



## **WORKSHOP REPORT:**

### **Nakuru City Flood Risk Modelling**

*Insert group photo*

**On  
19<sup>th</sup>, 20<sup>th</sup>, 24<sup>th</sup> and 27<sup>th</sup>, September, 2024  
ATC Soilo, Nakuru City**

**December 5, 2024**

## **Abstract**

The Nakuru City Flood Modelling workshop aimed to develop vision for the future city in the wake of flooding due to climate change. The vision was developed by the participants based on their experiences and aspirations. The vision led to development of future city plan that was screened to determine level of hazard exposure, impacts and finally develop policy intervention to curb future city from flooding.

The workshop was attracted the stakeholders from the Nakuru West sub-county's six wards. The experts, both from public and private sector, were invited to share professional experiences and opinions on the past, present and future Nakuru City through the urban risk lenses.

**Moderated:** Geoffrey Kibet, Urban Planner, Nakuru City Board and Mark Ojal, UN Habitat

**Opening and Closing Remarks:** Gitau Thabanja, City Manager, Nakuru City Board; Mucheru Chege, Administrator, Nakuru City Board; Naomi, UN Habitat; Prof. Mark Pelling, TCDE

**Technical:** James Michoma, Joan Chebet & Joakim Nyarangi, Nakuplan Consultants; Dr. Oscar Donde, Egerton University; Wilson Aboki, Department of Infrastructure, Evans Otieno; Department of Lands & Physical Planning

**Facilitators:** Sharon Ogoti, Solomon Karani, Sheila Kimoning, Daniel Munene, Allan Gichia, Stacy Mwangi, Naomi Moranga, Nancie Nakholi, Nancy Mutwii, Ezekiel Gogo, Dan Bomett, Allan Gichia, Joshua Arok

### **Mapping:**

This report was authored by: Geoffrey Kibet, Naomi Moranga, Dan Bomett, Nancie Nakholi, Sheila Kimoning, Allan Gichia and Joshua Arok

## **CHAPTER ONE: BACKGROUND INFORMATION**

### **1.1 INTRODUCTION**

This report presents the outcome of the workshop that was conducted by the Tomorrow's Cities Decision Support Environment in conjunction with UN Habitat and Nakuru city board. The workshop objective was to carry out flood mapping and develop flood model of Nakuru City with the stakeholders drawn from the affected parts of Nakuru City, experts and academia. The workshop was held on 19<sup>th</sup>, 20<sup>th</sup>, 24<sup>th</sup> and 27<sup>th</sup> September, 2024 in ATC Soilo conference hall, Nakuru City.

### **1.2 BACKGROUND INFORMATION**

Tomorrow's Cities is the UK Research and Innovation (UKRI) Global Challenges Research Fund (GCRF) Urban Disaster Risk Hub – a five-year global interdisciplinary research hub.

Their aim is to catalyze a transition from crisis management to multi-hazard risk-informed planning and decision-making, for cities in low-and-middle-income countries. It is one of 12 UKRI GCRF Hubs funded as part of the UK AID strategy, putting research at the heart of efforts to deliver the United Nation's Sustainable Development Goals (SDGs)

#### **1.2.1 Tomorrow's Cities Mission**

"To reduce disaster risk for the poor in tomorrow's cities."

In recent decades, the world has been urbanizing rapidly. In 1950, only 30 per cent of the world's population lived in urban areas. Presently, around 4.4 billion people, 56% of the global population, reside in urban areas.

Projections indicate this pattern will persist, and by 2050, the urban population will more than double its current figure, encompassing nearly 7 out of every 10 people. 95% of this growth is anticipated to occur in the Global South.

This historically unprecedented urban expansion, often occurring in cities already exposed to a multitude of hazards such as earthquakes, floods, volcanoes and landslides, will produce a similar

increase in disaster risk, particularly affecting the urban poor who are often ignored and forced into informal settlements outside official urban planning developments.

Nevertheless, the reality that approximately 60% of the land earmarked for urbanization by 2030 is yet to be developed, presents a unique opportunity to proactively incorporate multi-hazard, socially inclusive disaster risk considerations into urban planning and decision-making, thereby shaping a more resilient future. Failure to do so presents a major barrier to sustainable development, including the single greatest global challenge of eradicating poverty in all its forms.

Through an interdisciplinary approach, and working in different cities – Istanbul, Kathmandu, Nairobi, Quito and now Nakuru – the Tomorrow’s Cities Hub is catalyzing a transition from crisis management to multi-hazard risk-informed planning and decision-making that strengthens the voice and capacity of the urban poor.

Tomorrow’s City collaborated with Nakuru City in mapping and modelling of flood prone areas in the city aligning to Nakuru’s City Vision 2050 that outlines a comprehensive plan for the holistic development of City. Recognizing Nakuru's pivotal position as a regional hub, the vision leverages the city's geographic advantages to enhance trade, connectivity, and economic opportunities. The vision acknowledges Nakuru's rapid urbanization and population increase, addressing the need for sustainable infrastructure and services to accommodate this growth. It also considers the city's rich cultural diversity, aiming to create an inclusive environment that respects and celebrates the unique contributions of all demographic groups. This multifaceted approach ensures that Nakuru's development is balanced, sustainable, and equitable, fostering a thriving urban environment for all residents.

### **1.3 THE TOMORROW’S CITIES DECISION SUPPORT ENVIRONMENT (TCDSE)**

The Tomorrow’s Cities Decision Support Environment (TCDSE) is the Hub’s flagship disaster risk reduction framework to support inclusive, multi-hazard, risk-informed planning and decision-making in expanding cities. Aimed at reducing risk in future urban developments, the TCDSE uses a collaborative and co-creation approach with the involvement of local stakeholders, giving voice

not only to the planning authorities, municipalities, the government and the private sector, but also to the communities who will live in these future cities.

#### 1.4 Workshop objectives

1. To evaluate residents experiences and aspirations on flooding in Nakuru city
2. To map and design an ideal city of Nakuru in the context of flood risk mitigation.
3. To develop key policies and possible interventions of achieving flood risk-free Nakuru city.

#### 1.5 Planning Context

*Insert map*

##### 1.5.1 Nakuru City Profile

*Profile from Nancy/Allan*

##### 1.5.2 Planning Area

The project planning area was selected based on the following factors;

1. Drainage landscape of the city
2. Most affected section of the city
3. Land use
4. Future city expansion
5. Population and demographics

In consideration of the above factors, Nakuru west sub-county was selected, encompassing the following areas;

*Table 1.1: Site Selection*

Section	Comment
<b>London ward</b>	Highly elevated section of the city, with diverse land uses. London hosts areas that have also been affected by the floods through sinkholes at Eveready roundabout, waterlogged at Gilanis warehouse section etc.
<b>Kaptembwa, Shabab and Rhonda wards</b>	Highly populated wards in the sub-county, majorly low income earners. They are highly affected by the storm-water during rainy

	season, which has resulted in fault lines developing, sinking of houses, displacement of people and loss of human lives.
<b>Kapkures wards</b>	Low densely populated ward, hosting agricultural land. It provide opportunity for future city expansion, thus room for planning.
<b>Barut ward</b>	Adjacent to lake Nakuru, section of the ward is submerged by the water level rising from the lake. It also has expansive land under quarrying activities, thus, susceptible to sinking during flooding.
<b>Technology farm</b>	Adjacent to the city, under agricultural use. This section provides room for visioning of a futuristic flood risk-free city.
<b>Population</b>	Currently, the study area has a projected population of 282,000 people, at a population growth rate of 5.53%. By 2050, the population will be 747,854. Majorly, the residents are low income.

