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Youth-Led Response to Climate Emergencies in Informal Settlements: A Case Study of Mathare, Nairobi, Kenya

ENNS Cherie[a], RAGAN Douglas[b*], ADOYO Faith[c], GACHIE George[d], HIUHU Mary[e], TSAPLINA Olga[f], OBONYO Raphael[g] and IRUNGU Safrina[c]

[a] *RRP Chair of BRCP, University of Fraser Valley, Canada*
[b] *Carleton University, Ottawa, Canada*
[c] *Mto Wangu, Mathare, Nairobi*
[d] *Community engagement expert, UN-Habitat*
[e] *UN-Habitat*
[f] *Independent Researcher*
[g] *Obonyo Foundation, Public Policy Analyst*

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ABSTRACT

Youth in informal settlements are vulnerable to climate disasters. They have demonstrated time and time again the capacity to lead effective community responses. This chapter examines the youth-led response to severe flooding in Mathare in the Spring of 2024. Mathare is one of Nairobi's largest informal settlements. In April 2024, torrential rains intensified by El Niño caused the Mathare River to burst its banks, devastating the community. The Mathare based youth groups drew from their experience during COVID in 2020-2022 [1}. Through innovative partnerships and a sense of community trust built during COVID, Mathare's youth provided immediate support and spearheaded short and long term recovery initiatives such as the provision and food, housing and clothes, and longer term responses such as creating a public park on a former dumpsite to enhance long-term resilience. We analyze the factors through a youth-led development model that we had begun to develop for the COVID-19 response, to provide insights into what made this youth-led response effective. We were able to highlight the critical role of established Mathare youth-led organizations and networks and the need for meaningful inclusion of young people throughout the process, as well as support from development partners in an enabling role. One area which we brought into focus is the integration of livelihood strategies into the response, emerging as a central organizing factor contributing to the impact. The chapter concludes by proposing a model for youth-led climate emergency response in informal settlements, combining our evidence based theoretical insights on community resilience with a practical toolkit of strategies. The Mathare case demonstrates that youth are agents of change, and when supported by external agents such as local, national government and international agencies, can lead their communities in adapting to and mitigating the impacts of climate emergencies.

Introduction

Climate change is one of the greatest challenges of the 21st century, reshaping human environments and exacerbating existing inequalities across society. The Intergovernmental Panel on Climate Change (IPCC) has stated that the risk of climate change disproportionately impacts the poorest and most marginalized communities - particularly those in urban informal settlements – exposing them to climate hazards such as flooding, heat waves, droughts, and water contamination (IPCC, 2022). Informal settlements lack formal planning, adequate infrastructure, and access to risk-reducing services, which amplifies exposure and limits the community's ability to adapt to emergency situations (Satterthwaite et al., 2020).

* Corresponding author.
E-mail address: dougragan@cmail.carleton.ca (D. Ragan).

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An estimated one billion people globally live in informal settlements and slums, a number that will increase as urbanization accelerates in low- and middle-income countries (UN-Habitat, 2020). Informal settlements are situated on marginal lands because formal housing options remain unaffordable to the urban poor (UN-Habitat, 2016; Watson, 2009). In this context, climate change exacerbates socio-economic challenges and access to basic services, especially with the context of climatic emergencies that increases risk to the communities impacted (Satterthwaite et al., 2020; IPCC, 2022).

Urban development policies have historically overlooked the ability of residents of informal settlements to take action into their own hands. Traditional approaches to climate change have been led by top-down planning which fails to account for the local knowledge of those most affected (Watson, 2009; Satterthwaite et al., 2020). Recognizing local knowledge systems and grassroots innovation is essential for building effective and equitable resilience strategies in contexts of informality where formal governance structures are weak or absent (Mitlin & Bartlett, 2018).

Youth make up a significant demographic within these marginalized spaces. These youth live, by and large, in cities and towns; the cities of the developing world account for over 90% of the world's urban growth and youth account for a large percentage of those inhabitants. It is estimated that as many as 60% of all urban dwellers will be under the age of 18 by 2030 (Ragan, 2013). Youth are often absent from formal climate discussions and planning, despite their significant stake in the outcomes (Plan International, 2022). Engaging youth in climate action is more than just simple inclusion: youth, and the organizations they lead, bring unique local knowledge and skills that can bring communities together (Checkoway, 2011; Mitlin & Bartlett, 2018). As global policy discussions increasingly emphasize locally led solutions and inclusive governance, youth participation has become a critical dimension of equitable climate resilience planning.

Research on climate adaptation has shown that the potential of youth-led initiatives such as the Climate Cardinals and the Australian Youth Climate Coalition – demonstrate that youth mobilisation, advocacy, and education can broaden public engagement with climate science and policy (Climate Cardinals, 2025; Australian Youth Climate Coalition, 2025).

Despite the growing recognition of youth's role in fighting climate change, there is limited research on how youth engage in these processes - especially within informal settlements in Africa (Banks et al., 2020). We seek to address this gap as it is important to understand not only how youth undertake these tasks, but also how policy frameworks can be structured to support youth-driven climate action (IPCC, 2022).

Mathare is one of Nairobi's largest and most climate-impacted informal settlements. Mathare's social and environmental landscape is characterised by one of the densest populations in Kenya with approximately 69,000 people per square kilometer (Business Daily, 2019) to ~91,000 (UNEP, 2025). The Mathare river runs along the floor of the valley in which Mathare is built and is vulnerable to flooding and its impacts such as landslides. The environmental and social challenges provide context for examining how youth organisations respond to climate emergencies. Using qualitative and participatory research methods, we engage in stakeholder interviews and geospatial mapping, which reveal how youth and the organizations they've established navigate the exclusion they face from decision making, mobilise community resources, and innovate under extreme and rapidly changing conditions. We situate these activities within the broader discussions being held on climate justice, urban resilience, and participatory governance. We argue for policy shifts that recognise that meaningful youth engagement is central to effective climate action in informal settlements.

