INCLUSIVE CLIMATE-RESILIENT TRANSPORT IN AFRICA

Assessment of the needs of transport stakeholders including disadvantaged groups

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Abstract	

This report presents a summary of an assessment undertaken to understand the awareness that transport planners and decision-makers have of catering for the needs of disadvantaged groups. This includes the challenges transport planners and decision-makers face in incorporating the views of disadvantaged groups and climate resilience in the planning process. The needs assessment used a mixed-method approach consisting of a regional survey (135 participants), national focus groups (55) and stakeholder interviews (51), covering the countries of Ethiopia, Rwanda, Uganda and Zambia. This evidence from over 200 stakeholders will support the development of a Guidance Framework on Inclusive Climate-Resilient Transport Planning in Africa for transport planners, decision-makers and representatives of disadvantaged groups.

Keywords	Africa, climate change, vulnerable groups, mobility, inclusive transport, resilience, infrastructure, participation, decision-making
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ACRONYMS

BRT	Bus Rapid Transit
CCTV	Closed-Circuit Television
CISCOT	Civil Society Coalition on Transport
CRANE	Children at Risk Action Network
FABIO	First African Bicycle Information Organisation
FCDO	Foreign, Commonwealth and Development Office
FGD	Focus Group Discussion
GGGI	Global Green Growth Institute
HVT	High Volume Transport
IMC	IMC Worldwide Ltd
ITDP	Institute for Transportation and Development Policy
KCCA	Kampala Capital City Authority
LED	Ministry of Local Government Economic and Development
LMIC	Low- and Middle-Income Countries
MDAs	Ministries, Department and Agencies
NPDP	National Physical Development Plan
SDGs	Sustainable Development Goals
SEI	Stockholm Environment Institute
TEENS	Training Education and Empowerment for Neighbourhood Sustainability
TSUPU	Transforming the Settlements for the Urban Poor in Uganda
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNEP	United Nations Environment Programme
URRENO	Uganda Road Accident Reduction Network Organisation
UTRADA	Uganda Transport Development Agency
WRI	World Resources Institute
ZHVTP	Zambia High Volume Transport Project

EXECUTIVE SUMMARY

This needs assessment is part of a research project entitled "Inclusive Climate-Resilient Transport Planning in Africa". The overall objective of this project is to understand how the voice of disadvantaged groups can be better integrated in the transport planning process in low- and middle-income countries (LMICs) in Africa. In particular, the project examines how the mobility needs of low-income disadvantaged groups can be met in a changing climate, and how transport infrastructure can be made climate-resilient.

The research is funded by the UK Foreign, Commonwealth and Development Office (FCDO) through the High Volume Transport (HVT) Applied Research Programme (2017– 2023), which is managed by IMC Worldwide Ltd (IMC). It is being undertaken in collaboration with the Zambia Road Safety Trust, local consultants in Uganda and with the United Nations Environment Programme (UNEP) Share the Road Programme's "Investing in Walking and Cycling Policies in African Cities" project.

The aim of the needs assessment was to determine the main challenges transport planners and decision-makers encounter in meeting the mobility needs of disadvantaged groups in the four project countries of Ethiopia, Rwanda, Uganda and Zambia. It also examined the awareness of the risks that climate change poses to the transport system, and the consideration given to climate resilience. In addition, the study took the opportunity to gather evidence from additional Western, Eastern and Southern African countries by including the results of a regional survey in this assessment.

The needs assessment does not claim to provide a comprehensive overview of the situation in each African country. However, this broad sample does highlight common challenges encountered by disadvantaged groups, transport planners and decision-makers in the current transport planning process.

A mixed-method approach was used, consisting of a regional survey (135 participants), national focus groups (55), and stakeholder interviews (51), covering the project countries of Ethiopia, Rwanda, Uganda and Zambia. Based on the feedback received from over 200 stakeholders, a number of common challenges have been identified. These are:

- non-existent or inadequate policy and practice, and poor policy implementation to meet the mobility needs of disadvantaged groups;
- differing perceptions between transport planners and disadvantaged groups on the effectiveness of transport planning and policy;
- poor opportunity for engagement of disadvantaged groups in the transport planning process; and
- low priority given to climate risk and resilience.

Based on the above, the following common needs can be identified, which will have to be addressed if the four countries are to achieve an inclusive climate-resilient transport system:

- First, there is a need for transport planners and decision-makers to understand better the mobility challenges faced by disadvantaged groups, especially walking and public transport use. This will require the institutional capacity to engage and respond to disadvantaged groups. Appropriate engagement tools and procedures are required to ensure disadvantaged groups are involved in the entire transport planning process. This should be from the beginning of the process, as well as in the evaluation and monitoring of policies, in order to assess the short- and long-term impacts of transport policies on inclusion and service provision.

- Second, greater awareness is needed of the potential impact of climate on the transport sector and how to make transport infrastructure more resilient. This will require enhancing the capacity of transport planners to understand the climate risk to transport, and the measures that can be taken to improve the resilience of transport infrastructure (e.g. undertaking vulnerability and risk assessments). In addition, it would also require the availability of financial resources and priority to be given to investing in adapting transport infrastructure to future climate change. This will be important in order maintain levels of non-motorised transport (NMT) use.

  The findings of this needs assessment will inform the next stage of the research project, which aims to provide a Guidance Framework to support inclusive climate-resilient transport planning in Africa.

1. Introduction

Mobility plays a vital role in economic and social prosperity, connecting people, goods and places.[1,2] However, cities in LMICs in Africa often lack proper roads, public transport and non-motorised transport (NMT) infrastructure to meet travel needs, especially of low-income disadvantaged groups (e.g. women, children, older people and people with disabilities).[3]

In many African countries, the majority of citizens walk and cycle as their daily mode of transport, often out of necessity.[4,5,6,7] Every day, citizens risk their lives using NMT, due to the low priority given to low-carbon transport, poor investment in safe infrastructure, and increasing air pollution.[7] Figure 1 shows the split between transport journey modes in four capital cities in Africa, with walking playing a major role in daily mobility.[10,11,12,13] It is generally acknowledged that NMT, especially walking, is the major mode of transport in African countries with mode shares of between 20-65%.[8] Yet many African countries do not have national or city level NMT policies, or financial and institutional measures that prioritise the needs of NMT users.[8]

Figure 1: Modal split of journeys in the capital cities of Ethiopia, Rwanda, Uganda and Zambia
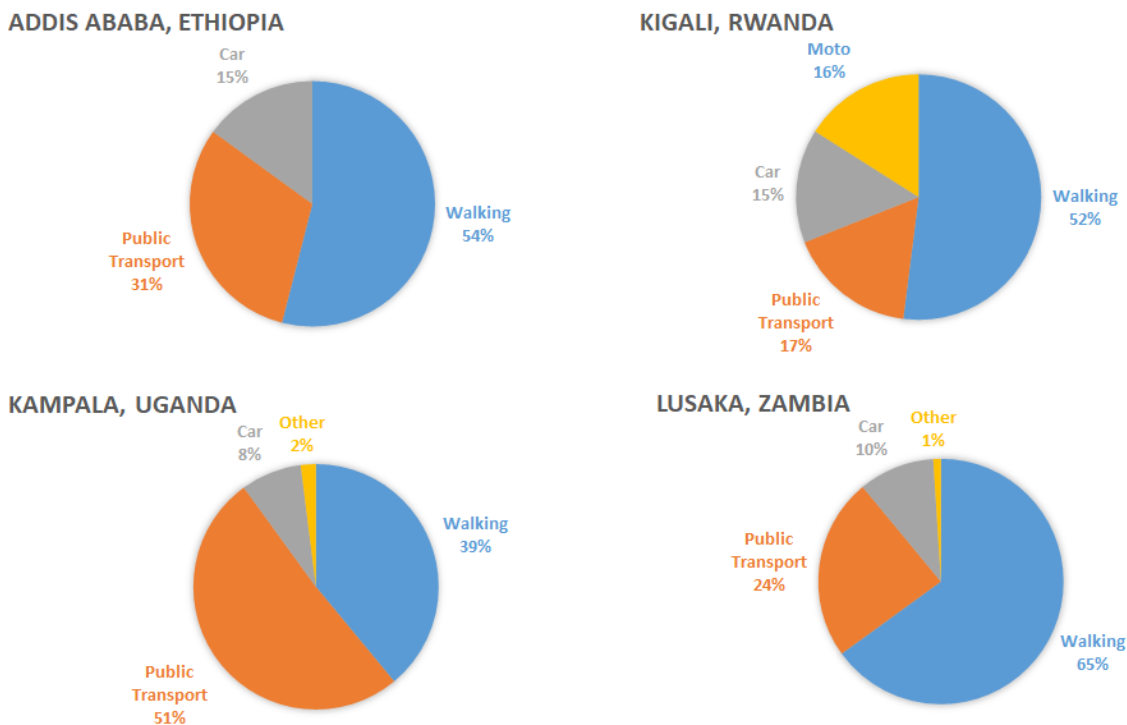
UNEP and the FIA Foundation[8] noted that people who walk, cycle and use two- and three-wheelers are the most vulnerable group of road-users. The majority of people killed on Africa's roads is young breadwinners. 62% are between the ages of 15 and 44, and three out of every four deaths are males. This is supported by the World Health Organisation,[14] which shows that males are more likely to be involved in road traffic crashes than females. About three quarters (73%) of all road traffic deaths occur among young males under the age of 25 years, who are almost three times more likely to be killed in a road traffic crash than young females. WHO also indicate that road traffic injury death rates are highest in the African region.[14] This brings an interesting perspective to the understanding of the dynamics associated with the vulnerable groups associated with mobility in cities in LMICs in Africa.

Poorly planned transport systems have negative consequences for everyone; whether they are driving a car, using public transport, walking or cycling. Transport planning in Africa therefore needs to be both inclusive and climate-resilient. Yet transport policy-making has been seen not as a rational evidence-based process, but the outcome of numerous interactions between policy-makers and various actors.

The low political participation of disadvantaged groups limits their ability to influence transport policy and planning.[15] The voices of such groups should therefore be taken into consideration in transport planning, to

understand better the mobility issues of these groups and how they might be affected by the adoption of new low-emission transport technologies (e.g. shared mobility and electric vehicles).[16, 17]

At the same time, new transport infrastructure (e.g. public transport, NMT or road construction), needs to be able to withstand future climate change.[18] This is a challenge as many countries have a short-term view, prioritising the needs of pro-poor basic urban services over environmental concerns.[19] A reluctance to take action on climate mitigation and adaptation is due to the perceived potential costs that they could impose and the negative effects on economic development.[20]

The challenge therefore is to have a transport planning process that is inclusive, climate-resilient and low carbon.[21] This will require transport planners and decision-makers to understand the mobility needs of disadvantaged people in a changing climate. It will also require opportunities to be provided for disadvantaged groups to engage in the design and planning of future transport systems.

1.1 Objective

The needs assessment is part of the Inclusive Climate-Resilient Transport Planning in Africa project, which aims to strengthen the technical capacity of African decision-makers and transport planners, so they are in a position to formulate and implement inclusive climate-resilient transport policy and planning.

The research is funded by the UK FCDO through the HVT Applied Research Programme (2017– 2023), which is managed by IMC. It is being undertaken in collaboration with the Zambia Road Safety Trust, local consultants in Uganda and UNEP Share the Road Programme's "Investing in Walking and Cycling Policies in African Cities" project.

The objective of the HVT Africa project is to:

- raise awareness of the needs of low-income disadvantaged user groups and the impacts of climate change on transport infrastructure; and

- increase capacity to assess the mobility needs of disadvantaged groups using appropriate tools and to facilitate the formulation and implementation of evidence-based climate-resilient transport policy that promotes inclusive low-carbon mobility.

The aim of this needs assessment is to determine the main challenges transport planners and decision-makers encounter in meeting the mobility needs of disadvantaged groups in Ethiopia, Rwanda, Uganda and Zambia. In addition, it will develop an understanding of the mobility challenges and needs of disadvantaged groups in engaging in the transport system and the transport planning process. It also examines the awareness of the risks that climate change poses to the transport system and the consideration given to climate resilience.

1.2 Scope and methodology

The assessment covers the four project countries of Ethiopia, Rwanda, Uganda and Zambia. In addition, the study took the opportunity to gather evidence from additional Western, Eastern and Southern African countries by including the results of a regional survey in this assessment.

Two activities (the regional survey and Rwanda national focus group) were undertaken in collaboration with UNEP's Share the Road Programme and their project on Investing in Walking and Cycling Policies in African Cities. All other activities were undertake separately as part of this needs assessment.

In order to achieve the project's objective, a mixed-method approach was followed, including:

- **A Regional Survey** – Walk21 Foundation and UNEP undertook a regional survey of transport stakeholders including disadvantaged stakeholders, on transport mobility issues in Africa. Additional questions were included in the survey to address the aims of this needs assessment.

- **National Focus Groups** – national focus group were held in both Uganda and Zambia. SEI participated in a national focus group in Rwanda, organised by the UNEP Share the Road project; however, participants did not engage in the discussions. As a consequence, the Rwanda focus group was unable to provide an input to this needs assessment. Due to time constraints and local partner issues, we were also unable to undertake a focus group in Ethiopia.

- **Country Stakeholder Interviews** – semi-structured interviews were undertaken with selected transport planners and decision-makers, and representatives of disadvantaged groups in Ethiopia, Rwanda, Uganda and Zambia.

Collectively, the insights gathered regionally, nationally and from individual stakeholders, highlight the common challenges encountered by transport planners, decision-makers and disadvantaged groups, in the transport planning process in Africa.

1.3 Challenges in data collection

The contribution of different stakeholders to the needs assessment was dependent on their willingness to complete the regional questionnaire survey, participate in a national focus group and agree to be interviewed. We found this challenging in Rwanda, especially when engaging with representatives of disadvantaged groups. This may have been due to a reluctance to appear to criticise government policy.

While this assessment does not claim to provide a comprehensive overview of the situation in each African country, it does highlight key issues that are common to several countries. The results from the interviews with disadvantaged groups in the four countries also cannot be considered conclusive and representative of the views of all the different groups, but rather provide insights into some of the needs of vulnerable groups.

However, this needs assessment does provides a foundation on which to explore the challenges encountered by disadvantaged groups and transport planners, in moving towards inclusive, climate-resilient transport planning in Africa.

1.4 Structure of the report

This report is divided into five chapters including this introduction. Chapter 2 provides the results of the regional survey. Chapter 3 presents the results of the national focus group discussions in Rwanda, Uganda and Zambia. Chapter 4 presents the results of the interviews in Ethiopia, Rwanda, Uganda and Zambia. Chapter 5 provides a summary of the key findings and implications for transport planning in Africa.

2. Regional Survey

2.1 Introduction

The Walk21 Foundation in collaboration UNEP Share the Road undertook an online regional survey of transport stakeholders as part of a Global Outlook report on Walking and Cycling Policy and Practice in Africa.

The aim of the survey was to identify which policies are effective at supporting walking and cycling in Africa; the projects that are improving conditions on the street that could be an inspiration to others; and the opportunities to enable agencies to make walking and cycling safer and more comfortable.

SEI included additional questions that related to the objective of the needs assessment, regarding the impact of weather on the use of NMT and the climate resilience of the transport system.

2.2 Methodology: scope of the study

The Walk21/UNEP survey used mixed-methods consisting of two data collection phases: (1) an online survey, and (2) in-depth semi-structured interviews, to corroborate the findings. Data were collected between the 20th October 2020 and 23rd December 2020.

The survey was developed by UNEP's Sustainable Mobility Unit and the Walk21 Foundation, in collaboration with the United Nations Human Settlements Programme (UN Habitat), the University of Manchester, the SEI Centre at the University of York, SEI-Africa, and the FIA Foundation. It was piloted with several partners to establish whether questions were understood as intended and relevant to the African context.

The survey was hosted online using Alchemer (www.alchemer.com). It comprised a mix of open- and closed-ended questions. Participants were asked to respond based on the region they work in. The survey took approximately 15 minutes to complete and was available in English and French.

Initially, email invitations were sent to all 350 members of an existing network of stakeholders working on transport and mobility issues in Africa. Share the Road network members were encouraged to share the link of the survey beyond the original database. A second e-mail was sent to the network thanking respondents for their participation and reminding those who had not participated about the survey deadline.

In total, 135 participants completed the survey (questions were not compulsory, so not all 135 participants answered every question). Of these participants, 40 partially completed the survey. The majority of those who completed the survey worked for national government (41), followed by: university/research (23); local non-government organisations (NGOs) (29); international NGOs (19); and private sector organisations (20).