**CHAPTER TWO: METHODOLOGY AND ANALYSIS**

## **2.1 Pre-Visioning**

The preparation for the workshop began with the training of the organization that were involved in the tomorrow's cities workshop. In this regard, the following organizations participated in the training and preparation process of the workshop;

### **2.1.1 Tomorrow's Cities**

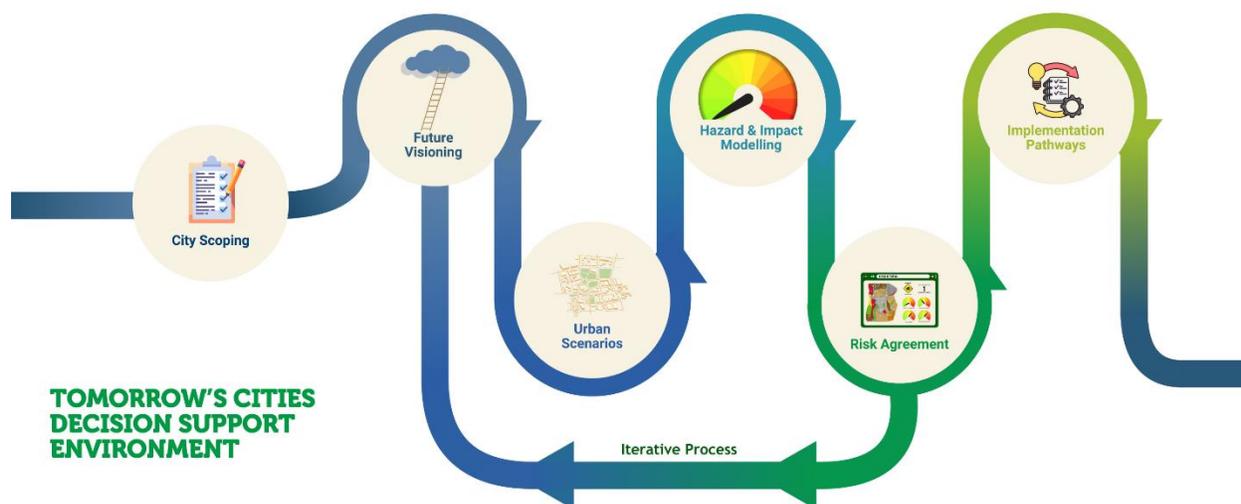
The Tomorrow's Cities team offered training classes to the UN-Habitat and Nakuru City Board team. The training was done online from 9<sup>th</sup> to 13<sup>th</sup> September in line with schedule attached. Upon training, the trainees were deployed as facilitators during the workshop. The tomorrow's cities organization also footed the transport cost of the participants. The GIS team of the Tomorrow's Cities assisted in the transformation of the stakeholder sketch plans into GIS-based plans.

### **2.1.2 Nakuru City Board**

The Nakuru City Board is an institution that was established under the articles of the Urban Areas and Cities Act (2011) and is mandated with administration duties of the city, as prescribed in schedule 11& 12 of UACA. The Board manages the affairs of the County in a Principal – agent relationship with the Nakuru County Government. During the workshop, the city board provided staffs for training, undertook stakeholder mapping and mobilization, as well as the venue selection. The technical staffs were seconded for training to earn valuable visioning skills as well as workshop preparation and administration for future that will benefit the board in future engagements.

### **2.1.3 UN Habitat**

The UN Habitat team participated in the training of the Tomorrow's Cities and guided the team in the stakeholder mapping and analysis, facilitated the workshop and guided the Nakuru City team in the post-workshop reporting and way-forward. The team also played pivotal role in guiding the stakeholders in the mapping and design of the vision, as well as policy formulation in achieving their desired vision.



## 2.2 Stakeholders

The selection of the stakeholders followed the site selection decision. Therefore, stakeholders were drawn from the six wards of the Nakuru West and distributed accordingly as shown in the table below.

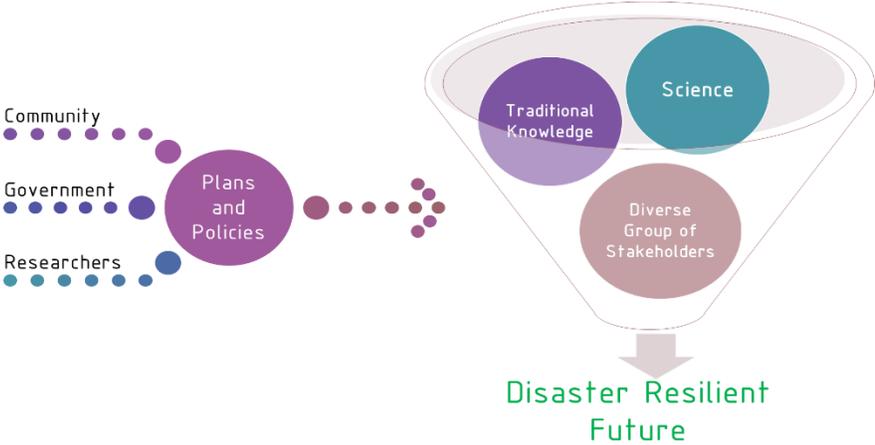
In Kenya, planning is a function of county governments (*Nakuru City Board has this mandate via Urban Areas and Cities Act, 2019*) and for that matter, wards are smallest units of administration and forms basis of planning. For purposes of ensuring effective participation and representation, stakeholders were drawn from all sub-locations of each ward.

The table below stipulates the approach and distribution of stakeholders.

Table 1.2: Stakeholder Distribution

No.	Group Represented	No. Persons	Comment
1	Residents of the 6 wards	6 (1 per ward)	Low-income, informal settlement dwellers or migrants. Ideally to include one disabled person. Drawn from across the wards in the study area.
2	Women	6 (1 per ward)	Diverse by age and background. Ideally to include one disabled person. Drawn from across the wards in the study area.
3	Faith Based Organization	6 (1 per ward)	Ideally to include one disabled person. Drawn from both Christian and Muslim groups.
4	Technical experts from different departments of County Government of Nakuru;	6 (1 each)	To provide expertise input to the participants in areas of past plans, global urbanization, policy, key

	<ol style="list-style-type: none"> <li>1. Environment</li> <li>2. Roads &amp; infrastructure</li> <li>3. Lands &amp; Physical Planning</li> <li>4. Disaster Management</li> <li>5. Egerton University</li> <li>6. Professionals</li> </ol>		information about the city and some assisted as facilitators.
5	Business community (including small scale traders)	6 (1 per ward)	Ideally to include one disabled person. Diverse by sector, medium and small scale businesses.
<b>Total</b>		30	

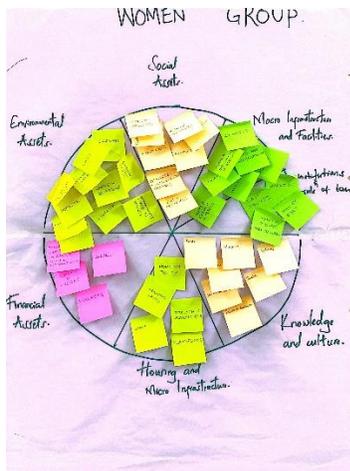


**2.3 Participatory Process**

The workshop was carried out under three distinct actions;

**2.3.1 Future Visioning**

The participants at this stage, based on their aspirations, developed the vision of the future city and designed a land use plan of their desired future city, free from flood risk.



VISION STATEMENT

A SAFE, WELL-GOVERNED, INCLUSIVE,  
RESILIENT AND ECO-FRIENDLY CITY  
THAT IS ECONOMICALLY VIBRANT BY  
2050.

WOMEN GROUP



### 2.3.1.1 Mapping

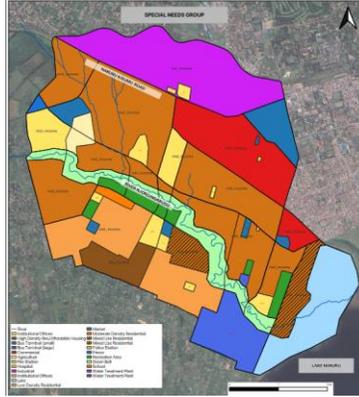
During the session, participants marked key assets and spaces based on the Wheel of Urban Assets. They identified areas for:

1. **Add/Enhance:** New developments or improvements.
2. **Preserve:** Existing sites of historical or ecological significance.
3. **Protect:** Vulnerable spaces needing safeguarding.
4. **Change:** Underutilized areas requiring revitalization.

They translated these aspirations onto the map, identifying specific locations for desired land use changes.