Through this study we examine the role of youth-led initiatives in responding to climate emergencies in informal settlements using the case of Mathare in Nairobi, Kenya. We will document the strategies and actions taken by the youth groups involved and look at the factors that made this possible. Using this we have developed a youth-led model that integrates local action, livelihoods, and participation in decision-making. The goal of our study will be to advance the discussion on youth-led action in climate crisis in informal settlements.

1. Problem Statement

Climate change is causing extreme weather events, and its impacts are most devastating in informal settlements and slums. Globally almost 13% of the world population live in informal settlements where inadequate housing, poor infrastructure, and social inequalities increase their vulnerability to disasters. Mathare is Nairobi's second-largest informal settlement with a population of over 206,000 residents living in just 3 square kilometers (Kenya National Bureau of Statistics, 2023). Due to its density, Mathare faces increased climate risks such as floods and landslides.

The April 2024 floods in Mathare demonstrated this reality (Reuters, 2024). During the March–May rainy season, torrential downpours caused the Mathare River to overflow its banks, sending water surging through the settlement. In a matter of hours, many homes along the Mathare river were swept away. Within one month more than 7,000 people had been displaced in Mathare as a result of the floods (Politico, 2024), and at least 15 residents lost their lives in the disaster. Community infrastructure was also damaged – schools and sanitation facilities collapsed, and piles of debris and mud choked Mathare's narrow alleyways. Many survivors were forced to shelter in overcrowded camps in local schools and churches, where shortages of food and clean water created further hardship.

Despite the destruction Mathare residents received little to no government assistance in the immediate aftermath. The principal response from the government was to demand that those living along riverbanks should relocate as they were deemed to be living illegally in the riparian zones.[1] Bulldozers and heavy machinery were brought in, and dozens of homes were destroyed along the banks of the river (Associated Press, 2024). This combination of

extreme vulnerability and institutional neglect left the people of Mathare largely to fend for themselves in the face of a climate emergency (Save the Children, 2024; The Guardian, 2024; Wambui, 2024).

As happened during the previous crisis, Mathare's youth responded to the emergency through initiating activities that provided direct relief in the form of food and shelter. Following the initial emergency phase of the flooding, youth groups continued to mobilize to find long term solutions to the problem. The Mto Wangu Initiative, an environmentally focused youth-led organisation, began to map and document the impact of the flood to assist with compensation measures and strategies related to reconstruction (Mto Wangu Initiative, 2025).

This was not the first time Mathare's youth played the role of front-line emergency responders. During the COVID-19 pandemic in 2020, local youth-led organizations – coordinated through the Mathare Environmental Conservation Youth Group (MECYG) at the Mathare One Stop Youth Centre – led a highly effective emergency response initiative to contain the virus's spread in the settlement (Ragan et al., 2023). That project, which included setting up handwashing stations, distributing masks and food, and running public awareness campaigns, was widely recognized for its impact. It was recognized as a runner-up for the UN Secretary-General's Award for Innovation (UN-Habitat, 2021). Their work included local capacity and trust building between the youth-led organizations and the community, demonstrating the value of youth as equal stakeholders in crisis management. Building on this foundation, Mathare's youth were well positioned to lead the response when climate disaster struck their community.

Youth are increasingly being acknowledged as agents of change in disasters, especially in marginalized urban areas. The concept of youth-led development holds that youth should be at the center of their communities' development, "moving youth from passive recipients of aid to agents of positive change" (Defence for Children International, 2020; UN-Habitat, 2014; UN-Habitat, 2022). In practice, this means empowering young women and men to participate meaningfully in decision-making and to take leadership in initiatives that affect their lives (Apollo & Mbah, 2022; Corburn et al., 2022).

In the context of emergencies, engaging youth should go beyond mere tokenism as it can significantly improve the effectiveness of a response. Youth often possess local knowledge of their community's terrain, social networks, and vulnerabilities, which is vital for assuring their assistance is viable during a crisis. Youth are also often first adopters and proficient in technology, this allows youth to quickly deploy, and when necessary, innovate in emergency situations. For example, by using social media to coordinate relief or using community mapping tools to identify risks. Youth and their agencies are able to mobilize quickly; they are usually the first responders on the ground when disaster strikes, often rescuing neighbors or providing first aid before any official help arrives. This was evident in Mathare, where immediately after the flooding, young volunteers waded into dangerous waters to pull people to safety and carry belongings out of inundated homes, according to local eyewitnesses. "We were stuck in the water, but they then came to our rescue," recalls one flood survivor, crediting young community members with saving her family's lives during the deluge (Mutura, 2025). Such a community-based first response can mean the difference between life and death, particularly in informal settlements where external emergency services are often delayed or unable to navigate congested slum environments.

In Mathare, the 2024 floods destroyed many young people's homes and sources of livelihood, compounding pre-existing issues of poverty and unemployment. Schools were damaged and education interrupted for thousands of children and youth. The trauma and social upheaval that followed – including instances of displacement and enforced evictions – hit young residents hard, at a pivotal time in their lives. By stepping forward to lead recovery efforts, Mathare's youth were not only helping their community but also helping themselves cope and rebuild.

The Mathare response is not unique - it has been noted that youth globally and especially in the global South, are first responders. In Liberia and Ethiopia, youth groups responded to COVID-19 by improving outreach and trust in public health measures (ARUP, 2023; Melkamsera, 2021). These examples underscore that the youth response can improve community resilience, in part because local youth groups are generally more trusted by residents than outside authorities and can communicate risk information in culturally appropriate ways (often using art, music, or peer education). Particularly in informal settlements – where there may be historical mistrust towards government officials or humanitarians – having local youth at the forefront of emergency efforts greatly increases community buy-in and participation. As one Mathare youth leader put it during the flood's emergency: "The floods have shown us that we need a community-led approach towards disasters" (The Star Reporter, 2024). In other words, solutions imposed from above are less effective than those developed and carried out by the community itself, with youth as the leaders.