The majority of participants worked in the transport (83) or environment (71) sector. Most were from West Africa (45), East Africa (36) and Southern Africa (36). Participants responded at either national (70) or city/local level (56).

The inclusion of survey data in this needs assessment is to identify issues common to a number of countries regarding NMT and climate resilience.

2.3 Walking

Participants were asked to select and rank the three most important reasons that they think people choose to walk (enablers) and choose not to walk (barriers), in their region.

The most frequently selected enablers were related to affordability ("it does not cost any money") (78%, n = 78) and inadequate transport systems ("lack of transport alternatives") (74%, n = 74). The two most frequently selected barriers were related to inadequate infrastructure ("no footpaths or safe crossing points") (68%, n = 68) and personal safety ("feel unsafe from traffic") (58%, n = 58). Weather was ranked sixth as an enabler ("Weather is good for walking") and seventh as a barrier ("weather not conducive to walking") (e.g. too hot/humid/windy).

It is clear that the impact of weather on walking is not a high priority, given the basic lack of NMT infrastructure such as footpaths and cycleways.

2.4 Organisation priorities

Participants were asked to select and rank the three most important sustainability priorities in the organisation in which they work.

Most participants who worked in government said that reducing road fatalities (53.6%, n = 15) and improving health and wellbeing (46.4%, n = 13) were one of the three most important priorities in their organisation. Similarly, the majority of participants outside of government said that improving health and wellbeing (52.8%, n = 38) and reducing road fatalities (47.2%, n = 34) were one of the three most important priorities in their organisation.

However, a higher proportion of participants outside of government perceived redressing inequalities as one of their organisation's top three priorities (25%, n = 18), compared to participants working in government (7.1%, n = 2).

Mitigating climate change was only ranked as the fifth most important priority for both participants in government (42.9%, n = 12) and outside of government (29.2%, n = 21).

Despite the low priority given to climate change, the majority of the participants from all countries represented in the survey felt that creating resilient infrastructure for climate-related weather events would support walking and cycling (see Figure 2).

Figure 2: Support for climate resilient NMT infrastructure (inset average over all countries)
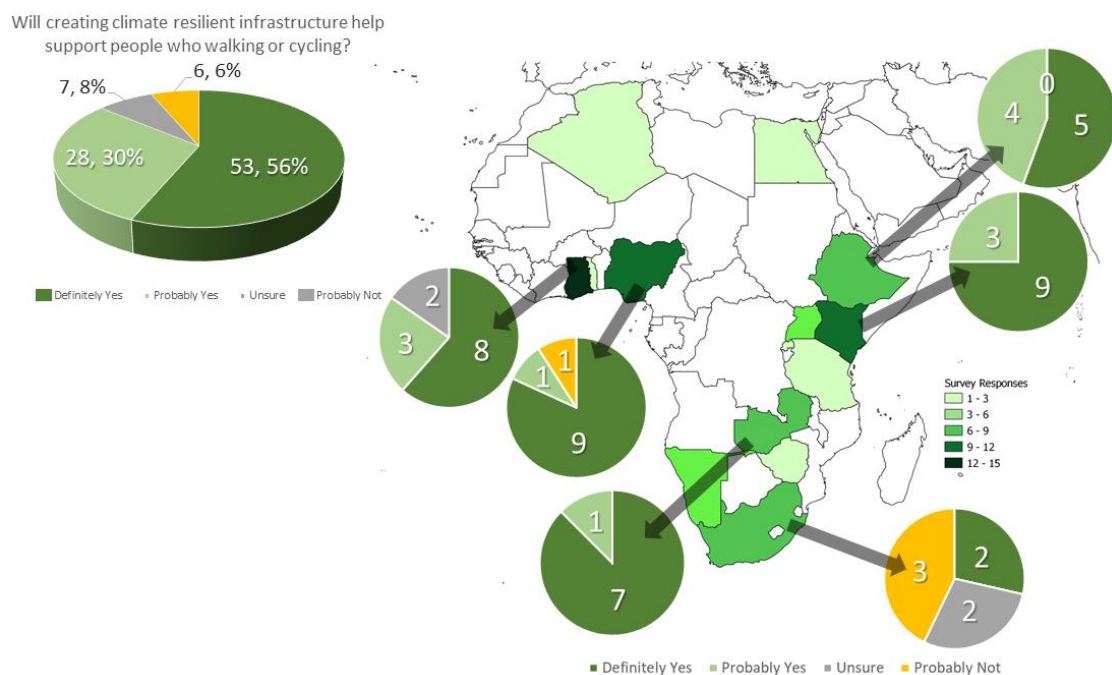
2.5 Key findings

The key findings from the regional survey relevant to this needs assessment is the low concern given to climate impacts across a number of African countries, and the relative low priority given to building resilient infrastructure and tackling climate change. This seems to be consistent across all countries surveyed with no significant differences between countries. All countries are concerned with the lack of footpaths and road fatalities with air quality and emissions having less importance. While there is awareness and concern about climate change, other priorities are considered more important. The survey results showed that:

- weather conditions rank low in the reasons given by respondents on why they would not walk. Main barriers include lack of footpaths, safety and trip distance;
- tackling climate change is ranked fifth in the sustainability priorities of their organisation, while building resilient infrastructure is ranked third.

3. National Focus Groups

3.1 Introduction

National focus groups were planned for Ethiopia, Rwanda, Uganda and Zambia in the period September 2020 to February 2021. However, focus groups were only held in Rwanda, Uganda and Zambia. Due to time constraints and local partner issues, we were unable to undertake a focus group in Ethiopia.

A qualitative approach was taken with Focus Group Discussion (FGD) as the main tool for data collection. The moderator asks broad questions to elicit responses and generate discussion among the participants. The moderator's goal is to generate the maximum amount of discussion and opinions within a given time period.

A total of 55 participants attended the FGDs in the three countries (see Appendix 1). The FGDs addressed three key themes relevant to the Inclusive Climate-Resilient Transport Planning in Africa project. These included the following three questions:

1. How can current transport policy and planning practice meet the needs of disadvantaged groups in your country?
2. How can we make transport infrastructure more resilient to climate change impacts?
3. What needs to be done to make transport planning more inclusive, and to address the impacts of climate change on the transport system?

The participants included transport planners, transport decision-makers and representatives from disadvantaged groups. Participants were asked these questions in sequence. Each participant contributed what they thought or experienced in relation to the question. The contributions were made through discussion and were recorded, with the contribution of each participant being anonymous.

3.2 Rwanda

The FGD in Rwanda was conducted on 2nd November 2020 as part of the Rwanda NMT Country Working Group, organised and hosted by the Global Green Growth Institute (GGGI). The NMT Country Working Group was virtual and held via Google Meetings. The FGD was allocated a 1-hour session.

A total of 13 stakeholders were invited to the virtual NMT Country Working Group, which comprised a mix of transport planners and disadvantaged groups. Nine stakeholders attended the online Working Group, including representatives of transport planners and decision-makers (i.e. Rwanda Transport Development Agency), and disadvantaged groups (older people groups and cyclists), including Healthy People Rwanda, Help Age International, Nsindagiza, GuraRide, Kigali Rides. The four stakeholders who did not attend included the Ministry of Transport, City of Kigali, Rwanda Standards Bureau and a representative of a women's group.

The aim of the FGD was to understand the awareness transport planners and decision-makers have of catering for the needs of disadvantaged groups. This includes the challenges transport planners and decision-makers face in incorporating the views of disadvantaged groups and climate resilience in the planning process.

The participants were asked to discuss the three FGD questions. However, the stakeholders did not participate in the discussions and indicated that they did not have any input to provide to the topic. Despite efforts by SEI and GGGI facilitators to engage with the stakeholders and probe questions, the participants remained quiet. Therefore, it was not possible to discuss any of the three questions during the one hour that had been allocated to the FGD.

Only one representative of an older person group typed a comment in the chat section in response to the third question and noted that "*Concerning climate change, I would suggest the organisation of an intergenerational dialogue to confront the traditional experience and the modern one in sustaining the environment. Older people should be provided with enough information on climate change and what could be their contribution to climate change.*"

During a follow-up meeting with the GGGI to review the FGD, the GGGI facilitator indicated that the poor stakeholder participation could be attributed to the composition of the FGD. The GGGI facilitator noted that if more transport planners had attended the meeting, they could have engaged more in the discussions, given

their expertise in transport. Even though stakeholders did not participate in the discussions, we followed-up with them to request interviews. Two of the representatives of disadvantaged groups provided their input through interviews (see Section 4).

3.3 Uganda

The Uganda FGD was held 4-5th February 2021 at the Shangri-La Hotel Muyenga in Kampala, Uganda and was compliant with the issued Standard Operating Procedures against the spread of the Covid-19.

The FGD engaged transport planners, decision-makers, local government administrators, academia, engineers, representatives of civil society organisations, transport operators and representatives of disadvantaged or vulnerable groups. In total, 15 people participated in the FGD.

The participants were selected due to their involvement in the transport sector at planning or decision-making level, civil society advocacy organisations and representatives of disadvantaged persons. There were 24 targeted participants; nine were targeted as transport planners and decision-makers, while 15 were from academia and representatives of various disadvantaged groups. However, not all attended due to a sudden heavy downpour on the second day of the meeting.

Planners and engineers were drawn from the Ministry of Works and Transport, Uganda National Roads Authority. Academia was represented by the College of Engineering, Design, Art and Technology (Makerere University, Kampala). Representatives of disadvantaged people included the Uganda Road Accident Reduction Network Organisation (URRENO); ACTogether/National Slum Dwellers Federation of Uganda; Training Education and Empowerment for Neighbourhood Sustainability (TEENS); Children at Risk Action Network (CRANE); Safe Roads Uganda; Civil Society Coalition on Transport (CISCOT); First African Bicycle Information Organisation (FABIO); and Uganda Transport Development Agency (UTRADA).

3.3.1 Results

The FGD session was held in four sessions, with a written record of the responses. A slightly adapted version of the three FGD questions were discussed, with the two categories of participants, consisting of planners/decision-makers and representatives of the disadvantaged persons. Answers from each group were sorted by themes for each question.

In the first session, each participant contributed what they thought or experienced in relation to the question. The submissions were then discussed and an agreed common answer was written down by the project team. In the subsequent sessions, presentations of findings from the previous sessions were given, and if accepted, were also adopted. New submissions were undertaken based on what the participants thought or experienced in relation to the question. The first day had 75% of participants, while the second had 25% of the participants. A review of the data was undertaken to establish FGD themes.

The common responses to each question are presented below.

What are the current transport policies and planning practices in meeting the needs of disadvantaged groups in Uganda?

Current planning practices that were identified by all participants include:

a) the Kampala Capital City Authority has introduced public garbage collection points, although these are not well established;
b) an effort has been made concerning street furniture in the form of waiting and resting areas for pedestrians and passengers, by Uganda National Roads Authority and local government administrative units especially Kampala Capital City Authority;
c) street addressing systems are evidenced, especially in well-established planned neighbourhoods;
d) there has been an of introduction of road/route charts by the Ministry of Works and Transport and Kampala Capital City Authority for public transport providers, and this has created some order on highways and in Kampala City.

On the second day of the FGD, in addition to those identified in the previous sessions, participants also noted that:

a) many roads have been converted to only one way road traffic;
b) there was an introduction of uniform marking or identification for public transporters, especially the taxis;
c) traffic lights with technology to enable pedestrian crossings has emerged, however, most pedestrians do not know how to use this and sometimes the height of the kerbs do not allow disabled access;
d) streetlights have been installed on many roads, which ensures safety of road users.

Current transport policies that were identified by 100% of participants on both days included:

- Ministry of Works and Transport Plan: Strategic Investment Plan – 2014

- National Development Plan 3-2020 /2021

Those identified by the 75% of participants (first day):

- The Uganda National Non-Motorised Transport Plan- 2012

- Physical Planning Act - 2010 (amended 2020)

- National Integrated Transport Master Plan - 2021–2040

- National Roads Safety Policy - 2020

- National Transport and Logistics Policy and Strategy - 2014

- National Physical Development Plan (NPDP)/ Vision - 2018–2040

- Kampala Street Lighting Master Plan – 2017

Those identified by 25% of the participants (second day) in supplementing those identified by the previous sessions included:

- National Urban Policy - 2017

- Ministry of Works and Transport Strategic Investment Plan 2011 /2012

- National Development Plan 3 - 2020/2021

- Multi Modal Master Plan for Greater Kampala - 2018

- Ministry of Local Government Economic and Development (LED) -2014

- Transforming the Settlements for the 409 Urban Poor in Uganda (TSUPU) - 2011

- Municipal Development Strategy – 2012

The participants in all sessions of the FGD for both days stressed the need to:

a) identify and include all disadvantaged and vulnerable groups individually and engage them for possible solutions at policy planning or formulation stage. Inclusion and participation of these groups from the initial planning stages is important because "*it's them you're planning for*". This would increase ownership of the policy, encourage effective monitoring and evaluation by all stakeholders, enable dissemination of information, and also reduce resistance at project implementation stage. Inclusive involvement in the form of mass representation of these groups should be done effectively and not "*window dressing*" where their involvement is to fulfil a requirement on paper, but recommendations are never adopted;

b) involve all stakeholders in discussions on budgeting priorities, especially at parliamentary level, so that all unique needs are catered for. Budget allocations should not only prioritise the "hard" components of a project, that include actual transport system constructions, but also the "soft" components such as sensitisation, monitoring and evaluation.

The participants on the first day (75%) further identified the need to:

a) undertake effective sensitisation of various groups about their mobility rights, to increase awareness;

b) avoid too much branding or over complicated designs in some planning practices, for instance, provisions for garbage disposal. This was concluded as one way users will not appreciate the facility;

c) enforce more inclusive planning in the transport sector. The planners should provide all options in access to transportation infrastructure. For instance, if a blind person cannot use a pedestrian crossing, what other alternatives can be provided for such people;

d) ensure enforcement in the traffic police department and curb down corruption tendencies by some members of the traffic department. Corruption leads to non-adherence to rules or guidelines;

e) ensure inclusive standardisation and implementation of land use plans. The standards should be uniform in implementing all policies, as opposed to each local government unit operating independently;

f) revive inclusive mass transport modes such as the railway system, which meet the mobility needs of disadvantaged groups (e.g. women, children, older people and people with disabilities). This should also be applied to all modes of transport;

g) simplify the policies, planning practices and designs to accommodate and enable every person to contribute their knowledge. The language used in drafting many policies, planning practices and designs cannot be easily understood and interpreted by all stakeholders; and

h) have a comprehensive audit of all these policies and practices vis-à-vis the current needs of the disadvantaged groups concerned. The current policies and practices may be out-dated or cannot effectively answer the needs of disadvantaged groups today. Any policy and practice review should be done in accordance with changing factors, for instance, population statistics and behavioural changes.

The participants on the second day (25%), though in agreement with the submissions of the previous sessions, added that there was also need to:

a) encourage Public Private Partnerships. However, the Government needs to play a leading role, especially in transport service provision;

b) be inclusive in all policies and give people a chance to give in their inputs. There is also a greater need for mindset and attitude changing within authorities. Authorities need to view themselves as agents and transformers, not bosses, while stakeholders need to know the projects benefit them;

c) introduce transport project champions/models at all levels, both in decision-making/transport planning and in the various advocacy groups for disadvantaged groups;

d) have institutional arrangements and reforms at the various Government Ministries, Departments and Agencies;

e) adhere to universal design principles in policy formulation and also benchmarking, for designs to be in line with current global planning practices.

How can we make transport infrastructure more resilient to climate change impacts?

On the first day of the FGD, participants who made 75% of the total number of overall participants agreed on the need to:

a) develop and adopt technology advancement in areas of road engineering and wastewater harvesting, runoff and management;

b) develop infrastructure to promote climate change mitigation in form of NMT;

c) foster clean energy use by investing in clean public transport options, such as electric vehicles, the Bus Rapid Transit (BRT), and railway;

d) upgrade the existing infrastructure to adapt to impacts of climate change;

e) introduce flow charts and NMT maps in particular zones, if not all;

f) promote greening, as required by a number of the Sustainable Development Goals (SDGs), at all levels of planning, and ensuring standard implementation;

g) conduct special studies of different tree and plant species that can be used to green most areas of urban environments;

h) provide supportive information or research that was conducted before the implementation of a transport project commences;

i) undertake investigations and feasibility studies at all the stages of a project;

j)   increase the number of public open spaces, especially in urban areas;

k)   ensure an efficient monitoring and evaluation system in the transport sector.