### 2.3.2 Plan Validation

The land use plan were digitized and analyzed through GIS. The final plans were subjected to validation. The hazard mapping were developed based on these validated plans. Participants evaluated the alignment between the sketched and digitized maps. They added missing facilities to enhance accuracy and reviewed existing hazard information, suggesting necessary updates. Future population growth and building distribution assumptions were discussed, alongside an equity check to identify potential winners and losers from our decisions.



**SPECIAL INTEREST  
HAZARD BRAINSTORM**

1. DESTRUCTION OF FACILITIES OR PROPERTIES  
 2. DISPLACEMENT OF PEOPLE  
 3. WATER BOURNE DISEASES AND DEATHS.

**SOLUTIONS:**

1. POLICY REGULATING PROPER BUILDING MATERIALS AND SITES.  
 2. EARLY/RELIABLE WARNING SYSTEMS, AND EVACUATION TO SAFE HOUSES/CAMPS  
 3. EFFICIENT RESPONSE SYSTEM (FOR RESCUE, MEDICAL SERVICE, GUIDANCE & COUNSELING, EMOTIONAL SUPPORT)

Special Interest Group

### 2.3.3 Risk Agreement

This marked the final stage of the workshop that aimed at developing implementation pathways of the plans that were validated. This process involved modeling flooding scenario of the future city, conceptualizing key actions to be implemented; and challenges associated with the action and potential solutions to the identified challenges. The participants utilized web-based app to carry out modelling of their preferred future city.



**IMPLEMENTATION CHALLENGES**

**Area 1**

PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS
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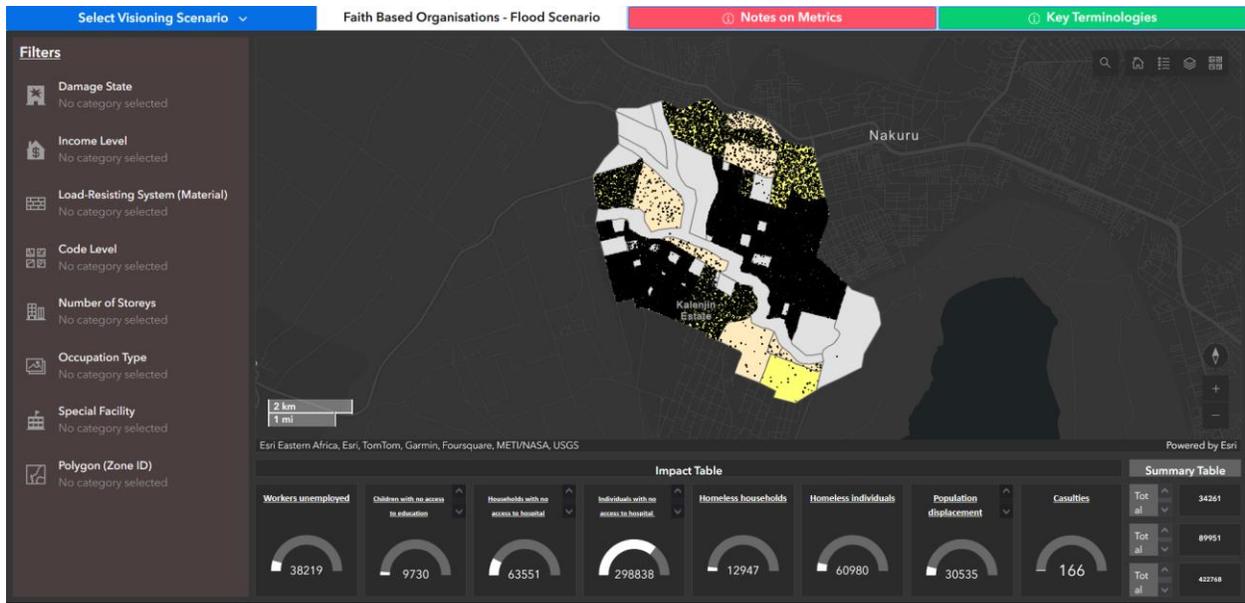
**Area 2**

PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS
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**Area 3**

PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS	PROFESSIONAL CONSULTANTS
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**RESIDENTS**



To undertake and effectively deliver the objective of the workshop, the following tools were utilized;

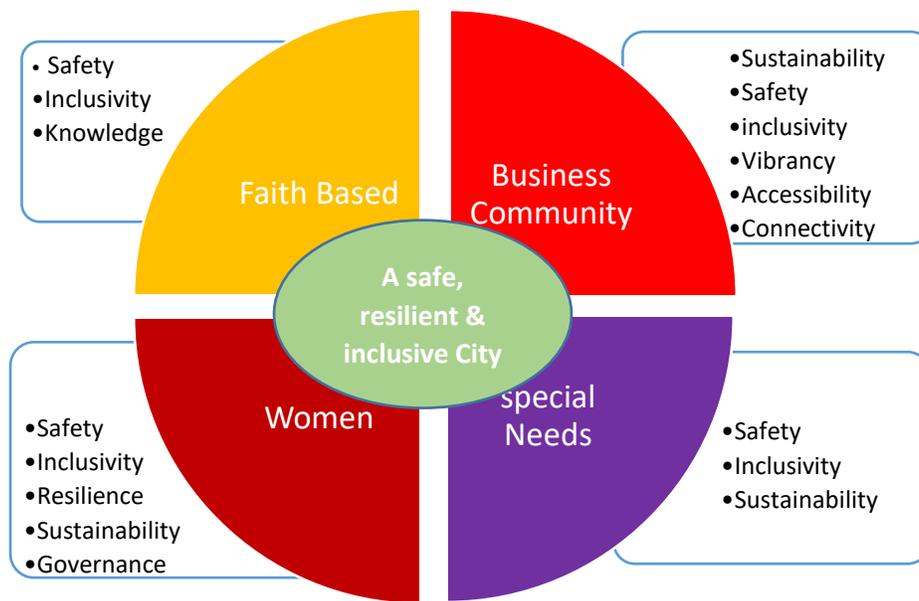
Tool	Purpose
<b>Stationaries, including writing and drawing materials</b>	Used for noting issues and drawing the plan
<b>Satellite image</b>	Used for referencing and guided on determining extent of study area, existing land uses and land cover
<b>Policy and vision cards</b>	Used to guide the participants in formulating vision and policies
<b>Laptops and Projectors</b>	Laptops were used for GIS analysis and flood modelling, while projectors were used for presentations

## 2.4 WORKSHOP OUTCOME ANALYSIS

### 2.4.1 Visioning

Visioning is an important tool that brings together stakeholders to imagine their future. This process is fundamental because by having a common goal, visioning empowers stakeholders to take charge of their aspirations and create a possibility of desired change. In this regard, the groups formulated visions, linking it to global development goals and Nakuru City Vision 2050, which anticipates to envision Nakuru city as ***“a model city that enhances quality of life and fosters economic prosperity”***.

Group	Vision	Factors
<b>Faith based</b>	A Friendly, Safe, Orderly and Fully Informed City by 2050	3 Safety 4 Inclusivity 5 Knowledge
<b>Residents &amp; Business community</b>	An eco-city that is safe, user friendly, economically vibrant, accessible and connected that is beautiful and unique by 2050	<ul style="list-style-type: none"> <li>• Sustainability</li> <li>• Safety</li> <li>• inclusivity</li> <li>• Vibrancy</li> <li>• Accessibility</li> <li>• Connectivity</li> </ul>
<b>Women</b>	A safe, well-governed, inclusive, resilient and eco-friendly city that is economically vibrant by 2050	<ul style="list-style-type: none"> <li>• Safety</li> <li>• Inclusivity</li> <li>• Resilience</li> <li>• Sustainability</li> <li>• Governance</li> </ul>
<b>Special needs</b>	An inclusive, safe, green and operational city by 2050	<ul style="list-style-type: none"> <li>• Inclusivity</li> <li>• Safety</li> <li>• Sustainability</li> </ul>



In light of the above scenarios, the participants **envision a future city that is safe, inclusive, sustainable and resilient.**

#### 2.4.2 Plan Proposals

In the preparation of the anticipated future city that is safe, sustainable, inclusive and resilient, the following key issues were put into consideration. The issues were classified into seven categories in the wheel of assets as shown in tables below. These assets are fundamental facilities, strategic infrastructure and policies that are subjected into stress by the flood phenomenon.

