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TO WHAT EXTENT DOES FREETOWN CLIMATE ACTION PLAN ENABLE A JUST TRANSITION TOWARDS SUSTAINABLE URBAN MOBILITY?

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# TO WHAT EXTENT DOES FREETOWN CLIMATE ACTION PLAN ENABLE A JUST TRANSITION TOWARDS SUSTAINABLE URBAN MOBILITY?

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## Abstract

In the past decade, the 'just transition' concept has emerged in transport and mobility studies, recognising the need for fair and equitable transitions towards sustainable mobility systems. In cities of Sub-Saharan Africa, achieving this is especially complex due to a multitude of demographic, socio-economic, political and environmental challenges. Freetown, the capital city of Sierra Leone, is an example of a city facing such challenges, while also striving for sustainable urban mobility in their recently published climate action strategy 'Freetown Climate Action Plan'. This paper explores the extent to which the transport section of this strategy enables a just transition towards sustainable urban mobility. Framed with a comprehensive literature review, it uses semi-structured interviews with academic and professional experts to assess Freetown's transport plans in terms of justice. This is examined through a conceptual framework consisting of procedural, distributive and recognition justice, which represents a novel approach to assess justice in sustainable urban mobility transitions of Sub-Saharan Africa. The analysis shows that attempts are made to consider a just transition towards sustainable mobility, but that key considerations are omitted from transport policy in the strategy. These are primarily related to governance, public engagement, transport infrastructure, integration of the informal economy, climate change, and the needs of vulnerable communities. From these findings, a set of policy recommendations are presented that can be used to help foster a just transition towards sustainable urban mobility in Freetown. More widely, these recommendations may be applicable to alternative cities in Sub-Saharan Africa with similar characteristics to Freetown. This paper provides a useful contribution to the emerging fields of transport and mobility justice, with real-world policy evaluation, and evidences the need for the further analysis of urban development plans in the Global South to ensure just transitions.

## Executive Summary addressed to the Mayor of Freetown and Freetown City Council

There is a significant need to address **urban transport planning issues in Sub-Saharan Africa**, due to high population growth that has driven **rapid urbanisation**, resulting in **high transport demand**. The limited capacity of governments to implement public transportation systems means urban populations in Sub-Saharan Africa face a range of mobility challenges. Meanwhile, countries in this region have a **high vulnerability to climate change**, and continue to face **socio-economic challenges** that prevent sustainable development.

**Freetown Climate Action Plan** is an ambitious climate action strategy that recognises the necessity of reconfiguring urban mobility systems as part of Freetown's **sustainable urban transition**. It begins to draw links between developing a sustainable transport system and achieving the **Sustainable Development Goals** in Sierra Leone. However, developing **sustainable urban mobility systems** is challenging within the context of Freetown's transport sector and urban environment. This context includes challenges such as the dominance of the informal transport economy, a large number of vulnerable, low-income and informal settlement communities, and limited institutional capacity. It is therefore crucial that transport planning, policy, and development underpin a **just transition** towards sustainable urban mobility, focused on achieving just and **equitable outcomes for Freetonians**.

This study aims to outline **important considerations for a just transition towards sustainable urban mobility in Freetown**. To investigate this, a **novel approach** is employed to assess justice in the transport section of Freetown Climate Action Plan, using **interviews with experts** to interrogate how future transport planning can embed principles of justice.

This research finds that there are a **range of justice considerations** related to governance, public engagement, transport infrastructure, integration of the informal economy, climate change, and the needs of women, children, disabled people, and the elderly. The following **policy recommendations** are set out to help foster a just transition towards sustainable urban mobility, **explained further in Section 5.4** of the study:

1. Enhance **cross-sectoral coordination**
2. Place greater priority on **active travel infrastructure**
3. Integrate **informal transport sector** workers
4. Implement **affordable fare policies** for formal public transportation
5. Recognise and provide for the differing **needs of vulnerable communities**
6. Implement **climate resilient transport infrastructure** as a priority
7. Assess **transport decarbonisation** in tandem with energy decarbonisation
8. Monitor the **public health** risks and benefits associated with changes in **air quality**

## Acknowledgements

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## Abbreviations

| | |
|---|---|
| $CO_2$ | Carbon Dioxide |
| FCAP | Freetown Climate Action Plan |
| FCC | Freetown City Council |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| NGO | Non-Governmental Organisation |
| $NO_X$ | Nitrogen Oxides |
| $PM_{2.5}$ | Particulate Matter (≤ 2.5 micrometres in diameter) |
| $PM_{10}$ | Particulate Matter (≤ 10 micrometres in diameter) |
| SDG | Sustainable Development Goal |
| SSA | Sub-Saharan Africa |
| SUM | Sustainable Urban Mobility |
| T-SUM | Transitions to Sustainable Urban Mobility in Sub-Saharan Africa Project |
| UN | United Nations |
| VNR | Voluntary National Review |

## Glossary

**Active travel**
Travel by modes of transport that are fully or partially people-powered, including walking, cycling, and people using wheelchairs.

**C40 Cities**
A trans-national network of nearly 100 city mayors globally, united in climate action.

**Distributive justice**
A principle of justice used to analyse just transitions, referring to the equitable spread of benefits and burdens from urban development.

**Formal transport**
Public transportation systems that are planned, developed, and regulated by government bodies.

**Informal settlement**
Any form of housing, shelter, or settlement that is self-organised and built without government planning or regulation.

**Informal transport**
Public transportation systems organised separately from the state, under limited regulations or without formal contracts.

**Just mobility transition**
The just, inclusive, and equitable transition towards decarbonised mobility systems.

**Just transition**
The fair and inclusive transition towards a decarbonised economy, that maximises the benefits of climate action and minimises the negative impacts for workers and communities.

**Land-use transport feedback cycle**
The interaction between transport and land-use, describing how the distribution of land-use co-determines the location of human activity, which creates the need for transportation systems.

**Mobility justice**
A multi-scalar concept that draws attention to the power structures and inequalities that shape people's movements, motility and immobility, alongside the actions of entities that govern and control mobility.

**Mobility poverty**
A systemic lack of transport and mobility options.

**Procedural justice**
A principle of justice used to analyse just transitions, referring to equitable decision-making processes that drive and shape urban development.

**Recognition justice**
A principle of justice used to analyse just transitions, based on the need to recognise divergent perspectives in urban development, rooted in social, cultural, ethnic, and gender differences.

**Sustainable urban mobility**
The need to develop urban transportation systems that are safe, accessible, inclusive, affordable, smart, resilient, and emission-free.

**Sustainable urban transition**
The need for systemic change in cities that restructures socio-technological systems towards sustainable functioning.

**Transit-oriented development**
An urban development approach that prioritises reliable public transport, active travel, and the maintenance of a closely knit urban fabric.

**Transport equity**
How transport accessibility is equitably distributed among social groups and members.

**Transport justice**
The distributional effects of transport systems, and the associated disparities across social groups that determine equity, linked to the interdependency of accessibility, affordability, and mobility.

**Transport poverty**
A systemic lack of transport and mobility options, linked specifically to unaffordability and inaccessibility.

# 1. Introduction

The concept of sustainable urban mobility (SUM) has instilled the importance of developing urban land and transport planning policy with environmental, social, and economic sustainability at its core (Foltýnová *et al.*, 2020). It recognises the impact of current urban mobility systems dominated by fossil fuel technologies, which have caused greenhouse gas (GHG) emissions and air pollution to increase (Banister, 2011). SUM focuses the need to reduce GHG and pollutant emissions, while approaching the planning of urban development with sustainability goals in mind (Kovačić et al., 2022). Linked to this is the aim of SUM to reduce private vehicle use and shift transport policy towards implementing efficient, ecologically sustainable, and socially equitable modes of transport (Cavoli *et al.*, 2024). In recent years, studies have drawn greater links between SUM and the concepts of transport and mobility justice (Verlinghieri & Schwanen, 2020), to address the inequity within urban mobility systems that is especially pronounced in the Global South (Venter *et al.*, 2019). Greater attention is therefore being drawn to just transitions towards SUM, which describes a fair, inclusive and equitable SUM transition that bridges the gap between sustainable transport development and justice (Schwanen, 2021).

Just transitions are particularly complex in cities of Sub-Saharan Africa (SSA), where rapid population growth has resulted in urban expansion (Forget *et al.*, 2021) that has placed significant pressure on urban mobility systems (Sumper & Barker, 2017). Cities in SSA continue to face high levels of inequality, poverty, and corruption (Massingue & Oviedo, 2021), and limited governmental capacity means cities struggle to implement public transport services that meet the demand for mobility (Falchetta *et al.*, 2021). Meanwhile, SSA is responsible for only 1.8% of global carbon dioxide ($CO_2$) emissions, yet will suffer most severely from the effects of climate change, illustrating the need for climate resilient transport infrastructure (Zigah, 2023). It is also shown that transport infrastructure is significantly underdeveloped in SSA and that investments are primarily directed towards road infrastructure (Sietchiping *et al.*, 2012), representing the need to curb the growth of private vehicle use in favour of equitable and sustainable transport modes (Cavoli, 2021). These factors together illustrate the multi-faceted and complex nature of ensuring a just transition towards SUM in cities of SSA.

Freetown is the capital city of Sierra Leone, located in western Africa, and is an example of a rapidly growing city in SSA facing challenges related to a just transition towards SUM. In urban sprawl, the city has expanded over 40km from its Central Business District (CBD), leading to the formation of over 68 informal settlements (Oviedo *et al.*, 2021). People face increased travel time and transport costs but have low access to transport, with limited formal public transportation systems and insufficient pedestrian infrastructure (Oviedo *et al.*, 2022). Residents are therefore highly dependent on unregulated informal transport modes, and the city's current urban trajectory suggests that the demand for private vehicles will increase, affecting people's safety and the future sustainability of the transport sector (Koroma *et al.*, 2021).