A total of 25% of the participants (total number of second day participants), though in agreement with the submissions in the previous sessions on the first day, further identified the need to:

a)   adhere to specifications and standards, especially at implementation level. All aspects of the project should be considered critical as opposed to the current prioritisation and neglect of some aspects due to financial constraints;

b)   prepare for disasters and natural hazards. Funds have to be set aside for any eventualities;

c)   decentralise decision-making, which should be supported by local planning approaches;

d)   enhance technical capacity building;

e)   improve the use of modern technology to enforce traffic and transport regulations;

f)   promote intelligent transport systems such as the installation of Closed- Circuit Television (CCTV) to monitor compliance with transport regulations;

g)   improve transport funding for transport planners/ policy-makers, civil society organisations and other representatives of disadvantaged groups;

h)   adopt an integrated transport and land use approach, which is the only way to coordinated development; and

i)   move towards NMT, green options and green campaigns.

What needs to be done to make transport planning more inclusive and to address the impacts of climate change on the transport system?

The participants of the first day agreed on a need for:

a)   a comprehensive audit of existing policies vis-à-vis the physical nature of the transport system;

b)   improving existing facilities to create capacity and enforce policy;

c)   public participation forums for all stakeholders, so as to own their plans through all stages of planning;

d)   organisation of the private public transport operators into cooperatives that are more beneficial and sustainable;

e)   advocating for gender inclusivity;

f)   sensitisation for clean energy use;

g)   adopting new technologies and capacity building for all stakeholders at all levels;

h)   inclusive growth and equity;

i)   ensuring good governance at all administration units. Politicians need to be separated from having a final say on technical decisions;

j)   budgetary improvement, especially in terms of adequate allocation of resources for all aspects of a project;

k)   ensuring clearly drafted and enabling regulatory frameworks, which should be easy to understand and disseminate to all stakeholders;

l)   practice multi-stakeholder partnerships at all levels of engagement;

m)   participation of civil society in the form of voluntary platforms; and

n)   building capacity of road committees, especially at local levels to create a sense of belonging.

The participants on the second day, though in agreement with the submissions of the previous day's sessions, also added the need for:

a)   promotion of NMT policies in all newly created cities of Uganda, as a starting point;

b)   regular updating and reviewing of current policies;

c)   capacity building through hands-on training for various stakeholders;

d)   ensuring adequate and priority funding for all aspects of any transport project and increase investment in the transport sector by public and private agencies and organisations;

e)   promotion of applied research projects;

f)   strengthening transport enforcement and compliance departments;

g)   creation of more innovative hubs, especially those geared towards transportation solutions; and

h)   planning for transport convenience facilitates, like highway rest areas, toilets and eating places.

3.3.2 Uganda FGD: Conclusions and recommendations

1. Current transport policies and planning practices in meeting the needs of disadvantaged groups

The Uganda FGD concluded that policy and practices to meet the needs of disadvantaged groups exist but may be inadequate.

A total of 80% of participants felt the implementation of policies were a challenge. Participants agreed there was a need for the central government to directly participate in the implementation of many of these policies and not leave it only to the lower local governments and private players. The central government should also enhance its monitoring and evaluation mechanisms, to improve the effectiveness of the transport planning process and to include the needs of disadvantaged groups.

The need to increase enforcement by various Ministries, Departments and Agencies to ensure compliance to standards was also agreed upon. This should be done in partnership with representatives of various civil society organisations and other representatives of disadvantaged groups.

2. Facilitating transport policy and planning practice to meet the needs of disadvantaged groups

The participants in the first day FGD (75% of overall participants) classified the disadvantaged groups into different categories including physically disabled, mentally impaired, pregnant women, older people and NMT users. These categories were accepted by participants on the second day (25%).

In terms of facilitating transport policy and planning practice to meet the needs of the disadvantaged groups, it was concluded that there has to be local decision-making in policy formulation. Disadvantaged groups should be fully involved in the entire planning process and practice. This should involve a study of their unique needs, capacity building of the different representative groups and improvement of the discussion forums, to bring on board all these different groups.

There is a need to address the planning and design inadequacies. For example, lack and misuse of pedestrian walkways, narrow road width, lack of road marking, poor adherence to building standards, potholes on the roads, lack of or inadequate pedestrian crossing, high and raised curbs, and lack of rest areas along roads and highways.

3. On making transport infrastructure more resilient to climate change

Almost all FGD participants agreed there is progress in Uganda in this area; however more needs to be done. They applauded the government's effort in building the Kiira motor manufacturing plant in Jinja, which will prioritise the production of electric buses, plus other motors coming on board later, but more needs to be done in terms of creating awareness of the use of electric vehicles. It was felt that the government also needs to fast track the implementation of the BRT project and the construction of the Standard Gauge Railway.

The government should also consider increasing the funding of "soft" components of projects, such as monitoring and evaluation, rather than concentrating solely on funding the "hard" components of a project, like the infrastructure.

4. On making transport planning more inclusive and responsive to impacts of climate change

In order to make transport planning in Uganda inclusive and responsive to the impacts of climate change, the FGD participants concluded that disadvantaged groups should be included in the entire transport planning process.

The participants in the second day further advised that The Transport Master Plan, currently under review, should only be tabled and passed by government after extensive consultation with the various stakeholders.

3.4 Zambia

The Zambian Road Safety Trust held a FGD on 26th January 2021 at ZAMCOM Lodge in Lusaka, Zambia under strict Covid-19 rules to safeguard participants.

A total of 10 transport planners/decision-makers and 12 representatives of disadvantaged groups attended the focus group. The FGD engaged planners, decision-makers, engineers and those disadvantaged groups regarded as vulnerable when it comes to accessing public transport.

Planners and engineers were drawn from various institutions, including the Ministry of Transport and Communication, the Road Safety Trust, Lusaka City Council, Chinkakata Town Council, Chongwe Town Council, the Commuters Rights Association of Zambia, Cheshire Homes Society of Zambia, and the Chartered Institute of Logistics and Transport.

Representatives of the disadvantaged groups included Youth Disability Inclusion of Zambia, Goodwill Ambassador for the Blind, Albinism Foundation of Zambia, Zambia Down Syndrome Network and Mental Health Users Network of Zambia.

Each participant contributed what they thought or experienced in relation to the question. The submissions, done through a discussion, were written down by the team. A review of the data was undertaken to establish themes from the FGD. In order to maintain anonymity, participants quoted here been have coded (ZHVTP) with a number.

How can current transport policy and planning practice meet the needs of disadvantaged groups in Zambia?

This question addressed the need to improve the current transport policy and planning practice to meet the needs of the disadvantaged groups in Zambia. Half of the participants felt that there was inadequate decentralisation to reach out to the disadvantaged groups easily. This has a negative effect on dissemination of information on policy and practice.

About 25% of the planners/decision-makers also recognised that there is poor coordination between the road development agency and councillors in local authorities, in order to coordinate planning and dissemination of policies and practices. Respondent ZHVTP3 suggested that there was *"need to revise the policy documents"*, while respondent ZHVTP4 went further to say *"the policy document does not spell out walkways to be separated from cycle lanes."*

Other issues that came out from policy-makers/planners regarding policy and practice to meet the needs of the disadvantaged included:

- implementation problems;
- need for including the disadvantaged and other stakeholders from planning stage;
- removing politics from planning;

When asked whether policy and planning practice is able to meet the needs of the disadvantaged, the representatives of disadvantaged groups believed existing policy and implementation plans are not explicit on the provisions for public transport to carry wheelchairs and persons who are differently abled.

ZHVTD 6 suggested that the differently abled should make *"unnecessary noise to gain attention for the change of the current policy and practice"*. It was further urged that "*Zambia should sign the optional protocol of the United Nations Convention on the Rights of Persons with Disability- UNCRPD and operationalise it.*"

About 63% (5) of the respondents represented people with disabilities and believed that there was no involvement of the persons with disability in planning policy and implementation. ZVHTD4 and ZDHTD5 commented that "*people with disability should be involved in policy plans and implementation from the beginning.*"

The submissions agree with Berg *et al.*[22] who argues that:

> "*…in developing countries … transport policies are often poorly designed and implemented*."

The poor policy design and implementation may be attributed to non-inclusiveness or low participation of stakeholders, especially the disadvantaged in planning and implementation.

How can we make transport infrastructure more resilient to climate change impacts?

Participants felt that transport infrastructure in Zambia was not resilient to climate change. This could be evidenced from the annual occurrence of collapsed bridges, washed away roads, overflowing drainage systems and flooded road passages, whenever there was a heavy downpour of rain.

Five planners/decision-makers reported that the design of drainage systems is not resilient to climate change. Most drainage systems, including the recently completed Bombay drainage in Lusaka by the Ministry of Local Government of Zambia, are open, allowing citizens to throw garbage in the drainage ways, thereby clogging the passage for water.

A total of six planners and decision-makers agreed that the prevalent road designs that are gravel-based can be destroyed by heavy rains and pose mobility challenges for disadvantaged groups. Two planners/decision-makers also observed that transport infrastructure that had little or no vegetation around could easily be damaged by extreme weather conditions such as floods and strong winds.

Some members of the FGD further observed that roads with poor, thin layers were a result of corruption and were not lasting long after construction. Road contractors sometimes have to meet the cost of satisfying those awarding contracts from the same funding released for road construction. This leads to thinning out the road design or using poor materials.

Three transport planners/decision-makers and two representatives of the disadvantaged observed that the vehicle load on the roads sometimes exceeded the carrying capacity of the roads. The roads were therefore overused as *"there were no other serious alternative transport modes"*. *"This led to many potholes that made transportation expensive and often uncomfortable for the disabled*."

The representatives of disadvantaged groups also commented that the road transport system is expensive for low-income groups.

What needs to be done to make transport planning more inclusive and to address the impacts of climate change on the transport system?

Almost all FGD participants agreed that there was no inclusiveness in the policy process and implementation, especially regarding the disadvantaged. Further discussion revealed that transport stakeholders did not even know boundaries for their roles in the transport infrastructure development, to the extent that councillors and road safety agents sometimes did things differently, and in extreme cases caused confusion in the planning process.

It was also discovered that many stakeholders and transport infrastructure users were unaware of policies and implementation plans. Inadequate decentralisation of the sector seemed to exacerbate the poor knowledge among some stakeholders and end users.

"*There appears to be few studies on transport infrastructure in Zambia to enable us to make evidence-based decisions*" said ZHVTP 8. This may mean that decisions made are not based on concrete evidence of the outcome, when designing and planning transport infrastructure.

3.4.1 Discussion

Facilitating for transport policy and planning practice to meet the needs of disadvantaged

Both planners/decision-makers and the representatives of the disadvantaged groups agreed that there was poor to no representation of the disadvantaged groups in policy enactment and implementation of transport policy. Although the poor representation was attributed to inadequate decentralisation and non-inclusive policy implementation plans, the main cause could be the lack of opportunity for disadvantaged groups to communicate their concerns.

The FGD discussants indicated that there was a need to involve disadvantaged groups from the beginning in planning and implementation of transport policies. As Lucas *et al.*[23] observe, a minimum level of participation in policy formulation and implementation should be available to all, regardless of their socio-economic status or background. This gives an inclusive policy and implementation outlook that supports success.

Decentralisation of the transport sector to district level through local government authorities and engagement with representative NGOs, may increase the participation of disadvantaged groups. Extensive awareness raising of transport policies and implementation will enable feedback from a wider range of transport stakeholders.

Making transport infrastructure more resilient to climate change

The collapse in transport infrastructure was attributed to poor infrastructure design and maintenance. There was also a need to make all new infrastructure and rehabilitated transport infrastructure climate smart, so it is resilient to increased climate shocks.

The Zambian government has introduced road paving as opposed to gravel roads in some townships as explained by ZHVTP 1. However, *"planting of trees"* (ZHVTP 1) and *"leaving 'green spaces'"* (ZHVTP 3) need to be undertaken in accordance with the historical plan of Lusaka as a 'Garden City'. The vegetation will strengthen transport infrastructure and is an inexpensive measure that can make it more resilient.

Wells[24] argues that corruption does affect quality and durability of infrastructure projects because of inappropriate project choices, high prices, poor quality work, excessive time and cost overruns, inadequate maintenance, and low returns as contractors. Meanwhile, contract givers seek to make money for themselves out of infrastructure contracts. Reducing corruption in transport infrastructure projects is imperative if the infrastructure has to meaningfully support all stakeholders.

ZHTP 4 submitted that "*in order to reduce car usage and thereby reduce carbon emissions, a mass transit system should be introduced.*" This should be coupled with "*integrated transport infrastructure planning and operations to ensure the disadvantaged are included across from the planning, to use of the infrastructure.*"

Another discussant suggested the solution was to *"change to an alternative transport system from roads"* such as a *"rail system."*

The need to make transport infrastructure that is climate smart is paramount to reduce bridge wash aways, flooding of roads and clogging of waterways.

Making transport planning more inclusive and responsive to impacts of climate change

There is a need to decentralise the planning process to a bottom-up system, by making the planning process more inclusive. As proposed by some FGD participants, a comprehensive strategy to allocate roles of various actors in transport infrastructure development will enable participation of many, including disadvantaged groups.

In Zambia, greater awareness is needed about the negative impact that transport planning decisions can have on the mobility and livelihoods of disadvantaged groups.

Paramount to inclusiveness is the creation of awareness among stakeholders, including the disadvantaged, on the planning and implementation process and needs of the disadvantaged in infrastructure development.

3.4.2 Zambia FGD: Conclusions and recommendations

1. Facilitating transport policy and planning practice to meet the needs of the disadvantaged

In terms of facilitating transport policy and planning practice to meet the needs of the disadvantaged groups, it is concluded that the disadvantaged should be fully involved in the entire planning process and practice. The transport policy should be reviewed to ensure that salient needs of the disadvantaged groups are included in the policy.

There should be decentralisation in planning to engage more stakeholders. The roles of government agencies and departments should be clear as this has caused confusion in the past.

As the disadvantaged groups are included in planning, more of their needs can be heard, such that footpaths are not suitable for wheelchairs, bus stations lack rest places, drains are not covered to enable crossing the roads and there are no signs for disabled access.

2. Making transport infrastructure more resilient to climate change

As proposed by many FGD participants, Zambian transport infrastructure is not climate-resilient. It is recommended that the transport infrastructure be supported with green areas and trees were necessary, to reduce impact of floods and other extreme weather conditions.

It is recommended that drainage systems be covered and that drain sieves be inserted with inspection manholes, so that the waterways are cleaned from time to time.

Walkway pavers have proved to work well in bad weather conditions in Lusaka and require minimum maintenance.

3. Making transport planning more inclusive and responsive to impacts of climate change

In order to make transport planning in Zambia inclusive and responsive to the impacts of climate change, it is concluded that the disadvantaged groups be included in the entire transport planning process. The current Transport Policy (2019 - 2028) should be reviewed to ensure that it meets the needs of the disadvantaged groups. There is too much centralisation in planning and implementation. The FGD participants recommended that decentralisation may provide the opportunity to engage more stakeholders of disadvantaged groups. Lastly, it has been suggested that a scoping study should be undertaken to identify players and their roles in the transport sector to ensure future decisions are inclusive and evidence-based.

3.5 Key findings from the two Focus Group Discussions

The two FGDs undertaken in Uganda and Zambia highlighted the challenge of engaging stakeholders whose views are often ignored in the transport planning process. They also demonstrated the difficulties in engaging representatives of disadvantaged groups and the need to find an appropriate forum and mode of engagement.

There is a general feeling that while there were some policies in place that meet the needs of disadvantaged groups, these are inadequate (in the case of Uganda). There is insufficient representation of the disadvantaged groups in the development and implementation of transport policy (in the case of Zambia). The engagement of disadvantaged groups and the implementation of appropriate policies to meet their mobility needs was perceived as a challenge. This requires a greater lead from the central government, including monitoring and evaluation of the participation of disadvantaged groups in the transport planning process.

In the Uganda FGD, the majority of transport planners/decision-makers admitted their consultation with disadvantaged groups was ineffective and interest was expressed in learning from co-design processes. Reasons given for this failure were inadequacy of the consultation process to involve stakeholders. It was noted that consultants are often appointed and the stakeholders consulted are the decision-makers and transport planners themselves. In such cases, disadvantaged groups are neglected, since in the Terms of Reference for the consultant, their involvement is usually overlooked because the policy-makers believe they are not empowered enough to contribute to this. The consultant submits proposals for amendments, which are reviewed by the decision-makers and transport planners, who do not consult the disadvantaged groups. Instead, they prepare a cabinet white paper, which is then tabled before parliament for approval. In all these steps, the disadvantaged groups are neglected.