Therefore, they were translated onto the map by identifying specific locations for desired land use changes to mitigate impacts in future as shown on the proposed land use plans below.

*Table 4.1 Residents And Economic Group's Wheel of Urban Assets*

No	Asset	Issues
1	<b>Environmental</b>	<ol style="list-style-type: none"> <li>1. Planting of trees.</li> <li>2. Demolish buildings on waterways.</li> </ol>
2	<b>Social</b>	<ol style="list-style-type: none"> <li>3. Expanding existing hospitals</li> <li>4. Build more hospitals</li> <li>5. Reduce slums</li> <li>6. Reduction of informal settlements by building affordable housing</li> <li>7. Fire ambulance and disaster management equipment and stations</li> <li>8. All building, government and commercial should be P.W.D friendly</li> <li>9. Social Hall</li> </ol>

<b>3</b>	<b>Financial</b>	<ul style="list-style-type: none"> <li>10. Saccos</li> <li>11. Co-operatives</li> <li>12. Creations of green spaces and stadia.</li> <li>13. Full realization of usage of power from the geothermal plant in Menengai crater</li> </ul>
<b>4</b>	<b>Housing and Micro Infrastructure</b>	<ul style="list-style-type: none"> <li>14. Create dams.</li> <li>15. Proper drainages that are sustainable.</li> <li>16. A proper and working sewage treatment plant.</li> <li>17. Planned building and development.</li> <li>18. Proper drainage of CBD to reduce run-off water to make the city user friendly during rain.</li> </ul>
<b>5</b>	<b>Knowledge &amp; culture</b>	<ul style="list-style-type: none"> <li>19. Establishment of Library and city Museum.</li> </ul>
<b>6</b>	<b>Institution and Rule of Law</b>	<ul style="list-style-type: none"> <li>20. Hospitals</li> <li>21. Schools</li> <li>22. Courts</li> <li>23. Police stations</li> <li>24. Prisons</li> </ul>
<b>7</b>	<b>Macro Infrastructure and Facilities</b>	<ul style="list-style-type: none"> <li>25. Multiple water Hydrants.</li> <li>26. Mapping and beaconing future roads</li> <li>27. Creation of non-motorized lanes for pedestrians and cyclists and P.W. D's</li> <li>28. Non-motorized lanes for bikes, and people.</li> <li>29. Paved roads</li> <li>30. Flood rescue teams.</li> </ul>

*Insert the plan here*

*Table 4.2 Faith Based Group's Wheel of Urban Assets*

No	Asset	Issues
<b>1</b>	<b>Environmental</b>	<ul style="list-style-type: none"> <li>1. Greenery along Roads</li> <li>2. Land-fills</li> <li>3. Waste Sorting &amp;</li> <li>4. Incineration</li> </ul>
<b>2</b>	<b>Social</b>	<ul style="list-style-type: none"> <li>5. Place of Worship</li> <li>6. Schools</li> <li>7. Hospitals</li> <li>8. Recreation Parks/Centers</li> <li>9. Well-designed Infrastructure</li> <li>10. Cemetery</li> </ul>
<b>3</b>	<b>Financial</b>	<ul style="list-style-type: none"> <li>11. Shopping Malls</li> <li>12. Tourist Sites</li> <li>13. Saccos</li> <li>14. Industries</li> <li>15. Markets</li> </ul>
<b>4</b>	<b>Housing and Micro Infrastructure</b>	<ul style="list-style-type: none"> <li>16. Proper Designed Infrastructure</li> <li>17. Shopping Malls</li> <li>18. Housing Development</li> </ul>

<b>5</b>	<b>Knowledge &amp; culture</b>	19. Railways 20. Airport/Airstrip 21. Housing Development
<b>6</b>	<b>Institution and Rule of Law</b>	22. County Assembly 23. Senate and National Assembly 24. Civil Society
<b>7</b>	<b>Macro Infrastructure and Facilities</b>	25. Library and Information Centre 26. Schools 27. Tourist Sites

*Insert the plan here*

*Table 4.3 Women Group's Wheel of Urban Assets*

No	Asset	Issues
<b>1</b>	<b>Environmental</b>	1. Gardens 2. Lake 3. Green buffers 4. Waste disposal points 5. Wildlife 6. Rivers 7. Geothermal Energy 8. Retention dams/ponds 9. Agricultural land 10. Forests
<b>2</b>	<b>Social</b>	11. Green space 12. Schools 13. Hospitals 14. Disaster management centre 15. Markets
<b>3</b>	<b>Financial</b>	16. Financial institutions e.g banks, saccos and cooperatives 17. SMEs 18. Markets 19. Shops & kiosks
<b>4</b>	<b>Housing and Micro Infrastructure</b>	20. Housing policy 21. Playgrounds 22. Residents Associations 23. Housing units
<b>5</b>	<b>Knowledge &amp; culture</b>	24. People 25. Museums 26. Library 27. Schools 28. Theatres 29. Research Institutions Innovation labs

<b>6</b>	<b>Institution and Rule of Law</b>	30. Markets 31. Law courts 32. Police posts
<b>7</b>	<b>Macro Infrastructure and Facilities</b>	33. Schools 34. Water drainage system 35. Hospitals 36. Roads 37. Streets 38. Water supply system 39. Drainage master plan

Insert the plan here

Table 4.4 Special needs Group's Wheel of Urban Assets

No	Asset	Issues
<b>1</b>	<b>Environmental</b>	1. Urban agriculture 2. Planting trees 3. Drainage infrastructure 4. Green public spaces 5. Grass cover
<b>2</b>	<b>Social</b>	1. Urban agriculture 2. Planting trees 3. Drainage infrastructure 4. Green public spaces 5. Grass cover
<b>3</b>	<b>Financial</b>	1. Relief funds from banks/NGO/Govt agencies
<b>4</b>	<b>Housing and Micro Infrastructure</b>	1. Walkable streets 2. Water volumetric sensors 3. Streetlights 4. Shelter/shades 5. Affordable housing projects 6. CCTV
<b>5</b>	<b>Knowledge &amp; culture</b>	1. Capacity development workshops 2. Early warning gadgets/messaging services.
<b>6</b>	<b>Institution and Rule of Law</b>	1. Efficient Disaster (flood) management board 2. Independent oversight/Audit body 3. Efficient county planning department
<b>7</b>	<b>Macro Infrastructure and Facilities</b>	1. Water harvesting infrastructure 2. Non-motorized Transport

### 2.4.3 Hazards

In line with the workshop vision, the plans were subjected into risk screening process to identify potential negative effects of hazards on the future city, reflecting on both cross-cutting and unique impacts, and their solutions. The following impacts were identified and their possible mitigation measures;

Table 4.5 showing flood impacts and their solutions

Flood impacts	Solutions
Loss of life and properties	✓ Moving people to higher grounds
Distraction of infrastructure i.e. roads, schools etc.	✓ Construction of larger drainage and canals ✓ Constant monitoring and evaluation
Displacement of people	✓ Compensation and moving to higher grounds
Soil erosion and destruction of crops, jeopardizing food security	✓ Building of gabions ✓ Adapting to modern farming methods and technology
Waterborne diseases as a result of Sewer spills lead to environmental pollution and clogging drainage systems	✓ Water purification and draining of stagnant water ✓ Construction and maintenance of good drainage and sewer system

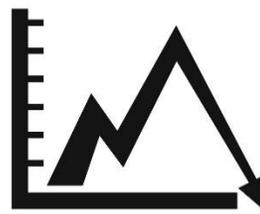
#### 4.3.1 Impacts on Human Life



Homelessness



Trauma & depression



Economic regression

## 2.5 Implementation Pathways

### 2.5.1 Policy Intervention

The vision, the plan and their associated hazards needed to be addressed. The participants, therefore, developed key policy component in relation to hazards,

feasibility and improvement areas, potential implementation barriers, capacity for execution and an equity check to identify beneficiaries and those at risk as stipulated in table 4.6 below;