In summary, the convergence of rising climate risks and a youthful population in informal settlements calls for a new paradigm of emergency response – one that places youth-led, community-based action at the center. This study aims to illustrate such a paradigm through the case of Mathare's youth-led response and to distill from it a model that can be replicated in similar contexts. We will first describe how the youth-organized response unfolded in Mathare, detailing its interventions, achievements, and challenges. We will then discuss the factors that influenced its effectiveness, and the lessons learned, comparing them with prior experiences like the COVID-19 response. Finally, we propose a model for youth-led climate emergency response in informal settlements, encompassing both theoretical principles and practical steps that practitioners and policymakers can apply. The overarching thesis is that an emergency response is only truly effective when the community is on board – and engaging youth as leaders is often the catalyst needed to achieve that in informal urban settings. By harnessing the power, creativity, and local knowledge of young people, even communities with very limited resources can mount robust

responses to climate emergencies and build long-term resilience against future crises.

2. Community-Led Response to Climate Crises: Youth Take the Lead

Working with Mto Wangu from January to February 2025 we undertook a series of community consultations on the flooding, looking at what happened, what was learned and how to apply this learning in the community. These consultations took place in three of the five wards[2] in Mathare: Hospital Ward, Mlango Kubwa, and Mabatini, with a final community town hall held on 14 February 2025 at Undugu Polytechnic in Mabatini. These forums allowed resident to reflect and learn about what were the causes of the floods, the impact, and what can improved in preparedness and response for next time. A key finding was that this was a distinctly unique event, the flooding exceeding any previous flooding in both scale and intensity. "It has always rained, but this time the water reached the road, which it has never done before" (participant, Mto Wangu Initiative, 2025a, 00:06:13–00:06:29).

Many of the participants noted that one of the causes of the severity of the flooding was the lack of infrastructure in the community.

"If the river had a gabion[3], the water would not have reached us" (Mto Wangu Initiative, 2025b, 00:09:45–00:10:08).

Mathare is built in a valley, with the river running along the bottom. The lack of preventive infrastructure, limited drainage and precarious building on the embankment of the river put residents at risk.

"Mathare was very affected because a lot of residents stay close to the river" (Mto Wangu Initiative, 2025b, 00:03:41–00:04:08).

Participants in the consultations commented that the flood risk in Mathare is not only due to the rain, was also due to lack of government response and chaotic building practices (Mto Wangu Initiative, 2025d; 2025e; 2025f).

Many of the participants expressed frustration with the response of local officials and government in at all levels. They described a disconnect between state actions and community needs, during and after the disaster. Rather than receiving any support, residents found that the government made the situation worse, and the residents believed that they were using the disaster as an excuse to forcibly evict residents and gentrify Mathare and other communities.

"Instead of helping us after the floods, the government came and demolished the houses" (Mto Wangu Initiative, 2025b, 00:10:13–00:10:42).

"Kenya's government has begun bulldozing homes built in flood-prone areas and promising evicted families the equivalent of $75 to relocate after a deadline passed to evacuate amid deadly rains … In the capital, Nairobi, a bulldozer ripped through iron sheet walls as people watched in despair. Security forces with guns and batons stood guard and fired tear gas at some residents" (Associated Press, 2024).

Youth groups were often mentioned as being able to mobilize an immediate emergency response due to them being based locally and understanding the community. The responses from the residents offered both a self-critique – they were not prepared and lacked community cohesion – combined with a recognition of the work of the youth organizations

"People saw the river overflowing, but they ignored it, and that is why we were affected so badly" (Mto Wangu Initiative, 2025b, 00:10:49–00:11:12).

"If we had a strong community response, we could have helped ourselves instead of waiting for others to come. We were lucky that groups such as Mto were able to help us" (Mto Wangu Initiative, 2025c, 00:10:29–00:11:20).

Residents connected the effectiveness of the youth-led flood response to experience gained during earlier crises, particularly the COVID-19 pandemic between 2020 and 2022. Several youth organizations involved in the flood response had previously coordinated health outreach, resource distribution, and public communication during the pandemic. Youth organizations built on these lessons to emphasize rapid communication and peer-to-peer mobilisation during the floods.

The consultations demonstrated that Mto and the youth organizations involved were not solely emergency response, but also were adept at community planning and governance – providing a community space for reflection, accountability, and longer-term risk reduction planning. These consultations created a space for residents to discuss and reflect upon not only what happened, but why losses were so severe and what needed to change.

"Any solution we talk about must start from what people here have actually gone through" (Mto Wangu Initiative, 2025).

Youth organizations acted not only as responders but also as conveners of collective analysis and planning.

3. Methodology

Youth-led development is the framework for the development of youth programmes within Mathare - collaboration and full participation are key to the success of the programme. For this study, we decided to use a case study approach because it best reflects a youth-led approach, embedding collaboration between academics, development practitioners, and youth groups. The study documents how the emergency response unfolded, drawing on the direct involvement of several authors who were present during coordination meetings and response activities in Mathare. The research team includes two academics, two UN-Habitat staff members, and three community leaders who were directly involved in the flood response. These different perspectives shaped both the research process and how events and decisions were interpreted in the analysis.

3.1. Case Study Selection

We chose Mathare because flooding is recurrent, youth organizations are active in response, and members of the author team had already worked with local actors during

the COVID-19 emergency response. The April 2024 floods allowed us to track how youth organizations moved from immediate action, into early recovery, and then into longer-term efforts aimed at sustaining recovery. This study centres on the 2024 flood, while drawing on lessons and comparisons from youth-led responses in Mathare during COVID-19 response in 2020-2022 (UN-Habitat, 2022).

3.2. Participatory Research

We used a participatory approach, with community members involved in shaping what the research focused on and how it was carried out. Community members were part of the research team and contributed to defining the questions, recording what happened, interpreting the material, and confirming that the conclusions reflected local realities. Having community authors involved helped keep the analysis tied to local experience and limited the extractive tendency of research that is written only from outside the community.

