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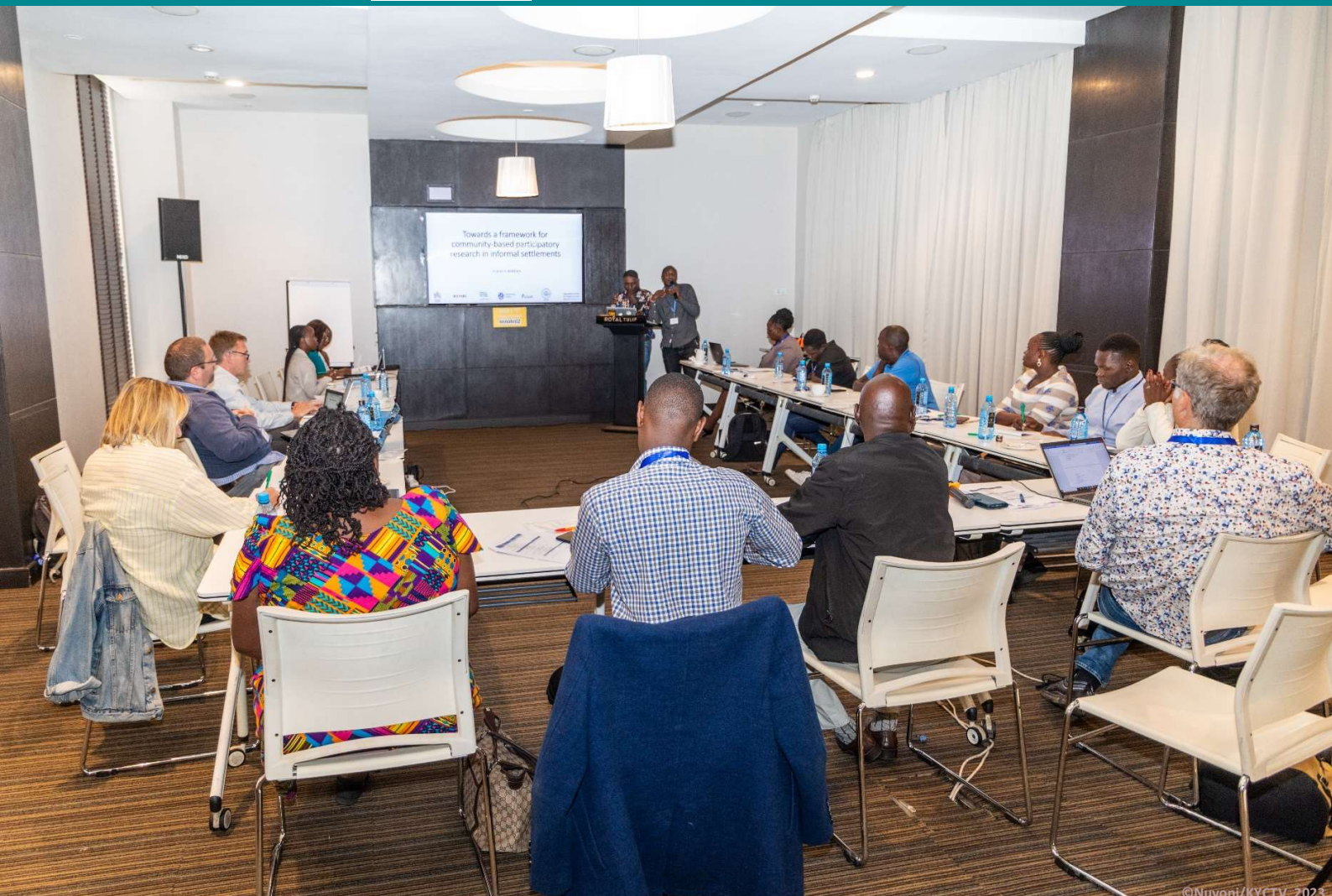
Towards a framework for community-based participatory research in informal settlements: A pilot in Mathare

Nairobi Workshop | June 12-14, 2023

Workshop Proceedings

Royal Tulip Canaan Hotel, Nairobi & Orbit Church Hall, Mathare

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Vital Cities and Citizens (VCC)-Erasmus Initiative

Ghetto Foundation (GF)

Mathare Special Planning Area Research Collective (MSPARC)

Summary

The first community-based participatory research workshop was conducted from 12th June to 14th June 2023 at Royal Tulip Canaan Hotel and Orbit Church Multipurpose Hall in Mathare, Nairobi. The co-creation workshop was part of participatory research methodology of the ongoing CoRe Impact (**Co**mmunity-**Re**search-**Impact**) project by the International Centre for Frugal Innovation/Nuvoni Centre for Innovation Research, which is funded by Leiden-Delft-Erasmus Universities (LDE) Global, under the Urban Resilience Programme of the Vital Cities and Citizen (VCC) Erasmus Initiative.

The main objectives of the workshop were (i) to explore the co-creation of a community research repository for past and present research on Mathare, and (ii) to deliberate on community-based participatory research ethics, as mechanisms for counteracting research waste, which results from research practices that perpetuate patronization of community participation and undermine societal relevance, validity, and actionability of research outcomes. The workshop drew participation from multiple actors including community members, civil society organizations, academia, private organizations, and independent researchers.

The workshop discussed the framings of the notion of research waste in the context of past and current research buzz in Mathare, against a backdrop of little to no positive transformation on the material conditions of the informal settlement. Participants discussed ways of tackling research waste, which predominantly included community engagement from research conceptualization to dissemination, and openly sharing data and research outputs with the community and other stakeholders in the Mathare. These discussions raised pertinent questions on ethical research in informal settlements. To this end, the proposed research repository was considered a potentially useful tool for enabling research actors to openly access, collate and share data/information. The repository was deemed a point of reference in determining future research agenda and interventions that would be applicable for planning and community development efforts in Mathare. Participants pointed out missing data/information from a draft research database, including spatial data and unpublished reports/work on Mathare, which would be useful for Special Planning Area (SPA) declaration and slum upgrading actions.

The need to map out and engage more actors who would be significant for the Mathare slum upgrading was considered critical to the process. The team also identified the need to create community awareness on the importance and potential benefits of government's acknowledgement of Mathare as a *Special Planning Area*. In this regard, grassroots mobilization through village-based and settlement-wide engagements were recommended as ways of catalysing community mobilization and participation in settlement upgrading

process. For external actors, the engagement strategies identified included partnerships, lobbying, capacity building, collaborative dialogues, and the use of social and mainstream media.

Lastly, the team engaged in a reflective discussion on research ethics. This entailed identifying ways in which research actors can engage in non-extractive research practices to facilitate co-learning, knowledge co-production and dissemination in a manner that mutually benefits the community and other actors. The team co-developed rules of engagement in community-based research and emphasized the need for collaboration among research actors and the community in co-designing and undertaking societally relevant and action-oriented research for the realization of positive community transformation.

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Day 1

I Session 1: Introduction

The first day of the workshop drew participation from the Nuvoni Centre for Innovation Research, Ghetto Foundation, University of Nairobi, Kenyatta University, Akiba Mashinani Trust (AMT), Kounkuey Design Initiative (KDI), Muungano wa Wanavijiji, Kenya Institute of Planners (KIP), Mathare Social Justice Centre (MSJC), Erasmus University Rotterdam- Institute for Housing and Urban Development Studies, (IHS) and TU Delft, and community members from Mathare.