Table 4.6: policy intervention measures

<b>Policy</b>	<b>How The policy relates to flood Hazards</b>	<b>Realistic</b>	<b>How To Improve</b>	<b>Potential Barriers To Implementation</b>	<b>Implementation Capacity</b>	<b>Equity Check (who benefits or may get harmed from this policy)</b>
Governance	Sensitization and civic education on flooding Public participation Information dissemination Inclusivity and democracy Accountability and transparency	Yes	Proper feedback mechanism Introduce school programmes on floods Develop and embrace systems of performance contracts and appraisals	Corruption Tribalism Ignorance Lack of proper information (poor governance) Lack of resource	High capacity	Everyone
Development Control & Management	Adhering to zoning plans Insecurity of land tenure Building regulations – height, materials, durability and quality Encroachment control & environmental protected areas & disaster prone areas Accessibility (Disaster response – proximity to roads)	Yes	Proper enforcement Accountability Improving access to housing finance Adhering to zoning plans	Corruption Financial constraints Land resource limitations	Medium capacity	Everyone

Environment and Climate	<p>Definition of riparian zones &amp; buffers – flood control</p> <p>Pollution control – clear drainages</p> <p>Increasing greening in development areas</p>	Yes	<p>Integrate NBS into planning</p> <p>Increasing/promoting public private partnership for increased resources and greening for flood response</p> <p>Increase awareness</p>	<p>Limited technical capacity</p> <p>Financial constraints</p> <p>Misappropriation of funds</p>	Medium capacity	Everyone
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**Special needs group**

<b>POLICY</b>	<b>HOW IT RELATES TO HAZARD</b>	<b>REALISTIC</b>	<b>HOW TO IMPROVE</b>	<b>POTENTIAL BARIERS TO IMPLEMENTATION</b>	<b>IMPLEMENTATION CAPABILITY</b>
Environmental Protection zones	Restricts settlements in flood prone areas (protected) reducing the chances of destruction property when flooding occurs.	Yes, it is realistic. Can be achieved through enforcement of existing environmental policies and laws	Come up with policies/laws to protect environmental designated zones.	Corruption which leads to comprised enforcement	High
Funding Community networks	It relates to flooding as a hazard in that building networks that will provide support to the affected population after flooding e.g. Hosting displaced population, sharing basic needs and providing emotional support.	Equipping/activating existing groups with necessary response facilities/knowledge.	Application of technology and best practices	Low/unallocated budget towards flooding response equipment	High

Capacity & awareness	Community sanitization on how to minimize displacement e.g. by observing warning/signs of flooding.	Can be achieved by deploying officers to flood prone areas or through digital platforms.	Intensive training  Equipping of personnel	Lack of access to digital platforms	High
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## 2.5.2 Action Modification

The action modification of the policy interventions is stipulated in table 4.7 below in line with the associated implementation challenges, solutions, actors and timeline of the policy implementation.

Policy	Action Modification	Implementation Challenge	Solutions	Action By	Timelines
Development Control & Management	Enforce building regulations within the development control and management policy	<p><b>Political</b></p> <p>Corruption</p> <p>Tribalism nepotism</p> <p>Mismanagement of funds</p> <p><b>Socio-economic</b></p> <p>Substandard materials availability</p> <p>Cost of building materials – fluctuation in market prices</p> <p><b>Infrastructure/physical</b></p> <p>Substandard materials availability</p> <p>Absence in uniformity and continuity of the existing drainage system</p>	<p>Ensure quality control of materials used</p> <p> </p> <p>Introduce alternative building materials &amp; technology to enhance affordability of quality materials for various income groups</p>	<p>The Government, NCA, KEBS</p> <p> </p> <p>Government, Private companies</p>	<p>Short-term (0-2 years)</p> <p> </p> <p>Medium-term (3-5 years)</p>
	Reinforce foundation	Elevate and reserve ground floors for parking (no houses on ground floors)			
Governance	Introduce a resettlement action plan for	<b>Political</b>	Regular monitoring and evaluation	Project Monitoring	Short-long term

	the high flood rise zones & concrete the areas to green protected zones	<p>Corruption</p> <p>Lack of political good will</p> <p>Transition of power</p> <p><b>Socio-economic</b></p> <p>Lack of reserved land for resettlement</p> <p>Lack of prior planning</p>	<p>through audits and proper enforcement of policies</p> <p>Ensure consultative planning</p>	<p>Committee</p> <p>Government, Planners, Members of the Public, Private organizations</p>	<p>(0-10years)</p> <p>Short-term(0-2 years)</p>
Environment and Climate	Increase green spaces within the plan	<p><b>Political</b></p> <p>Low prioritization of green space development in city funding</p> <p>Political transition interfering with long term green spaces plans</p> <p><b>Socio-economic</b></p> <p>Poor maintenance of the existing green spaces</p> <p><b>Infrastructure/physical</b></p> <p><b>Land resource</b> constraints</p>	<p>Introduce alternative non-conventional greening options</p> <p>Introduce a policy that ensures continuity of projects and successful completion</p>	<p>Local Authorities, private developers, Members of the public</p> <p>Government, Policy makers</p>	<p>Medium-term(3-5 years)</p> <p>Short-term(0-2years)</p>

### Special needs group

Policy	Action modification	Implementation challenges	Solutions	Action by	Timelines
Funding Community	<b>ZONE ID 37 (HDR)</b>	<b>Political:</b>	Environmental impact assessment	<b>NEMA /EIA Experts</b>	Short-term (0-

networks	Relocate the schools to the southern most part ( <b>priority</b> )  Change the whole area to LDR	<b>Socio-economic</b>  Long distance  Disrupted learning  Community resistance  <b>Infrastructure</b>  Environmental impact	(EIA)		2years)
Environmental Protection zones	<b>ZONE ID 38 (MDR)</b>  -Introduce afforestation in the flood risky areas.  -Make trenches/terraces towards the river. ( <b>priority</b> )  -Change the whole zone to LDR	<b>Infrastructure</b> :  Unstable or weak soil    <b>Political:</b>  Unaccountable processes  Political incitement  Lack of political goodwill   <b>Socio-economic:</b>  Lack of community	Solution 1- Formation of an oversight unit    Solution 2- Community sensitization	Oversight unit members    Community leaders	Medium term (2-5 years)    Medium term (2-5 years)

		funding			
Capacity awareness	<b>ZONE ID 28 (HDR)</b> -Relocate schools to the northern most (higher) parts of the zone -Introduce more drainage trenches -Zone out the lower section (southern) of the zone then make it MDR ( <b>priority</b> )	<b>Political:</b> Misinformation Lack of political goodwill  <b>Infrastructure</b>  <b>Social-economic</b> The community resistance	<b>Solution 1-</b> Proper channels/systems of communication  <b>Solution 2</b> Voting out non-performing leaders	Community leaders  Citizens/Voters	Short term (0-2 years)  Medium term (2-5 years)

**CHAPTER THREE: CONCLUSION & RECOMMENDATION**

**3.1 CONCLUSION**

The workshop was conducted in line with the workshop plan and scheduled that was prepared to guide the facilitators and participants. The workshop was broken down broadly into future visioning, validation and risk agreement. These activities were done in four days, with breaks to allow digitization and further resources assembling and acquisition, while each day was guided by the workshop program that was shared to participants. Therefore, the workshop achieved its objectives effectively.

However, the short workshop period demanded extension of time during the workshop. The facilitators ensured that before time was extended, participants were consulted. It was anticipated that there could be language barrier due to presence of international facilitators and partners. Luckily, the participants were conversant with English language, which ensured seamless operation and administration of the workshop.