Freetown City Council (FCC) published Freetown Climate Action Plan (FCAP) in 2023, recognising transport as a priority sector requiring climate mitigation and resilience policy intervention. The transport section of FCAP outlines high-level policy actions to reduce private vehicle use, address historical land-use challenges, and encourage public transport and active travel (FCC, 2023). As the first climate action strategy of its kind focusing urban mobility in Freetown, these transport policies must be examined to assess how strongly they consider equity in transport development, as part of a just transition towards SUM. Research is required to address the dearth of literature related to SUM transitions in Sierra Leone,

and more widely, sustainable urban development in SSA (Sheller, 2018a; Emodi *et al.*, 2022; Oviedo *et al.*, 2022).

This study aims to investigate the extent to which the transport section of FCAP enables a just transition towards SUM, applying a conceptual framework from just transitions literature. Section 2 provides the conceptual background in a literature review that links together SUM, just transitions, and the context of Freetown as a rapidly growing city in SSA. Section 3 presents the methodology and outlines the conceptual framework consisting of procedural, distributive, and recognition justice used to assess the transport section of FCAP. Section 4 details the results from semi-structured interviews with key experts, then Section 5 analyses these findings with reference to the conceptual background, and presents policy recommendations to help foster a just transition towards SUM in Freetown.

# 2. Literature Review

## 2.1. Sustainability and Equity on the International Stage

The concept of sustainable development emerged in the early 1970s (Mensah, 2019), defined as "*development that meets the needs of the present while safeguarding Earth's life-support system, on which the welfare of current and future generations depends*" (Griggs *et al.*, 2013, p.306). Sustainable development recognises the role of anthropogenic activity in driving environmental change that can negatively affect human and natural systems, that has pushed society into a new epoch described across academia as the Anthropocene (Malhi, 2017). The establishment of the United Nations (UN) 2030 Agenda for Sustainable Development set a precedent for the implementation of national policies promoting social, economic and environmental sustainability (Henderson & Loreau, 2023), in line with its 17 Sustainable Development Goals (SDGs) and 169 targets (UN, 2015). Underpinned by a 'leave-no-one-behind' principle of equity and fairness to address rising inequalities (Tremblay *et al.*, 2020), the SDG paradigm highlights the twin challenges of equity and sustainability in the Anthropocene, whereby the co-evolving interactions of socio-ecological systems has led to significant complexities in achieving equitable sustainability (Leach *et al.*, 2018).

The SDG framework is bolstered by the Paris Agreement, which commits UN member states to net-zero GHG emissions by 2050 to limit global warming at 1.5°C above pre-industrial levels (Schleussner *et al.*, 2016). Objectives of the SDGs and Paris Agreement are interdependent (Gomez-Echeverri, 2018; Akrofi *et al.*, 2022), and within the SDG framework interdependency exists across SDGs to achieve set outcomes and meet global sustainability targets (Nilsson *et al.*, 2016; Tremblay *et al.*, 2020). These global frameworks attempt to take into account the complex interactions between human, technological and environmental systems, to evidence the need for societal transformations that require deep, structural changes across a variety of sectors (Sachs *et al.*, 2019).

## 2.2. Sustainable Urban Transitions

Approximately 70% of the global population is projected to live in cities by the mid-century (Jiang & O'Neill, 2017), where some of the most significant sustainability challenges exist (Sharifi *et al.*, 2024). This growth in urban population is set to increase the scale and complexity of urban sustainability challenges (Kraas *et al.*, 2016; Rosenzweig *et al.*, 2018). The nature and composition of these challenges vary greatly between Global North and South regions, but examples of urban sustainability issues include: poverty, social inequalities, insufficient transport and healthcare services, rising GHG emissions, poor air and water quality, water and food insecurity, inadequate waste management, and poor housing conditions (Crush & Frayne, 2011; Ernst *et al.*, 2016; Lucas *et al.*, 2016; Hoekstra *et al.*, 2018; Crippa *et al.*, 2021; de Siqueria Filha *et al.*, 2022). Achieving sustainability in urban environments is spotlighted in SDG 11 'Sustainable Cities and Communities' to "*make cities and human settlements inclusive, safe, resilient, and sustainable*" (UN, 2015, p.16), with the role of urban actors extending across all 17 SDGs (Woodbridge, 2015). SDG 11 shows interdependency with a variety of SDGs (Pradhan *et al.*, 2017; van Soest *et al.*, 2019), highlighting the interrelated environmental, political, socio-cultural, economic, institutional, and physical features of cities (Wamsler *et al.*, 2013), in which challenges are enhanced by complex socio-spatial structures, context-dependencies, large scales, and the inertia of built environments (Næss & Vogel, 2012; Ernst *et al.*, 2016).

Urban challenges are particularly complex in the Global South, where sustainable development remains hindered by rapid population growth (Nagendra *et al.*, 2018), unregulated urban expansion and growing

informal settlements (Auerbach *et al.*, 2018), limited productive, institutional and financial capacity (Omisore, 2018), and post-colonial inequalities (Hickel *et al.*, 2021). Despite their negligible contribution to historical and current GHG emissions, Global South regions have the highest vulnerability to climate change (Thornton *et al.*, 2014; Xu *et al.*, 2020). Meanwhile, studies show that future urbanisation and poverty reduction will require huge resource and energy inputs, contributing to a significant increase in GHG emissions, and increasing stress on under-resourced governments (Hodson *et al.*, 2012; Ramaswami *et al.*, 2012). It is therefore imperative that urban developments in the Global South are enacted with equitable sustainability at their core, to drive transformational, systemic change which embeds climate action, while improving socio-economic and environmental wellbeing (Leach *et al.*, 2018).

This need for systemic change is channelled in the concept of 'sustainable urban transitions' (Frantzeskaki *et al.*, 2017), describing the "*(re)structure of cities' socio-technological systems towards sustainable functioning*" (Loorbach & Shiroyama, 2016, p.6). Coupled with this is the concept of 'sustainable urban transformation' (Ernst *et al.*, 2016). This places greater emphasis on the structural transformation processes driving radical change and multi-dimensional sustainability across interconnected, multi-level and multi-scale urban structures, such as governance, transport planning, and climate action (McCormick *et al.*, 2013). These notions of urban sustainability can be conceptualised further as 'just transformations' (Bennett *et al.*, 2019) or 'just transitions' (Swilling, 2020), explored in section 2.4.

## 2.3. Sustainable Urban Mobility

### *2.3.1. Context and definitions*

Transport is a key sector that must be made more sustainable to achieve the SDGs (UN, 2021), playing a significant role in sustainable urban transitions and the transformations required to create systemic change (McCormick *et al.*, 2013; Frantzeskaki *et al.*, 2017). The role of transport in achieving global sustainability was first recognised by the UN in Agenda 21, and is specifically referred to in three 2030 Agenda targets (UN, 2021), including SDG 11.2 to "*provide access to safe, affordable, accessible and sustainable transport systems for all, … notably by expanding public transport, with special attention to the needs of those in vulnerable situations*" (UN, 2015, p.24). Numerous countries have leveraged the links between transport and the SDGs (Fig. 1); the top interlinkages based on 2022 voluntary national reviews (VNRs) were between transport and SDG 11, 9 (infrastructure), 3 (health), 7 (clean energy) and 13 (climate action), and 64% of VNRs referenced urban transport (SLOCAT, 2022a).

This requirement for sustainable transport in urban environments is described as 'sustainable urban mobility' (SUM), and can be defined as "*the ease, convenience, affordability, and accessibility of travelling to one's destination with minimal impact on the environment and others*" (Lam & Head, 2012, p.359). It can be defined further to include "*the provision of transport infrastructure and services to facilitate the efficient movement of people and goods in the context of climate, energy and extreme weather events, within the carrying capacity of supporting ecosystems*" (Chong *et al.*, 2023, p.26). While the former definition highlights some key social characteristics of SUM related to transport equity, the latter emphasises the importance of public transport and links to natural resource use and climate, together providing a holistic view of SUM.