The workshop's main aim was to co-create a framework for community-based participatory research in the Mathare informal settlement and deliberate on piloting a community research database/repository as a tool for counteracting research waste. There were four presentations:

- Introduction to the Community Based Participatory Research (CBPR) project (CoRe Impact-**Co**mmunity-**Re**search-**Impact**)
- Countering research waste
- Research on Community-grounded upgrading
- Lessons from Mukuru Special Planning Area (SPA) process

1.1 Discussions and Take-aways

- **Research fatigue**: Most Mathare residents have been involved in multiple research studies. The time commitment, monotony/repetition of research topics, and high optimism of participants overwhelm them when their expectations are unmet. The cumulative effect of multiple engagements leads to fatigue.
  - "*Professional interviewees*" - Some participants are known to participate in many interviews for different projects, such that some who would have different views are left out. The knowledge generated is thus non-diverse, as these "professional interviewees" often give answers that interviewers want to hear. How do we divert from experienced, coached respondents to get credible knowledge from a variety of community sources?
- **Research waste**: From the discussions, a major manifestation of research waste in Mathare was duplication of research. In this regard, an observation made was that most research in and on Mathare has the same concept studied repeatedly, just packaged differently with different names and methodologies. Poor dissemination of research results/outputs, such as the use of academic jargon, that

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is not understood by lay people and limiting access to research outputs (articles, reports etc.) for subject communities, also emerged as key issues leading to wasteful research.

- **Research and academia**: Most academic research are not published but is continually done for academic advancement. Would this be considered research waste? There is need to deliberate whether unpublished academic research (students' theses) should also be included in the proposed Mathare repository.

  - There is a lot of dormant information and 'unusable' research on Mathare, which is done by students whose interactions with communities often cease upon completing the data collection phase. These research remains stored in university libraries and repositories, which are inaccessible to the community. This data/information should be made available to the community; it could possibly be used to generate solutions to societal challenges.

- **Is all research waste bad**? When we talk about research waste, who labels it so? Is it mostly the community or other actors as well? Is the repository considered 'waste' or a 'landfill' once the SPA process and objectives are achieved? Timelines for research impacts should also not be used to label research as waste. "Maybe some of the research done 20 years ago is being implemented now, 20 years later."

- **Translating research to action:** making research relevant, accessible, and beneficial to disadvantaged communities has potential to accelerate social change.

- **Process versus output**: CBPR framing sees research value as a process rather than the output. Our take on research waste might change if we look at the process rather than the output.

- **The research repository/database**: This will be used as a platform that makes research accessible to the community. It could possibly reduce research duplication as it becomes a point of reference for researchers to identify research gaps for future enquiry.

- **A model research café** would promote participation between organizations and help curb research waste. It would also be a useful tool for the realization of Mathare as a Special Planning Area. However, community-based participatory research needs to go beyond the SPA process.

  Sustainability of the repository/data café: Ideally, the repository and data café should be managed by the community. The sustainability of the repository is important; this raises the question of how to finance its maintenance in the long run.

- **Stakeholder engagement**: Who is the target audience of Mathare research? All stakeholders, including the government, should be brought on board and make data available to build the repository.

- **Research on community-based upgrading**: A focus on collaborative research that establishes more equitable relationships is necessary. The popularized term- decolonization of research- compels research actors to speak differently about undertaking research, but is this just a token? There is need

to empower and build capacity to conduct research by the community, on the community and for the community.

- **'Circular Research'**: Can be used in this concept to replace the term 'research waste'.

1.2 Experiences of Community Researchers (Mathare)

- Research is not wasteful.

- Most community research in Mathare focusses on health, education, and local economy

- Through data collection, research has created employment opportunities and learning new research areas, such as 'frugality'. It's also an opportunity to participate in community forums and for residents to air out their grievances.

- Most researchers do not acknowledge/credit community researchers in their publications or other outputs, despite their contribution in the research process.

- Researchers need to reevaluate methods of conducting community based participatory research.

Figure 1: Jacob Omondi and Samuel Kiririo-Ghetto Foundation

- Grooming other researchers- Those with more expertise in community research can impart their knowledge and experiences to the younger generation.

- There are numerous organizations working within the informal settlements. Usually, a researcher will seek out community researchers according to their networks and who they know in the settlement. Presently, most of the researchers go to Ghetto Foundation to seek assistance to conduct research.

- Sometimes, the researcher co-creates the research design with the community researchers, but the research produces different output. "Some researchers hide their cards and change the process midway even after consultations, so community researchers are left out."

1.3 Lessons from Mukuru SPA: An expert's perspective

- A little-known fact is that **Kenya's planning law allows communities to initiate planning processes**. Thus, experts suggested that the community pushes for the declaration of Mukuru as a special planning area, which was the genesis of the SPA process in informal settlements in Kenya. In Mukuru, challenges revolving around access to land and basic services led to the birth of the SPA process. Additional thematic areas were born as the process kickstarted.

- **Mukuru SPA Foundation**: The ideation, conceptualization, methodology design, budgeting, and establishment of partnerships for Mukuru SPA commenced in 2012. The conceptualization of Mukuru SPA took 4-5 months of planning and consultation. Between 2013 and 2015, activities undertaken included: primary data collection, situation analysis, documentation of results and outcomes, and planning for implementation, action and sustainability. The SPA declaration was done in 2017, marking the commencement of the second phase of the SPA process, which involved planning activities, wider partner engagement, legal and institutional actions, and the preparation of the Mukuru Integrated Development Plan

- In Mathare, the SPA process is influenced by the idea, engagement, mapping, research, planning, and implementation for impact on the community in Mathare. **Beyond planning for impact, there is implementation**. Thus, **planning and research for impact** have implications.

- **There is no room to ignore the emotive subject of land ownership and tenure security in this process**. One stated requirement for tenure in Mukuru was that the owner had to present a development plan before being issued with a land title, or else, the title deeds would be returned to the government. **Quasi and semi-quasi-acquisitions** could be one solution for land tenure issues in informal settlements. For example, in the Korogocho settlement, people willingly gave out land for development.

- The Mathare SPA process should be guided by **community-led solution-finding for the endemic problems in the settlement.** For example, a research project in Nakuru sought to resolve monkey's invasion of people's homes. Through community-led solution finding, residents discovered the primates are attracted by their careless dumping, so a solution was found. The solution to the research problem was solving both primate invasion and waste mismanagement.

1.3.1 Takeaways

- **Don't put your eggs in one basket**: In Mukuru, the planning, legal, and finance teams were all involved, but each team was thinking thematically according to their focus areas. Instead, diversify and maintain synergy, for instance, the finance team should 'think' like the planning team, etc.

- **Always have an entry point**: For Mukuru, the entry point was stakeholder engagement; 'the community and the space.'

- **Have a steering committee**: Interaction cannot be between Nuvoni Centre for Innovation Research and the community. Rather, a consortium of several partners and the community.
- **Engage with the community for maximum impact**.
- **Research for impact.**
- **Implementation for impact**- Mukuru SPA was realized by aggressive advocacy that caught the attention of national leaders. "The best way to predict the future is to create it."-Abraham Lincoln

1.4 Mukuru SPA Experience: A Community Member's perspective

- Muungano wa Wanavijiji, a grassroots organization advocated for proper land tenure systems, and agitated against evictions through protests/demonstrations and rapid enumeration. However, endemic problems in informal settlements, such as fires, hampered the enumeration process. Land title holders' hands were tied due to spreading encroachment.
- Mukuru SPA research depended on very old (outdated) data as they did not have any current data available, and the rapid enumeration process was not very accurate due to its hasty nature.
- The relationship between community members and policymakers/concerned authorities was not seamless. However, there was a cordial relationship and interaction between community members and education institutions such as Strathmore, UoN, etc., who were at the forefront of the process.