The researchers from academia supported the study design and analysis, while the UN-Habitat researchers contributed the understanding of the governmental process, policy engagement, and the realities of working between community-led response and government systems.

3.3. Data Collection Methods

Data was collected through key informant interview and focus groups, such as the consultations held in January and February by Mto Wangu. Over 15 interviews were conducted with participants drawn from a number of youth-led groups, with the Initial focus being on leaders of the youth organizations and, from there, expanded through referrals to include volunteers and coordinators.

Participants were asked questions on the challenges they faced during the response and recovery phases of the flooding, and what their experiences revealed about preparedness, livelihoods, and the kinds of changes needed to reduce future flood risk in Mathare.

Interviews were done in English and Kiswahili, depending on participant preference, and were recorded.

3.4. Observation and Practice-Based Evidence

In addition to the interviews and focus groups, we also undertook direct observation during the flooding response. This was an effective methodology as some of the researchers were from the community. We attended coordination meetings, community forums, and relief activities, and were involved in the engagement of external partners. The researchers being close to the activities allowed them to capture how decisions were made, how priorities shifted over time, and how youth-led groups navigated the pressures of working in a rapidly changing emergency context. Observational insights were used to inform interviews and their analysis and to identify gaps between formal narratives and everyday practice.

The analysis also draws on documentary and community-generated materials produced during the response and recovery period. These included flood maps and damage assessments developed by community members, internal research notes and coordination messages, public communications and media coverage, and materials shared by partner organizations. Relevant policy and programme documents related to disaster response and climate adaptation were also reviewed. Together, these materials helped illuminate how youth-led organizations framed the problems they were responding to, justified their actions, and communicated with both the wider community and external actors.

We developed the analysis through close engagement with interview transcripts, field notes, and project materials, rather than through a fixed or pre-defined coding framework. We looked for recurring patterns in how youth leadership was expressed, how trust was built and maintained, how partnerships operated in practice, and where structural limits became apparent. The seven elements presented in the findings section emerged through this process and reflect patterns observed across different stages of the response. Ideas drawn from youth-led development, community resilience, and locally led adaptation informed interpretation, but were used as guiding perspectives rather than as a framework imposed on the case.

4. Conceptual Framework

This study brings together ideas from youth-led development, community resilience, and locally led climate adaptation. The Youth-Led Framework for Climate Emergency Action focuses on how youth respond to climate emergencies by organising knowledge, relationships, and resources in contexts with weak institutional support.

The framework focuses on how youth can respond to climate emergencies by organising knowledge, relationships, and resources in contexts with weak institutional support. (Checkoway, 2011; UN-Habitat, 2022). In this study, agency is understood as the ways in which young people act and organise despite political and institutional exclusion. In informal settlements such as Mathare, resilience emerges largely through collective action and social relationships rather than or in spite of, formal systems. In practical terms, resilience refers to how residents prepare for, respond to, and recover from events such as the Mathare floods (Norris et al., 2008).

In this study we used Locally Led Adaptation (LLA) principles that place decision-making with communities facing climate impacts (IIED, 2021). LLA shares core principles with youth-led development, particularly the emphasis on youth leadership in community development (Solberg & Ragan, 2024). LLA highlights equity, transparency, and long-term support, offering a way to examine how youth groups work with external actors. Taken together, these perspectives help explain how youth use experience from earlier crises in responding to climate emergencies. They also show how informal coordination and social ties often compensate for weak state response, and how external partners can either enable or constrain youth action.

5. Case Description: Youth in Mathare Responding to the 2024 Floods

Mathare is made up of multiple communities located along the Mathare River in Nairobi. Life in Mathare is shaped by inequality, limited infrastructure, and constrained opportunities, particularly for young people. Despite these challenges, residents in Mathare live full lives, including education, relationships, and aspirations. Before the floods, youth-led organisations were already active in education, waste management, and public health, including the MECYG-run Mathare One Stop Youth Center (MECYG, 2025). These networks were active and functional before the crisis. When flooding occurred, these groups were able to respond quickly.

The turning point came on the night of April 23, 2024. Rain poured down for hours without letting up. The Mathare River, already choked with debris, overflowed and surged into the lower sections of the settlement. Within minutes, entire homes filled with water. People woke to soaked mattresses, floating furniture and collapsing walls. To get away from the rising waters, some people climbed trees, others took their families up onto rooftops. By morning, much of Mathare lay in ruin. The flood had hit with speed and force. Over 55,000 households were displaced across Kenya, and 294 people died during the March - May rainy season. Within Nairobi, Mathare, Kibera, and Mukuru suffered some of the worst losses (Lusige, 2025).

Even before official agencies arrived, youth from Mathare were already acting. Groups like the Mto Wangu Initiative and the Mathare River Regeneration Network began pulling people from submerged homes. They had no protective gear, no boats - just ropes, makeshift rafts, and the kind of local knowledge only insiders have. Young men formed rescue lines. Women organized food and shelter on higher ground. In one area, a youth team helped an entire group cross a flooded alley by linking arms to steady the line.

They didn't wait for permission to act. Word spread fast through WhatsApp chats, radio, and in-person updates. Those messages reached NGOs and partners familiar with the settlement. SHOFCO, an NGO working in the slums in Nairobi, was one of the first to respond, working side by side with youth to deliver basic aid. In the first 48 hours, nearly all support came from within Mathare itself. Residents later credited the quick work of young people with keeping the local death toll to just 15, despite the disaster's scale (Citizen Reporter, 2024).

Though the waters went down, the danger didn't. Mud and waste blocked passageways. Contaminated water sources made sanitation a growing concern. Within two days, youth organizers brought together around 30 community groups - representing all areas of Mathare, along with elders and women's collectives. They met in churches and community spaces to assess the damage and coordinate. Youth organizations had already done rough headcounts in informal camps. From this, they identified 150 households that urgently needed food, bedding, and shelter.