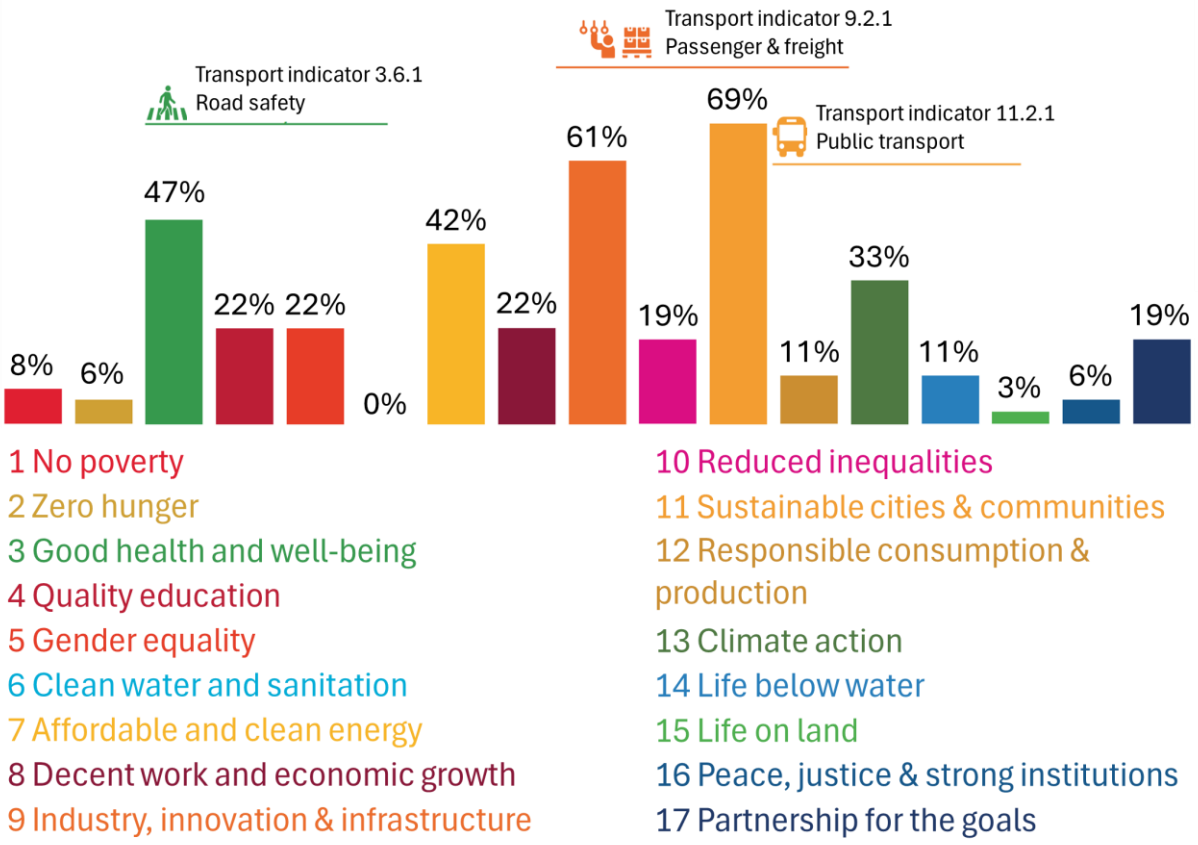


**Figure 1:** The percentage of VNRs connecting transport with different SDGs. Figure adapted from SLOCAT (2022b).

*2.3.2. Car-oriented development and inequity*

Accessibility is an integral part of SUM (Oviedo *et al.*, 2022), with the UN New Urban Agenda promoting equitable access to sustainable transport and inclusive practices that consider low-income and peripheral urban populations (UN, 2017). Relatedly, an overarching aim of SUM is to decouple economic growth from automobility, with evidence suggesting that car-oriented urban developments rely on and lead to increased private vehicle use, particularly in the Global South (Cavoli, 2021). This can proliferate a number of negative externalities (Fig. 2), providing a basis for prioritising the implementation and use of sustainable modes of transport, such as walking and cycling, i.e. active travel, collective public transport, and electric vehicles (Banister, 2008). Figure 3 shows a positive relationship between increases in gross domestic product (GDP), population growth, and private car use (Teoh *et al.*, 2020), but also evidences the potential for alternative development pathways separate from car-oriented urban development. This pathway supports transitions to SUM by 'leapfrogging', i.e. bypassing or avoiding, car-oriented development in favour of transport and land-use policies that promote efficient, ecologically sustainable, and socially equitable modes of transport (Cavoli *et al.*, 2024).

Car-oriented urban development can proliferate high levels of inequity, particularly related to accessibility, affordability and underdeveloped public transport infrastructure (Lucas *et al.*, 2016). In the Global South, this inequity is more pronounced, with a lack of formal public transport services, and many individuals or households unable to afford upfront vehicle costs (Benevenuto & Caulfield, 2019). Where they can, vehicles are often old, unreliable and high-polluting, and thus exacerbate issues such as congestion and poor air quality (Popoola *et al.*, 2022). Car-oriented development prioritises private vehicle use and thereby inhibits the use and development of public transport and active travel, excluding

low-income and peripheral urban communities from accessing education, healthcare, and employment, among other services (Pérez-Peña *et al.*, 2021). This often leads to residents utilising informal modes of transport, due to a lack of formal public transportation infrastructure, that can jeopardise safety, health and efficiency, presenting particular risk for vulnerable communities such as women, children, the elderly and disabled people (Popoola *et al.*, 2022). Together, these issues denote the concept of 'transport poverty', an overarching combination of (un)affordability, (in)accessibility, and 'mobility poverty', where the latter component refers to a systemic lack of transport and mobility options (Lucas *et al.*, 2016).

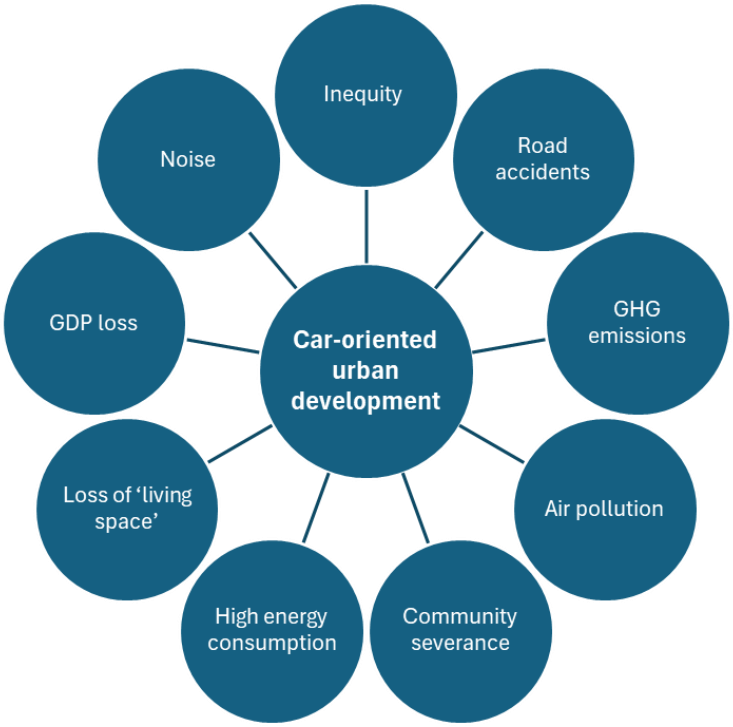


**Figure 2:** Negative externalities associated with car-oriented urban development. Figure adapted from Cavoli (2021).

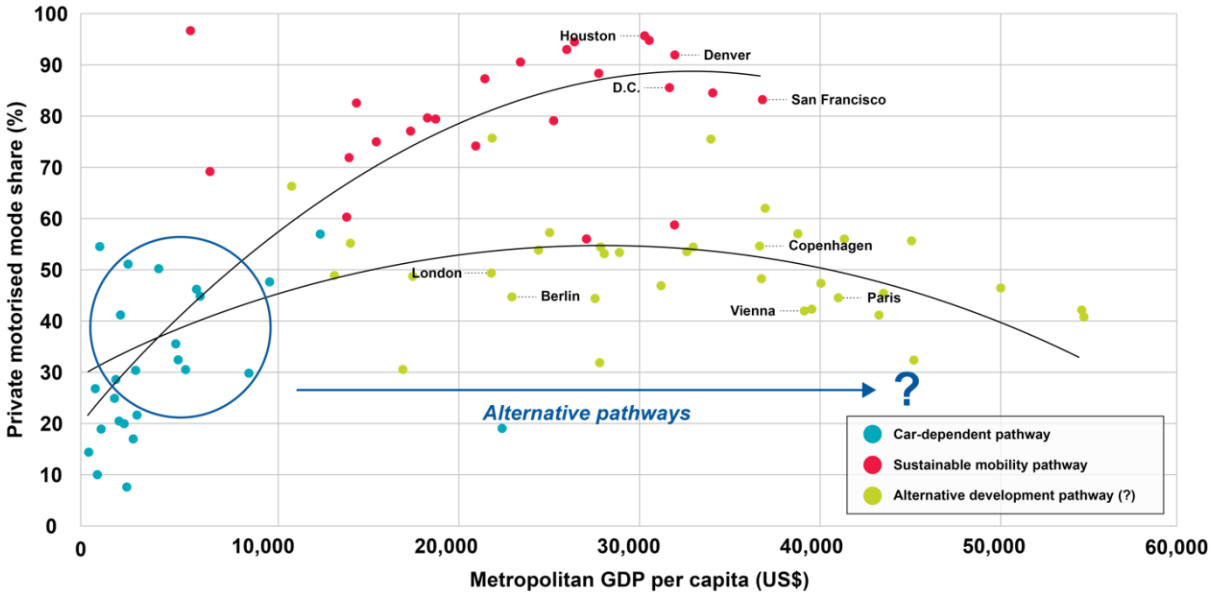


**Figure 3:** Leapfrogging to alternative urban development trajectories associated with low private vehicle use (Cavoli, 2021).

### *2.3.3. Climate change, air quality and inequity*

The Intergovernmental Panel on Climate Change estimates that GHG emissions from transport "*have more than doubled since 1970 … 80% of this increase coming from road vehicles*" (IPCC, 2014, p.606). Road transport accounted for 18.6% of global $CO_2$ emissions in 2023 (Liu *et al.*, 2024), comprising approximately 70% of direct transport emissions (IPCC, 2022), and therefore contributes significantly to global warming. Emissions continue to grow most rapidly in the transport sector compared to other sectors (IPCC, 2022), explained by the high level of investment required for decarbonisation relative to other sectors, associated with the global dependence on fossil fuel-powered internal combustion engines (Santos, 2017). Despite this slow pace of decarbonisation (Ternes *et al.*, 2024), given that approximately 70% of transport GHG emissions are attributable to cities, they present a large opportunity for decarbonisation as places where high levels of fossil fuel dependence can be overcome (Schwanen, 2020).

Alongside the climate impact of vehicle GHG emissions, the release of pollutants such as nitrogen oxides ($NO_X$) and particulate matter ($PM_{2.5}$ and $PM_{10}$) has exacerbated poor air quality, resulting in a major global public health issue (Cohen *et al.*, 2017), particularly in urban environments (Gulia *et al.*, 2015). Outdoor air pollution is responsible for 4 million deaths annually (WHO, 2018), causing a range of cardiovascular, respiratory, and neurological diseases (Peeples, 2020; Marcantonio *et al.*, 2021), and has been shown to negatively impact productivity, inequalities, and cognitive abilities (Rentschler & Leonova, 2023). Urban mobility systems are significant sources of air pollution (Al-Thani *et al.*, 2022; Sicard *et al.*, 2023; Ghaffarpasand *et al.*, 2024), and there is a widening global disparity between the air quality improvements of high-income urban areas, and the declining air quality of low-income urban areas (Apte *et al.*, 2021). Alongside this pattern of global inequity, there is an unequal spatial distribution of exposure to and the impact of air pollution within urban areas, burdening low-income and marginalised communities disproportionately (Rentschler & Leonova, 2023).

To address the negative externalities of car-oriented development and meet global climate commitments, cities are increasingly developing sustainable mobility transition policies (Winkler *et al.*, 2023). These often focus transit-oriented development, an urban development approach that prioritises active travel, high connectivity to reliable public transport, and the maintenance of a closely knit urban fabric, through high density, mixed-use and human-scale design (Venter *et al.*, 2019; Nubi *et al.*, 2024). In underdeveloped urban mobility systems of the Global South, policies should aim to foster the alternative pathway presented in Fig. 3 to ensure equitable sustainability, and prevent carbon lock-in and path dependency (Driscoll, 2014; Haarstad *et al.*, 2022).