The participants welcomed the workshop and deliver their aspirations that guided the vision, plans that were developed and the policy interventions to combat hazards effects on human life, their properties and critical infrastructure. However, their aspirations went beyond the visioning and modelling and called for implementation because the issue at hand was a critical challenge that Nakuru city residents are currently facing due to climate change. Such issues are;

- The need to re-settle the households that have been submerged by water level rising from Lake Nakuru
- The need to inform and advise the residents on the water ways and sensitize areas to faulting to avoid damage to properties through informed decision.
- The need to develop effective storm water drainage system in the city and undertake constant renovation and cleaning of drainage systems to avoid blockage.

The city, in recent time, is experiencing heavy downpour, while the rainfall pattern is shifting. The resultant effects are devastating, as discussed in the report. Therefore, the situation demands urgent address.

### **3.2 RECOMMENDATION**

As a results of the workshop, the following actions should be undertaken to address the flood risk experienced in Nakuru City, presently and in the future;

- i. Undertake geological survey mapping to curb implication of flooding on critical infrastructure and properties as a result of faulting and sinking.
- ii. Develop flood risk master plan for the city

- iii. Undertake resource mobilization to implement geological survey and master plan preparation and implementation

**APPENDIX 1: WORKSHOP SCHEDULE**

Schedule of Trainings, Meetings and Workshops for Tomorrow's Nakuru																												
Programme Month: September, 2024																												
September	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27									
Task/Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri									
Nakuru and UN-Habitat team TCDSE training: Overview and M0: 10.30-12 UK time	T0																											
Nakuru and UN-Habitat team TCDSE training: WP1 (Thaisa) 9-12 UK time		T1																										
Nakuru and UN-Habitat team TCDSE training: WP2 (Emin) 9-12 UK time			T2																									
Nakuru and UN-Habitat team TCDSE training: WP3 (Gemma/Hugh) 9-12 UK time				T3																								
Nakuru and UN-Habitat team TCDSE training: WP4 (Roberto) and WP5 (Max) 9-12 UK time					T4/5																							
Preparation Meetings among UN Habitat, Nakuru and TC teams for WP1 and WP4 workshops								Mt1	Mt4																			
Normative Visioning workshop WP1											W1	W1																
Preparation Meetings among UN Habitat, Nakuru and TC teams for WP2													Mt2		Mt2													
Validation workshop WP2																	W2											
Preparation Meetings among UN Habitat, Nakuru and TC teams for WP4																										Mt4		
Risk agreement and action planning workshop WP4/WP5																											W4	

Note: T= Trainings; Mt = Meetings ; W = Workshops

## APPENDIX 2: WORKSHOP PROGRAMS AND OBJECTIVES



### Workshop in Nakuru Day 1: Future Visioning

*Moderator: Geoffrey Kibet, Nakuru City Board, Assisted by: Mark Ojal, UN Habitat - Venue: ATC Soilo*

Time	Activity	Activity Details	Responsible
8:30-9:00am	<b>Arrival &amp; Registrations</b>		
9:00-10:0am	<b>Welcome &amp; Introduction</b>	❖ <i>Introductions</i>	<i>Stephen Chege</i>
		❖ <i>Introduce the TCDSE Process in Nakuru</i> ❖ <i>Agenda of the two-day workshop</i>	<i>Geoffrey Kibet</i>
		❖ <i>Keynote Speeches</i>	<ol style="list-style-type: none"> <li>1. <i>Gitau Thabanja, City Manager</i></li> <li>2. <i>Kamau Kuria, Chief Officer, Opening Remarks</i></li> <li>3. <i>Naomi, UN Habitat</i></li> <li>4. <i>Plan. James Muchoma, Nakuplan Consultants Ltd - Historical &amp; planning perspective of Nakuru</i></li> <li>5. <i>Dr. Oscar Donde, Egerton University - Climate Resilience</i></li> </ol>
10:00-10:30am	<b>Tea &amp; Health Break</b>		
10:30-11:45pm	<b>Individual Storyline</b>	<ul style="list-style-type: none"> <li>❖ 1h drawing: <i>Individually, participants to describe their urban experiences in the city</i></li> <li>❖ 15 min sharing</li> </ul>	Facilitators
11:45pm - 12:45pm	<b>Collective Storyline</b>	❖ 1h drawing: <i>Collectively, participants to describe their urban experiences in the city</i>	Facilitators
12:45pm-1:45pm	<b>Lunch</b>		

1:45pm-2:25pm	<b>Wheel Exercise</b>	❖ <i>Participants to highlight and expound on their everyday life and aspirations in their area, indicating the assets to be preserved</i>	Facilitators
2:25pm-2:35pm	<b>Visioning Statement</b>	❖ <i>Individually, participants to describe their urban experiences in the city: Participants to translate the aspirations into visioning statements, which puts an emphasis on the assets according to their specific priorities.</i>	Facilitators
2:35pm-3:40pm	<b>Introducing Co-mapping.</b>	❖ <i>Participants to come up with sample land use plans to be enhanced on the second day.</i>	Mark Ojal
3:40pm-4:00pm	<b>Closing Remarks</b>		Stephen Chege
<b>End of day 1</b>			



## Day 2: FUTURE VISIONING II

Moderator: Geoffrey Kibet, Nakuru City Board, Assisted by: Mark Ojal, UN Habitat | 20<sup>th</sup> Sep, 2024 at ATC Soilo

Time	Activity	Activity Details	Responsible
8:30-9:00am	<b>Arrival &amp; registrations</b>		
9:00-9:30am	<b>Presentations</b>	<ul style="list-style-type: none"> <li>❖ <i>Opening Welcoming</i></li> <li>❖ <i>Recap of day 1 and agenda of day two of the workshop</i></li> <li>❖ <i>Wheel of Assets presentations</i></li> </ul>	<p>Moderator Mark Pelling</p>
9:30-11:00am	<b>Co-mapping</b>	❖ <i>Participants to mark assets/spaces they want to add\enhance, preserve, protect or change on the map as guided by the wheel of urban assets</i>	Facilitators
11:00pm-11:30pm	<b>Breakfast</b>		
11:30pm-1:00pm	<b>Co-Design</b>	<ul style="list-style-type: none"> <li>❖ <i>Future city conceptualization: Imagine your ideal city. What does it look like? Consider how land is used, what important places are there, what the buildings are like, and who lives there.</i></li> <li>❖ <i>Participants to translate the aspirations onto the map and locate where they would want the various land use changes to be in order to achieve the aspirations</i></li> </ul>	Facilitators
1:00pm-1:30pm	<b>Policy Discussion</b>	❖ <i>Participants to highlight key Policy bundles or possible interventions that could help achieve the stated visions.</i>	Facilitators
1:30pm-1:45pm	<b>Closing Remarks</b>		City Manager
1:25pm-2:25pm	<b>Lunch</b>		
<b>End of day 2</b>			

## NAKURU CITY VALIDATION WORKSHOP AGENDA

Time	Activity	Activity details	Responsibility
8:30am-9:00am	<b>Arrival &amp; Registrations</b>		
9:00am-9:20am	<b>Welcome &amp; Recap</b>	❖ <i>Welcome &amp; Introductions</i>	Geoffrey (Introduction of Nakuru) Mark Pelling (Introduction of TC)
9:20am-9:30am	<b>Introduction of the Exercise</b>	❖ <i>To outline the overall objectives and exercises of the validation workshop</i>	Ezekiel Gogo
09:30am-10:45am	<b>Validation of Land Use Plans</b>	<ul style="list-style-type: none"> <li>❖ <i>Comparing sketched and digitized version – well represented?</i></li> <li>❖ <i>Adding missing facilities on the map</i></li> <li>❖ <i>Checking hazard information – any desired changes?</i></li> <li>❖ <i>Discussing assumptions for future population and building distribution</i></li> <li>❖ <i>Equity check and trade-offs: who wins and losses from our decisions?</i></li> </ul>	Facilitators
10:45am-11:00am	<b>Tea Break</b>		