Figure 2:Dorice Moseti - Mukuru resident and community researcher, Muungano wa Wanavijiji

- The community formulated hierarchical structures such as the *Nyumba Kumi* initiative, where people would discuss issues that would later be forwarded and deliberated on at higher level governance structures such as local administration.
- Different consortiums were formed based on thematic areas such as water, sanitation and energy, housing, infrastructure and commerce, land and institutional frameworks, among others.

- The motto, "*Leave no one behind*" guided community engagement. It ensured maximum mobilization and engagement from all the community groups.
- Priority was given to those who lived and worked in Mukuru.

  "… someone who doesn't live in Mukuru or Mathare cannot speak on behalf of the residents as they do not have lived experiences in the area…If we want to go far with MSPARC, let us involve Mathare people from the beginning to the implementation"

- Higher echelon stakeholders should avoid 'militarized' implementation as was the case in Mukuru, and fully engage the community.

1.5 Challenges of the Mukuru SPA

- The plan was implemented in March 2020 at the height of the COVID-19 pandemic.
- A lot of evictions had to happen to accommodate development guided by the SPA, such as roads and streetlights. The SPA was a double-edged sword.
- Rent prices hiked due to the development of the roads, which further oppresses the community members.

2 Session 2: Fieldwork in Mathare

Later in the afternoon, the team visited Mathare informal settlement. The aim of the visit was to facilitate participant observation of the existing situation and appreciate various stakeholders' efforts towards improving the living environment within Mathare. The team led by Ghetto Foundation walked from Mathare 3A through Gitathuru, Kosovo, Brick stone to Kiamutisya. The participants could make quick observations on the living conditions, the social and environmental challenges, and opportunities that could culminate in improving the living conditions. The sites visited include Vision Bearer's urban agriculture site, Mathare River rehabilitation and place-making activity in Kosovo, and Green Park in Kiamutisya.

2.1 Vision Bearers Farm

Vision Bearers Youth Group is a local community-based organization composed of reformed middle-aged youths. Group members engage in small-scale farming, provision of water and sanitation services (sell water at Ksh.5 per 20-liter jerrycan), solid waste collection and disposal, and production of briquettes for income generation. The group acquired the land (approximately 0.04 Ha) on which they operate on through donation .

Figure 3: Workshop participants visit the Vision Bearer's farm

The initiative by Vision Bearers shows creative activities conducted by the youth to sustain their livelihoods against frequent shocks and social challenges.

2.2 Kosovo Recreational Park

The team visited a section of Mathare river riparian land transformed from a dumping site into a recreational park. The river rehabilitation is a joint initiative of community-based organizations, namely, the Mathare Social Justice Centre (MSJC), Mathare Roots, and Vision Bearers, who are advocating for ecological justice in the settlement which has limited green open spaces. The aim is to reduce pollution of Mathare River, mitigate flooding caused by clogging of plastic wastes, and minimize the health-related impacts of river pollution. This initiative builds on ongoing city-wide efforts by multiple actors (government, professionals, researchers, academia, local communities, NGOs, CBOs etc.) to clean and rehabilitate the Nairobi River ecosystem.

Figure 4: Kosovo recreational site

The rehabilitated site is presently landscaped with young growing trees and sprouting grass. It has been partly furnished with benches and wooden railings creating walking trails. Toilet facilities have also been provided on site. This transformation is evidence of a community yearning for transformation.

2.3 Green Park Farm

Pirates is a local community youth group that does environmental conservation and urban agriculture in Kiamutisya village of Mathare. The group advocates for a greener Mathare by planting trees and vegetable gardening through irrigation. They also undertake waste collection, sorting and disposal, advocacy against crime, and promote access to knowledge and education by operating a library.

Day 2

The second workshop day was held in Mathare, at the Orbit Church Hall near Ghetto Foundation offices. The objectives of day 2 of the workshop were threefold:

i. Data mapping: Guided by a draft repository, the participants were to map out all the research in Mathare over the past decade.

ii. Identify research needs for the SPA: The data mapping process would then segue into identifying the gaps present and which focus areas would be most useful in realizing Mathare as a Special Planning Area.

iii. Data café: The afternoon session would be interactive, involving participants exchanging ideas on the form that a Mathare knowledge database would take.

Figure 5:Dr. Jan Fransen gives an overview on data mapping exercise.

The session, facilitated by Dr. Jan Fransen and Alice Menya, was conducted through small breakout groups to facilitate interactive focused discussions and data sharing.

3 Session 3- Data Mapping

Four major subject topics/thematic areas were developed from the draft Mathare research, and break out groups formed by participants to discuss the main ideas, sub-themes, and actors within each thematic area. the groups made presentations using eye-catching visual diagrams like Venn and Sankey diagrams.

3.1 Group 1- Land and Housing

The main emerging sub-themes from the land and housing group included:

- Land dynamics: land tenure, ownership, cost, use, actors, and challenges
- Construction process and materials: Actors, drivers, innovation, challenges
- Resilience/transformation,
- Mapping and geospatial tools: Mapping as a data collection tool/method was a key element in the research database on land and housing.
- Infrastructure: housing and infrastructure are interrelated, and all infrastructure and development happen on land.

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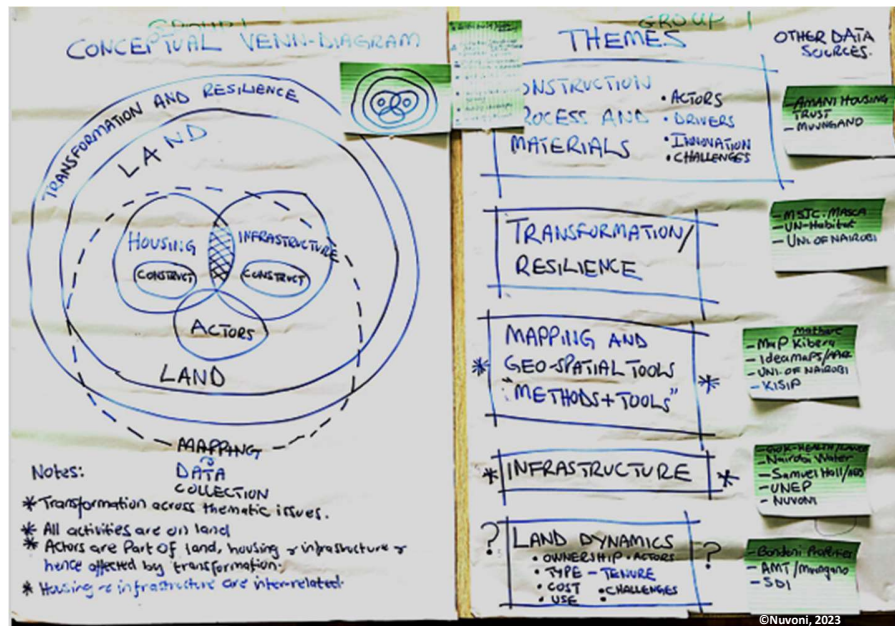
Figure 6:Land and Housing Venn diagram

Land tenure and ownership manifested as either public or private. Kosovo, Mathare 4B, Mabatini, and Gitathuru villages were identified as occupying government land, while Mlango Kubwa, St.Teresa, Mathare 4B, Mashimoni, Kiboro, Bondeni, and Kiamutisya villages were on privately owned land.

More data is needed on the following topics:

- Legal land ownership status in all the villages.
- Spatial data on land, housing, and infrastructure.
- Ward and village boundaries, including the Mathare Valley boundary
- Existing situation i.e. development on the ground like housing, infrastructure, etc.
- Any development regulatory framework, such as legal or local zoning ordinances, rules, and regulations managing development.