In the Zambia FGD, the majority of transport planners/decision-makers believed there is little or no collaboration when planning 'major' transport projects, between central government agencies and local planners in small towns/cities. They highlighted the need for national transport policy to assign clear responsibility between local and national planners to avoid conflict.

The current transport infrastructure was perceived as vulnerable to the impacts of climate change. The collapse in transport infrastructure was attributed to poor infrastructure design (Zambia). While progress has been made in shifting to low-emission mobility (e.g. electric vehicles), more needs to be done (e.g. BRT) (Uganda). There was also a need to make all new infrastructure and rehabilitated transport infrastructure climate-smart, so that it is resilient to increased climate shocks (Zambia).

To make transport more inclusive and climate-resilient, there is a need to include disadvantaged groups in the entire transport planning process (Uganda/Zambia). This requires the decentralisation of the planning

process, towards a bottom-up system to make it more inclusive (Uganda), and a comprehensive strategy, to allocate roles of various actors in transport infrastructure development. This will enable participation of many, including disadvantaged groups (Zambia). While action was supported to make transport infrastructure more climate-resilient, there were few detailed solutions on how this could be done. This highlights the need for greater awareness of climate change mitigation and adaptation, and capacity to develop and implement appropriate actions.

4. Stakeholder Interviews

4.1 Introduction

Stakeholder interviews were undertaken in the four project countries (Ethiopia, Rwanda, Uganda and Zambia) in the period October 2020 to February 2021. A qualitative approach with individual interviews as the main tool for data collection was followed.

Semi-structured interviews were undertaken with two categories of participants, consisting of planners/decision-makers and representatives of disadvantaged persons. A list of questions were developed for each group (see Appendix 2).

Stakeholders were selected to cover a wide range of actors involved in transport at the national and city levels, ranging from transport ministries, city authorities, transport authorities, road development agencies, academia, private sector, transport engineers, development partners, associations of planners, and research and policy institutions. For stakeholders who agreed to participate in the interviews, consent forms were provided and signed before the interviews.

The majority of the interviews were conducted via the Zoom Meeting platform. A Microsoft Forms online questionnaire survey was used to capture information from those who were unable to be interviewed.

4.2 Ethiopia

In Ethiopia, 18 transport planners and decision-makers were contacted but only eight stakeholders were interviewed. Ten stakeholders did not respond to our invitation. A total of seven representatives of disadvantaged groups were contacted but only one youth group was interviewed. Four stakeholders did not respond to our invitation. The email invitations sent to two organisations were returned.

4.3 Rwanda

In Rwanda, 15 transport planners and decision-makers were contacted but only two stakeholders were interviewed. 10 stakeholders did not respond to our invitation. One stakeholder responded positively but referred us to relevant transport authorities and institutions. One transport engineer declined the invitation and one invitation was returned. A total of seven disadvantaged groups were contacted but only two representatives of an older person group and of a disadvantaged youth group (for street boys and girls) were interviewed. A representative of a women's group declined the invitation after reviewing the questions, citing lack of expertise in the area. Four stakeholders did not respond to our invitation.

4.4 Uganda

In Uganda, a total of 40 interview invitations were sent out to 22 transport planners and decision-makers, 17 representatives of disadvantaged groups, and one academic. Of these, 22 were successfully conducted from 10 transport planners and decision-makers and 12 were representatives of disadvantaged groups.

4.5 Zambia

At total of 13 representatives of disadvantaged groups were contacted and ten were interviewed, as the others declined to be interviewed. A total of 35 people were contacted for interview, of which 18 were interviewed.

4.6 Challenges

We faced several challenges while planning for and conducting interviews with transport planners and disadvantaged groups in Ethiopia and Rwanda.

These included the unavailability of stakeholders in November-December 2020. Some stakeholders that had responded positively were unable to schedule interviews, citing end of year commitments. Other stakeholders who had confirmed, failed to participate in the interviews and postponed several times. As an alternative, we asked the stakeholders to complete the online survey, but some of them had not submitted

their responses by February 2021, despite many follow-ups. Overall, the slow responses in both countries in December could be attributed to the issue of availability in December (end of year holidays).

In Rwanda, some transport planners and disadvantaged groups were reluctant to participate in the study because it might appear they are criticising the government's transport policy implementation. Stakeholders indicated that they did not have the capacity to evaluate the government's policies and therefore, they declined our invitation or referred us to the Ministry of Transport, as the lead Government authority in transport.

In Ethiopia, we encountered challenges contacting disadvantaged groups. We learnt through the interviewed stakeholders that disadvantaged groups in Ethiopia are not well-established organisations and do not generally work on transport issues. This could explain the low response.

Poor internet connection was particularly a challenge for stakeholders in Ethiopia, who failed to participate in the online interviews. During one of the interviews, the weak internet connection led to multiple interruptions. We had a similar challenge in Rwanda, where we could not interview one stakeholder who was online. As an alternative, we suggested that stakeholders completed the online survey.

In Zambia, we could not invite more people to attend the FGD, mainly because of government Covid-19 restrictions on the number of people who could meet in a room. There were also some challenges on Zoom connectivity for the people who wanted to participate virtually.

A total of 51 stakeholder interviews were undertaken, covering the four focus countries. This included 25 representatives of disadvantaged groups and 26 transport planners, with Uganda accounting for the highest number of the interviews undertaken (see Table 1).

Table 1: Distribution of stakeholders in the four target countries

Country	Disadvantaged Group Number of people interviewed	Transport Planners and Decision-makers Number of people interviewed
Ethiopia	1	8
Rwanda	2	2
Uganda	12	10
Zambia	10	6
Total	**25**	**26**

4.6.1 Participant organisations

The representatives from disadvantaged groups were drawn from the following organisations: ACTogether/ National Slum Dwellers Federation of Uganda (NSDFU), Cheshire Homes Society of Zambia, Children at Risk Action Network (CRANE), Zambia Down Syndrome Network, Civil Society Coalition on Transport Uganda (CISCOT), Deaf Blind Association of Zambia, First Africa Bicycle Information Organisation (FABIO), Healthy People of Rwanda, Kabulonga Girls Secondary School, National Union of Disabled Persons of Uganda (NUDIPU), New Foundation of the Blind in Zambia, NSINDAGIZA Organisation, Pioneer Easy Bus Limited, Safe Roads Uganda, Tara Youth Association, Training, Education and Empowerment Neighbourhood Sustainability (TEENS), Uganda Sustainable Transport Network (USTN), Uganda Transport Development Agency (UTRADA), Uganda Roads Accidents Reduction Network Organisation (URRENO), Zambia Association on Employment for Persons with Disabilities (ZAEPD), Zambia Charter for Advocacy and Development of Women with Disabilities, Zambia National Association of the Partially Sighted, and Zambia National Federation of the Blind.

The transport planners and decision-makers were drawn from Addis Ababa City Transport Authority, Addis Ababa City Traffic Management Agency, Ministry of Transport of Ethiopia, Addis Ababa University, Addis
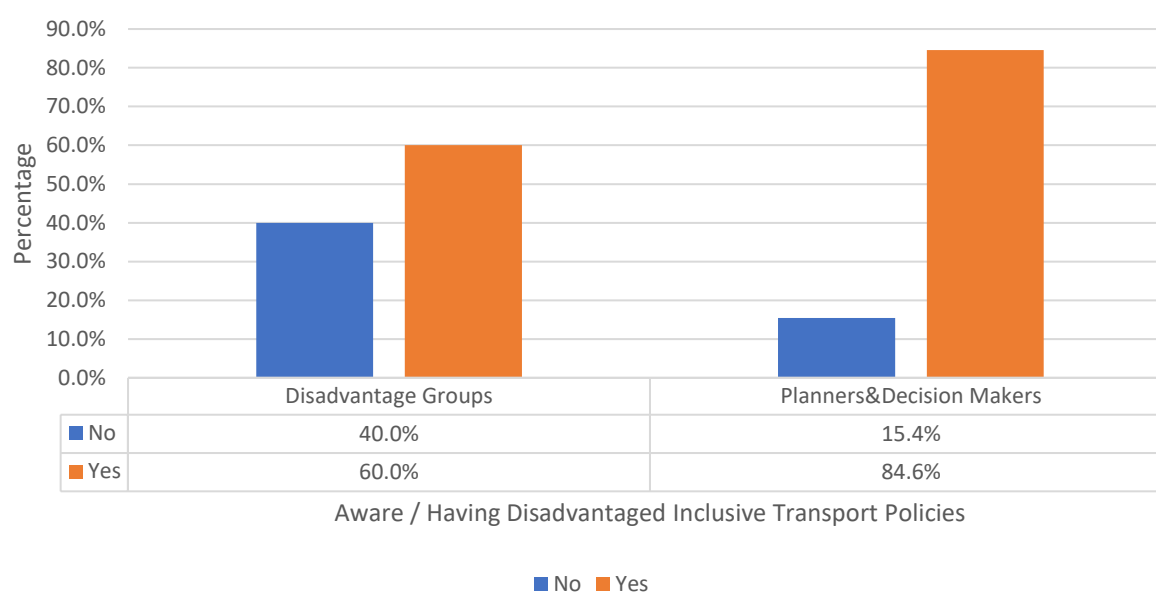
Ababa Institute of Technology, Chartered Institute of Logistics and Transport of Zambia, Citizens Infrastructure Growth, Zambia Institute of Transportation and Development Policy (ITDP), Kampala Capital City Authority, Kiira Motor Corporation, Ministry of Lands, Housing and Urban Development, Ministry of Works and Transport, National Planning Authority, Road Development Agency, School of Public Health-University of Zambia, Uganda Institute of Physical Planners, Uganda National Roads Authority, UN Habitat, University of Rwanda- College of Science and Technology (UR-CST), Zambia Environmental Management Agency and Zambian Road Safety Trust.
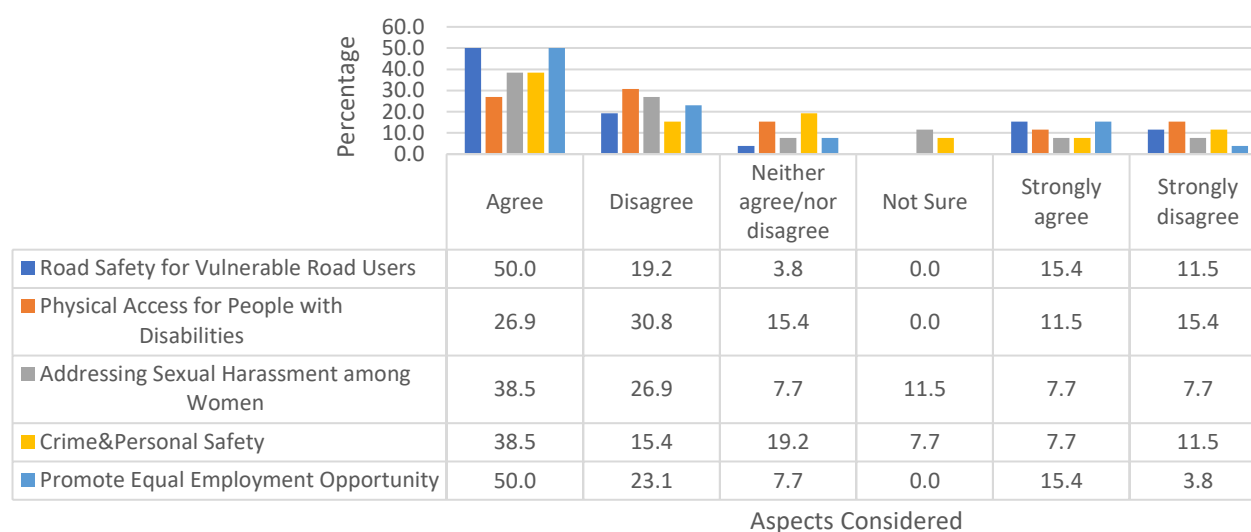
4.6.2 Policy situation

The majority of the policy-makers (84.6%) were found to be aware of the existence of policies that recognise the needs of the disadvantaged groups (see Figure 3). Planners and decision-makers in all four countries noted that they have policies considering the needs of vulnerable groups. However, a large number (40%) of disadvantaged groups across the four countries were unaware of policies that consider their mobility needs.

Figure 3: Existence of policies considering disadvantaged groups transport needs

	Disadvantage Groups	Planners&Decision Makers
No	40.0%	15.4%
Yes	60.0%	84.6%

Aware / Having Disadvantaged Inclusive Transport Policies

■ No ■ Yes

According to transport planners, aspects considered in policy documents were road safety for vulnerable road users (i.e. children, people living with disability) and promotion of equal employment opportunity in the transport sector (see Figure 4).
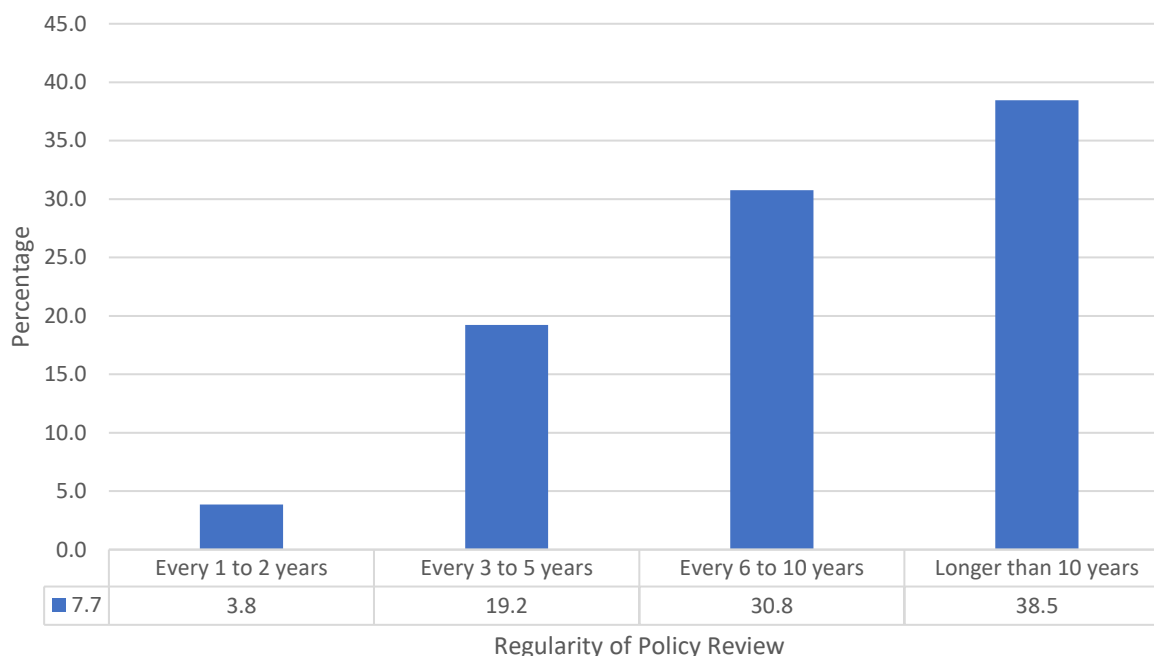
Figure 4: Aspects considered in the government policy

	Agree	Disagree	Neither agree/nor disagree	Not Sure	Strongly agree	Strongly disagree
Road Safety for Vulnerable Road Users	50.0	19.2	3.8	0.0	15.4	11.5
Physical Access for People with Disabilities	26.9	30.8	15.4	0.0	11.5	15.4
Addressing Sexual Harassment among Women	38.5	26.9	7.7	11.5	7.7	7.7
Crime&Personal Safety	38.5	15.4	19.2	7.7	7.7	11.5
Promote Equal Employment Opportunity	50.0	23.1	7.7	0.0	15.4	3.8

Aspects Considered

Regarding how often policies were reviewed, it was found that the time period differed between countries. Over 69.3% said it took more than six years to review policy in their country(see Figure 5). The reviews were undertaken in-house or by procuring a consultant to undertake the assignment. The review involved discussing policy documents with users, analysing traffic surveys and using a Monitoring and Evaluation tool. It was noted that there are financial challenges to periodically or regularly review the policy documents.

Figure 5: The number of years before policies are reviewed

	Every 1 to 2 years	Every 3 to 5 years	Every 6 to 10 years	Longer than 10 years
7.7	3.8	19.2	30.8	38.5

Regularity of Policy Review

The majority of the transport planners noted that the policies are *effective* (42.3%) or *very effective* (15.4%) in addressing the mobility needs of disadvantaged groups. In contrast, a large number of disadvantaged groups were pessimistic and ranked policies as *very ineffective* (32%) *or ineffective* (28%) (see Figure 6).