## 2.4. A 'Just' Transition

Ensuring equitable pathways for sustainable transitions has culminated in the term 'just transition', describing the need for low-carbon transitions that are underpinned by issues of equity and justice (Newell & Mulvaney, 2013). The concept stems from labour movements of the 1980s to couple environmental and social justice (Velicu & Barca, 2020), gaining momentum as a labour-friendly approach to climate action in the transformation of systems such as energy, manufacturing, transport, and related infrastructures (Morena *et al.*, 2020). It centres structural or systemic changes that account for increasing inequalities and vulnerabilities in the Anthropocene, that exist at local or global scales (Gupta *et al.*, 2023).

The notion of a just transition can be traced back to the 'environmental justice' movement, which advocates for vulnerable communities disproportionately impacted by environmental degradation (Schlosberg, 2004; Farrell, 2012). The concept holistically identifies who is affected by such inequity and how to address this, while recognising that the causes of environmental pollution are derived from political, economic and social inequalities (Cha *et al.*, 2020). This evolved into 'climate justice', which challenges the systems that create climate change, and instils equity in climate action (Harris, 2019; Smith *et al.*, 2019). Climate justice highlights how low-income communities in developing nations least responsible for climate change will endure its worst effects, while individuals in the Global North continue to benefit from (historical) high-carbon development (Stevis *et al.*, 2020). This underpinned the conceptualisation of 'energy justice', with recognition of the drastic changes in energy production and consumption required to tackle climate change (Jenkins *et al.*, 2016). Energy justice literature investigates the need for just trade-offs between energy, development and low-carbon growth to create an energy system that fairly distributes the benefits and burdens of energy services (Newell & Mulvaney, 2013; Sovacool *et al.*, 2017).

The notion of just transitions has since evolved to be known as an integrated, people-centred framework for justice, linking principles of environmental, climate, and energy justice, to become a key theory of sustainability transitions (Wang & Lo, 2021). Just transition scholars argue that the sustainable development concept lacks the requisite knowledge and policies to reduce emissions and address injustices, calling for an equitable allocation of the costs and benefits of climate action that go beyond technological adjustment (Heffron & McCauley, 2018; Eckersley, 2021; Abram *et al.*, 2022).

*2.4.1. Just transitions to sustainable urban mobility*

The concept of a just transition is increasingly being used as a framework for assessing the fairness and equity of SUM transitions (Schwanen, 2020; Schwanen, 2021), with a growing body of literature that has introduced the concepts of 'transport justice' (e.g. Gössling, 2016; Martens, 2017), 'mobility justice' (e.g. Sheller, 2018b; Verlinghieri & Schwanen, 2020) and 'just mobility transitions' (e.g. Khajehpour & Miremadi, 2024; Monyei *et al.*, 2024). These emerging concepts (Table 1) represent a new paradigm in just transitions literature that shifts the application of justice principles to transport and mobility studies, to encompass the issue of equity within SUM transitions (Schwanen, 2021).

**Table 1:** Definitions of justice concepts related to SUM transitions. Note that the term 'motility' refers to the potential for mobility (Cuignet et al., 2020).

| Concept | Definition | Source |
|---|---|---|
| **Transport justice** | Refers to the distributional effects of transport provision and the associated disparities across social groups. It recognises how different modes of transport contribute to the unequal distribution of negative externalities for individuals or society. Affordability, accessibility and mobility are critical dimensions, with interdependence that can result in conflicting outcomes. | Gössling (2016); Guzman *et al.* (2021) |
| **Mobility justice** | A multi-scalar concept that draws attention to the power structures and inequalities that shape people's movements, motility and immobility, alongside the actions of entities that govern and control mobility. This framing considers social, political, and environmental problems at macro (e.g. trade routes, migration flows), meso (e.g. government policy, energy and transport infrastructures) and micro (e.g. embodied differences in class, gender, race, sexuality, and physical ability) levels. | Sheller (2018a); Verlinghieri & Schwanen (2020); Harada (2023) |
| **Just mobility transitions** | Refers to the just, inclusive and equitable transition towards decarbonised mobility systems, in the context of sustainability transitions in the Global North and South. | Prause & Dietz (2022); Khajehpour & Miremadi (2024); Monyei *et al.* (2024) |

The advancement of such concepts enables new pathways for alternative mobility futures to be mapped out, so that as well as achieving net-zero emissions and reducing inequity, pathways are configured to address sustainability and justice together (Davidson, 2021). This is important to achieve the SDGs, building on the conceptualisation of equitable sustainability in Leach *et al.* (2018). Sheller (2018a) notes that studies primarily focus on contemporary urban issues of the Global North, calling for greater attention to (im)mobilities of the Global South and how "*systems of mobility are built, energised, and impact on larger planetary ecosystems*" (Sheller, 2018a, p.21).

*2.4.2. The need for just mobility transitions in Sub-Saharan Africa*

The urban population of SSA has increased ten-fold in the past half-century, and is projected to comprise 47% of the region's total population in 2030 (UN-Habitat, 2023). Although SSA is experiencing progressive economic growth, there are rising levels of poverty and income inequality, representing a lack of inclusive growth; this is a large barrier in achieving the SDGs (Amponsah *et al.*, 2023). There is a significant need for government intervention to achieve just mobility transitions (Tumwesigye *et al.*, 2023), but states remain limited in their institutional, technological and financial capacity for sustainable development (Omisore, 2018). As such, investment into transportation systems, particularly infrastructure for mass transit, lags behind urban expansion (Falchetta *et al.*, 2021), with cities prioritising car-oriented development despite walking being the main form of mobility (Sietchiping *et al.*, 2012; Cavoli, 2021). SSA cities are therefore experiencing rising levels of motorisation alongside high levels of transport poverty, presenting the need to avoid car-dependent development trajectories to prevent further inequality (Oviedo *et al.*, 2024). The twin challenges of rapid urbanisation and transport poverty illustrate the interactions between land-use, the subsequent spatial distribution of human activity, and the need for accessible transport systems, as part of the 'land-use transport feedback cycle' (Wegener, 2004). Transport systems in SSA require reconfiguration to increase the accessibility of formal public transport and active travel, to provide safety and access to education, healthcare and employment, whilst remaining resilient to climate change (Acheampong, 2022; Oviedo *et al.*, 2024).

*2.4.3. Informality and vulnerable communities*

Urban sprawl associated with rapid population growth has concentrated many low-income households in informal settlements (slums) in peripheral zones that lack access to basic services such as water, sanitation and electricity (Parienté, 2017). Recent figures show that there is a continuous growth of informal settlements in SSA, which contain 23% of the global urban population living in slums, over 237 million people (UN-Habitat, 2020). While sustainable development can be a catalyst for improved socio-economic wellbeing, if people living in informal settlements are not integrated into such development processes, the concerns of low-income and marginalised communities will remain ignored, denying millions from receiving the benefits of sustainable urban transitions (Nagendra *et al.*, 2018).

Urban development in SSA must take into account informal settlements to ensure that transportation systems are accessible to all communities, and must recognise the importance of including these groups to achieve just mobility transitions and SDG 11 (Venter *et al.*, 2019). Considerations for informal settlement and vulnerable groups can be complex, as evidenced by Venter *et al.* (2018) who show that the implementation of bus rapid transit systems in the Global South offer significant benefits to low-income groups, but that these are skewed towards medium-income users due to inadequate spatial coverage and unsuitable fare policies. There is therefore a significant need for carefully designed transport systems in SSA that lead to true inclusivity (Fig. 4), reduce transport poverty, and are embedded with principles of equity to ensure transport and mobility justice within SUM transitions.

## 2.5. The Case of Freetown, Sierra Leone

### *2.5.1. Geography*

Freetown is the national capital and largest city of Sierra Leone (Fig. 5), situated on a mountainous peninsula that protrudes westwards into the Atlantic Ocean (Bowles *et al.*, 2024). The city denotes the centre of the Western Area Urban District (PCGN, 2014) and covers a land area of 82km$^2$ (Ibrahim *et al.*, 2021). The centre is located 49m above sea level (Koroma *et al.*, 2021), while elevation on the peninsula ranges between -13 to 752m, with mountain slope angles that range from zero to 44° (Jin *et al.*, 2020). The area has a tropical monsoon climate (Beck *et al.*, 2018), with a wet season from May to October (Amara & Kansal, 2021) that is largely moderated by the interaction of the Intertropical Convergence Zone and West African Monsoon (Barry *et al.*, 2018; Nicholson, 2018).

### *2.5.2. Socio-demographics*

The total population of Freetown is estimated to exceed 1.2 million people (Oviedo *et al.*, 2021), representing a 15% and 35% concentration of the total national and urban population, respectively (Macarthy, 2024). A population density of 12,959 inhabitants per km$^2$ means Freetown is one of the most densely populated cities in West Africa (Fig. 6), with an estimated annual growth rate of 4.2% (Koroma *et al.*, 2021) that could lead to over a doubling of the current population by 2040 (Macarthy, 2024). Population growth derives mainly from economic-driven rural-urban migration and internal displacement from the 1991 to 2002 civil war (Bakhshi *et al.*, 2020; UN Network on Migration, 2020), which resulted in many people losing limbs, and acquiring physical and mental disabilities (Morin *et al.*, 2022). Most migrants are based in informal settlements due to proximities to employment and the unaffordability of housing (Koroma *et al.*, 2018), leading to the formation of over 68 informal settlements (Oviedo *et al.*, 2021).

### *2.5.3. Economy*

Freetown accounts for 30% of national GDP (World Bank, 2018). Approximately 95% of Freetown residents depend upon the informal sector for their livelihood, meaning the majority have low and irregular incomes to support basic needs, including transport expenses (Oviedo *et al.*, 2021). Relatedly, 37% of inhabitants are in multidimensional poverty (SSL, 2017a), and economic growth is largely constrained by low and unreliable electricity access (World Bank, 2018; Conteh *et al.*, 2021). Nationally, there is large gender disparity in the formal economy, with men representing 73% of paid employees (SSL, 2017b). Sierra Leone has a Gini coefficient of 0.36, corresponding to high levels of income inequality (World Bank, 2024), and ranks 182 of 189 countries on the Human Development Index (UNDP, 2020).