Table 1: Actors identified on Land & Housing

Muungano wa Wanavijiji	UN-HABITAT	Map Kibera Trust
Amani Housing Trust	University of Nairobi	Akiba Mashinani Trust (AMT)
Mathare Social Justice Centre (MSJC)	Mathare Slums Community Association (MaSCA)	Slum Dwellers International-Kenya (SDI-K)
IDEAMAPS Network	World Bank	Government of Kenya-Ministry of Lands & Physical Planning

3.1.2 Comments

Actors and Community Engagement: Residents, leaders, stakeholders.

- Who is going to spread the word? We need community champions who will steer the data mobilization agenda.
- We need to map out interested and disinterested leaders.

3.2 Group 2 - Infrastructure & Services

The main sub-themes in this category include physical/basic infrastructure & services such as water and sanitation, transport, ICT/digital infrastructure, energy and waste management, and social infrastructure & services such as education, health, and community spaces. Some of the emerging issues included:

- On ICT, most research papers/topics discussed the *use of* digital infrastructure (e.g. for mapping) rather than the *development of* digital infrastructure. i.e., **as a tool, not a service.**
- Research on water and sanitation is very often related to gender too.
- The youth are often discussed in relation to employment opportunities that may arise in response to services (e.g. waste management), while solid waste management was often discussed as a means of livelihood.
- Interestingly, energy is minimally discussed and is never in relation to any other theme – such as health (indoor air quality) or environment (climate/clean energy).
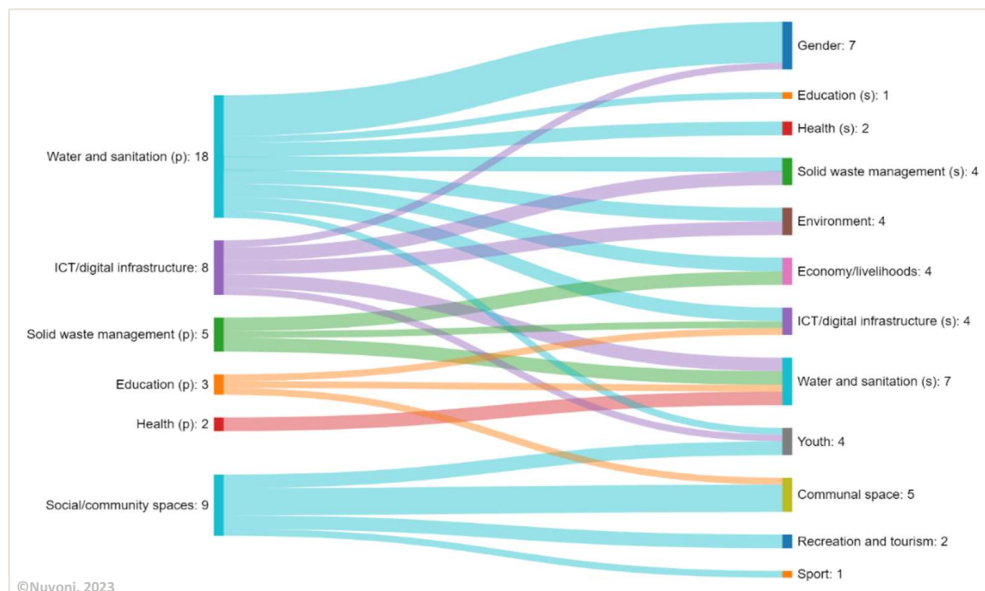
Figure 7: Sankey diagram on thematic overlaps in research on infrastructure and services

The following data was identified as missing from the draft reseaerch database:

- Spatial data on the physical and social infrastructure

- The settlement's physical address system including data indicating the number of structures, including housing and physical development, and data on road and street names.
- Information on transport and mobility in Mathare; modes and means of transport.
- Information and data on health infrastructure.

3.2.1 Comments

- There is need to make sanitation safe and accessible to children and women, and the elderly in informal settlements.
- there is need to understand how infrastructure is suitable for different age groups and for people with disabilities.
- We need to map out research and information that has not been documented.
- There is data on the schools from Mathare Social Justice Centre
- Muungano wa Wanavijiji has also done settlement profiling through structure enumeration in Kiamutisya, Kosovo, and 4B.

3.3 Group 3- Environment and Climate Change

The main themes from the environment and climate change group included flooding and autonomous adaptation, community capacity and empowerment, flood risk, climate adaptation, water quality and sanitation access, and social vulnerability. There were major overlaps with health and social vulnerability as sub-themes such as infectious diseases, sexual and reproductive health (SRH), nutrition, drug abuse & addiction, and social networks.

Figure 8: Venn diagram of environment and climate change

3.3.1 Missing Information

Data on air pollution, waste management, micro-climate of informal settlements, land cover and vegetation, fire, and local initiatives on environment and climate change was minimal or missing in the research database. Air pollution research has been conducted by Stockholm Environmental Institute (SEI).

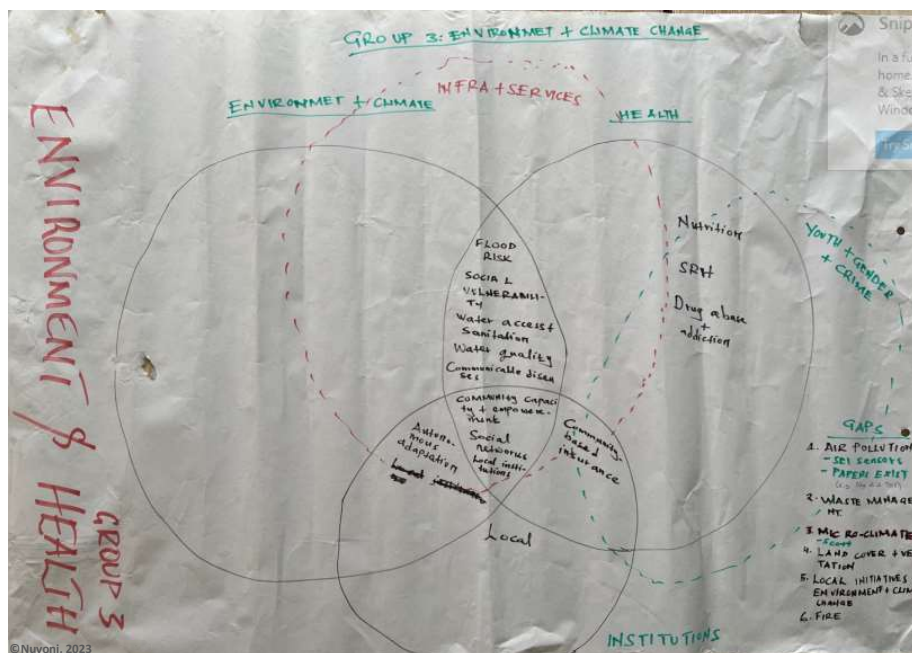More data is needed on climate and local adaptation strategies. Lastly, more data on disaster management should be added to the database. No research has been added on fire management strategies in Mathare.

3.3.2 What is needed for SPA

The following is needed for the SPA agenda;

- Water quality, access, and availability
- Information on existing landslides
- Research and data on the river ecosystem and pollution
- Little information on soil quality

3.3.3 Comments

- MSJC has done research on water quality.
- Data should be verified because of the transformations within Mathare. We need to look for further information to enrich the repository.
- Air quality is changing due to industries coming up within the neighborhood.
- The need to capitalize on funding for climate change by showing the trends on climate over time. We need to measure the trends over time.
- Muungano wa Wanavijiji has done studies on health and well-being through the ACRC project.
- Mathare Social Justice Centre has done studies on air quality and noise Pollution in Mathare.
- Katiba Institute has studied underground water quality in relation to borehole drilling in Mathare.
- the community works with organizations, but we cannot access their documents. The activities end by the end of the exercise.