It was noted by disadvantaged groups that the policies are *very ineffective* since policy formulation and preparation is mainly top-down. However, some categories of the vulnerable groups (e.g. those living with disabilities) are organised and have technical members who are able to present their policy needs.
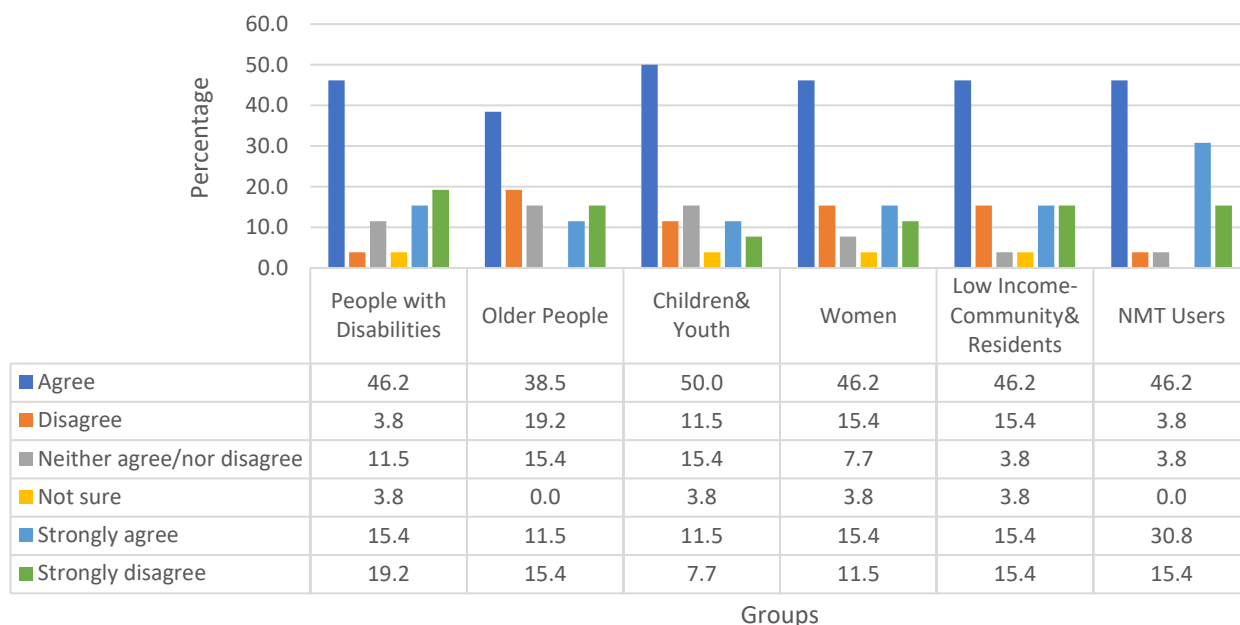
Figure 6: Stakeholder perceptions of the effectiveness of the policies

	Don't know	Neither effective nor ineffective	Somewhat effective	Somewhat ineffective	Very effective	Very ineffective
Planners&Decision Makers	0.0	15.4	42.3	15.4	15.4	11.5
Disadvantage Groups	4.0	12.0	24.0	28.0	0.0	32.0

Effectiveness Perception

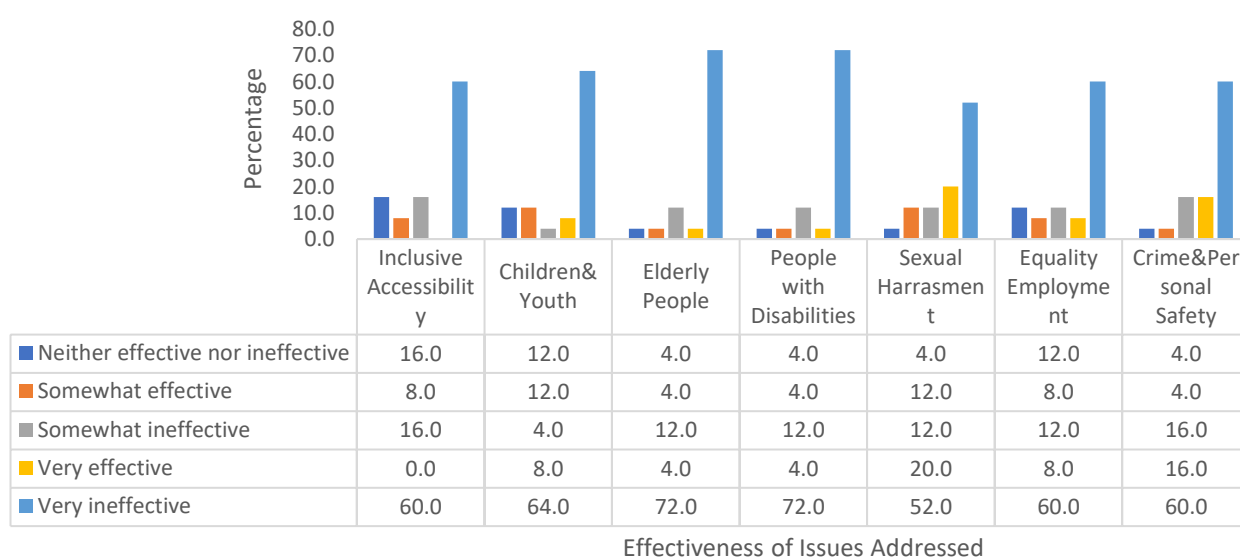■ Planners&Decision Makers ■ Disadvantage Groups

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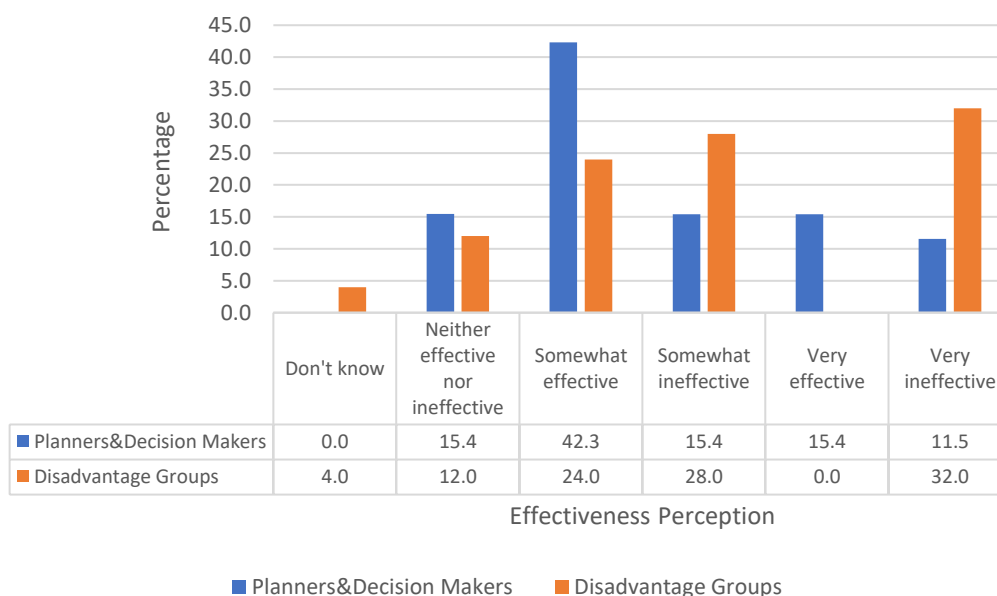
According to the transport planners and decision-makers, there was general agreement that policies considered the transport needs of the disadvantaged groups, with issues of children and youth featuring prominently, and issues of older people least considered (see Figure 7).

Figure 7: Groups considered in the policy, according to transport planners and decision makers

	People with Disabilities	Older People	Children& Youth	Women	Low Income-Community& Residents	NMT Users
Agree	46.2	38.5	50.0	46.2	46.2	46.2
Disagree	3.8	19.2	11.5	15.4	15.4	3.8
Neither agree/nor disagree	11.5	15.4	15.4	7.7	3.8	3.8
Not sure	3.8	0.0	3.8	3.8	3.8	0.0
Strongly agree	15.4	11.5	11.5	15.4	15.4	30.8
Strongly disagree	19.2	15.4	7.7	11.5	15.4	15.4

Groups

There is a clear contrast between the perception of planners and decision-makers who agreed that policies have considered the transport needs of the disadvantaged groups, and the negative perception of disadvantaged groups who feel that policies have been *very ineffective* in addressing all the mobility issues based on their lived experiences with transport infrastructure on the ground (see Figure 8).

Figure 8: Effectiveness of issues considered in the policy, according to disadvantaged groups

	Inclusive Accessibility	Children& Youth	Elderly People	People with Disabilities	Sexual Harrasment	Equality Employment	Crime&Personal Safety
Neither effective nor ineffective	16.0	12.0	4.0	4.0	4.0	12.0	4.0
Somewhat effective	8.0	12.0	4.0	4.0	12.0	8.0	4.0
Somewhat ineffective	16.0	4.0	12.0	12.0	12.0	12.0	16.0
Very effective	0.0	8.0	4.0	4.0	20.0	8.0	16.0
Very ineffective	60.0	64.0	72.0	72.0	52.0	60.0	60.0

Effectiveness of Issues Addressed

Planners and decision-makers (53.8%) felt that policies were well integrated with other policy goals, such as gender mainstreaming (34.6%) and agreed that the policies were implemented. A smaller number (7.7%) agreed that the policies were well financed, as shown (see Figure 9).
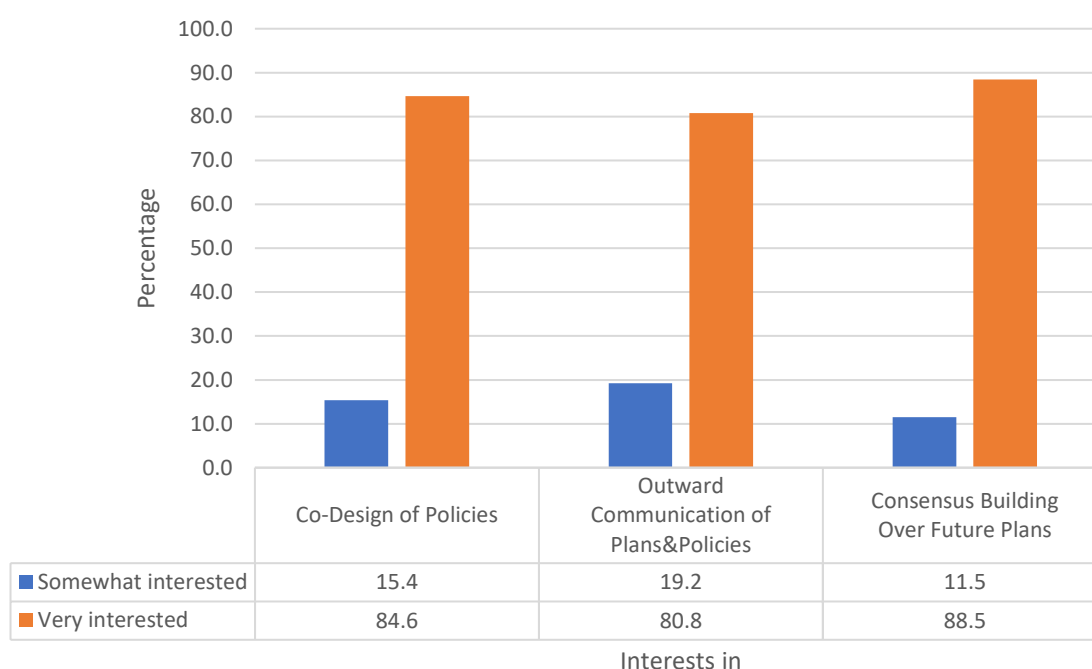
Figure 9: Planners and decision-makers' perception on transport policies

Planners Perception on Policies	Agree	Disagree	Neutral	Strongly agree	Strongly disagree
Well Implemented	30.8	34.6	19.2	3.8	11.5
Well Financed	7.7	53.8	26.9	3.8	7.7
Well Integrated with Other Policy Goals	53.8	19.2	19.2	0.0	7.7
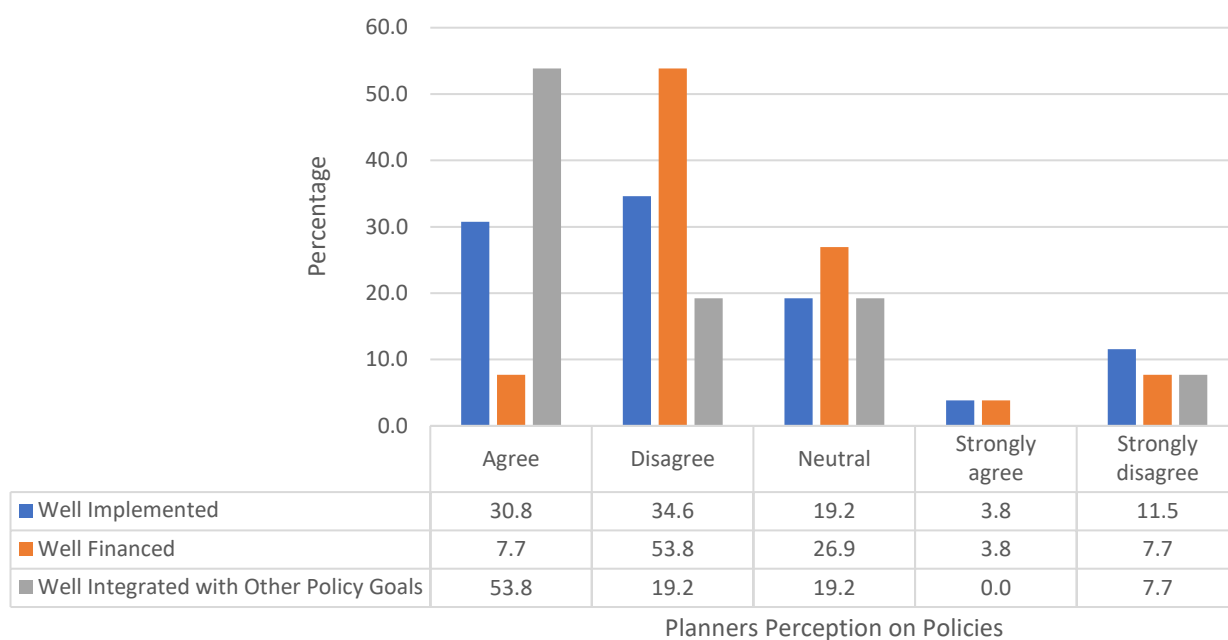
Planners were keen on consensus building and co-designing of policies as a way of encouraging disadvantaged groups to participate in the planning process (see Figure 10).

Figure 10: Planners' interest in participatory methods

Interests in	Co-Design of Policies	Outward Communication of Plans&Policies	Consensus Building Over Future Plans
Somewhat interested	15.4	19.2	11.5
Very interested	84.6	80.8	88.5

Disadvantaged groups indicated that co-design of policies and consensus building were occasionally used or never used by transport policy-makers to improve engagement, consultation and participation (see Figure 11). Vulnerable groups stated that generally, they are not fully involved in transport planning and only consulted after policy formulation. This compares well with the high interest expressed by planners and decision-makers to learn more about these approaches to improve their engagement with disadvantaged groups, as shown in Figure 10 above.

