overall engagement remains low. These results reflect broader patterns identified in literature, where inclusive governance and participatory mechanisms are critical to building urban resilience. For example, Fritz et al. (2024) emphasize that public engagement is essential for sustainable climate interventions, while Restrepo-Mieth et al. (2023) advocate for community-based participatory approaches to climate action. Similarly, Abubakar (2022) highlights the importance of multi-level governance frameworks that empower local actors and institutionalize equitable climate responses in Global South cities.

Having documented the availability of community platforms for discussing climate change and urban development issues, the study sought to determine the extent to which these platforms are utilized by those with access—particularly as a means of building urban resilience among informal sector residents. The results reveal that not all city residents who have access to such platforms actually use them. In fact, only 13% of the 19% who reported having access to community platforms indicated that they actively engage with them. This pattern was consistent across both cities, with fewer residents utilizing the platforms than those who have access. Some variation in platform utilization was also observed between the two cities (Figure 15).

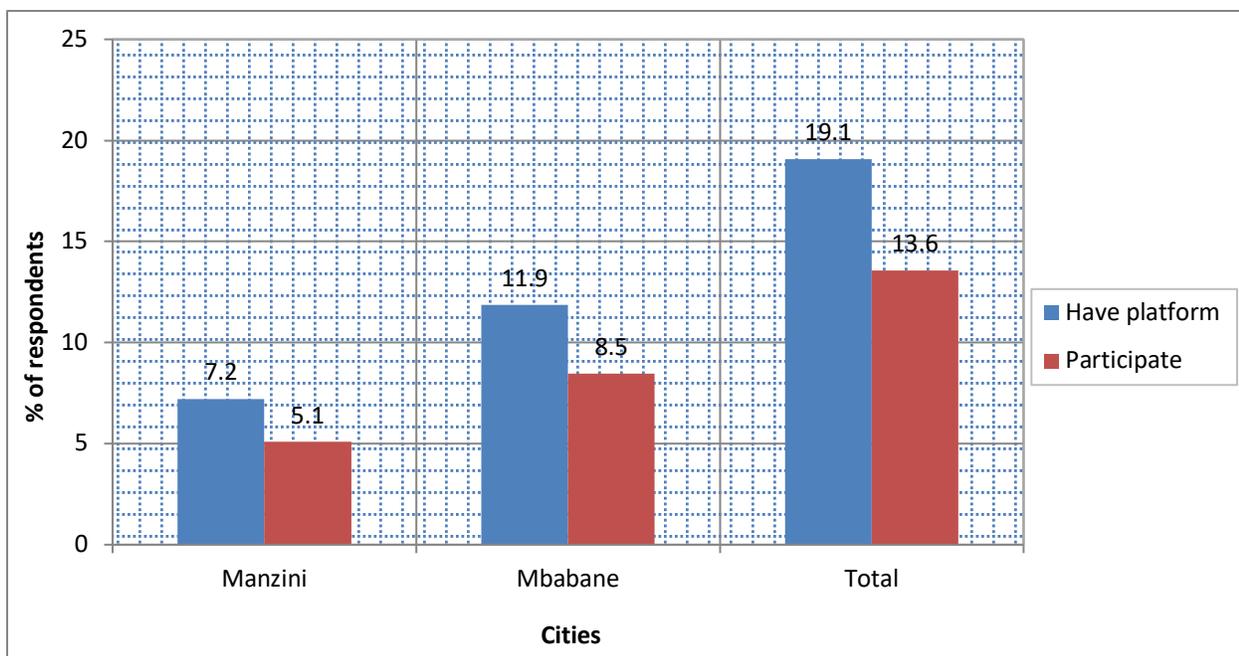


Figure 15: Utilization of available community platforms for discussion of climate change and city development

The results highlight a critical disconnect between access to community platforms and their actual utilization for climate and urban development engagement. Although 19% of respondents reported access, only 13% of them actively used these platforms, suggesting limited civic participation even where infrastructure exists. This underutilization reflects broader challenges in participatory climate governance, particularly in urban informal sectors, where barriers such as trust, relevance, and capacity often inhibit engagement (Fritz et al., 2024; Restrepo-Mieth et al., 2023). The observed inter-city variation further underscores the need for context-specific strategies that not only provide platforms but also foster inclusive, sustained participation to enhance urban resilience (Abubakar, 2022).

When respondents were asked whether any resolutions from engagement meetings had been used to inform urban development programs aimed at reducing the impacts of climate change, the majority (62.5%) indicated that no such resolutions had been applied. A smaller proportion (37.5%) responded affirmatively, with approximately 21.9% of these responses coming from Mbabane residents (Figure 16).