3.4 Group 4- Youth, Gender, and Crime

The database contained records on extrajudicial murders, reports from social justice organizations such as the Independent Policing Oversight Authority (IPOA), the Independent Medico Legal Unit (IMLU), the Kenya National Human Rights Commission (KNHRC), Amnesty International, and Haki Africa. These records highlight issues such as the use of lethal force, reports on youth and drugs, resistance, and the perspectives of victims and defenders. There was also information on unemployment and generational differences, frequently inspiring criminal activity. Corruption and drug use were largely unreported in the database. SDI-Kenya have done several works on youth groups, their skills, and jobs. Local CBOs like the

Ghetto Foundation and MSJC have also compiled youth talent, entrepreneurship, and mentorship data. Issues to do with street children, social networks, young people, and ICT have all been the subject of numerous studies.

In terms of gender, there were overlaps with themes on ICT, the economy, and social activism through publications that highlighted women's empowerment through ICT, women and peacebuilding, and women entrepreneurs. However, there was a lack of information regarding gender-based violence, early marriages, and teenage pregnancies. Nonetheless, MSJC, Ghetto Foundation, and Muungano have made significant contributions to the field of gender through collaborations with organizations like Plan International, and She Leads.

3.4.1 Comments

- There is missing information and research on people with disability and disability justice in Mathare. SEI and Constant Cap conducted a study on people with disability in Mathare. We need more data on how people access different services, such as housing and transportation in Mathare.
- There is missing data on mental health.
- More data should be added on gender-based violence.
- There is need to categorize information that has not been grouped in the database.
- How do we analyze the information we have to aid the SPA process?
- How do we access research from organizations that do not want to share?

4 Session 4- Research Needs for SPA

This session involved identifying data relevant for the SPA process in Mathare, mapping available and missing information, and the relevant actors involved in each thematic area. The table below summarizes the data needs for the SPA process.

Table 2: Missing data for the SPA

Theme	Data needed for SPA	Available data	Missing/invisible data	Actors/actions involved
Land & Housing	Land	Land tenure and ownership (Government vs private land in Mathare)	-Geospatial data -Housing & infrastructure developments -land use zoning	Muungano wa Wanavijiji Akiba Mashinani Trust (AMT)
	Situational analysis		-Social dynamics -Environmental dynamics -Economic dynamics	Community Nairobi City County Government (NCCG) NGOs National government
	Actors and community engagement		Residents Leaders Stakeholders	Community champions (dis)Interested leaders Informal community
Infrastructure & Services	**Education facilities** -Number -Conditions -Type -Supportive infrastructure	No. of public schools (3)	-No. of private schools -spatial data on private schools -student-teacher ratio -quality of supportive infrastructure (toilets, kitchens etc)	Ministry of Education Hope International NCCG KPSA Muungano wa Wanavijiji Ghetto Foundation
	Transport & mobility -Modes of transport -Condition -Street addressing -Accessibility -Supportive infrastructure	-Street addressing in Kiamutisya -Spatial data -Accessibility (Matatu, Motorbikes) -Public infrastructure -Safety in public infrastructure	-Street address -Street lighting	Plan International Muungano wa Wanavijiji Ministry of Transport
	Water & sanitation -Reticulation -Portability -Service providers -Costs	-Water points (water ATMs) -Spatial data -Costs	-Reticulation -Governance of water points	Mathare Social Justice Centre (MSJC) Nuvoni/ICFI Muungano wa Wanavijiji Youth groups AMT

Theme	Data needed for SPA	Available data	Missing/invisible data	Actors/actions involved
Infrastructure & Services	**Health** -Population -Number of facilities -Types of facilities -Quality of services -Disease prevalence -Legislation -Livelihoods	-Service mapping (no. of facilities) -Community Health Volunteers (CHVs) - Tuberculosis prevalence	- No. of informal health facilities	Muungano wa Wanavijiji Slum Dwellers International-Kenya (SDI-K) ARISE African Cities Research Consortium (ACRC)
	Solid waste management -Designated garbage collection points -Types of waste -Legislation -Waste management -SW and livelihoods	-Legislation -SWM+ livelihoods	- Waste management (recycle, reuse, reduce, recover) -Spatial data on waste disposal points	National Environmental Management Authority (NEMA) CBOs/youth groups e.g., Pirates, MASCA
	Energy -Access -types of energy -governance	-Electricity -Illegality (in Kosovo) -Legislation	-Renewable/clean energy -Illegality -Household access -Other energy types e.g., LPG	-Nuvoni/ICFI -KPLC -CBOs e.g., Motobrix
	ICT/digital -Service providers -Access (to Wi-Fi, etc) -Physical infrastructure -Governance	-Internet accessibility -Physical infrastructure -Digital platforms	-Cost -Governance	ICFI/Nuvoni Moja Wi-Fi GIZ
	Social and Community Spaces -Governance -Number of social spaces -Recreation facilities -Accessibility -capacity	Internet connection	-Number of facilities -Governance -Cost -Accessibility	ICFI/Nuvoni CBOs NGOs Local Administration e.g., chief
Environment and climate change	**Water** -Access -Availability -Quality -River ecosystem	Water access Water availability Quality River ecosystem	-Ongoing monitoring -diseases	-Eternal and local research -Unpublished student research -MSJC

Theme	Data needed for SPA	Available data	Missing/invisible data	Actors/actions involved
Environment and climate change	**Air** -Outdoor/indoor quality -Noise pollution		-Diseases -Causes -Incidents	
	Soil quality		Very little information exists	
	Vegetation cover	-Mapping	Localized data	UN-HABITAT
	Disease -Prevalence	Prevalence on select diseases	-Effects on livelihoods -Effects on education -Comprehensive studies -Loss and damage	Local and external research
	Microclimate -Heat and cold stress	Heat mapping	-Longitudinal climate data -Effects on livelihoods, education and health	External research
	Waste management	Data is available	Ecosystem loss effects Flooding	Local research Dialogues
	Flooding -Drivers -Frequency -Intensity -Modelling	-Drivers -Frequency -Intensity	Ecosystem Livelihoods Longitudinal data (climate) Flood modelling	External and local researchers
	Fire	(Ref: desinventor for raw data)	-Causes -Incidents -Analysis -Loss and damage -Mapping	NCCG
	Landslides	No data available	-Causes -Incidents -Analysis -Loss and damage -Mapping	

Theme	Data needed for SPA	Available data	Missing/invisible data	Actors/actions involved
Youth, Gender and Crime	**Youth education** -Skill -Employment -Security	A lot, though not specific. - Outdated		AMT Ghetto Foundation Muungano
	Crime -Drugs -Unemployment -Mapping -Extrajudicial killings	Almost all data is there	-Drugs -Corruption -Dissemination -Intervention measures -Spatial patterns	
	Gender	Not reported	-(S)GBV -Teenage pregnancy -Early Marriages -Legal challenges -Access to safe houses -Mental health	SDI-K Muungano
	People with special needs	Mobility	-People with special needs -Available services	

4.1 Comments

- We need to ask ourselves whether this database is useful for Mathare.
- We need to understand how we will use the data.
- We need to understand what outputs we will get from this database.
- It is important to formulate a way forward for sharing data in the future.
- The community has a right to access research outputs, including resultant data.