11:00am-11:30am	<b>Hazard Brainstorm</b>	<ul style="list-style-type: none"> <li>❖ <i>Structuring flipchart according to main hazards – floods</i></li> <li>❖ <i>Brainstorming potential negative effects of hazards onto future city</i></li> <li>❖ <i>Reflecting on cross-cutting and unique impacts</i></li> </ul>	Facilitators
11:30am-12:45pm	<b>Policy Measures / Actions (for 3 policies)</b>	<ul style="list-style-type: none"> <li>❖ <i>Reflecting on FV policy discussions</i></li> <li>❖ <i>Specifics/details?</i></li> <li>❖ <i>How does it relate to hazards?</i></li> <li>❖ <i>Realistic? How to improve?</i></li> <li>❖ <i>Potential barriers to implementation?</i></li> <li>❖ <i>Implementation capacity: low, medium or high?</i></li> <li>❖ <i>Equity check: who benefits or may get harmed from this policy?</i></li> </ul>	Facilitators
12:45pm-1:15pm	Sharing Results (10 min per group)		
1:15pm-2:15pm	<b>Lunch</b>		
2:15pm-3:15pm	<b>Achievements, opportunities and Next Steps</b>	❖ <i>Insights from Community groups, Nakuru &amp; UN Habitat &amp; Tomorrow's Cities team</i>	Geoffrey
3:15pm-3:30pm	<b>Closing Remarks</b>		City Manager
<b>END OF DAY 3</b>			



## Nakuru Risk Agreement Workshop

Time	Activity	Activity details	Responsible
8:30-9:00am	<b>Arrival &amp; Registrations</b>		
9:00-9:30am	<b>Welcome &amp; Introductions</b>	❖ <i>Recap of the TCDSE Process WPI-WP3 activities (Gogo)</i>	<i>Geoffrey Gogo</i>
9:30am-10:00am	<b>Introduction to Flood modelling</b>	❖ <i>Introduction to flood impact modelling</i>	<i>Hugh Sinclair</i>
10:00-11:15am	<b>Dashboard Exercise</b>	❖ <i>Introduction to key terms &amp; Web-App dashboard</i>	<i>Facilitators</i>
11:15am-11:30am	<b>Tea Break &amp; Group Photo</b>		
11:30am-12:45pm	<b>Risk Reveal</b>	❖ <i>Make observations in Visioning Scenarios</i>	<i>Facilitators</i>
12:45pm-1:45pm	<b>Action/Policy Modifications - Implementation challenges</b>	❖ <i>Identify potential action modifications (prioritize three actions)</i> ❖ <i>Identify implementation challenges</i>	<i>Facilitators</i>
1:45pm-2:45pm	<b>Lunch</b>		
2:45pm-3:30pm	<b>Strategizing and Sharing</b>	❖ <i>Identify solutions to the implementation challenges</i> ❖ <i>One person per group shares results (three actions; implementation challenges &amp; strategies)</i>	<i>Facilitators</i>
3:30pm-3:45pm	<b>Debrief and next steps - reporting</b>	❖ <i>WP4-WP5 transition</i>	<i>Mark Pelling</i>
3:45pm-4:15pm	<b>Closing</b>	❖ <i>Official closure of the workshop</i>	<i>City Manager</i>
		❖ <i>Issuance of certificates</i>	<i>City Manager &amp; Mark Pelling</i>
		❖ <i>Participants feedback</i>	<i>ALL</i>
<b>End of the workshop</b>			

*Thank You for your Participation*

### APPENDIX 3: WORKSHOP TOOLS

#### Policy & Vision Cards



## URBAN FORM EXERCISE

### ANSWER THE FOLLOWING QUESTIONS BASED ON YOUR FUTURE CITY ASPIRATIONS

WHAT ARE THE MOST COMMON STRUCTURE TYPES AND THEIR DISTRIBUTION (IN %)?

REINFORCED CONCRETE	MASONRY	TIMBER	ADOBE	OTHER

CLASSIFICATION OF BUILDING HEIGHTS:

	AGREE (YES/NO)	IF NOT AGREE PROPOSE THRESHOLDS	OVERALL % OF BUILDINGS IN ENTIRE BUILDIN INVENTORY
HIGH RISE: 9-19:			
MID-RISE: 5-8			
LOW-RISE: 1-4			

**WHAT TYPE OF BUILDINGS DO DIFFERENT INCOME GROUPS LIVE IN?**

	LOW-RISE	MID-RISE	HIGH-RISE
LOW INCOME			
MID-INCOME			
HIGH INCOME			

**WHAT TYPE OF BUILDINGS DO DIFFERENT INCOME GROUPS LIVE IN?**

	LOW-CODE (QUALITY)	MID-CODE (QUALITY)	HIGH-CODE (QUALITY)
LOW INCOME			
MID-INCOME			
HIGH INCOME			

**WHAT TYPE OF HOUSEHOLD SIZES DO DIFFERENT INCOME GROUPS LIVE IN?**

	SMALL SIZE	MID-SIZE	LARGE-SIZE
LOW INCOME			
MID-INCOME			
HIGH INCOME			

**APPENDIX 4: ATTENDANCE SHEET**

**TOMORROW'S CITIES FUTURE VISIONING WORKSHOP NAKURU**

**ATTENDANCE SHEET WITH KEY INFORMATION FOR PARTICIPANTS**

**Please read carefully the information below before signing your name. If you have any questions or concerns, please ask them to the representative researcher present in the room.**

*This activity is led by the Tomorrow's Cities Urban Risk Hub, funded by the UK Research and Innovation Global Challenges Research Fund. The Hub aims to reduce disaster risk in the global south through inclusive approaches for equitable urban development.*

It is entirely voluntary for you to participate in this activity and refuse to participate will involve no penalty. If you decide to take part, please sign the attendance sheet below. By signing, you are agreeing to the terms below.

### Key Information

1. You can withdraw from this research at any time without giving a reason and without it affecting you in any way. If you decide to withdraw you will be asked what you wish to happen to the data you have provided up to that point. Based on your answer, data will either be stored and used or deleted.
2. This workshop might be photographed for research and communication purposes. If you do not wish to be photographed, please inform our research team and we will make sure to remove you from our visual records.
3. This workshop might also be recorded for research purposes. All the information that we collect about you during the research will be kept strictly confidential and anonymised. You will not be able to be identified in any ensuing reports or publications. However, please note that Confidentiality will be respected unless there are compelling and legitimate reasons for this to be breached. If this was the case we would inform you of any decisions that might limit your confidentiality.
4. Participating in this research does not include any direct risk or benefits.
5. Collected data will be processed and analysed and then findings will be disseminated in the form of a Policy Brief and/or research paper. Please contact our research team if you are interested in accessing findings.
6. The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at [data-protection@ucl.ac.uk](mailto:data-protection@ucl.ac.uk). Your personal data will be processed so long as it is required for the research project. If we are able to anonymise the personal data you provide, we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.
7. If you have any queries or complaints about this research and its activities, you can contact the project's Science Director, our Technical Co-leads or your local representative in Tanzania and Bangladesh:
  - Principal Investigator – Professor Hugh Sinclair: [hugh.sinclair@ed.ac.uk](mailto:hugh.sinclair@ed.ac.uk)
  - Science Director - Professor Mark Pelling: [mark.pelling@ucl.ac.uk](mailto:mark.pelling@ucl.ac.uk)
  - [Technical Co-Lead \(Physical Sciences\) – Dr Gemma Cremen: g.cremen@ucl.ac.uk](#)
  - [Technical Co-Lead \(Social Sciences\) – Dr Thaisa Comelli: thaisa.comelli@ucl.ac.uk](#)

**Thank you for reading this information sheet and for considering to take part in this research study.**

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*By signing the Attendance Sheet below, I CONFIRM that*

I have read and understood the Information above. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction.
I understand that I will be able to withdraw my data up to 3 weeks after interview
I consent to participate in the study. I understand that no personal, sensitive or identifiable information will be used in the study.
<i>(The information collected will be securely stored in a password protected laptop and will not be shared with anyone except researchers involved in the study.)</i>
I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified.
I understand that the data from this event may be subject to review by responsible individuals from the University for monitoring and audit purposes.
I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason.
I understand that if I decide to withdraw, any personal data I may have provided up to that point will be deleted unless I agree otherwise.
I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the research.
I understand that there is no promise or guarantee of benefits in participating in the study
I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study.
I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.
I understand that no one will be able to identify me when data from this research is shared
I understand that the information I have submitted will be published and that I can contact the researchers mentioned in this study to get copies of outputs.
I agree not to photograph or copy the flood risk map and understand this is a test analysis and cannot be used for flood risk assessment.
I consent to audio recordings and photographs being taken and understand that these will be EITHER <ul style="list-style-type: none"> <li>- destroyed within 2 years after data collection OR</li> <li>- Stored anonymously, using password-protected software and will be used for training, quality control, audit and specific research purposes.</li> </ul> To note: If you do not want your participation recorded you can still take part in the study. You may also choose to not be photographed.
I hereby confirm that I understand the inclusion criteria as detailed in the Information Sheet and explained to me by the researcher.
I hereby confirm that: (a) I understand the exclusion criteria as detailed in the Information Sheet and explained to me by the researcher; and (b) I do not fall under the exclusion criteria.
I have informed the researcher of any other research in which I am currently involved or have been involved in during the past 12 months.
I am aware of who I should contact if I wish to lodge a complaint.