Figure 11: Communication approaches used - disadvantaged groups perceptions

	Frequently	Never	Not sure	Occasionally
■ Co-Design of Policies	12.0	48.0	4.0	36.0
■ Outward Communication of Policies& Plans	16.0	36.0	8.0	40.0
■ Consensus Building Over Future Plans& Policies	16.0	40.0	4.0	40.0

Approaches
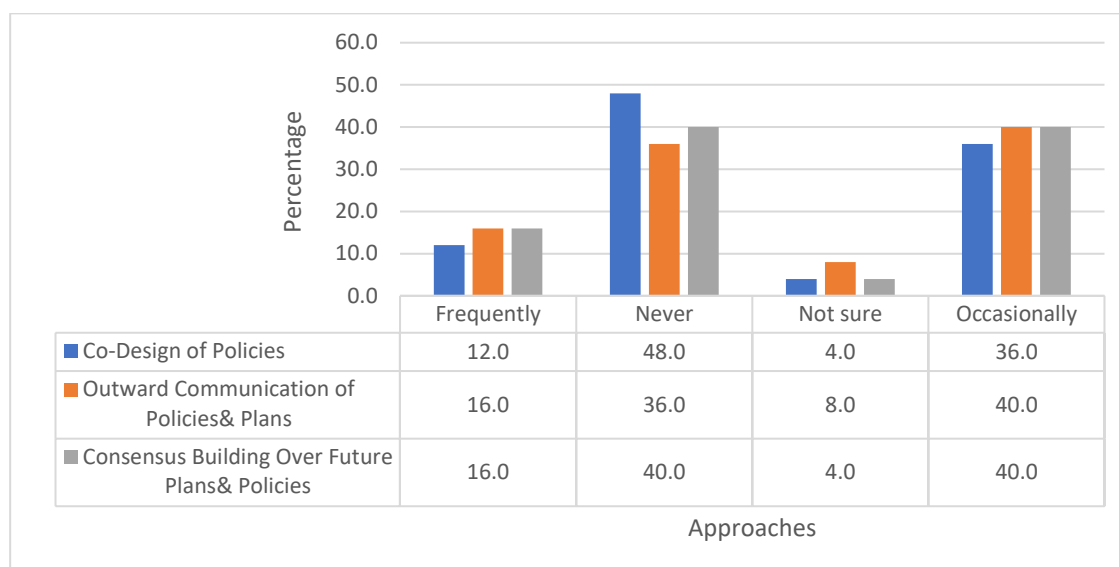
Participation in the allocation of the budget of infrastructure resources was considered the most effective engagement method by the disadvantaged groups (see Figure 12). This may be related to the fact that issues raised during participation are a formality and are not actually included in the budget, and therefore not implemented due to lack of committed funds.

Figure 12: Disadvantage groups considered effective engagement methods

	On-Street Mapping&PGIS	On-Street Participatory Visioning Using 3D Cityscape	Digital Storytelling	On-Street Mapwork	Participatory Budgeting of Infrastructure Resources
■ Effective	48.0	24.0	32.0	20.0	20.0
■ Not effective	8.0	28.0	24.0	28.0	8.0
■ Unsure	8.0	20.0	8.0	12.0	4.0
■ Very effective	36.0	28.0	36.0	40.0	68.0

Engagement Methods
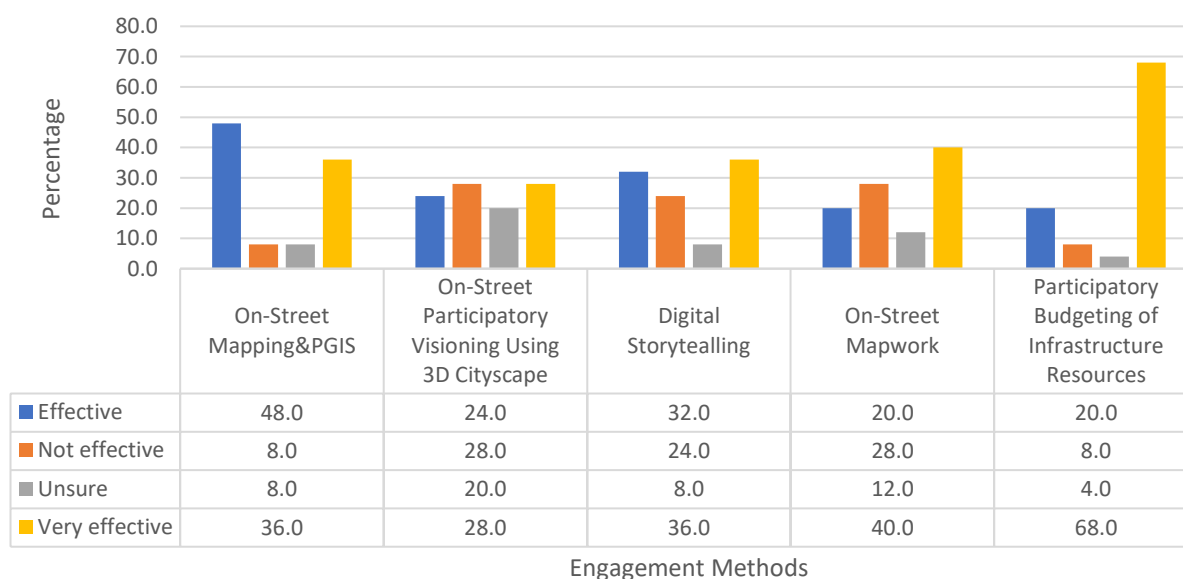
Transport planners and decision-makers were very interested in on-street participatory mapping; on-street Participatory visioning using 3d-cityscape street models to co-design options; on-street artworks and participatory budgeting of infrastructure resources (see Figure 13).

PPGIS can be defined as community-focused public participation utilising GIS technology. PPGIS techniques include the overall goal of empowering communities within decision-making processes, either within decisions being taken by the community, or more commonly, decisions being taken by outside agencies that will affect the community concerned. Overall PPGIS represents a flexible suite of tools with different approaches relevant to particular contexts and issues.

On-street mapping can be defined as the use of in-situ on-street events, utilising individual and group participatory mapping, with an individual's input structured through the deployment of specific queries.

Transport planners and decision-makers also noted that these methods would enable them to engage with a wider public, to better understand daily lived experiences of diverse users with transport systems, their mobility patterns, their needs and priorities and therefore, to design more inclusive and sustainable transport systems.

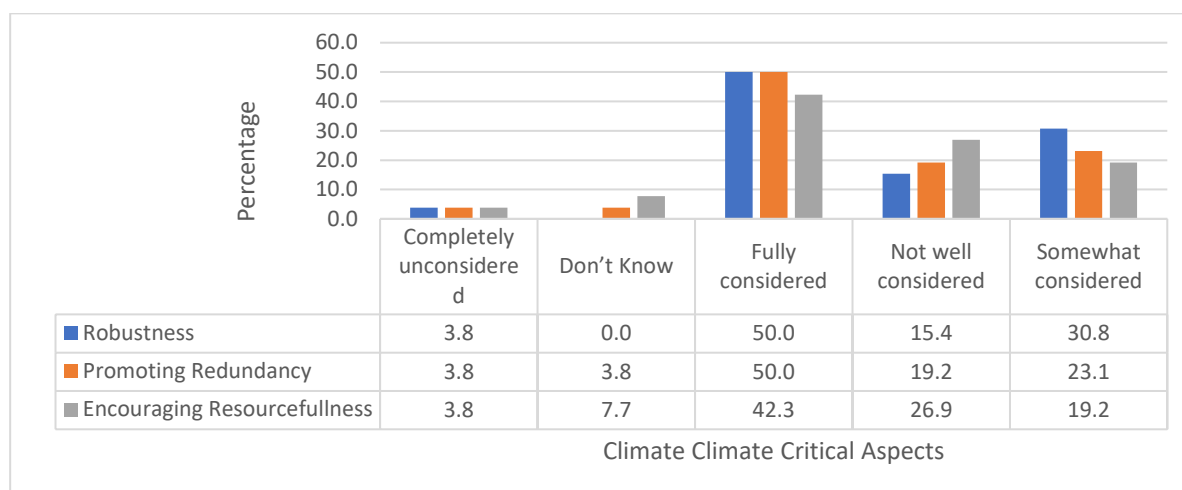**Figure 13: Planners effective engagement methods**

	On-Street Mapping&PGIS	On-Street Participatory Visioning Using 3D Cityscape	Digital Storytealling	On-Street Mapwork	Participatory Budgeting of Infrastructure Resources
Neutral	11.5	7.7	26.9	7.7	7.7
Somewhat interested	11.5	23.1	34.6	30.8	15.4
Very interested	77.0	69.2	38.5	61.5	76.9

Engagement Methods
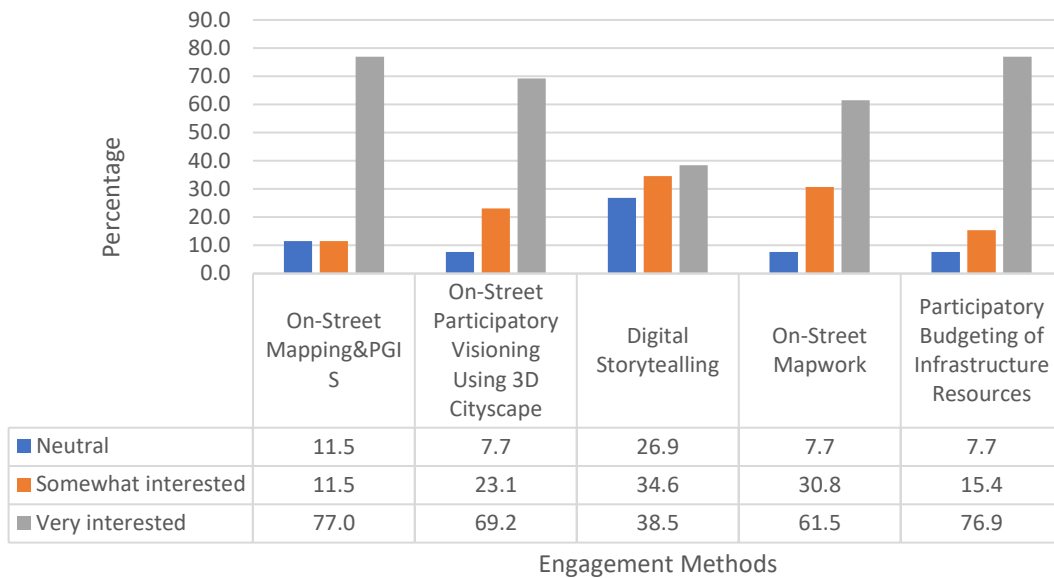
Promotion of redundancy was considered the most important climate change aspects by the disadvantaged groups (see Figure 14).

Figure 14: Climate change aspects considered critical by disadvantaged groups

	Completely unimportant	Don't Know	Not important	Somewhat considered	Very important
Robustness	0.0	8.0	0.0	24.0	68.0
Promoting Redundancy	0.0	0.0	0.0	20.0	80.0
Encouraging Resourcefullness	4.0	0.0	4.0	16.0	76.0

Critical Aspects of Climate Change
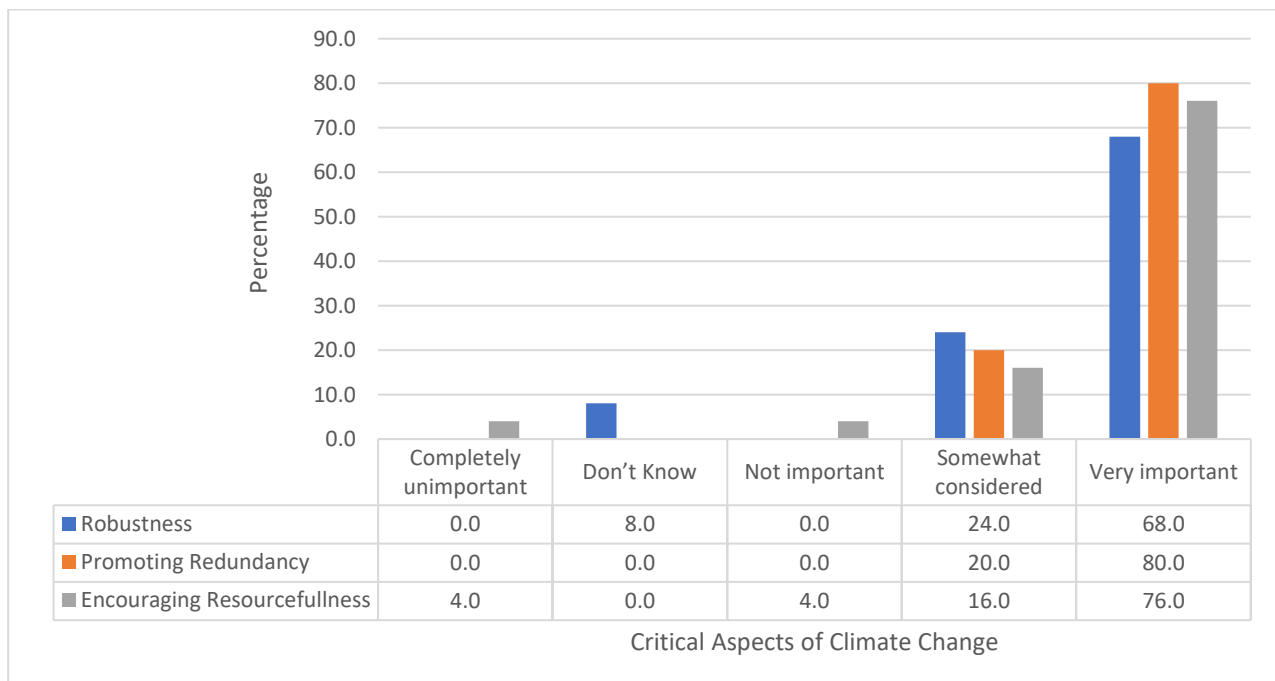
Robustness and promotion of redundancy were scored highly as *fully considered* by the planners and decision-makers (see Figure 15). The decision-makers also proposed that there is a need to start discussing electric vehicles, flooding, and designs of roads, including construction materials, as they are all becoming useful in addressing climate change impacts on the transport sector. It was also proposed that the private sector and academia should work with the public sector in coming up with innovative ideas for climate smart solutions.

Figure 15: Climate change aspects considered critical by planners and decision-makers

	Completely unconsidered	Don't Know	Fully considered	Not well considered	Somewhat considered
■ Robustness	3.8	0.0	50.0	15.4	30.8
■ Promoting Redundancy	3.8	3.8	50.0	19.2	23.1
■ Encouraging Resourcefullness	3.8	7.7	42.3	26.9	19.2

Climate Climate Critical Aspects

The planners and decision-makers were unanimous about all the aspects of climate-resilience. Table 2 shows aspects of climate-resilience where transport planners request support, highlighting the limited expertise in inclusive climate-resilient transport planning in all four countries and need for capacity building.

Table 2: Aspects of climate-resilience where transport planners and decision-makers would like support

Aspects of Climate-Resilient Transport	Yes	No	Don't Know
A. Strategic			
Undertaking Vulnerability & Risk Assessments	100.0%	0.0%	0.0%
Further Development of Integrated Multi-Modal Transport Network	100.0%	0.0%	0.0%
Considering Investment in Emerging Low-Carbon Transport Solutions	92.3%	0.0%	7.7%
Strengthening Communications with Public on Climate Change	96.2%	0.0%	3.8%
B. Regulatory/Administrative	**Yes**	**No**	**Don't Know**
Incorporating "building back better"' Requirement	92.3%	0.0%	7.7%
Promoting Sustainable Urban Planning Processes	100.0%	0.0%	0.0%
Optimising Inter-Modal bike-bus-walking routes	100.0%	0.0%	0.0%
C. Economic Instruments	**Yes**	**No**	**Don't Know**
Provide Economic Incentives	92.3%	0.0%	7.7%
Consider financing mechanisms	92.3%	3.8%	3.8%

4.7 Key findings from the stakeholder interviews

The key findings from the stakeholder interviews across Ethiopia, Rwanda, Uganda and Zambia including open-ended questions not already reported above, are as follows:

- Concern over climate change is a low priority compared to other more immediate needs (e.g. reducing road fatalities, improving health and wellbeing). Higher priority was given to building resilient infrastructure than to address the issue of climate change itself;

- Current transport infrastructure is perceived as vulnerable to climate change impacts. The collapse of transport infrastructure is attributed to poor infrastructure design and maintenance. There is limited expertise in inclusive climate-resilient transport planning in all four countries;

- Countries have progressively considered, to an extent, the mobility needs of vulnerable groups in transport, through the development of NMT policies and strategies at the city and national levels in Rwanda, Ethiopia and Uganda, and in the provision of NMT infrastructure and road safety awareness campaigns in cities such Addis Ababa, Kigali and Kampala. Compared to Rwanda, Uganda and Ethiopia, Zambia has made little progress in infrastructure provision for alternatives modes of transport and the improvement of the quality of public transport service provision, which has led to negative externalities (traffic congestion, road safety risks, overreliance on private cars);

- Development partners and research and policy institutions such as the World Bank, World Resources Institute (WRI), the Institute for Transportation and Development Policy (ITDP) and UNEP have provided technical and financial support to Ethiopia and Uganda to promote inclusion of disadvantaged groups in transport, especially on aspects of NMT and road safety;

- In all the four countries, policies are reviewed after a long period of time, which makes it difficult to monitor progress on inclusion and address emerging transport issues. In Uganda and Ethiopia, it was highlighted that lack of dedicated funding for policy review, evaluation and monitoring, and for research and collection of baseline data, were factors contributing to delays in policy reviews;

- Limited funding is a key barrier to the effective implementation of existing national and local transport policies across the four countries and therefore, to the provision of inclusive transport infrastructure and services. Transport infrastructure development has relied heavily on donor support and development partners. National governments in developing countries in Africa need to address several priority development challenges with limited financial resources. Lack of funding therefore constrains the prioritisation of inclusive transport infrastructure in planning. In Zambia, generally, there is inadequate allocation of funds for alternative modes of transport, leading to poor NMT infrastructure development. In Uganda, it was also highlighted that there is prioritisation of hard infrastructure over soft infrastructure components (i.e. transport service provision, policy review, consultation, evaluation and monitoring) during budget allocation for transport sector development;

- In Uganda, politics and lack of political will are also barriers to policy implementation on the ground (for example, the development of the Bus Rapid Transport has been hampered by lack of political will and finances);

- In terms of engagement, vulnerable groups are not fully involved in transport planning from the early stage of policy formulation, but rather are informed and consulted after the policy development in all four countries. In addition, vulnerable groups are not involved in transport service provision in Ethiopia;

- The level of engagement differs depending on disadvantaged groups in Uganda, Ethiopia and Rwanda. The engagement and consultation with some vulnerable groups (i.e. older people, low-income community residents and jobseekers), compared to well established groups (youth and people with disability) has not been effective in Rwanda, partly due to their poor representation in transport decision-making and weak institutional capacity. In Zambia, there is generally poor to no representation of disadvantaged groups in policy-making processes as it is a top-down process. This consultation process lacks means to include marginalised groups (Zambia and Ethiopia). In Uganda, the method of engagement is inadequate whereby consultative meetings are conducted mainly with representatives of the vulnerable groups, which may not fairly represent the views of the entire group. The consultative meetings are also perceived to be very high-level by disadvantaged groups which may limit their active participation;

- There is a lack of data on mobility needs and travel patterns of different vulnerable groups in all countries. This data gap limits explicit integration of their needs in transport planning. There is also a lack of baseline data especially in Rwanda and Zambia to monitor progress on inclusion in transport.