"One afternoon, while helping my mother with her job, I met a group of kids around my age. They called themselves the "Generation Shapers"– a youth group. They cleaned parks, planted trees, and collected trash from the rivers. Not because it would fix everything, but because it mattered to try" (Kiriro, 2025).

A new committee emerged to manage the next phase of the response. Most members were youth leaders, each assigned to one key issue - health, shelter, sanitation, or food. But elders were included too. That balance mattered. One resident noted: "Youth knew who was hurting most, but they didn't make decisions alone - we all sat together." The approach echoed lessons from earlier crises, including COVID-19, when locally led efforts had proved most effective.

The group adopted a name - the Mathare Floods Relief and Resilience Initiative. They added "resilience" on purpose. By May, they had opened relief hubs at the youth center and two local schools still standing. These became gathering points: a place to get a hot meal, access clean water, or see a nurse. Initial supplies came from Mathare itself. Shop owners donated food. Churches gave mattresses. Neighbors offered what little they had. More help followed. SHOFCO launched a food drive that reached 2,000 families. Youth groups handled the distribution because they knew the area and the people (Mto Wangu Initiative, 2025).

Public health quickly became a priority. With water sources compromised, youth volunteers, medics, and students from local universities worked together. They handed out water purification tablets, cleaned blocked drains, and reinstalled handwashing stations leftover from the pandemic.

Meanwhile, youth and local leaders turned to their long-term partners for support. UN-Habitat, already known to many youths from previous projects, stepped in with technical support. Two staff members helped draft proposals and connect with donors. The Canadian High Commission responded, providing funds directly to Mto Wangu and Slum Dwellers International (SDI), its partner. This covered emergency supplies and modest stipends for 50 core volunteers - recognizing their work and reducing pressure on their own families. Other contributions came in too. Safaricom sent blankets. A private hospital offered doctors. Save the Children delivered mosquito nets and school kits (Diplomatic Watch, 2024).

Aid was shared transparently. Before any distribution, the committee held barazas (public forums) to explain who would receive what and why. This open process helped avoid conflict. In a place where aid can sometimes divide more than it heals, fairness mattered.

As 2024 came to a close, relief efforts gave way to recovery. More than 150 households had received sustained help, and many more got food and healthcare. In December, youth groups organized a holiday celebration - with music, meals, and gifts for children. The mood was hopeful. The event signaled a shift - from emergency response to community rebuilding.

Mto Wangu began the recovery phase with the creation of a community park. With support from UN-Habitat and Canadian partners, youth groups cleared waste, planted trees, and installed benches. By November 2024, the new space opened with a playground, footpaths, and shaded gathering areas. It was a small but powerful sign of

recovery. "This park embodies the determination of Mathare's youth," stated Michal Mlynar, Deputy Executive Director of UN-Habitat (Mathare Roots, 2024). In early 2025, youth organizations mapped the riverbanks to flag high-risk zones. Using digital tools and community surveys, they marked evacuation routes, critical gaps in drainage, and possible relocation needs. They hosted forums with county officials to push for fair investments in infrastructure.

To expand their impact, they worked to expand the Mathare River Regeneration Network (MRRN). Made up of over 20 groups, MRRN was a space where city officials and NGOs could meet Mathare on equal terms. Local leaders began to see youth as more than just residents—they were trusted partners. That same year, youth from Mathare were invited to present at a global UN forum on climate adaptation, sharing what they'd learned.

This wasn't just about surviving a flood. It was about claiming agency in the face of crisis. From rescues to policy meetings, youth from Mathare rewrote the story of disaster. What follows in the next section is an analysis of how they did it - and what that tells us about youth-led resilience in places too often overlooked when climate disasters hit.

6. Study Findings: Case Analysis

The flood response in Mathare illustrates how youth leadership, built over earlier crises, was activated during the emergency. This section identifies seven elements that influenced how the response worked, drawing connections to earlier efforts like the COVID-19 response.

6.1. Element 1: Youth-driven Organizations and Networks

Many of the relationships and systems used during the response already existed before the floods. Groups such as Mathare Roots, Mto Wangu Initiative, and MECYG were already known and trusted in the community. Because of their earlier work, these groups were trusted when the flooding began.

This local trust shaped how the response unfolded. When these organisations took action, they did so with support from residents. Community centres, informal networks, and trusted organisers became key to how the response operated. These were the same practical systems used during the pandemic, including those coordinated by MECYG. In Mathare, strong youth-led networks supported both social coordination and day-to-day operations. Investment in youth-led networks strengthens a community's ability to respond to crises.

6.2. Element 2: Meaningful Youth Engagement at All Stages

Youth were not asked to carry out plans designed by adults. Youth were involved from initial assessments through to later stages of distribution and review. Youth leadership shaped the response from early damage assessments through to decisions on distribution and follow-up, reflecting the principles of UN-Habitat's Kampala Principles for Youth-Led Development (Solberg & Ragan, 2024). Because youth were involved throughout, decisions reflected the local realities of the community and thus were trusted by the community.

Technical skills amongst the youth supported rapid adaptation. Youth used geospatial mapping tools and social media to share both real time and historical information about the flooding. Messages were trusted because they came from people that the community knew. Some youth gained new visibility through this work and were later invited to participate in city-level disaster planning forums. The point is not simply that youth can contribute. Their role as co-leaders strengthened legitimacy, accelerated adaptation, and helped build a pipeline of future leaders.

6.3. Element 3: External Partners

External partners mattered most when they worked in ways that supported local leadership. Rather than imposing models on the youth and the community, groups such as UN-Habitat, SHOFCO, and the Canadian High Commission supported existing youth-led organizations.

In Mathare, external partners followed UN-Habitat's youth-led development model by responding to priorities identified by youth themselves. This approach was reflected in how support was delivered. Funding, such as from the Canadian High Commission, allowed local actors to decide how resources were used based on community needs.