I voluntarily agree to take part in this study.
Use of information for this project and beyond <i>(Information provided will be used for research purpose only and will not be used for commercial or other purposes. Electronic version of the data will be stored anonymised way till the publication of the report after writing my dissertation)</i>
I would be happy for the data I provide to be archived at the Tomorrow's Cities Sharepoint (managed by the University of Edinburgh, with the participation of researchers from University College London).
I understand that other authenticated researchers will have access to my anonymised data.

**Attendance Sheet**

\*Please read carefully all the information in the pages above before signing!

**APPENDIX 5: FEEDBACK FORMS**

**Facilitators Feedback Form**  
Future Visioning & Validation Workshops

<b>Name:</b>	[Write here your full name]
<b>Role:</b>	[Were you a facilitator, a note taker, or did you take another role? Specify here]
<b>Institutional Affiliation:</b>	[Write here the organisation you work for]
<b>Disaggregated Group Assigned:</b>	[Write the name of the disaggregated group you were assigned to]
<b>Date:</b>	[Date of filling this form, not the date of the workshop]
<b>City/Country:</b>	[Write here the name of city and country where the workshop took place]

***Future Visioning***

*Reminder: This is the workshop where we first met the stakeholder groups and asked about their dreams for the future, which led to the production of sketched spatial proposals and policies*

1. *How did you find the overall process of the Future Visioning workshop? Provide a brief comment below.*

2. *Any positive things you would like to highlight?*

3. *Any challenges you would like to highlight?*

4. *Please rate the key stages of the Future Visioning exercise from 1 to 3. 1 means “irrelevant/not useful”, 2 means “interesting/useful”, 3 means “outstanding/very interesting”.*

- *Collecting individual aspirations and timelines (1) (2) (3)*

- *Collective aspirations and ‘city timelines’ - or ‘city rivers’ – (1) (2) (3)*
- *Filling the wheel of urban assets (1) (2) (3)*
- *Co-mapping - drawing the sketched land use plans (1) (2) (3)*
- *Outlining policy themes and expectations (1) (2) (3)*

5. Which was the most interesting stage of the Future Visioning workshop? Mention the stage and explain why you think that.

6. Which was the least interesting or most challenging stage of the Future Visioning workshop? Mention the stage and explain why you think that.

7. Do you think the workshop was inclusive enough? Write your thoughts on the capacity of these methods to capture people’s experiences and aspirations for the future.

8. Would you have done anything differently? What? Why?

**Validation Workshop**

*Reminder: this was a follow-up workshop when we presented the digitised results of the Land Use Plans emerging from the visions, and where we discussed the policies.*

<b>9. How did you find the overall process of this validation workshop? Provide a brief comment below.</b>
<b>10. Any positive things you would like to highlight?</b>
<b>11. Any challenges you would like to highlight?</b>
<p><b>12. The workshop had four main stages. Rate them from 1 to 3. 1 means “irrelevant/not useful”, 2 means “interesting/useful”, 3 means “outstanding/very interesting”.</b></p> <ul style="list-style-type: none"> <li>• <b>Discussion of the Land Use Plans (1) (2) (3)</b></li> <li>• <b>Hazard brainstorm - outlining negative impacts (1) (2) (3)</b></li> <li>• <b>Impact priority exercise – voting on the wheel of assets (1) (2) (3)</b></li> <li>• <b>Policy discussion (1) (2) (3)</b></li> </ul>
<b>13. Which was the most interesting stage of the Validation Workshop. Mention the stage and explain why you say that.</b>
<b>14. Which was the least interesting or most challenging stage? Why?</b>
<b>15. Comment on your experience facilitating or taking notes of discussions. Was it easy? Would you have done anything different?</b>
<b>16. Do you think participants learned anything new from the Future Visioning to the Validation Workshop? What? Did you notice any interesting changes in the way that people think and interact?</b>
<b>17. Comment on the extent to which members were actually using the lens of the group (e.g., womens, migrants) to discuss and come up with ideas. How easy/difficult it is to represent a collective identity?</b>

18. Was everyone from the group participating in the discussion? Any power imbalances that you noticed.
19. Would you like to share any interesting discussions or stories from the workshop?
20. Was there any topic that generated conflict within your group? If yes, what was it, and why do you think this happened?
21. Did this experience (both workshops together) change the way you think or feel about: disaster risk, (participatory) urban planning and policy making? Explain what changed and explain why.
22. How can these workshops improve in the future? Do you have any recommendation?
Other Comments (If any)
Other Remarks (If any):

## Questionnaire for Participants Future Visioning and Validation Workshops

***Disclaimer:** Please note that this data will be used for research purposes only. Your personal information will be kept confidential in a secure database. Your participation in this research is optional but highly desirable. By supporting this project, you are helping to reduce risk in the future, particularly for disadvantaged populations.*

### General Questions

Name:

Age:

Gender: ( ) female ( ) male

Primary occupation: Group you were assigned to (mark an 'x'): (1) Women (2) Youth (3) Building Blocks Residents (4) Social Security (5) Civil Society

### About Tomorrow's Cities

1. Is this your first or second workshop with the Tomorrow's Cities team?

( ) First ( ) Second

2. Were you concerned or interested about disaster risk reduction before hearing of Tomorrow's Cities?

( ) Yes ( ) No

3. Do you feel your interest in disaster risk reduction increased after engaging in this project?

( ) I feel more interested ( ) I feel the same ( ) I feel less interested

4. Which positive results could come out of this project? Write good things you think could happen. Be as specific as possible.

5. How confident you are that the findings from this project will result in real changes in the city?

'0' meaning not confident at all. '5' meaning you have high hopes.

(0) (1) (2) (3) (4) (5)

6. *If you are not very confident or think it will be difficult to make positive changes, say what could prevent this project from being successful*

### **Future Visioning**

7. *In the last workshop you were asked to dream about the future. Do you think this exercise was useful?*

(YES) (NO)

8. *Would you like to highlight anything interesting that you discussed or learned in the last workshop?*

9. *Do you think the vision of your group is aligned with your own personal vision for the city? Do you feel you were personally represented in the vision? Explain if possible.*

10. *In the last workshop we asked you to produce urban plans and policies for the future city. What are your thoughts about this experience?*

11. *If you had to choose one main ambition or desire for the future Nablus, what would it be? Did the activities capture this well enough?*

### **Validation Workshop**

12. *Did you learn anything new in this validation workshop?*

13. *Which were the most interesting things you learned, saw, or discussed? Comment below.*

14. *Which were the most challenging things you saw or discussed? Comment below.*

15. *Did this experience change the way you think or feel about: disaster risk, (participatory) urban planning and policy making? Explain what changed and explain why.*

16. *Do you feel you understand better the urban challenges of Nablus? What is it that you now understand and didn't before?*

17. *Do you think this project included enough groups/voices? Did we miss anyone?*

18. *Do you have any final comments to make? Write whatever you feel is relevant.*

19. *How can these workshops improve in the future? Do you have any recommendation?*

20. *Would you be interested in participating in more of these workshops in the future?*

(YES) (NO)

## **APPENDIX 5: PICTORIALS**