- The four countries need more financial and technical support to promote inclusive climate-resilient transport planning. These include:

  o capacity building of technical expertise can be achieved through knowledge and technology transfer between countries, short-term training courses and by incorporating inclusive transport and climate-resilience in the curriculum of transport engineers and planners; especially in Ethiopia and Uganda. In Uganda, attention should be given on strengthening technical capacity of government agencies in carrying out the "soft" activities such as policy reviews and evaluation, and provision of efficient transport systems (e.g. trains, standard gauge railway, air transport and alternative transportation); countries need to allocate enough funding for research on inclusive and climate-resilient transport planning;

  o intelligent transport systems should be promoted to improve inclusion of vulnerable groups (e.g. older people, people with disability) in current transport systems (Ethiopia). In Uganda, the need is to improve ICT infrastructure as well;

  o enhancing technical capacity of vulnerable groups on aspects of inclusive mobility and climate-resilience, and their institutional capacity, is key to facilitate their active participation in transport decision-making processes and to enable them to advocate for the inclusion of their needs in planning and budget allocation in all countries;

  o in order to prioritise the needs of vulnerable groups in transport planning and encourage attitude change towards inclusive transport, high-level transport decision-makers should be sensitised on the importance of inclusion in transport in all countries;

  o in terms of technical and financial capacity enhancement, attention should be given to local councils who have close interaction with disadvantaged communities in Zambia;

  o Strengthening capacity of NGOs is needed to enhance their efforts in advocating for inclusive transport in Zambia;

  o there is a need to promote active participation of vulnerable groups in all the stages of policy making i.e. policy formulation, implementation, evaluation and review; this will require dedicating specific budget lines for the engagement of disadvantaged group representatives in Zambia;

  o there is a need to involve vulnerable groups in stakeholder mapping during policy-making and consultation in Uganda for effective engagement with vulnerable groups;

  o transport planners should engage the media to mobilise and sensitise vulnerable groups and the public in general on mobility issues and existing transport policies, especially in Uganda, Ethiopia;

  o multilateral and development partners should include aspects of inclusive transport and climate-resilience in the funding requirements and donor agreements, to encourage high level decision-makers to incorporate inclusion and climate-resilience in transport infrastructure provision in Ethiopia;

  o There is a need for analytical studies providing baseline data on mobility trends, inclusion, and exclusion to set indicators and monitor progress towards achieving inclusive transport in all countries. Furthermore, there is need for regular and continuous data collection on mobility trends and inclusion to inform policy change in Uganda.

- There is a need to upgrade the current transport infrastructure to integrate the special needs of vulnerable groups, particularly in Uganda, Zambia and Ethiopia. In Zambia, focus should be on improvements of road safety designs and road signage, to reduce the risk of road crashes for the vulnerable in urban areas.

- There is a need to review legal framework on road safety measures for the vulnerable groups and disadvantaged group transport provision; introduce pilot projects; and enhance evaluation and reviews of transport programmes in Zambia.

5. Conclusion

The aim of the needs assessment was to determine the main challenges transport planners and decision-makers encounter in meeting the mobility needs of disadvantaged groups in the four project countries of Ethiopia, Rwanda, Uganda and Zambia. It also examined the awareness of the risks that climate change poses to the transport system and the consideration given to climate resilience.

A regional online survey, national focus groups and individual stakeholder interviews were undertaken to collate views from two key stakeholder groups: transport planners and decision-makers, and representatives of disadvantaged groups. Due to partner issues surrounding the Ethiopia FGD and the lack of discussion in the Rwanda FGD, input from these FGDs were not included in this assessment. Instead, the regional survey and the stakeholder interviews provided an opportunity for stakeholder groups from these two countries to contribute to this study.

The needs assessment used a mixed-method approach of a regional survey (135 participants), national focus groups (55) and stakeholder interviews (51). Input was received from over 200 African stakeholders mainly from Ethiopia, Rwanda, Uganda and Zambia. The assessment does not claim to provide a comprehensive overview of the situation in each country. However, this broad sample does identify common challenges encountered by disadvantaged groups and transport planners in the current transport planning process.

Common challenges identified include:

1. Non-existent or inadequate policy and practice, and poor policy implementation to meet the mobility needs of disadvantaged groups

The Uganda FGD participants believed existing policy and practices in meeting the needs of disadvantaged groups are inadequate. The Zambia FGD participants agreed that there was poor to no representation of the disadvantaged groups in policy enactment and implementation of transport policy. A finding from the stakeholder interviews was that the engagement and consultation with some vulnerable groups (i.e. older people, low-income community residents and jobseekers), compared to well established groups (youth and people with disability) has been ineffective, partly due to their poor representation in transport decision-making and weak institutional capacity.

The stakeholder interviews showed that when policies have integrated the mobility needs of vulnerable groups, their implementation has been hampered. This has been due to factors such as a lack of financial resources, low prioritisation, lack of political will and inadequate capacity. In addition, lack of data on mobility needs and travel patterns of different vulnerable groups in all countries has limited the explicit integration of the mobility needs of these groups in transport planning.

2. Differing perceptions between transport planners and disadvantaged groups on the effectiveness of transport planning and policy

The stakeholder interviews showed a distinction between the perception of transport planners and disadvantaged groups. While transport planners believed current transport policies address the needs of disadvantaged groups, representatives of these groups perceive them to be ineffective (see Section 4.6.2). This contrast can be explained by the key findings on the barriers to effective policy implementation and engagement with disadvantaged groups in transport infrastructure and service provision, which were highlighted by both planners and disadvantaged groups.

3. Poor opportunity for engagement of disadvantaged groups in the transport planning process

Both the Uganda and Zambia FGDs highlighted the need for the greater engagement of disadvantaged groups in the entire planning process. In Uganda, there was a call for an assessment of the unique needs of these groups and capacity building to improve engagement in different fora. In Zambia, there was a call for greater local-decision making in transport policy formulation, which may ignore the issues of disadvantaged groups when taken nationally. The stakeholder interviews showed that vulnerable groups are not fully involved in transport planning from the early stage of policy formulation, but rather are informed and consulted after the

policy development. Representatives of disadvantaged groups highlighted the lack of appropriate policies and the inadequate implementation of existing policies. This was reiterated by the Uganda FGD that underlined the need to address transport planning and design inadequacies and to enforce existing standards and laws.

The poor engagement and consultation of vulnerable groups in all stages of transport planning and service provision is reflected in the current system that has failed to cater for the specific mobility needs of the different groups. The contrast between the perception of disadvantaged groups and decision-makers highlights the need for enhancing engagement of the various group users, not only in the design of policies and service provision, but also their active engagement in the review of policies and plans, to assess the short and long-term impacts of transport policies on inclusion and service provision.

4. Low priority given to climate risk and resilience

The regional survey showed that climate risk (ranked fifth) is a relative low priority in a number of organisations across several African countries, compared to socio-economic issues. This includes ensuring transport infrastructure is more resilient to climate change (ranked third). The Uganda FGD felt that progress has been made on addressing climate issues, but more needs to be done. This is especially the case for the adoption of electric vehicle technology. The Zambia FGD attributed the vulnerability of climate-related weather-events to poor infrastructure design and maintenance. A participant called for all new infrastructure and rehabilitated transport infrastructure to be climate smart, so that it is resilient to increased climate shocks. However, while the need to make transport climate-resilient was supported, both FGDs provided limited suggestions on how this could be achieved (e.g. laws, code of practice and enforcement).

A finding from the stakeholder interviews showed that there is limited expertise in inclusion and climate resilience in the four countries. It highlighted interest from planners and decision-makers in climate resilience and to access technical support (e.g. undertaking vulnerability and risk assessments). These countries also require additional financial and technical support, to promote inclusive climate-resilient transport planning.

Based on the above, the following common needs can be identified, which will have to be addressed if these four countries are to achieve an inclusive climate-resilient transport system:

- First, there is a need for transport planners and decision-makers to better understand the mobility challenges faced by disadvantaged groups, especially walking and public transport use. This will require the institutional capacity to engage and respond to disadvantaged groups. Appropriate engagement tools and procedures are required to ensure disadvantaged groups are involved in the entire transport planning process. This should be from the beginning as well as in the evaluation and monitoring of policies to assess the short- and long-term impacts of transport policies on inclusion and transport service provision.

- Second, greater awareness of the potential impact of climate change on the transport sector is also needed and knowledge on how to make transport infrastructure more resilient. This will require enhancing the capacity of transport planners/decision-makers to understand the climate risk to transport, and the measures that can be taken to improve the climate resilience. It would also require the availability of financial resources and a higher priority given to adapting transport infrastructure to future climate change. This will be important in order maintain levels of NMT use in Africa.

The findings of this needs assessment will inform the next stage of the research project, which aims to provide a Guidance Framework to support inclusive climate-resilient transport planning in Africa.

REFERENCES

1. UN Environment Programme (2019). "Calculating the potential climate value of Non- Motorised Transport projects in African Cities." UN Environment Programme, Nairobi. http://www.airqualityandmobility.org/PDFs/ClimateValue_NMT.pdf

2. UNEP (2010). "Share the Road: Investment in Walking and Cycling Road Infrastructure". https://wedocs.unep.org/bitstream/handle/20.500.11822/7890/-Investment%20in%20Walking%20and%20%20Cycling%20Road%20Infrastructure%20%20Share%20the%20Road_-2010984.pdf?sequence=3&isAllowed=y

3. Porter G, Abane A, and Lucas K (2020). "User diversity and mobility practices in Sub-Saharan African cities: understanding the needs of vulnerable populations. The state of knowledge and research.", Discussion Paper. Volvo Research and Educational Foundations. http://www.vref.se/publications/researchsynthesisreports/synthesisreports1/achievingequitablesustainable mobilityandaccessinsubsaharanafricaanoverviewofthestateofknowledge.5.74c15c6d173d8c1d0b2849c9.html

4. Sumper E and Barker M (2017). Sustainable Urban Transport: Improving Mobility Conditions for Vulnerable Road Users in Sub-Saharan Africa. In: Leal Filho W, Belay S, Kalangu J, Menas W, Munishi P, Musiyiwa K (eds) Climate Change Adaptation in Africa. Climate Change Management. Springer, Cham. https://doi.org/10.1007/978-3-319-49520-0_18

5. Vanderschuren N (2012). Non-Motorised Transport in Africa. In: The sustainable transport and mobility handbook. Available at: https://www.researchgate.net/publication/282764517_Non_Motorised_Transport_in_Africa

6. Sietchiping R M and Ngomsi C (2012). "Transport and mobility in sub-Saharan African cities: An overview of practices, lessons and options for improvements." Cities 29(3):183–189.

7. UNEP and WHO (2009). Health and Environment Linkages Policy Series: Healthy Transport in Developing Cities. Available at: https://www.who.int/heli/risks/urban/transportpolicybrief2010.pdf.

8. UNEP and FIA (2016). Global Outlook on Walking and Cycling 2016 ISBN No: 978-92-807-3616-8 Job Number: DTI/2060/PA.

9. Vanderschuren M, Jennings G, Khayesi M and Mitullah W (2017). Introduction: Challenges and opportunities for non-motorised transport in urban Africa. In: Mitullah W, Vanderschuren M, and Khayesi M (eds., 2017 Non-Motorised Transport Integration into Urban Africa. Routledge, London.

10. Ethiopia Ministry of Transport (2020). Ethiopia Non-Motorised Transport Strategy.

http://airqualityandmobility.org/STR/Ethiopia_NMTStrategy_EN200529.pdf

11. Rwanda National Transport Policy. UN Environment Programme Share the Road. http://airqualityandmobility.org/STR/NMTStrategy_Rwanda_200402.pdf

12. Zambia Non-Motorised Transport Strategy (2019). Ministry of Transport and Communications, United Nations Environment Programme, Institute for Transportation and Development Policy. http://www.airqualityandmobility.org/STR/Zambia_NMTStrategyfinal.pdf

13. Kampala Iganga Foundation (2014). Smart Moving Kampala: Design of NMT-zone in Namirembe Rd and Luwum Rd.

14. WHO (2018). Global status report on road safety 2018. Geneva: World Health Organisation; 2018. Licence: CC BYNC-SA 3.0 IGO.

15. Gorman M, Jones S and Turner J (2019). "Older people, mobility and transport in low- and middle- income countries: A review of the research." Sustainability 11:21, 6157.

16. Behrens, R.; Görgens, T. Challenges in Achieving Universal Access to Transport Services in South African Cities. In The Palgrave Handbook of Disability and Citizenship in the Global South; Watermeyer, B., McKenzie, J., Swartz, L., Eds.; Palgrave Macmillan: Heidelberg, Germany, 2019.

17. Kett, M, Cole, E, Turner, J (2019). "Disability, mobility and transport in low- and middle-income countries: a thematic review." Sustainability **12(**2):589

18. Bakker, S, Haq, G, Peet, K, Gota, S, Medimorec, N, Yiu, A, Jennings, G, Rogers, J (2019). "Low carbon quick wins: integrating short-term sustainable transport options in climate policy in low income countries." Sustainability **11(**16):4369

19. Schwanen, T, Banister, D, Anable, J (2011). "Scientific research about climate change mitigation in transport: a critical review." Transp Res Part A Policy Pract **45**: 993‑1006 https://doi.org/10.1016/j.tra.2011.09.005.

20. Jennings, G (2020). "An exploration of policy knowledge-seeking on high-volume, low-carbon transport: findings from expert interviews in selected African and South-Asian Countries." Transportation Research Interdisciplinary Perspective **5**:100117

21. Banister, D, (2011) "Cities, mobility and climate change." J. Transp. Geogr. **19**: 1538‑1546 http://www.sciencedirect.com/science/article/pii/S0966692311001244.

22. Berg CN, Deichmann U, Liu Y and Selod H (2017). "Transport Policies and Development", The Journal of Development Studies, **53**(4):465-480.