This kind of engagement strengthened local leadership rather than displacing it. However, it was not without challenges. Bureaucratic procedures delayed the disbursement of funds, placing additional strain on already overburdened youth organizations. If the objective is to enable local response, administrative reform is as important as financial support.

6.4. Element 4: Integration of Livelihood Support for Youth Responders

Taking part in crisis response often comes with personal and financial costs. Participation during emergencies places demands on those involved. Youth want to help but could not always afford to volunteer. Sustained engagement was difficult for youth without income support. Drawing on earlier models, including the COVID-19 response, the initiative incorporated modest stipends, meals, and short-term work opportunities to sustain engagement.

Youth were engaged in a number of different ways – from providing direct relief to impacted residents to work on rehabilitating a local park. Youth contributions were recognised through practical support. This approach served two purposes: it ensured a reliable workforce for response activities and supported youth at a time of widespread economic disruption.

The balance between volunteerism and economic necessity cannot be ignored. If youth are expected to play central roles in future responses, they must be supported in ways that allow them to remain involved over time.

6.5. Element 5: Local Knowledge and Context-Specific Strategies

The response built on existing experience. Youth applied lessons learned during the COVID-19 response. Decisions about where to distribute emergency aid were made based on the localized knowledge the youth organizations had. For example, in order to reach residents without internet access, youth relied on local radio and word-of-mouth, approaches that had proven effective during the pandemic. Local knowledge was not just an added advantage but a basic requirement for the initiative to function efficiently and effectively.

6.6. Element 6: Intra-Community Partnerships

At an early stage, more than 20 groups in Mathare came together through the Mathare River Regeneration Network (MRRN). The Network helped coordinate activities, share information, and avoid overlapping efforts. Instead of multiple disconnected responses, the flood response took shape as a single, coordinated effort across the settlement.

These connections were not limited to Mathare. Youth groups already linked through earlier COVID-19 work, including groups in Kibera and other settlements, shared experiences and strategies, which strengthened advocacy beyond the neighbourhood level. Working as a collective also changed how youth engaged with county authorities. Rather than approaching government as individual organisations, they spoke as part of a wider network, which increased their influence and access to decision-making spaces. Over time, this kind of coordination requires recognition and support, not as an ad-hoc arrangement, but as part of the infrastructure that enables communities to respond to future crises.

6.7. Element 7: Challenges: Structural Issues and Sustainability

Despite its strengths, the response could not resolve deeper structural problems. Drainage systems had failed, many homes were located in high-risk floodplains, and this was used as an excuse by government to evict those living there.

Youth volunteers cleared blocked drains and dredged sections of the river. Their advocacy contributed to the launch of "ClimateWorX," a county-led initiative that included cash-for-work schemes and new drainage plans for Mathare. Progress, however, was slow, and underlying risks remained.

The crisis also exposed significant mental health pressures. Displacement, trauma, and economic loss contributed to increased depression and gender-based violence. Youth groups created safe spaces and offered peer support, but demand quickly exceeded capacity. Mental health support needs to be integrated into preparedness planning rather than added after emergencies occur.

Sustaining youth engagement over time also proved difficult. As the immediate crisis passed, some volunteers had to return to work or studies, and maintaining momentum became challenging. Formal partnerships helped by funding and institutionalising some activities, reducing reliance on unpaid labour. Even so, questions remained about how to keep youth networks resourced and engaged over the long term.

By early 2025, the Mathare youth coalition was transitioning from emergency response to ongoing community development, with plans to register formally as a society to support future initiatives. This shift is promising but requires continued backing. The Mathare experience shows that while youth-led responses can jump-start recovery, mechanisms are needed to sustain and integrate these efforts into formal systems. These include recognition of community disaster committees and organizations, dedicated budgets for training and equipment, and policies that protect informal settlement residents from displacement.

In conclusion, the Mathare flood response did not succeed by chance. It reflected deliberate strategies and enabling conditions that can be applied elsewhere. Trusted youth-led organizations such as Mto Wangu and MRRN provided a bridge to the community. Youth engagement at every stage ensured relevance and responsiveness. Partnerships respected local leadership while supplying critical resources, and livelihood support helped sustain participation. Local knowledge guided action, and unity among groups amplified impact. At the same time, structural gaps and long-term risks remain. These lessons inform the model presented in the next section, which brings together the strengths of the response while addressing its limitations. The Mathare case demonstrates that youth-led community responses can manage immediate crises and contribute to longer-term resilience and social change when they are supported in consistent and meaningful ways.

7. Conclusions

The Mathare model provides a concrete way to do that at the local level. By showcasing Mathare's success on global stages (as happened during UN-Habitat Assembly Youth sessions and the UN Summit of the Future consultations where Mathare was highlighted), advocates can influence policy to be more supportive of community-led adaptation. The model is not only a grassroots model but also one which provides input to policymakers: it demonstrates that empowering youth in slums to lead emergency response is both feasible and beneficial, warranting policy models that promote such empowerment. Governments and local authorities should see these youth groups as partners in resilience-building and possibly replicate institutional mechanisms like Youth Advisory Boards or include community representatives in climate task forces, as UN-Habitat has done.

The lessons from Mathare's youth-led flood response crystallize into a model characterized by community ownership, youth leadership, inclusive participation, partnership, communication, livelihood support, and a vision for long-term resilience. This model is replicable: elements of it have already been applied in other informal settlements. The model is also scalable, what happened in Mathare can inspire a global movement. Importantly, this approach transforms how we view youth in crises – from passive victims or mere volunteers to central protagonists of change. When a flood, pandemic, or any emergency hits a community, the question should not be "what can outsiders do to help this slum?" but rather "what do the

young people in that community need to effectively lead the response, and how can we support them?". By answering that, we align with the spirit of resilience and self-determination that Mathare's youth exemplified.