### *2.5.4. The need for sustainable urban mobility*

Although the transport sector is the second-highest generator of jobs in Freetown, 85% are in the unregulated informal economy, meaning workers and service users are highly vulnerable to disturbances (Koroma *et al.*, 2021). Freetown's urban transport is characterised by high levels of congestion and emissions, emitting pollutants including $NO_x$, $PM_{2.5}$ and $PM_{10}$, and is the second largest source of GHG emissions (31%) behind the energy sector (40%) (Taylor & Nakai, 2012; Williams *et al.*, 2017; FCC, 2023). The development of efficient and accessible formal public transportation systems has lagged significantly behind Freetown's rapid rate of urbanisation observed since the 1960s, proliferating dependency on informal modes of public transport (Fig. 7), known as okadas (motorcycle-taxis or two-wheelers), kekehs (three-wheelers) and poda-podas (minibuses) (Oviedo *et al.*, 2022).



**Figure 4 (above):** Freetown residents from the informal settlement of Thompson Bay calling for inclusive mobility (Stewart cited in Walker & Ossul-Vermehren, 2021).

**Figure 5 (left):** The location of Freetown (O'Kane & Ménard, 2015). Note that field sites are not relevant to this study.

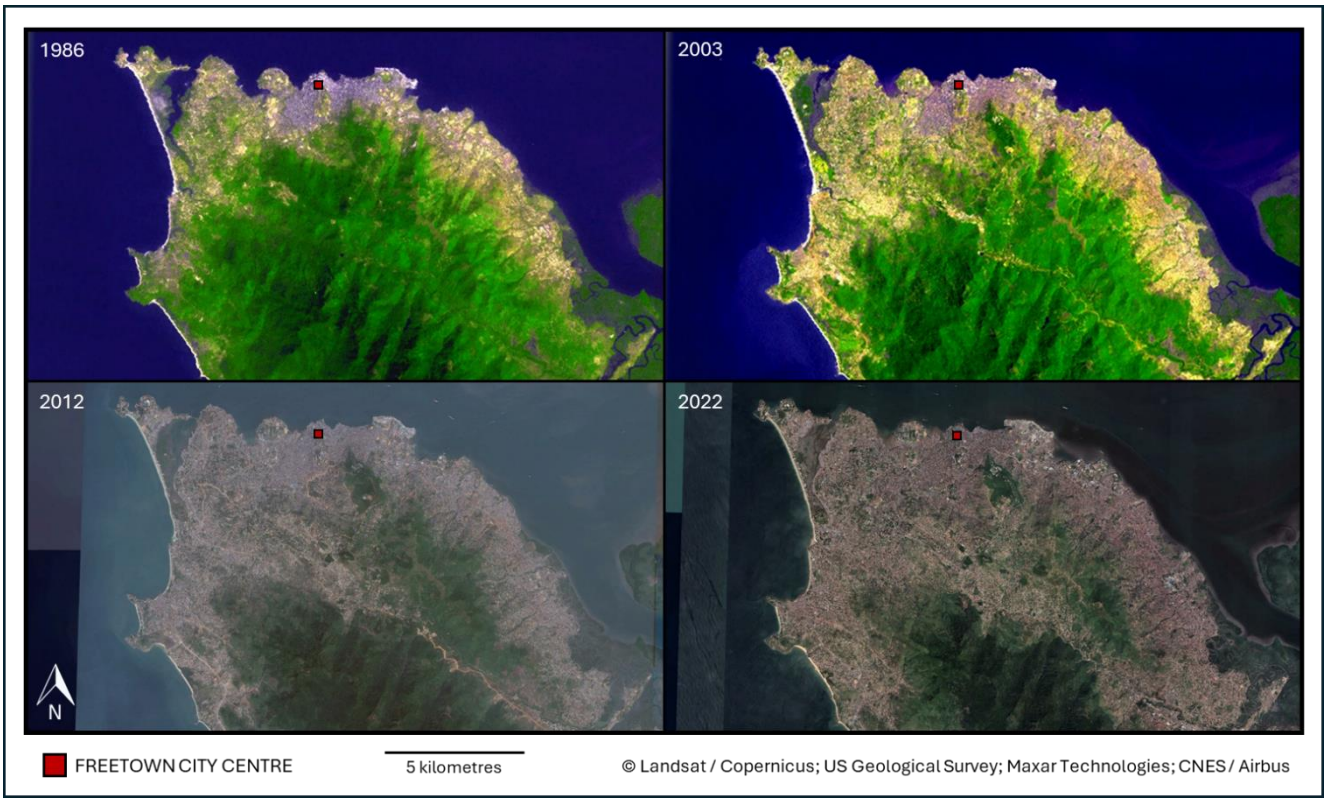


**Figure 6:** Satellite imagery showing the urban expansion of Freetown within the Western Area region in four periods from 1986 to 2022 (Google Earth Pro, 2024). Figure author's own.

Informal transport vehicles tend to be in poor condition and are generally unreliable and unsafe (Koroma *et al.*, 2021), contributing to the high proportion of road accidents observed in Freetown and its surrounding areas. These account for nearly 70% of all collisions, and 50% of all recorded vehicle-related fatalities or severe injuries in Sierra Leone (Tripodi *et al.*, 2018). Congestion significantly limits walkability, with blocked routes on damaged or non-existent pathways that residents are forced to utilise as captive mode users, and steep topography which presents challenges for inhabitants of hillside locations (Oviedo *et al.*, 2022). Vulnerable groups, such as disabled people, women, children and the elderly, face particular struggle in Freetown's transport sector, with a lack of inclusive mobility measures, and discrimination from transport providers and other users (Walker & Ossul-Vermehren, 2021). These issues, linked to the high use of informal services, and the inadequate provision of formal public transport and pedestrian infrastructure, indicate a high level of transport poverty in Freetown. Meanwhile, there is low government capacity to address transport poverty, related to the limited institutional, technological, and financial capacity of Sierra Leone to plan and deliver transport projects (Koroma *et al.*, 2024).

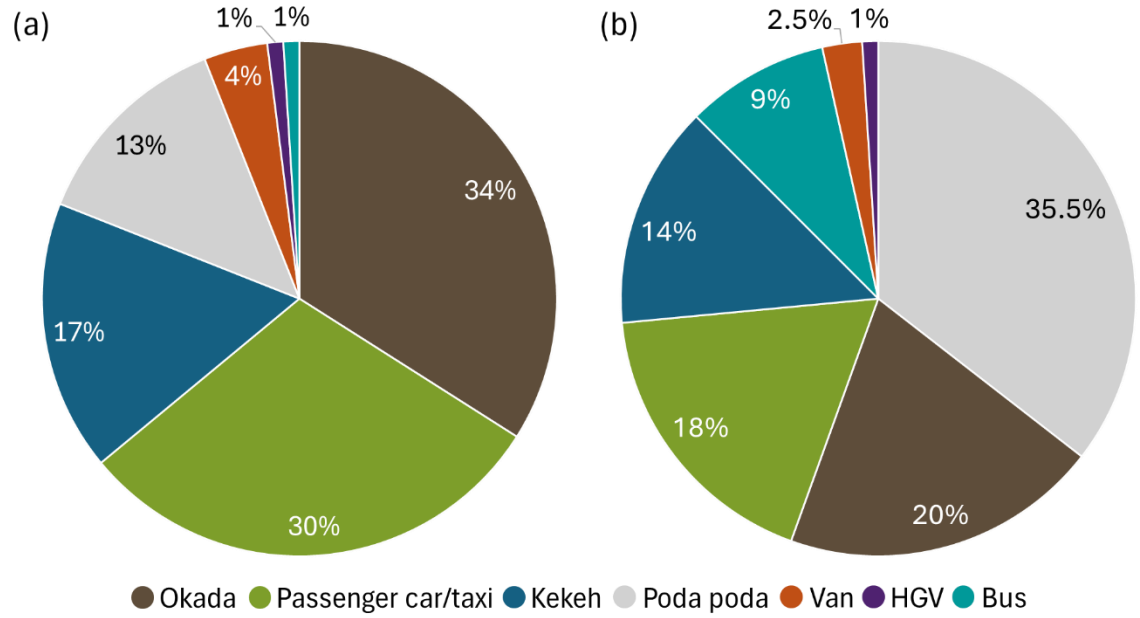


**Figure 7:** Modal share in Freetown by (a) vehicle type and (b) people carried, using peak hour vehicle count data from the East-West Corridor (Seery, 2023), where HGV = heavy goods vehicle. Note that the dominant mode of transport in Freetown is walking (Oviedo *et al.*, 2021), which is not shown in this data, and this sample location is not representative of the modal share in mountainous regions further inland. Figure author's own.

*2.5.5. Freetown Climate Action Plan*

Sierra Leone is ranked the 18th most vulnerable country to climate change by the Notre Dame Global Adaptation Initiative (ND-GAIN, 2023). Rising air temperatures and the increased frequency of rainfall extremes (Carr *et al.*, 2022) present greater risk of storms, flooding, landslides, erosion and sea level rise in Freetown (Arup *et al.*, 2018). The unplanned development of informal settlements along the Atlantic coastline, Sierra Leone River estuary, and on steep hillsides (Allen *et al.*, 2019) means the country has one of the highest percentages of informal populations residing in hazard-prone areas in SSA (Muchadenyika *et al.*, 2023). The 2017 Regent Landslide, destroying 400 buildings, killing 1,100 people, and affecting approximately 5,000 others, is direct evidence of the devastating impacts that can occur from unaddressed vulnerability (Cui *et al.*, 2019; Redshaw *et al.*, 2019). Alongside changing rainfall patterns and increased soil erosion from deforestation, the unplanned urban occupation of hazard-prone areas

exacerbates the effects of climate-related hazards, together creating a high vulnerability for transportation systems (Muchadenyika *et al.*, 2023; Battersby *et al.*, 2024).