5 Session 5- Knowledge/Data café

Participants aimed to generate ideas on creating an innovative and engaging tool for knowledge sharing in Mathare. Participants engaged in plenary discussions on forms of creative and interactive knowledge sharing. Several ideas emerged as listed below:

- **Art**

Murals, graffiti, comic books, street plays, photovoice, artistic games like designing sessions for streets, concerts, infographics, and exhibitions are just a few of the creative ways data could be shared.

- **Video, film, and radio**

These would be short documentaries, online videos, and animated films. Local radio stations like Ghetto Radio could be used to spread information to the neighborhood.

- **Advocacy**

Resources could be made available to the community by using community centers and venues. Additionally, community champions, researchers, and leaders would actively help the community members understand the data by translating it into their language. Another method of sharing information would be local collective lobbying in response to study findings.

- **Maps**

Participants noted that since reading maps is simpler than understanding the scientific language in reports, any data containing spatial components might be represented using offline and online maps. Additionally, recommended were story maps and web maps with a uniform level of realism.

- **Interactive learning**

"Make it fun and rewarding" was the aim of interactive dissemination. Residents should have access to all types of data, and researchers and locals should collaborate. Early on, the community could participate in data collecting, mapping (geo-collection), community meetings and dialogues, FGD sessions, and working groups. The information would be made available through seminars, community forums, brochures, and publications with a simple reading level. There was also a suggestion for

organizing 'fairs' or open days for SPA-related initiatives such as urban gardening, WASH cooperatives, and greening initiatives, which would inform the community on activities the SPA is championing.

- **Web-based /Online platforms**

A common recommendation was for MSPARC to have social media accounts and a website presence. These would be used to keep the community informed of the collective's operations and major accomplishments. Community members could also upload updates, links, posters, advertisements, flyers, and other infographics on WhatsApp or Facebook groups.

A website should be interactive, categorize topics like housing, land, etc., and contain blogs, videos, and talking walls that explain the MSPARC process.

Figure 9: Suggestions on knowledge dissemination and data/research Café activities

Day 3

Day three of the workshop targeted formulating strategies for engaging the stakeholders in the SPA process, defining ethical rules of engagement in research, and discussing the way forward. The activities were divided into three sessions, as shown below.

Figure 10:Workshop Day 3 Morning session

6 Session 6: How to Engage the Actors in the SPA Process

This session aimed to develop a strategy for engaging relevant actors in the Mathare SPA process. The participants were divided into four breakout groups, and each group represented an identified actor. The four groups discussed how they would engage community members, community leaders, local and national government actors, and researchers. The groups later did presentations describing the engagement strategy for the various actors, as described in the sections below.

6.1 Group 1: Local and national government

The group chose the expansion of Juja Road as a case study for designing an engagement strategy with the government. The following table summarizes the actors that would be involved in the project.

Table 3: Identified Actors

Actors	
Local administration	• Deputy County Commissioner • Assistant County Commissioner • Chiefs
County Government	• The roads department • Sub county administration • Member of County Assemblies
National Government	• Ministry of Roads &Transport • Kenya Urban Roads Authority • Member of Parliament for Mathare
The Community	• Opinion leaders • Community elders • Project-affected persons such as the land owners, structure owners, tenants, and business owners)
NGOs and CBOs	• Ghetto Foundation • Mathare Social Justice Centre • Muungano wa Wanavijiji Trust • Akiba Mashinani Trust
Researchers	• Nuvoni Centre for Innovation Research • University of Nairobi • Stockholm Environment Institute

The group discussed some challenges they would encounter during their engagements with the government and other stakeholders. They include the following:

i. The community feels sidelined by the government. It does not have the right people to champion the community agenda with the government.

ii. Inadequate capacity to mobilize resources to facilitate community meetings.

iii. Strategies that could lead to meaningful engagement of the government on their plans, policies and actions for Mathare.

6.1.1 Engagement Strategy

1. **Create awareness of the proposed road expansion and how the community would be affected**
   • Using active groups to discuss the proposals
   • Setting up village-based and settlement-wide meetings with the communities and the government officials on the proposal.

2. **Engage with government**
   • Find like-minded people in government/'community allies'
   • Advocacy through demonstrations

3. Data and documents-Evidence

- Collect and collate data and information for Mathare that would help in building a case for the the SPA process.

4. Partnership

- Have joint meetings with government officials
- Provide incentives for the stakeholders to get involved
- Establish a working consortium (coordination, partners have their own funds, mapping of actors)

5. Capacity building

- Training the government actors and community leaders on the community-led SPA process.
- Organizing for exchanges between the community and the government.

6.2 Group 2: Community Leaders

The aim of Group 2 was to tackle how they would engage the community leaders better to spear the SPA agenda to realization. The group used the case of water, sanitation and hygiene (WASH) challenges in Mathare to engage the community leaders in ensuring that residents live in a clean and healthy environment free from pollution. The main problem with water, sanitation and hygiene in Mathare was summarized into the following:

- **Water Rationing**: Water is available two or three times in Mathare, especially on Saturdays and Sundays. This impairs accessibility.

- **Local water providers overtake Government Water projects:** Water provided by the government free end up being sold expensively by the local water providers, e.g. Kiboro borehole in 3B. Also, some of the boreholes are non-functional. The residents pay more for water than the normal costs (poverty penalty).

- **Water contamination**: Sewage bursts and breakages contaminate the water sources, exposing the residents to the risks of getting waterborne diseases. Lack of water treatment also exposes the residents to consuming contaminated water.

- **Outdated water reticulation system**: An uncoordinated or unregulated connection of water pipes within the settlement leads to a 'spaghetti pipe network'. There is laxity from the government to regularly repair the burst sewer network.

- **Pollution:** Mathare River is highly polluted by raw sewer. There is also pollution from the indiscriminate disposal of solid wastes from the households. The community does not have access to waste disposal sites which leads to indiscriminate waste dumping.

6.2.2 Actors

Other actors that would be engaged in the WASH program include the local administration, such as the chiefs who would provide security during the program implementation, the county government to help in sinking the boreholes, the Nairobi City Water and Sewerage Company who would install and connect of sewer lines, and community health volunteers who would assist in supplying the water treatment tablets. Other actors include youth initiatives, local organizations, researchers, and academia.

6.2.3 Engagement Strategy

i. Setting up community dialogues such as barazas and video screenings

ii. Training of the community researchers to familiarize themselves with participatory approaches to slum upgrading.

iii. Lobbying for local universities to be part of the SPA process by creating incentives for their participation.

iv. Inviting the researchers to be part of the SPA discussions through community dialogues and debates. Further, encouraging the researchers to share their outputs with the community.

v. Lobbying for support adoption of the SPA agenda from local politicians and policymakers.

vi. Initiating discussions on the SPA on local and mainstream media such as radio talk shows, TV interviews, group social media platforms.

6.2.3 Comments

We need a strategic approach to engaging community leaders to further the SPA agenda. Although they can be very useful in mobilizing the community, they can use the platform to ride on their own political agenda. They can also incite the community against the foreseen impact of the SPA agenda. Similarly, politicians can use the platforms to steer their political agenda. Politicizing community dialogues and discussions can create conflicts among different political groups.

6.3 Group 3: Mathare Community

The group looked at how the community members would be involved in research to steer the SPA agenda. Identifying the different community groups and their interests is important for their engagement. Thus, the answer to the question below would provide a strategy for engaging the community.

- Who is the community? Which groups form the community?
- What inspires the different groups of the community? How can we use their inspiration to ride on the SPA agenda?