8. Recommendations: Proposed model for youth-led climate emergency response

This section highlights the seven components of the Youth-Led Climate Emergency Response model: Community Empowerment and Youth Leadership; Inclusivity and Equity in Participation; Multi-Stakeholder Partnerships; Communication and Community Education; Resource Mobilization and Livelihood Integration; Building Back Better - Linking Response to Long-Term Upgrading; and Policy Support and Institutionalization. The graphical representation of the youth-led climate emergency response as well as a description of elements can be found in Table 1 and Figure 1, respectively.

8.1. Community Empowerment and Youth Leadership as Core Principles

At its heart, the model centers on the principle that the affected community – especially its youth – must be the driving force of any emergency response. An emergency response is effective only when the community is onboard and leading. Theoretically, this aligns with the concept of capability and agency – i.e., those impacted should have the capability to act and the agency to decide on the solutions. In practice, this means establishing or utilizing platforms where community members (youth and others) can voice needs, make decisions, and take ownership. For example, forming a community disaster committee or using existing structures like a youth centers or local councils as the coordination hub. In Mathare, for the COVID-19 response, the Mathare One Stop played this role; during the flooding response, MRRN played this role, ensuring local voices guided the process.

The model suggests informal settlements identify an "entry point" for mobilization – be it a youth group, a trusted CBO, or a community leader – before disasters occur. Investing in training local actors in disaster risk management (first aid, early warning, etc.) is a proactive step. This way, when a crisis hits, there is already a leadership nucleus ready to respond.

8.2. Inclusivity and Equity in Participation

A critical lesson is that youth-led does not mean youth-only (Solberg & Ragan, 2024). The most effective initiatives are those that engage all segments of the community in some capacity, while still being youth-driven. In Mathare, youth led, but they included women, elders, and children in various activities (children helped with peer education on hygiene, for instance). The proposed model emphasizes creating an inclusive structure: sub-committees or working groups can be formed to involve different demographics (e.g., a women's safety group to address gender issues in shelters, an elder advisory group to tap older residents' knowledge of past disasters). Equity considerations are also important – making sure the response prioritizes the most vulnerable (in the Mathare response, for example, Mto identified the 150 most-affected households for special assistance).

Tools like community mapping and participatory vulnerability analyses can be employed so that no group is left behind. Inclusion builds collective resilience; it ensures the response is holistic and that there is community buy-in. It also helps tackle social issues that may worsen during emergencies (such as protecting girls from exploitation in relief camps, a point raised during Mathare's planning forums). In short, the model advocates a people-centered approach where youth facilitate broad participation and social inclusion in crisis response and recovery.

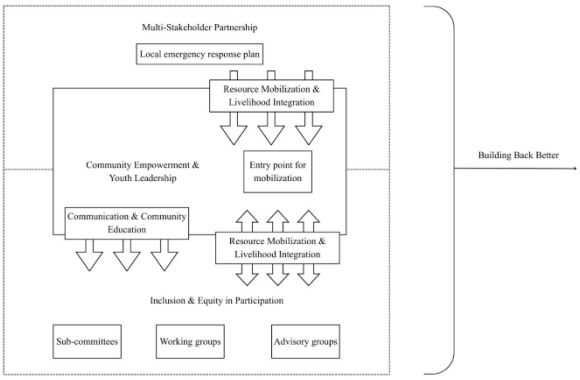

Figure 1. The Youth-Led Climate Emergency Response Model and interplay of its elements

Table 1. The description of the structural elements of the Youth-Led Climate Emergency Response Model against the tools to establish them, as well as their institutional and policy outcomes (Element 7)

Structural element	Short description	Tools	Institutional outcome(s)Element 7.1	Policy outcome(s) Element 7.2
Element 1: Community Empowerment & Youth Leadership	Youth-led groups	Stakeholder mapping	Entry point for mobilization	Formal recognition of youth and communities in disaster management plans
Element 2: Inclusion & Equity in Participation	Internal actors: women, elderly, children, existing groups, local government	Stakeholder mapping	Sub-committees, working groups and Advisory Groups; capacity building for local actors; a platform for community-wide decision-making	Formal recognition of community disaster committees in disaster management plans; budget allocations for supporting community response; legal safeguards
Element 3: Multi-Stakeholder Partnership	External Actors: UN agencies, NGOs, donors, private sector, and government	Stakeholder mapping; co-creation exercises	Established partnership model between the community and outside actors	Local emergency response plan
Element 4: Communication & Community Education	Reaching the most marginalized with timely warnings and information	Early warning strategies managed by youth	Regular awareness campaigns; community-based "trusted messengers"; community of practice	Include in local and other emergency response plans
Element 5: Resource Mobilization & Livelihood Integration	Quickly and efficiently mobilising resources for community	Crowdsourcing; rapid external funding	Systems to track donations and spending; micro-insurance or	Create inclusive institutions that allow youth and

Structural element	Short description	Tools	Institutional outcome(s)Element 7.1	Policy outcome(s) Element 7.2
	response while supporting community actors instrumental to the response		community emergency funds	community groups to fundraise ie non-profit registration policy
Element 6: Building Back Better – Linking Response to Long-Term Upgrading	The response contributes to breaking the cycle of poverty and vulnerability	Participatory slum upgrading plans; advocacy tools	Community-designed infrastructure (e.g., parks, drainage); ongoing upgrading forums	Inclusion of informal settlements in national climate adaptation and disaster risk reduction strategies
Element 7: Policy Support and Institutionalization	Enabling policies and formal recognition to make the model scalable and durable	Advocacy tools; engagement with municipal and national government; international policy frameworks	Formal recognition of community disaster committees in national disaster management models; budget allocations for community-based preparedness; training programs targeting youth from informal areas	Government policies that support rather than hinder community-led efforts; inclusion of youth and communities in disaster management plans; protection of informal settlement residents from displacement

8.3. Multi-Stakeholder Partnerships with Clearly Defined Roles

The Mathare case demonstrated the power of partnerships between the community and external actors - UN agencies, NGOs, donors, private sector, and government. The proposed model calls for establishing these partnerships early and clarifying roles through a co-creation process. One practical tool is to develop a local emergency response plan that outlines how different stakeholders will collaborate when a disaster strikes. For instance, an informal settlement can have an agreement with the city government that in event of a flood, an identified body (committee or agency) will manage local evacuation and relief distribution, while the government will support with heavy equipment, ambulances, or technical expertise.