Following recognition of this high vulnerability to climate change, Freetown attained membership of the C40 Cities Climate Leadership Group, a trans-national network that platforms coordination and knowledge sharing for urban-focused climate initiatives (Davidson *et al.*, 2019). This spurred the development of FCAP, a strategy published by FCC in 2023 to consider "*mitigation and adaptation in an integrated way, identifying interdependencies to maximise efficiencies*" and set "*evidence-based, inclusive and deliverable goals and targets*" to achieve transformational climate action (FCC, 2023, p.15). The plan is an example of how cities in SSA can leverage the synergistic properties of SDG 11 (cities) an 13 (climate action) in working towards the 2030 Agenda (Pradhan *et al.*, 2017). Community-level needs were assessed through a consultation process as part of the Transform Freetown Agenda (FCC, 2019), which identified the priority sectors of FCAP: climate resilience, water security, waste management, transport, and energy (FCC, 2023). To address transport sector issues, three goals were developed alongside 20 medium- and long-term actions to promote SUM (Fig. 8). FCAP states that GHG reduction policies must consider the dependence of local livelihoods on the current transport sector, to "*ensure [a] just transition through an inclusive approach*" (FCC, 2023, p.81). Since the publishing of FCAP, the Transitions to Sustainable Urban Mobility in Sub-Saharan Africa (T-SUM) group based at University College London (UCL) has been exploring SUM pathways in Freetown (Cavoli *et al.*, 2023), but the extent to which a just transition is being achieved remains unexplored. This represents an opportunity to influence how the transport section of FCAP is to be delivered and further developed to ensure a just transition to SUM.

| FREETOWN CLIMATE ACTION PLAN: URBAN MOBILITY | |
|---|---|
| **Vision: Building a cleaner, safer and more equally accessible transport system** | |
| **Goal 1** | Encouraging public transport and maintaining the share of private to public transport at low levels |
| **Goal 2** | Proactively address historical land-use planning challenges in support of efficient and low-carbon transportation and transit-oriented development |
| **Goal 3** | Promoting behavioural change and enabling and encouraging the use of public transport, cycling and walking |
| **Priority Actions** | |
| **2025** | |
| **A** | Partner with the Ministry of Transport and Aviation to introduce a regulated high-occupancy bus service along the Freetown East-West Corridor |
| **B** | Conduct a feasibility study for and procurement of the Freetown Cable Car East Line (pilot route) |
| **C** | Introduce on-street parking controls |
| **D** | Improve pedestrian walkways |
| **2030-2050** | |
| **E** | Partner with the Ministry of Transport and Aviation to increase the proportion of high-occupancy electric buses |
| **Non-Priority Actions** | |
| **2025** | |
| **F** | Support a ban on import of high-polluting vehicles |
| **G** | Cooperate with national stakeholders to implement a national vehicle emission testing roadworthiness regime |
| **H** | Support the development of a system for and the performance of on-the-spot vehicle emission testing |
| **I** | Promote transit-oriented development to minimise car travel by introducing high density development at locations with good public transport links |
| **J** | Partner with the Ministry of Transport and Aviation in developing a Sustainable Transport Management Strategy for the Western Area |
| **K** | Devolution of planning controls to local councils |
| **L** | Devolution of the maintenance of local roads to Freetown City Council |
| **M** | Through the development of the Western Area Structure Plan, policy interventions will seek to restrict development in hard-to-reach areas that are difficult to service due to limited levels of accessibility |
| **N** | Freetown City Council planning policies will give priority in developing Action Area Plans targeted at preventing unsuitable development in hazard prone areas |
| **O** | To stem the rapid rate of deforestation on the periphery of the city, areas will be identified in the Local Area Plans as Protected Forest Areas. The approach will aim to protect areas within existing water supply catchment and areas at risk of funding. |
| **P** | Create pedestrianised streets |
| **Q** | Improve street lighting in the Central Business District area |
| **2030-2050** | |
| **R** | Implement the cable car pilot and other routes as part of the integrated transportation system |
| **S** | Implement a Low Emission Zone and congestion charging schemes |
| **T** | Introduce car free days |

**Figure 8:** Schematic summarising the transport section of FCAP, showing all priority and non-priority actions (FCC, 2023). Each action is colour-coded with reference to its target goal, where blue = Goal 1, green = Goal 2, and yellow = Goal 3. Figure author's own.

# 3. Methodology

## 3.1. Aim, Objectives and Hypothesis

Given the need for just and sustainable urban transitions in SSA, this study aims to assess the extent to which the transport section of FCAP enables a just transition towards SUM. The objectives of this study are to:

a) Explore the need for a just transition towards SUM in Freetown, related to transport and mobility justice;
b) Examine the transport section of FCAP using a conceptual framework from just transitions literature;
c) Analyse the extent to which justice is accounted for in the transport section of FCAP, contributing towards the emerging concepts of transport and mobility justice;
d) Outline policy recommendations to help promote a just mobility transition in Freetown, and more widely, cities in SSA.

The study builds on previous literature investigating just mobility transitions (e.g. Pereira *et al.*, 2017; Schwanen, 2021; Khajehpour & Miremadi, 2024), and research from the UCL T-SUM project (e.g. Cavoli, 2021; Oviedo *et al.*, 2022; Oviedo *et al.*, 2024). Qualitative research methods are used to analyse FCAP and the complexities of a just transition towards SUM in Freetown, drawing insight from a range of experts. It is expected that the transport section of FCAP does not sufficiently enable a just transition towards SUM, and that further considerations must be made to achieve SDG 11.

## 3.2. Conceptual Framework

The conceptual framework applied in this study utilises principles of procedural, distributive and recognition justice to assess the transport section of FCAP. Figure 9 defines these principles and outlines the framework, which was developed by Schlosberg (2007). It is well described in just transitions literature (e.g. McCauley & Heffron, 2018; Abram *et al.*, 2022), and has been applied to energy system studies to assess energy justice in the development of low-carbon power systems (Jenkins *et al.*, 2016). In the past decade, the emerging concepts of transport and mobility justice (see section 2.4) have expanded this framework to the transport sector, to assess the extent to which transport developments promote a just transition (Prause & Dietz, 2022). Given the lack of consideration to justice in SUM transition processes, there is a vital need for the application of justice principles to assess equity in and arising from the development of mobility systems, to pre-empt resistance in certain population groups and accelerate change (Schwanen, 2021). As such, this study utilises this framework for the first time within the urban context of Freetown, acknowledging the need for greater research into (im)mobilities of the Global South (Sheller, 2018b).

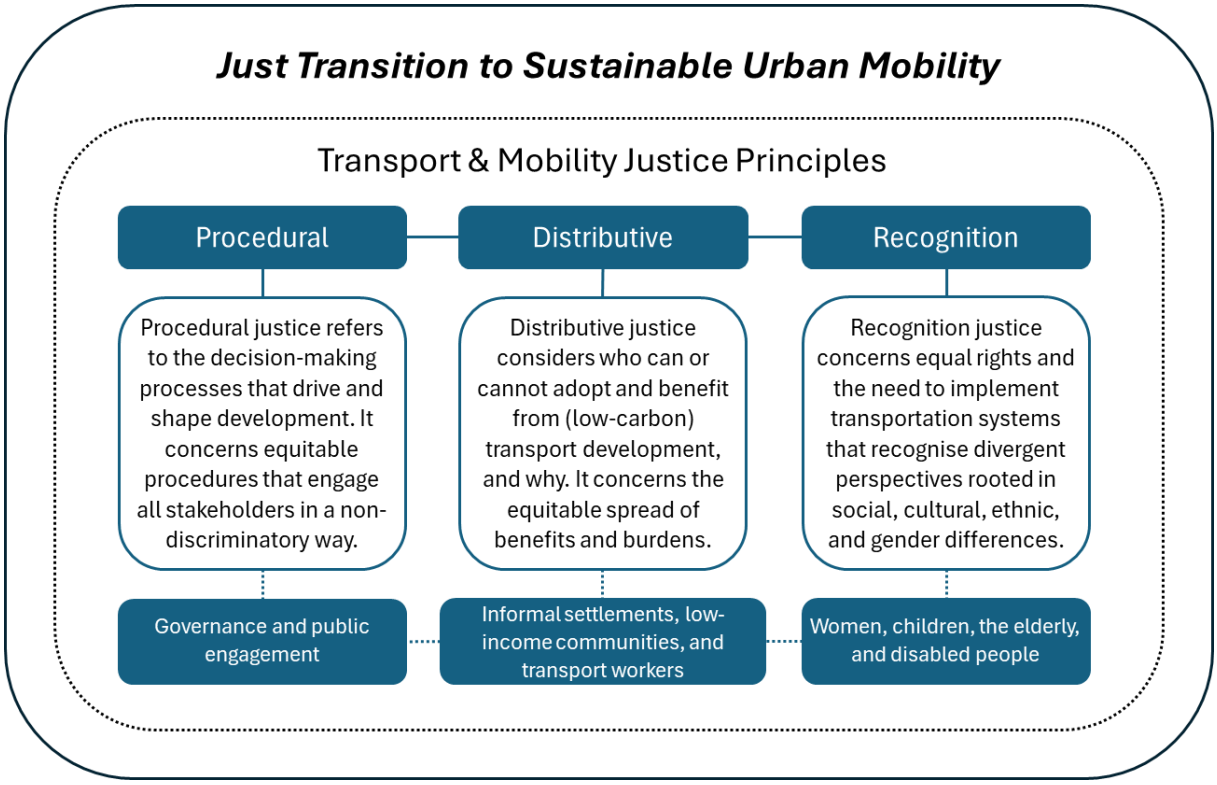


**Figure 9:** The conceptual framework used to assess transport and mobility justice in FCAP, and how it relates to the analysis of a just transition towards SUM in Freetown. Definitions from Jenkins et al. (2016) and Schwanen (2020), figure author's own.

## 3.3. Qualitative Research Methods

### *3.3.1. Data collection*

A series of semi-structured interviews were undertaken with experts in SUM, transport and mobility justice, or FCAP to gather views on the transport section of FCAP. This method was chosen to account for the unique perspectives of experts, and to facilitate a flexible dialogue that allowed further enquiry, while following a predetermined order of questioning (Longhurst, 2016). Participants were selected to encompass a broad set of institutions, views and expertise, but primarily include those with localised knowledge of Freetown's transport system (Table 2). A topic guide was used to navigate seven interviews conducted online using Microsoft Teams in July 2024 (see Appendix 1); these were recorded and transcribed with pseudonymisation and anonymisation for the study. Questions focused on the actions within the transport section of FCAP, with reference to the justice principles outlined in section 3.2. They also addressed the conceptual framework itself, challenges in Freetown's transport sector, and climate change. All interviews were completed in accordance with ethics procedures outlined by UCL Civil, Environmental and Geomatic Engineering Ethics Committee (see Appendices 2 and 3).