The community comprises of children, youth, adults, the elderly, women, men, PWDs, immigrants, structure owners, tenants, landlords, business owners, and professionals. The need to identify their aspirations would facilitate active engagement from all the community members. The following table summarizes the community groups, their interests and possible ways of engaging the community in the slum upgrading process.

Table 4: The Community engagement strategy

Community groups	Aspirations	Engagement
The elderly	• Supportive social network • Access to food and water • Access to health services • Access to social services • Good security • Safe and quality housing • A clean and healthy environment	• Religious gatherings • Local administrations • Radio discussions and dialogues • The elderly social networks • Play cafes • Women *chamas*
The youth	• Improved social lives • Access to economic opportunities • Access to information and services • Capacity Enhancement for better lives • Protection of the existing opportunities	• Sports and theatre • Workshops and seminars • Mainstream and social media dialogues • Information and data collection • Social exchanges • Essay writings
Children	• Safe play and recreational spaces • Quality education • Activities and 'to do' spaces •	• Play and learn activities. • Feeding programs • Animated films • Engage through schools and daycare • Essay writing • Sensory walks and route mapping
Adults	• Safety and Security • Stable living conditions • Peace and co-existence (social cohesion)	• Dialogues through the radio and print media • Bulk messaging alerts • Religious gatherings • Household surveys • Mobilization • Talking walls • *Chamas*

Figure 11:Pascal Mukanga (KDI) presenting on possible community engagement strategy

6.3.1 Comments

- There is need to identify the interest of people living with disabilities to ensure inclusivity.
- We must understand how we will ask them to engage in the process directly.

6.4 Group 4: Researchers

Group 4 discussed how they could engage researchers in the Mathare SPA. The group defined research as the process of using information to create knowledge. Therefore, a researcher is anyone who seeks to add new knowledge. The simplified research process that could be relevant to the SPA agenda includes developing a baseline, raising awareness, engagement strategy, doing research, and disseminating the output (s).

6.4.1 Types of Researchers

The group identified different types of researchers, including community researchers, academic researchers (university masters and research programs), researchers from civil society organizations, government, and the private sector.

6.4.2 Research Process

Developing a Baseline: This stage involves summarizing the existing information in a research database. Collecting and collating information and data regarding the SPA process. Then identifying what more information could be needed for the SPA agenda. The information database should be made accessible to all the research actors.

Creating Awareness: This involves sharing the database with the public to enable the public to add more information.

Engagement: Engaging researchers in the SPA agenda involves creating a shared understanding towards the common visions, defining the rules of engagement, and aligning the expectations. The following table summarizes how researchers could be engaged in the SPA agenda.

Doing research:

The research partners can do their research in line with the strategies outlined in *Table 5*. In addition, the engagement strategy should include research ethics guiding the researchers' code of conduct. The researchers could then continue their research but make their data available to the public to prevent wasteful research. But then the question would be: how do we create research ethics for academic researchers versus others? How do we ensure that data is shared? How do we incentivize collaboration?

Table 5:A framework for conducting research to further the SPA agenda

Actions	Strategies	(Lead) actors
Establishing partnerships	Set up an MOU	Universities MSPARC
Streamlining research	Create a Master's "market"	Universities Community researchers
Filling research gaps	Target specific researchers	Depends on gap!
Increase visibility	"Marketing" – social media campaigns	All?!
	Hosting lectures/webinars	All
	Attending conferences	Universities
Generating buy in	Lobbying	NGOs/civil society

6.4.3 Comments

- What incentives can we use to engage the researchers?
- How do we engage people who come with pre-conceived engagement strategies to conduct their research in Mathare?
- How do we engage with the local researchers and the community? Who facilitates the continuity of the process?
- How do we incentivize the whole process? How do we motivate the entire process?
- Who funds this process? And what do they get out of it?
- What does the community have to benefit from the SPA process?

7 Session 7: Research Ethics

The second session of the day involved determining ethical rules of engagement in research in Mathare. The participants were divided into four groups, each identifying a relevant theme, selecting a research study from the repository, describing the relevant methods, and describing the rules of engagement if they were to undertake the research.

7.1 Group 1: Housing

This group chose housing as their case study The major subtopics identified under housing included: affordability, accessibility, climate comfort, risk vulnerability, construction materials, housing layout, and use and livelihoods. The research methods identified included: interviews, household surveys, community focus group discussions, community architect sketches, time and money diaries, actor mapping, and sensitive community priority.

Figure 12: David Karani presenting findings from the housing group

A summary of research actors and the rules of engagement identified by the group is indicated on Table 6.

Table 6:Housing research actors and Rules of Engagement

Actors	Role	Ethics
Residents	Respondents	• Get prior access and informed consent from all the participants • Have ongoing consent • Consider the vulnerable groups • Data protection and confidentiality • Do no harm • Do as much good as you can
Resident groups	Raise awareness	
Local administrators	Mobilization Provide security	
Structure owners	Provide gatekeeping access Research Validation	
Landlords/landladies	Support service provision	
Community researchers	Data collection	

7.1.1 Comments

How do you manage community expectations?

- Don't overpromise!
- The community should be part of the process. Ensuring that the community leads the research process help in managing the expectations.

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7.2 Group 2: Waste Management

The group chose waste management as their case study. Their aim was to describe the ethical rules when conducting a waste management study in an informal settlement. The main sub-topics identified under waste management included: waste collection, reuse, reducing, and recycling.

7.2.1 Methodology

a. Mapping the actors/stakeholders

b. Study on types of waste

c. Focus group discussions with existing solid waste management groups:

- Discussions with community members

- Discussions with structure owners

- Interview (key informants)

- Validation workshop and develop the action plan

7.2.2 Roles of the Actors

Actors	Roles
Community	• Framing the research agenda • Data collection • Community leaders undertake community mobilization • Community leaders to follow-up with relevant authorities throughout the research process
Community Researchers	• Data collection and analysis, research dissemination
Researchers	• Provide guidance in framing the research agenda • Data collection • Data analysis • Capacity building: training of community researchers
NGOs and CBOs	• Community sensitization • Resource mobilization • Establishing community networks and coordination • Technical support • MSPARC becomes data custodian
The Government	• Advise on policy issues • Provide security for researchers (e.g. local administration) • Facilitate entry into the community
Waste Collectors	• Provide information on waste management

7.2.3 Ethical Rules of Engagement

The following rules of engagement would apply;

- Link to existing themes, programs, to the agenda of the community

- Making all the data collected available to the community

- Recognition of community inputs, including acknowledging the community researchers

- Data collection should be done together with community researchers

- MSPARC to coordinate the research and ensure fair arrangements

- Equal partnerships

- Partner with a local NGO/CBO

- Provide clarity on how the community will benefit.

  - <mark>Standardization of remuneration</mark>

  - Ensure the safety of the community and researcher (esp. on sensitive issues-confidentiality)

7.2.3 Funding

- Fundraising through secretariate (e.g SDI)

- Funding from the research partners

- Funding from embassies

- Donor agencies such as World Bank, UN-Habitat, etc.

7.3 Group 3: Household-Level Climate Change Adaptation

The group looked at how households and communities in Mathare adapt to risks associated with climate change. The research questions included the following;

i. What are the local-level risks associated with climate change in Mathare? E.g. Flooding.

ii. What are the impacts on households/individuals? E.g. Disruptions to food and power supply.

iii. How do communities/individuals manage the risks and impacts? E.g. Temporary relocation.

7.3.1 Methodology

The following methods and processes will be used in data collection.