23. Lucas L, van Wee B and Maat K (2016). "A method to evaluate equitable accessibility: combining ethical theories and accessibility-based approaches." Transportation 43:473–490

24. Wells J (2015). "Corruption in the construction of public infrastructure: Critical issues in project preparation". Anti-corruption Resource Centre, U4 Issue Nr. 8. http://www.engineersagainstpoverty.org/site/engi/templates/general.aspx?pageid=3&cc=

APPENDIX 1: FOCUS GROUP PARTICIPANTS

Rwanda	
Organisation	**Gender**
Global Green Growth Institute (GGGI) (host)	F
Healthy People Rwanda	F
Help Age International, International and Regional Policies Coordinator	F
Nsindagiza, Director	M
RTDA, Contract Management Specialist	M
GuraRide	F
Kigali Rides	M
Stockholm Environment Institute Africa Centre	M
Stockholm Environment Institute Africa Centre	F

Uganda		
Name	**Organization and role**	**Gender**
1. Nandudu Sarah	National Slum Dwellers Federation of Uganda - National Coordinator.	F
2. Humphrey Tenywa	Uganda National Roads Authority(UNRA) – Graduate Project Formulation Engineer	M
3. Fred Tumwine	Uganda Road Accident Reduction Network Organisation (URRENO) – Executive Director.	M
4. Sengendo Lawrence	Civil Society Coalition on Transport (CISCOT) – Board Chairman	M
5. Baguma Richard Rwatooro	Civil Society Coalition on Transport (CISCOT) – Information and Communications Office	M
6. Amanda Ngabirano	High Volume Transport – Local Partner / Makerere University Kampala -Lecturer.	F
7. Katusime Joan	Physical Planner	F
8. Wasike Yusuf Arby	Assistant to the High Volume Transport - Local Partner/Physical Planner.	M
9. Muzaphal Sekulima	Safe Roads Uganda Networking Coordinator.	M

Uganda		
Name	**Organization and role**	**Gender**
10. Kagwisagye Proscovia	Mbarara City Local Government, Lugazi Village – Local Government Council 1.	F
11. Lubega Edris	Actogether / National Slum Dwellers Federation of Uganda – Data Coordinator	M
12. Katusabe Betty Jessy	Actogether / National Slum Dwellers Federation of Uganda – Assistant Project Coordinator.	F
13. Kayemba Patrick	First African Bicycle Information Organisation (FABIO) – Sustainable Transport Advocate	M
14. Dr. Kiggundu Amin Tamale	Makerere University Kampala – Lecturer	M
15. Elias Muhereza	Children at Risk Action Network (CRANE) – Driver	M
16. Annet Birabwa	Children at Risk Action Network (CRANE) – Education Assessment Coordinator.	F
17. Richard Hamba	Training Education and Empowerment for Neighbourhood Sustainability (TEENS) – Chief Executive Officer/ Uganda Sustainable Transport Network – Chairperson.	M

Zambia		
Name	**Organisation and role**	**Gender**
Zambia Road Safety Trust		
1. Daniel Mwamba	Zambian Road Safety Trust - Chairman	M
2. Sandra Machima	Zambian Road Safety Trust - Communications Officer	F
3. Paul Mwanza	Zambian Road Safety Trust - Road Safety Officer	M
4.Elizabeth Ngala- Admin	Zambian Road Safety - Road Safety Officer	F
5.Susan Mawele	Zambian Road Safety - Project Officer	F
Disadvantaged groups		
6.Rodgers Musoma	Disability Rights Watch - Project Officer	M
7. John Chiti	Albinism Foundation- Director	M
8. Elijah Ngwale	ZamDHArp - Director	M
9. Fredrick Chilengwe	ZamDHArp - Personal assistant (Carer)	M
10. Sylvester Katontoka	Mental Health Users Network of Zambia- Director	M

Zambia		
Name	Organisation and role	Gender
11.Peter Bwale	New Foundation of the Blind in Zambia – Director	M
12. Silas Fumba	New Foundation of the Blind in Zambia (Carer)	M
13. Abigail Katontoka	Mental Health Users Network of Zambia(Carer)	F
14. Kifita Kimbonyi	Down Syndrome Foundation of Zambia Director	M
15. Ian Banda	Youth Disability Inclusion in Zambia Director	M
16. Daniel Banda	Youth Disability Inclusion in Zambia (Carer)	M
17.MakambeNamulwanda	Sani Foundation Program Manager	M

APPENDIX 2: STAKEHOLDER INTERVIEW QUESTIONS

Transport Planners and Decisionmakers

Interview Questions

1. Participant Name

2. Participant Organisation

3. Participant Country

4. Brief description their background?

5. Brief description of their Departments role in transport?

Policies

6. Do you have transport policies to consider the needs of these specific groups that might be disadvantaged by transport provision?

○ Yes

○ No

○ Not sure

7. Do your NATIONAL policies explicitly consider these stakeholder groups?

	Strongly agree	Agree	Neither agree/nor disagree	Disagree	Strongly disagree	Not sure
People with disabilities?	○	○	○	○	○	○
Older people	○	○	○	○	○	○
Children and youth	○	○	○	○	○	○
Women	○	○	○	○	○	○
Low-income community residents	○	○	○	○	○	○
Non-motorised transport users	○	○	○	○	○	○

8. Do your LOCAL/CITY policies explicitly consider these stakeholder groups?

	Strongly agree	Agree	Neither agree/nor disagree	Disagree	Strongly disagree	Not sure
People with disabilities?	○	○	○	○	○	○
Older people	○	○	○	○	○	○
Children and youth	○	○	○	○	○	○
Women	○	○	○	○	○	○
Low-income community residents	○	○	○	○	○	○
Non-motorised transport users	○	○	○	○	○	○

9. Other group?

10. To what extent do you think these aspects of mobility are considered at the NATIONAL level?

	Strongly agree	Agree	Neither agree/nor disagree	Disagree	Strongly disagree	Not sure
Road safety – especially measures for vulnerable road users such as child pedestrians, low income communities and cyclists	○	○	○	○	○	○
Physical Access for people with disabilities	○	○	○	○	○	○
Addressing the level of sexual harassment and personal security, particularly amongst women	○	○	○	○	○	○
Crime and personal safety	○	○	○	○	○	○
Promoting equality of opportunity for employment in the transport sector both within transport infrastructure and transport services and opportunities?	○	○	○	○	○	○
Displacement of vulnerable groups through transport infrastructure development	○	○	○	○	○	○

11. To what extent do you think these aspects of mobility are considered at the LOCAL/CITY level?

	Strongly agree	Agree	Neither agree/nor disagree	Disagree	Strongly disagree	Not sure
Road safety – especially measures for vulnerable road users such as child pedestrians, low income communities and cyclists	○	○	○	○	○	○
Physical Access for people with disabilities	○	○	○	○	○	○
Addressing the level of sexual harassment and personal security, particularly amongst women	○	○	○	○	○	○
Crime and personal safety	○	○	○	○	○	○
Promoting equality of opportunity for employment in the transport sector both within transport infrastructure and transport services and opportunities?	○	○	○	○	○	○
Displacement of vulnerable groups through transport infrastructure development	○	○	○	○	○	○

12. Do you think these policies are well implemented and effective?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not sure
(a) Well implemented and effective?	○	○	○	○	○	○
(b) Well financed?	○	○	○	○	○	○
(c) Well integrated with other policy goals?	○	○	○	○	○	○

13. What evidence are you using for your response on the policies implementation and effectiveness question?

14. What evidence are you using for your response on the policies finance question?

15. What evidence are you using for your response on integration ?

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16. How regularly are these policies reviewed?

○ Every year?

○ Every 1 to 2 years?

○ Every 3 to 5 years?

○ Every 6 to 10 years?

○ Longer than 10 years?

17. How is this review and revision undertaken? What evidence or data do you collect and use?

18. What change or support would help you include greater consideration of vulnerable or disadvantaged groups transport provision in your policy making?

19. Any other comments on the inclusion of the needs of disadvantaged groups within transport planning?

Engagement, Participation & Consultation

We would now like to ask you some questions around your engagement and consultation with vulnerable groups...

20. How effective do you think your consultation and engagement with disadvantaged groups has been?

	Very effective	Somewhat effective	Neither effective nor ineffective	Somewhat ineffective	Very ineffective	Don't know
Effectiveness	○	○	○	○	○	○

21. Please tell us why?

22. In relation to improving your engagement, consultation and the participation of disadvantaged groups we discussed - which of these approaches would you be most interested in learning more about?

	Very interested	Somewhat interested	Neutral	Not interested	Don't know
(a) Co-design of policies and services with disadvantaged groups?	○	○	○	○	○
(b) Outward communication of policies and plans to disadvantaged groups?	○	○	○	○	○
(c) Consensus building over future transport plans?	○	○	○	○	○

23. Which of these methods for engagement with disadvantaged groups would you be interested in learning more about?

	Very interested	Somewhat interested	Neutral	Not interested	Don't know
(a) On-street Participatory Mapping (and PGIS) to understand needs or challenges	○	○	○	○	○
(b) On-street Participatory visioning using 3d-cityscape street models to co-design options	○	○	○	○	○
(c) Digital storytelling and photo voice to get users perspectives	○	○	○	○	○
(d) On-street artworks and pop-up displays to build consensus	○	○	○	○	○
(e) Participatory budgeting of transport infrastructure resources	○	○	○	○	○

Climate Adaptation, Mitigation and Resilience

Short Definition
Resilience is commonly defined as the ability to maintain a system's functionality and basic structure while it undergoes changes. In practice, most people conceive of resilience as the speed of bouncing back after stress (or shocks), the ability to endure greater stress or the disturbance given by a certain amount of stress. Sometimes building resilience to one stress can increase the risk from another factor.

Now we would like to move onto the issues of climate adaptation, mitigation and resilience of your transport systems and infrastructure.

24. What aspects of resilience of transport systems to climate change impacts have you considered?

	Fully considered	Somewhat considered	Not well considered	Completely unconsidered	Don't know
(a) Robustness - vulnerabilities to extreme weather events and longer-term climatic changes?	○	○	○	○	○
(b) Promoting Redundancy - diversifying transportation modes, corridors and infrastructure systems inc. providing non-motorised transport options?	○	○	○	○	○
(c) Encouraging Resourcefulness - actively encouraging individuals to explore alternative ways of moving around the city?	○	○	○	○	○

25. (d) Any other areas you would like to include?

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26. Which aspects of climate resilient transport would you like more support on:

	Yes	No	Don't know
• Undertaking vulnerability and risk assessment of the city's transportation infrastructure to identify their vulnerability to climate change and extreme weather events.	○	○	○
• Commit to further development of integrated multi-modal transportation networks that provide alternative means by which to travel throughout the city.	○	○	○
• Consider investing in emerging low-carbon transport solutions.	○	○	○
• Strengthen communications with the public regarding the potential negative impacts of climate change on existing urban transportation systems and the resilience and long-term cost benefits of promoting compact cities and greater use of public and active transit options.	○	○	○
• Incorporating "build back better" requirements in the procurement of all infrastructure retrofits and new nodes (bridges and intersections) to enhance resilience against climate shocks and stresses.	○	○	○

	Yes	No	Don't know
• Promote sustainable urban planning processes, such as complete street design and the use of green infrastructure components, to reduce the impact of increased heat and precipitation due to climate change.	○	○	○
• Optimize inter-modal bike-bus-walking routes by requiring new developments to consult with the municipal Department of Transportation.	○	○	○
• Provide economic incentives to encourage shared and collective or active transportation models.	○	○	○
• Consider financing mechanisms such as taxes, and tolls to finance climate-resilient transportation infrastructure.	○	○	○

THANK YOU & WRAP UP...

27. That is the questionnaire complete... Are there any other comments you would like to make on the topics we have covered?

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Representatives of Disadvantaged Groups

Interview Questions

1. Participant Name

2. Participant Organisation

3. Participant Country

4. Brief description their background and the departments role in transport

Policies

5. Are you aware of any policy(ies) specifically addressing transport and infrastructure provisions for the mobility of disadvantaged group?

○ Yes

○ No

6. If YES, which policy(ies) do you feel is/are addressing transport and infrastructure for the disadvantaged group

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7. What do you think the key mobility challenges are for your stakeholder group linked to transport and infrastructure provision?

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8. How effective do you think these policies have been for your stakeholders?

	Very effective	Somewhat effective	Neither effective nor ineffective	Somewhat ineffective	Very ineffective	Not sure?
Inclusive accessibility	○	○	○	○	○	○
Road safety – especially measures for vulnerable road users	○	○	○	○	○	○
Children and youth	○	○	○	○	○	○
Access for people with disabilities	○	○	○	○	○	○
Sexual harassment	○	○	○	○	○	○
Crime and personal safety	○	○	○	○	○	○
Equality of opportunity for employment in the transport sector?	○	○	○	○	○	○

9. Other policy area?

10. Do you participate as a stakeholder in the formulation/developing of policies on transport provision and infrastructure development?

○ Yes

○ No

○ Not sure

11. To what extent do you feel the needs of your stakeholders have been included in policies on transport provision and infrastructure development?

	Completely included	Somewhat included	Minimal inclusion	Somewhat excluded	Completely excluded	Not sure
Level of inclusion	○	○	○	○	○	○

12. If you have been included - how have you been included in the past? OR If you have been excluded – how would you like to be included in the future?

13. Are current policies and infrastructure development improving the mobility options for your stakeholders?

Engagement, Participation & Consultation

We would now like to ask you some questions around your engagement and consultation with vulnerable groups...

14. How effective do you think transport policy makers consultation and engagement with your stakeholder's has been?

	Very effective	Somewhat effective	Neither effective nor ineffective	Somewhat ineffective	Very ineffective	Don't know
Effectiveness	○	○	○	○	○	○

15. Please tell us why?

16. In relation to improving your engagement, consultation and the participation with your stakeholder group - which types of approaches have they used?

	Frequently	Occasionally	Never	Not sure
(a) Co-design of policies and services with your group?	○	○	○	○
(b) Outward communication of policies and plans to your group?	○	○	○	○
(c) Consensus building over future transport plans with your group?	○	○	○	○

17. Which of these methods for engagement do you think would be effective for improving the engagement of your stakeholders in transport planning?

	Very effective	Effective	Not effective	Unsure
(a) On-street Participatory Mapping (and PGIS) to understand needs or challenges	○	○	○	○
(b) On-street Participatory visioning using 3d-cityscape street models to co-design options	○	○	○	○
(c) Digital storytelling and photo voice to get users perspectives	○	○	○	○
(d) On-street artworks and pop-up displays to build consensus	○	○	○	○
(e) Participatory budgeting of transport infrastructure resources	○	○	○	○

Climate Adaptation, Mitigation and Resilience

Short Definition
Resilience is commonly defined as the ability to maintain a system's functionality and basic structure while it undergoes changes. In practice, most people conceive of resilience as the speed of bouncing back after stress (or shocks), the ability to endure greater stress or the disturbance given by a certain amount of stress. Sometimes building resilience to one stress can increase the risk from another factor.

Now we would like to move onto the issues of climate adaptation, mitigation and resilience of your transport systems and infrastructure.

18. What aspects of resilience of transport systems to climate change impacts do you think are most critical for your stakeholders?

	Very important	Somewhat considered	Not important	Completely unimportant	Don't know
(a) Robustness - vulnerabilities to extreme weather events and longer-term climatic changes?	○	○	○	○	○
(b) Promoting Redundancy - diversifying transportation modes, corridors and infrastructure systems inc. providing non-motorised transport options?	○	○	○	○	○
(c) Encouraging Resourcefulness - actively encouraging individuals to explore alternative ways of moving around the city?	○	○	○	○	○

19. Are there any other areas you think are critical to include on this topic for your stakeholders?

20. Considering these climate resilient transport options - which would also be beneficial for your stakeholder's?

	Very beneficial	Somewhat beneficial	Neutral	Somewhat problematic	Very problematic	Not sure
• Undertaking vulnerability and risk assessment of the city's transportation infrastructure to identify their vulnerability to climate change and extreme weather events.	○	○	○	○	○	○
• Commit to further development of integrated multi-modal transportation networks that provide alternative means by which to travel throughout the city.	○	○	○	○	○	○
• Consider investing in emerging low-carbon transport solutions.	○	○	○	○	○	○
• Strengthen communications with the public regarding the potential negative impacts of climate change on existing urban transportation systems and the resilience and long-term cost benefits of promoting compact cities and greater use of public and active transit options.	○	○	○	○	○	○

	Very beneficial	Somewhat beneficial	Neutral	Somewhat problematic	Very problematic	Not sure
• Incorporating "build back better" requirements in the procurement of all infrastructure retrofits and new nodes (bridges and intersections) to enhance resilience against climate shocks and stresses.	○	○	○	○	○	○
• Promote sustainable urban planning processes, such as complete street design and the use of green infrastructure components, to reduce the impact of increased heat and precipitation due to climate change.	○	○	○	○	○	○
• Optimize inter-modal bike-bus-walking routes by requiring new developments to consult with the municipal Department of Transportation.	○	○	○	○	○	○
• Provide economic incentives to encourage shared and collective or active transportation models.	○	○	○	○	○	○
• Consider financing mechanisms such as taxes, and tolls to finance climate-resilient transportation infrastructure.	○	○	○	○	○	○

THANK YOU & WRAP UP...

21. That is the questionnaire complete... Are there any other comments you would like to make on the topics we have covered?

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