**Table 2:** Overview of participants' field of work, where NGO = non-governmental organisation.

| Expert | Sector | Description |
|---|---|---|
| **E1** | NGO | Expert in urban climate action planning, involved with developing FCAP. |
| **E2** | Government | Involved with developing and implementing FCAP, including the bus and cable car projects. Experts of urban planning in Freetown, with backgrounds in engineering. |
| **E3** | | |
| **E4** | Academia / NGO | Well-established scholar and project manager of urban development (urban management, climate adaptation, transport) in Sierra Leone. |
| **E5** | Academia | Researcher with expertise in transport justice and socio-spatial inequality. |
| **E6** | Academia / Consultant | Environmental planner and researcher, with expertise in SUM transitions in Freetown and SSA. |
| **E7** | Academia | University Dean and pioneering scholar of mobility justice, with expertise in sustainable mobility, climate adaptation, and just transitions in the Global South. |

*3.3.2. Data analysis*

A thematic content analysis was conducted to identify key themes and topics from the primary data relevant to the aim and objectives of the study. This method of analysis can be used within most theoretical frameworks, due to its flexibility and ability to address a wide range of research questions (Terry *et al.*, 2017). Core ideas were extracted by categorising data into a matrix organised by interview topics (see Appendix 4), from which a coding process was used to identify themes based on the conceptual framework (see Appendix 5) (Bryman, 2016). This method represents a deductive approach to analysis, whereby the justice principles outlined in section 3.2 provided a foundation for 'seeing' the data and its interpretation (Terry *et al.*, 2017). Links could therefore be made between data points either directly or indirectly related to the conceptual framework, to observe any patterns. Crucially, this method of analysis was chosen to account for the multi-disciplinary nature of this study, acting as an epistemological bridge between different fields of research (Ashmore *et al.*, 2020).

# 4. Results

This section presents a synthesis of the interviews with experts, mainly structured to align with the conceptual framework of procedural, distributive, and recognition justice. First, section 4.1 outlines the main mobility challenges in Freetown declared by experts, to highlight key areas relevant to a just transition to SUM. In sections 4.2 and 4.3, a letter system associated with Fig. 8 in section 2.5.5 is used to identify links between identified themes and specific actions from the transport section of FCAP.

## 4.1. Mobility Challenges

There was consensus among experts that mobility challenges in Freetown primarily relate to accessibility, with focus on inaccessibility for residents of informal settlements, and a sentiment that demand for services greatly exceeds supply. Links were made between accessibility issues and other challenges, such as affordability and insufficient infrastructure (Table 3). FCAP transport priority actions A and B concerning the bus pilot and cable car feasibility projects, respectively, were commonly raised as means of addressing such challenges. Relatedly, there was consensus for increasing the provision of formal public transportation systems, but contention over which modes to invest in to achieve a just transition.

**Table 3:** The main challenges in Freetown's transport sector, where expert count relates to the number of interviewees citing each topic at least once.

| Topic | Expert count |
|---|---|
| Accessibility | 6 |
| Affordability | 4 |
| Congestion | 4 |
| Insufficient road and active travel infrastructure | 4 |
| Low levels of regulation | 4 |
| High dependence on the informal transport sector | 4 |
| Road, vehicle and personal safety | 4 |
| Physical geography | 3 |
| Minimal government provision of public transport | 3 |
| Governance | 2 |
| Limited capacity (institutional, labour, knowledge, technological) | 2 |

## 4.2. Procedural Justice Overview

As defined in section 3.2, procedural justice refers to fair and equitable decision-making processes that drive and shape development. Experts primarily discussed the dynamics of public engagement and the large influence of governance structures presiding over decision-making processes (Table 4). The potential for these aspects to promote injustice relates generally to the decision-making processes behind achieving actions in the transport section of FCAP. Specifically, the issue of centralised governance is recognised within FCAP, which seeks to remedy this within actions K and L regarding devolution.

**Table 4:** Themes identified related to procedural justice, where general denotes relevance to all actions.

| Topic | Expert count | Links to FCAP |
|---|---|---|
| Public consultation processes | 7 | General |
| Barrier of government centralisation | 6 | K, L |
| Devolution concerns | 4 | K, L |
| Financing models | 4 | General |
| Limited capacity (institutional, knowledge, labour, technological) | 4 | General |
| Voice of transport unions and public associations | 3 | General |

*4.2.1. Procedural Justice: Governance*

The centralisation of government in Sierra Leone was raised as a key barrier to procedural justice in implementing the transport actions of FCAP. In Freetown, this concerns the lack of statutory transport and planning development powers that lie with FCC, which means "*they don't have the powers to meet community needs*" (E3, 2024). This issue is compounded by unsustainable financing models that operate on a project-by-project basis (E6, 2024), and low levels of cross-sectoral collaboration: "*the issue of siloed operations is very dominant … the Ministry of Lands and Ministry of Transport hardly engage*" (E4, 2024). In this way, experts highlighted that the transport section of FCAP does not fully address the need for policy integration and coordination between urban sectors to promote long-term institutional partnerships. Government agencies "*aren't really working together in order to achieve a bigger vision*" (E6, 2024).

Actions K and L denoting the devolution of planning and road maintenance powers to FCC were welcomed by experts to address this barrier by drawing power to local levels. However, this depends upon the willingness of central government: "*devolving on paper and devolving in practice are two different things … the politics around this is something that is difficult to break into*" (E4, 2024). In line with this, concerns were raised about approaches to devolution and that this remains unclear in the transport section of FCAP, with E7 (2024) noting that "*it's really hard to have devolved planning of a transport system if not all the pieces are going to fit together*". As such, devolution does not inherently promote procedural justice, "*unless it is followed up by robust institutional arrangements*" (E5, 2024).

*4.2.2. Procedural Justice: Public engagement*

In light of these governance issues, there was consensus that FCC does its best with attempting public engagement practices given their limited institutional capacity. The importance of public consultation was well-recognised by interviewees, particularly for informal settlement communities who have their own local perspective of procedural justice as "*nothing for us without us*" (E2, 2024). Despite high levels of engagement between FCC and the public, this "*tends to be one-way and … more reactive rather than planning-led*" (E3, 2024). Further, unions and public associations are often ignored or are very local, so their claims are not substantiated (E6, 2024). This means there are not many examples of participatory decision-making, and though this is starting to increase, government centralisation remains a barrier to implementing any such engagement-led solutions (E3, 2024). One expert noted that "*the voices of transport unions doesn't seem to be visible anywhere*" in the transport section of FCAP (E5, 2024). This omission highlights potential injustice that could arise from the decision-making processes shaping transport development, related to the exclusion of informal transport sector voices that are "*not as strong and well-organised*" as transport unions in other cities such as Johannesburg, where they "*have a strong voice, a unified voice*" (E3, 2024).

## 4.3. Distributive Justice Overview

As defined in section 3.2, distributive justice concerns the equitable distribution of benefits and burdens arising from development. Experts primarily discussed distributive justice in terms of transport infrastructure development, integration of the informal economy, and climate change. A wide range of actions from the transport section of FCAP were referenced (Table 5), as experts were able to draw links between specific actions and their distributional effects. Links were mostly made with actions A (bus project), D (improve pedestrian walkways), and P (create pedestrianised streets), with five links each, excluding general links.

**Table 5:** Themes identified related to distributive justice.

| Topic | Expert count | Links to FCAP |
|---|---|---|
| Upcoming cable car project | 6 | B, R |
| Pedestrianisation and active travel | 6 | C, D, I, J, P, Q, S, T |
| Weather and climate change hazards | 6 | General |
| Accessibility for residents of informal settlements | 5 | A, B, D, J, M, N, P, R |
| Bus pilot project | 5 | A, E |
| Fare systems and legal regulation | 5 | A, C, S |
| Energy infrastructure | 4 | B, E, Q, R |
| Integration of the informal transport sector | 4 | A, B, D, E, F, J, M, P, R, S, T |
| Structure of FCAP | 4 | General |
| Focus on CBD | 3 | A, D, P, Q, S |
| Low availability of transport-related data | 3 | General |
| Street vendor livelihoods | 3 | C, D, P |
| Vehicle electrification | 3 | E |

### *4.3.1. Distributive Justice: Transport infrastructure*

The bus pilot project was noted as a key infrastructure development. The approximately 50 buses currently in operation were regarded insufficient for Freetown's population, with continuing congestion (E2, 2024) and a lack of data that prevents optimisation of the system (E4, 2024). There was consensus that the bus corridor is inequitable because it is too expensive, charging a flat rate that only "*works out cheaper [than informal transport] if you take it from the first to the last stop*" (E6, 2024). Experts emphasise the importance of developing an affordable fare system that accounts for the disproportionate impact of a flat rate on low-income communities, to reduce the "*cost burden that is placed on them when they have to stitch together multiple modes*" (E7, 2024).

Another key development cited was the upcoming cable car project, presented by two experts as an important pathway for increasing transport accessibility for informal settlement communities on hillside locations. The cable car project was critiqued by other experts, who noted its high opportunity cost and the risk of downtime periods during its operation due to unreliable electricity access (E6, 2024). Further, its ability to promote greater accessibility was questioned because of absent supporting formal transport infrastructure; it was highlighted that in other Global South cities with cable car systems "*there's a bus system, a train system, and the cable car is the last-mile connection … but Freetown doesn't have these main systems*" (E6, 2024).

Relatedly, E4 (2024) mentions that for the cable car to facilitate a just transition for informal settlement communities, it must be accompanied by greater investment into active travel infrastructure. There was

a large consensus that increasing walkability is key to securing distributive justice. However, it was noted that the transport actions in FCAP suggest that Sierra Leone is "*improving the pedestrian experience in and around transportation hubs, but not really in between*" (E6, 2024). This fails to address the reorganisation of space that promotes safety for active travel (E5, 2024). A just transition to SUM cannot be achieved without improving walkability, and such improvements must consider peripheral areas to help informal settlement communities put together multi-modal journeys (E7, 2024).