Table 7: Methodology and actors

Sub-topic	Methods	Actors
What are the local-level risks associated with climate change in Mathare?	Risk assessment (geo-spatial data)	Engineer/technical expert e.g. to model flooding
And what are the impacts on households/individuals?	Household survey and interviews	Community, local research organisation (GF)
How do communities/individuals manage the risks and impacts?	Household survey, KII, FGDs	Community, community leaders, government/other support (if any?)

7.3.2 Research process

i. The research should be framed to suit the wider knowledge of the topic and informality. The researcher should check whether the research question is meaningful to the study by conducting a literature search, doing exploratory research, finding a balance between the research agenda and the topic versus the community's need, and contextualizing the climate change topic from the community point of view.

ii. Research approach: You need an in-between organization like Ghetto Foundation to find access to Mathare.

iii. Establish mutual respect and trust for successful collaboration

iv. The type of organization in the middle may depend on the " sampling " type, but they may also help refine/adapt the sampling strategy.

v. Need to establish the co-benefits from the research, for example, how the community research would benefit.

7.3.3 Ethical Rules of Engagement

i. Include community-based researchers in the research design

ii. Inform participants about outcomes, consent, data protection, etc.
   a. Providing prior consent, e.g., "Can I come by and ask you about your coping strategies next week?"
   b. Manage expectations by working with an intermediary organization like Ghetto Foundation.

iii. Recognize participants' commitments – keep it brief, respect time and contribution.
   a. Ensure to get your data without becoming a burden to research subjects. Finding a balance between fully representing their views and their commitments.

iv. Recognizing bias e.g., in who you've spoken to, your worldview, etc.

7.4 Group 4: Housing in Kosovo

Improving Housing infrastructure in Mathare, the case of Kosovo.

Why Kosovo? The land was originally a government resettlement project, it is therefore categorized as public land. Unpredictable land tenure affects the planning, types, and housing infrastructure. The themes include the following;

- Planned vs. unplanned development- planned street lanes, altered plans, house extensions, etc
- Housing typology- stone, iron sheet, timber structures
- Tenure and tenancy agreements
- Basic services and infrastructure- e.g., water, sewerage system, electricity, which will affect housing plans and design

7.4.1 Methodology

- Co-designing research agenda with the community researchers and SPA consortium
- Conducting a case study of Kosovo village
- The methods include
   a. Walkabouts through the settlement by the SPA consortium (NGOs, CBOs, government, community members, and private institutions).
   b. Focus group discussions (FGDs) with structure owners and tenants.

c. Key informant interviews with the State Dept. Of Housing and Land, Physical planners, community, etc.

d. Community barazas- dissemination and validation.

e. Co-production of reports and outputs- community, academia, etc.

7.4.2 Ethical Rules of Engagement

i. Co-designing research questions and methodology with community-led researchers and SPA champions

ii. Collaborating with community members to recruit participants for data collection

iii. Providing training and support to community researchers

iv. Data validation- ensure research findings are shared with the community in a meaningful and accessible way.

v. Acknowledging and valuing community expertise and contribution

vi. Using CBOs and local organizations as the entry point into the community

7.4.3 Comments

- The government should be engaged when designing the research questions
- We need to ensure that the community validates the information collected.

Session 8: Discussions and Way Forward

8.1 What we have Achieved so far

We have achieved the following so far;

1. Draft research database for Mathare.
2. Explored research needs
   - Reused and recycled research waste for SPA
   - Explored facts and research to offer argumentation and prove
3. Explored how to use data to engage actors in the SPA process (from research to action).

8.2 What's Next?

1. We have some funds for further work this/ next year
2. Next steps involve:
   - Dissemination of the workshop report
   - Work on a community research repository. What? How: web-based? Who wants to join?
   - Work on research agenda: what and how to do future research. Work closely with MSPARC. Who wants to join?
3. Workshop in the Netherlands
   - Discuss the research repository and agenda
   - Work on a guideline on conducting research in informal settlements

- Work on an academic article.
- Request a few more people from the workshop to join the Netherlands Workshop in August.
4. Validation workshop

8.3 More Actors? Actions?

1. **MSPARC and partners** to support the SPA process
   - How can we best support the MSPARC?
   - MSPARC to develop future research and partnerships. How can we help?
2. Who updates and maintains the **research repository**? How can we ensure various actors use it in engagement activities? What form should it take?
3. How do we include spatial data in the database?
4. **Quick wins:** Who can run with concrete ideas/ studies/ data/ activities we discussed?
   - LDE/ UoN to look for (student) research on MSPARC-selected topics.

8.4 What is the Way Forward?

- There is community mobilization ongoing in Mathare. We need to structure the meetings according to the SPA themes. A coordinated community dialogue will enable us to meet the SPA agenda. Local organizations within Mathare, including the CBOs, should catch up on the SPA process.
- We need to enhance engagement and involve all the partners in MSPARC. Currently, only a few organizations are actively engaged in MSPARC conversations.
- There is a complete lack of geospatial data from the repository. We need to dedicate time to understand what spatial data is available and easily accessible. We can showcase the data available and request other organizations to assist with what is unavailable. We need to create a common vision of what the data will be used for.
- Can we organize a consortium? African Cities Research Consortium (ACRC) has been doing city-wide research in Mathare; they can assist in organizing the Mathare SPA consortium.
- How do we ask institutions to share their data? A data sharing agreement? We can also help the partner organizations use data and information they have in the SPA consortium. Meanwhile, we should seek more information from the government.
- We need a core working group (steering committee) in MSPARC to coordinate the SPA process as "many rats do not dig a hole".
- The following are the challenges we foresee;
  - Coordination of MSPARC activities. We need collective responsibility to make it a collective goal.
  - Mapping of all the groups in MSPARC
  - Structuring the SPA activities and discussions according to thematic areas.
    Facilitating and supporting monthly community dialogues.

Appendix 1- List of participants

S/no.	Name	Organisation
1.	Elsie Onsongo	Nuvoni Centre for Innovation Research
2.	Musyimi Mbathi	University of Nairobi
3.	Mary Achieng	Community Member
4.	Daniel Wainaina	Ghetto Foundation
5.	Samuel Kiriro	Ghetto Foundation
6.	Maureen Musya	Akiba Mashinani Trust (AMT)
7.	Pascal Mukanga	Kounkuey Design Initiative (KDI)
8.	Jan Fransen	Institute for Housing and Urban Development Studies, Erasmus University Rotterdam
9.	Edward Onyango	Community member-Mathare 4B
10.	Stephen Nyagaya	Nuvoni Centre for Innovation Research
11.	Dorice Moseti	Muungano wa Wanavijiji
12.	Lucy Oates	TU Delft
13.	Jacob Omondi	Ghetto Foundation
14.	Giorgio Agugiaro	TU Delft
15.	David Dodman	Institute for Housing and Urban Development Studies, Erasmus University Rotterdam
16.	Ann Njuguna	Nuvoni Centre for Innovation Research
17.	Mildred Ambani	Kenyatta University/ Kenya Institute of Planners (KIP)
18.	Sheila Muthoni	Know Your City TV (KYCTV)
19.	Peter Ndichu	Know Your City TV (KYCTV)
20.	Alice Menya	Nuvoni Centre for Innovation Research
21.	Omae Jennifer	Mathare Social Justice Centre (MSJC)
22.	Michael Wera	Slum Dwellers International (SDI)- Kenya
23.	John Kiarie Kabuu	Ghetto Foundation
24.	Nancy Njoki	Muungano wa Wanavijiji
25.	Kelvin Aroni	Ghetto Foundation
26.	David Karani	Ghetto Foundation
27.	Brock Hicks	Independent researcher
28.	Edward Kariuki	Nuvoni Centre for Innovation Research

Appendix - Pictorials