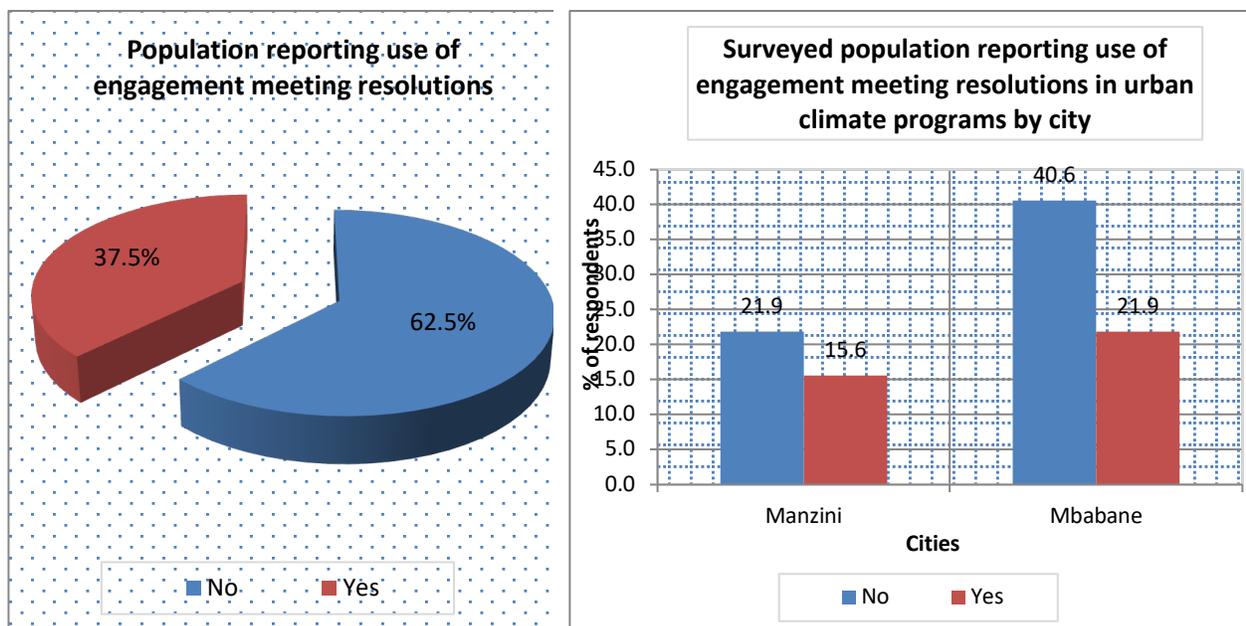


Figure 16: Surveyed population reporting use of engagement meeting resolutions in urban climate programs

The results reveal a disconnect between community engagement and policy implementation, with 62.5% of respondents reporting that resolutions from engagement meetings have not influenced urban climate programs. This suggests a gap in participatory governance, where community input is not effectively translated into actionable strategies. The limited affirmative responses (37.5%), particularly from Manzini, reflect uneven integration of local voices in climate planning. These findings emphasize the need for institutional mechanisms that bridge consultation and decision-making (Fritz et al., 2024; Restrepo-Mieth et al., 2023).

In exploring best practices for disaster risk reduction and equitable climate governance, respondents shared practical recommendations. One respondent emphasized the importance of incentivizing sustainability in the business sector, stating that, “local authorities need to support and encourage sustainable practices in the business space through incentives for investors and vendors, and job creation or support in initiatives aligned to sustainability, such as green farming. Secondly, it was also highlighted that local authorities need to map all strategic stakeholders and ensure collaborations in areas of mutual interest to ensure efficient use of resources. These insights reflect a growing recognition of the role of economic incentives and stakeholder coordination in building urban resilience. This aligns with the work of Satterthwaite and Dodman (2013), who argue that local governments must actively support pro-poor climate strategies through inclusive economic development and targeted investment in informal economies.

When asked how local governments could optimize institutional arrangements for equitable climate governance, another respondent remarked that, *“Firstly, there needs to be a clear understanding of the various roles and responsibilities within Council on climate issues, including the establishment of a dedicated unit. Secondly, the local authority must build solid relationships within communities, ensuring inclusion of all sectors. Lastly, internal and external stakeholders must be trained in climate mitigation and adaptation.”* These reflections underscore the importance of institutional clarity, community trust, and capacity-building as pillars of effective climate governance. This is consistent with the collaborative governance model proposed by Ansell and Gash (2008), which emphasizes shared responsibility, stakeholder inclusion, and iterative learning in complex policy environments.

As a recommendation to policymakers, respondents also called for localized research and data collection to tailor interventions to specific community needs. They emphasized that *“Problems and challenges differ by locality, and conducting research will ensure relatable actions and programs that foster community buy-in and acceptance. Areas needing greater alignment include (1) further decentralization of climate responsibility to communities to ensure they are the drivers, and (2) education of communities to better understand their role.”* These recommendations echo the findings of Archer et al. (2014), who advocate for place-based climate planning that leverages local knowledge and empowers communities to lead resilience efforts.