The principle of subsidiarity should be followed. Tasks should be handled at the closest to the ground, most effective, level (the community does what it can itself) and escalate to higher levels (municipal/national/international) what requires additional capacity. In Mathare, such a division happened organically; our model suggests formalizing it for replicability. It's also important that partners respect local leadership – perhaps by including youth representatives in their coordination meetings or even in city emergency committees (as happened when Mathare youth were invited to city forums). Trust and accountability mechanisms (like joint monitoring of aid, public dashboards of aid received) help maintain transparency.

8.4. Communication, Early Warning, and Community Education

One of the underpinnings of effective disaster management is the "last mile" communication – reaching the most remote or marginalized people with timely warnings and information. In informal settlements, conventional early warning systems may not exist. This model incorporates community-based early warning strategies managed by youth. For example, establishing a volunteer-run SMS alert system or using local radio and public address systems to warn of impending hazards.

For example, youth can be trained to interpret weather bulletins and translate them into local languages and context. In Mathare's recovery phase, youth started dialogues about flood awareness; scaling that up, the community could institute regular awareness campaigns (street theatre, murals, school clubs) about what to do when floods loom, much like fire drills.

Education is power: if residents know evacuation routes, safe spots, and have a family emergency plan, casualties can be greatly reduced. The Mathare experience of battling misinformation also underscores including a strategy to combat rumors – by designating "trusted messengers" (often youth or community health workers) to relay verified information during crises. It has been estimated that nearly 70% of Mathare residents relied on local radio for COVID info (Ragan et al., 2023); for floods, community radio and word-of-mouth were key. The model formalizes partnerships with local media and ensures youth spokespersons are prepared to communicate clearly.

8.5. Resource Mobilization and Livelihood Integration

Key to the success of this model is mobilizing resources quickly and efficiently. The model suggests diversifying resource streams: internal community resources (crowdsource locally via community fundraisers, savings groups) combined with external rapid funding (small grants from donors earmarked for community groups in emergencies, humanitarian crowdfunding, etc.). Mathare's youth tapped into both, which was effective.

One principle from Mathare is to tie emergency response to livelihood opportunities whenever possible. For instance, instead of bringing outside contractors to clear debris, hire local youth (and pay them) to do it, as was done via cash-for-work in the park cleanup. This injects money into the local economy at a time of need and builds skills.

The model would encourage approaches like "Recovery through Work" – cleaning, rebuilding, and service provision done by trained community members, especially youth and women, with compensation. Not only does this approach aid recovery, but it also addresses the economic shock that disasters inflict (many in Mathare lost their income sources in the flood). Additionally, the model would have templates for managing finances transparently at community level (perhaps simple tools for tracking donations and spending, to build trust with donors and the community alike). Micro-insurance or community emergency funds could be explored as resilience measures – e.g., a community fund that youth help manage, which can quickly pay out small grants to affected families, acting like a communal insurance scheme.

8.6. Building Back Better – Linking Response to Long-Term Upgrading

A standout feature of Mathare's response was how it segued into projects like the Community Park, addressing underlying issues. The model champions this proactive approach of "resilience dividends" – using the recovery window to make improvements. In informal settlements,

that could mean advocating for and participating in slum upgrading projects that incorporate climate resilience: e.g., elevating pathways, improving drainage, securing land tenure away from high-risk zones, building flood shelters that double as community centers, etc. Youth should be involved in the planning and design of such measures as their creativity and local knowledge can lead to more practical solutions. In Mathare, youth helped redesign a piece of their neighborhood into a safer, greener space. This embodies the idea that disaster response and sustainable urban development must go hand in hand. Our proposed model integrates with existing agendas like the Sustainable Development Goal 11 (inclusive, safe, resilient cities) and the Sendai Model for Disaster Risk Reduction, which calls for enhancing disaster resilience of the vulnerable urban poor. In policy terms, it means pushing for informal settlements to be included in city climate adaptation plans.

8.7. Policy Support and Institutionalization

Finally, for the model to be scalable and durable, it needs enabling policies at higher levels. One lesson from Mathare is that government policies can either hinder or help community-led efforts. The initial government response of bulldozing unsafe houses without providing alternatives exacerbated the suffering of the residents. Government support did come in late 2024 through ClimateWorX initiative that attempted to respond to both the need for improved livelihoods and climate change mitigation (Government of Kenya, 2024). The proposed model advocates for institutionalizing the role of youth and communities in disaster management plans. This could mean formal recognition of community disaster committees in national disaster models, budget allocations for community-based preparedness, and training programs targeting youth from informal areas. Internationally, models like the United Nations Pact for the Future and the Declaration for Future Generations emphasize the need to include youth and civil society in governance for sustainability (United Nations, 2024).

The COVID-19 and now climate emergency responses demonstrate clearly that investing in youth-led initiatives in informal settlements will yield dividends in disaster preparedness, quicker recovery, and the co-creation of more just and sustainable cities. The Mathare model shows the way forward to a future where communities stand resilient in the face of climate adversity, empowered from within by the leadership of their youth.

Data Availability Statement

The fieldwork transcripts cited in this study (Mto Wangu Initiative, 2025a–g) are unpublished consultation recordings and are held by the authors. They are not publicly available due to the confidential and community-sensitive nature of the data. Researchers wishing to enquire about access may contact the corresponding author. Where ethical approvals permit, the authors will consider deposit in an institutional repository at a future date.

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In Kenya, riparian zones are legally protected by the government (Environmental Management and Coordination Act, 2009). This Act

establishes a mandatory riparian setback, restricting any building along river corridors. ↑

There are five electoral wards in Mathare. ↑

A gabion is a wire mesh cage filled with stones or rock used to control erosion and manage water flow. ↑