## 5. Conclusion

This study explored the dynamics of climate resilience within Eswatini’s urban informal sectors, focusing specifically on the cities of Manzini and Mbabane. Through a multi-dimensional analysis of socio-economic incentives, governance frameworks, and community engagement, the research illuminated both the strengths and limitations of current resilience-building efforts. The findings underscore an urgent need to bridge the gap between policy formulation and community-level implementation, particularly in urban contexts where informal economies and vulnerable populations prevail. A key revelation was the limited public awareness of existing climate resilience policies, despite the presence of legislative frameworks and strategic plans at the municipal level. This disconnect between institutional efforts and community engagement undermines the effectiveness of resilience strategies and highlights the importance of inclusive governance. The study affirms that community participation, cultural relevance, and social capital are essential components of urban resilience, aligning with global scholarship that advocates for participatory and context-sensitive approaches to climate adaptation.

Additionally, the research identified several barriers to effective implementation, including financial constraints, limited technical capacity, and fragmented institutional arrangements. These challenges are not unique to Eswatini but reflect broader trends across Global South cities, where resource limitations and governance complexities often impede transformative climate action. Nevertheless, the study also documented promising practices—such as stakeholder mapping, sustainability incentives, and localized data collection—that offer valuable entry points for strengthening urban resilience. Advancing climate resilience in Eswatini’s urban informal sectors requires a strategic recalibration of governance approaches to prioritize inclusivity, decentralization, and community empowerment. Policymakers must invest in awareness campaigns, capacity-building initiatives, and collaborative platforms that facilitate meaningful participation across all segments of society. By aligning institutional frameworks with local realities and fostering multi-level partnerships, Eswatini can move toward a more equitable and sustainable urban future—one that is resilient not only to climate shocks but also to the socio-economic vulnerabilities that shape everyday life.

The study concluded that while socio-economic incentives hold significant potential to enhance urban resilience in Eswatini, their effectiveness remains uneven across informal sectors in Manzini and Mbabane. Limited public awareness, fragmented institutional support, and low levels of community engagement continue to hinder the full realization of resilience-building efforts. Despite the existence of municipal frameworks and strategic plans, many urban dwellers—particularly those in informal settlements—remain disconnected from formal resilience initiatives. Cultural relevance, social networks, and participatory governance emerged as critical enablers of success, yet these elements are not consistently integrated into policy and practice. Based on the findings of the study, the following recommendations are made:

## **Recommendations for Action**

### **1. Institutionalize Inclusive and Participatory Urban Governance**

Municipal councils, working in partnership with the National Disaster Management Agency (NDMA), should embed participatory planning mechanisms into urban resilience strategies. By actively involving informal sector dwellers in the design and monitoring of initiatives, local authorities can ensure that interventions reflect community priorities and foster long-term ownership.

### **2. Integrate Cultural and Indigenous Knowledge into Resilience Frameworks**

To enhance local relevance, municipal councils should collaborate with traditional leaders to co-design resilience programs that incorporate indigenous knowledge systems and

cultural practices. This approach strengthens community trust and ensures that strategies are socially grounded and widely accepted.

### **3. Strengthen Multi-Stakeholder Collaboration and Urban Networks**

Local governments, in coordination with NGOs, should facilitate urban forums and stakeholder mapping exercises that promote collaboration across sectors. These platforms enable informal sector actors to connect with resilience practitioners, share resources, and co-create solutions tailored to urban challenges.

### **4. Enhance Institutional Capacity and Policy Coherence**

NDMA, together with the Ministry of Housing and Urban Development, should lead efforts to integrate socio-economic incentives into urban planning instruments such as the Integrated Development Plan (IDP). Concurrently, municipal staff should receive targeted training to improve technical capacity and inclusive governance practices.

### **5. Promote Awareness, Education, and Adaptive Learning**

Municipal councils, supported by the Ministry of Education and Training, should launch multilingual public awareness campaigns and integrate resilience education into schools and vocational programs. Establishing feedback systems will also help communities evaluate and adapt resilience strategies over time.

### **Recommendations for Future Research**

Future studies should explore the long-term impact of socio-economic incentives on resilience outcomes in informal urban sectors across different regions of Eswatini.

Research should investigate the role of informal institutions and social networks in shaping adaptive behaviors and community cohesion during climate-related shocks.

Comparative studies between urban and peri-urban areas could provide insights into spatial variations in resilience and inform location-specific strategies.

Further inquiry into the gendered dimensions of resilience in informal sectors is needed to ensure that interventions are equitable and inclusive.

Evaluations of existing municipal policies should be conducted to assess their effectiveness in supporting informal sector resilience and identify areas for reform.

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