*4.3.2. Distributive Justice: Integration of the informal economy*

Although there is a significant need for investments that improve walkability, the impacts of such development must be considered within the context of Freetown's dominant informal economy. Pedestrianisation actions and on-street parking controls (action C) would directly affect street vendor livelihoods, and if development is "*not done in a way where the livelihoods of street vendors are protected, then the process in itself is unjust*" (E5, 2024). While E3 (2024) highlighted that alternative market spaces are being investigated, E7 (2024) noted that such action can change "*the whole character of the urban space and increase the use of streets for throughputs of traffic flow, which then actually makes them less desirable for pedestrians*."

Further, many experts drew attention to how the transport section of FCAP does not consider the impacts of developing formal public transportation on the informal transport sector. Two experts referenced the bus pilot project and the negative impact this has had on informal transport operators that "*were effectively pushed out of the corridor*" (E3, 2024). There has been little monitoring of such impacts on the informal transport sector, and the city's current implementation of the bus corridor has caused "*a lot of tension*" (E6, 2024). There was consensus that formalisation processes must acknowledge the impacts on informal transport sector livelihoods for a just transition towards SUM, and recognise that these workers "*play a crucial part … in connecting people to larger scale public transport which can't go everywhere*" (E7, 2024). In this way, there are a multitude of considerations that must be made for the integration of informal sector workers into the transport section of FCAP, which currently begs the question: "*what alternatives are we going to provide for these particular people that are going to lose their job?*" (E4, 2024).

*4.3.3. Distributive Justice: Climate change*

E1 (2024) noted that the transport section of FCAP incorporates climate justice into transport development, and recognises that low-income communities are most vulnerable to climate change. However, others noted that measures for climate resilience are not evident in the transport section of FCAP (E6, 2024), which indicates "*a business-as-usual approach*" (E5, 2024) that is "*more development-oriented rather than really fighting climate [hazards]*" (E4, 2024).

In terms of climate mitigation, multiple experts highlighted that the electrification of two- and three-wheelers was missing from the transport section of FCAP, despite their large role in providing mobility. This was noted as a more affordable pathway to decarbonise transport than electrifying buses (action E) (E7, 2024), which is currently not feasible due to Freetown's limited capacity (E6, 2024). It considers the needs of people in hard-to-reach areas that are reliant on such vehicles, while ensuring that low-carbon solutions are distributed across the Western Area Urban District (E2, 2024). Alternatively, E6 (2024) argued that mitigation strategies need not take precedence for Freetown, given its low contribution to global GHG emissions, but that the decarbonisation of vehicles is "*definitely something that should be kept in mind and worked towards*."

Some experts noted that decarbonisation of the transport should be considered more in tandem with the energy sector, with recent electricity issues in Freetown that have left "*poorer areas [with] no electricity for a month*" (E6, 2024). There was a sentiment amongst experts that energy supply issues could impact the success of newly implemented transport infrastructure, and that efforts should be made to stabilise electricity supply through the renewable energy development, namely solar energy.

### 4.4. Recognition Justice

As defined in section 3.2, recognition justice highlights the importance of recognising the needs of vulnerable groups. Views on recognition justice were mainly expressed with regards to gender, age and disability, and were linked to transport infrastructure and the wider societal conditions of Freetown.

The majority of experts expressed a lack of recognition for vulnerable communities in the transport section of FCAP, particularly of the inequalities faced by women and girls in Freetown's transport sector. Multiple experts noted that the pricing of the pilot bus project has prevented access for women and girls, so they cannot benefit from its increased safety. Further, E2 (2024) highlighted that of around 70 to 80 bus drivers, only two are women, building a case for the greater representation of women within Freetown's transport services. Multiple experts expressed a sentiment that the transport section of FCAP showcases a "*one-size-fits-all approach*" to development (E7, 2024), and does not take into account the differing mobility patterns, and therefore needs, of women and girls to achieve SDG 5 (gender equality).

Experts also mentioned a lack of recognition for disabled and elderly people in the transport section of FCAP. Pedestrianisation actions in FCAP were commended, but experts noted that these must be developed with disabled access in mind. While the provision of bus and cable car services could provide greater accessibility and safety for such communities, E6 (2024) noted that disabled and elderly people require support to navigate such systems, calling for "*additional people who can help out and provide guidance*". In a wider reference to recognition justice, E5 (2024) highlighted that cultural changes via education are required in Freetown to build long-term societal support networks for vulnerable communities in the transport sector, recognising that "*the transport curriculum … has to be fundamentally changed as well*."

# 5. Discussion

This section contextualises the findings of this study in line with the conceptual framework and wider concepts from literature. A set of policy recommendations are suggested, to better support a just transition towards SUM in Freetown.

## 5.1. Procedural Justice

To ensure procedural justice in the transport developments outlined in FCAP, the local perspective of "*nothing for us without us*" (E2, 2024) should be a guiding principle for participatory decision-making in Freetown, something which has not been abided by thus far. This should not only recognise the importance of consulting informal settlement communities, which were commonly cited to ensure justice, but also a variety of societal organisations, unions and associations, which enable the voices of informal (transport) sector workers and vulnerable communities to be heard. It is vital that meaningful and inclusive participation methods are implemented to improve citizens' ability to effectively engage and exercise agency (Suiseeya, 2020). These participation methods should not become tokenistic and should be continually improved to increase representation and accessibility to decision-making structures, especially for the aforementioned groups, and ensure transport development supports a just transition to SUM.

This study finds that participatory decision-making is strongly inhibited by the governance structures of Sierra Leone, highlighting how public engagement does not confront and redress the power imbalances, exclusion and misrecognition associated with governance structures (Suiseeya, 2020). Although democratic powers are held by FCC, Sierra Leone shows similar governance characteristics of other nations in SSA, whereby political decentralisation is more pronounced than administrative or fiscal decentralisation (Resnick, 2021). This has limited FCC's decision-making power in transport development, and will in future hinder their ability to deliver upon FCAP transport actions in a just manner. Further, the institutional capacity of Sierra Leone remains limited by weak cross-sectoral coordination, which undermines effective public investment management practices and climate-sensitive public investment management (Battersby *et al.*, 2024). As such, addressing the centralisation of power in Sierra Leone is key in promoting mobility justice, representing an important systemic change that could better support a sustainable urban transition in Freetown. While this is recognised in the transport section of FCAP in actions K and L, devolution actions are listed as 'non-priority' and FCAP does not account for the complexities of such decentralisation processes, which can only facilitate a just transition towards SUM if "*followed up by robust institutional arrangements*" (E5, 2024).

## 5.2. Distributive Justice

This study reveals the complex dynamics of distributive justice in Freetown. The pilot bus project is a key example of how implementing a formal public transportation system cannot be assumed to promote justice, as there is a high risk of generating inequity through its discriminatory fare system. Concerns raised about the pilot's implementation are illustrative of the broader need to integrate the pricing of mass transit services with other public transportation, to unlock progressive impacts that can underpin a just transition towards SUM (Venter *et al.*, 2018). A just mobility transition cannot be achieved with inequitable fare policies which disproportionately impact low-income communities, and prevent marginalised groups from accessing safer modes of transport, as emphasised by study participants. The transport section of FCAP does not include any reference to the affordability of future motorised transport systems, omitting a significant consideration for transport justice. Affordability must be considered in the

implementation of bus and cable car systems, which will not relieve transport poverty for low-income communities if there is a cost barrier.

As supported by literature (Oviedo *et al.*, 2021), a critical component of achieving a just transition to SUM in Freetown will be investment into pedestrian infrastructure to improve walkability. This is recognised within the transport section of FCAP (actions D and P), but one expert noted that there is slow progress being made in this area (E6, 2024). Given that walking is the most popular mode of transport in Freetown and there is a large opportunity cost associated with investments into motorised public transport (Ortegon-Sanchez & Hernandez, 2015), under such conditions it may be more effective to use resources to improve pedestrian infrastructure than to subsidise formal public transport (Serebrisky *et al.*, 2009). There is an urgency to integrate walking into urban transport planning in African cities (Mitullah *et al.*, 2017), and this would work synergistically with the implementation of formal public transport services in the long-term by producing accessibility gains for residents (Venter *et al.*, 2018). Ensuring investment into peripheral regions would address transport poverty related to the exclusionary urban configuration of informal settlements, but must take into account both the objective and subjective factors that determine walkability for different communities (Oviedo *et al.*, 2021).

This study also finds that the transport section of FCAP does not consider integration of the informal transport sector. It therefore fails to recognise the dependence of local livelihoods on the informal economy, and the vital role informal services play in meeting Freetown's transport demand. The emerging consensus between experts and literature is that cities are better off proactively including informal transport to ensure just mobility transitions, while harnessing the entrepreneurship and experience of this sector (Venter *et al.*, 2019). In cities like Freetown, it may be optimal to upgrade services incrementally to improve productivity and quality without requiring complete formalisation, with the key point of recognising informal transit in policy, to work towards institutional and operational reform that includes informal operators in the multimodal network (Behrens *et al.*, 2015; Mehndiratta & Rodriguez, 2017). GHG reduction policies can be aligned with such processes, with this study finding that the electrification of okadas and kekehs could present an affordable and equitable pathway to decarbonisation, providing low-carbon mobility for residents across the urban district, and reducing air pollution exposure. Efforts to decarbonise transport must be coordinated and assessed alongside investments into renewable energy, to acknowledge the larger climate impact of energy systems as the highest GHG-emitting sector in Freetown, and the overarching need to increase reliable electricity supply in Freetown.

### 5.3. Recognition Justice

The differing mobility needs of women, children, the elderly and disabled people are not well considered in the transport section of FCAP. Transport-related issues for vulnerable communities lie within the context of high social inequity in Freetown, and the cultural changes required to secure recognition justice may extend beyond the remit of the sector. As such, achieving a just transition to SUM may in part relate to non-transport investments towards other public services that substitute the need for mobility, accounting for low-income individuals who would not be able to afford improved transport services (Porter, 2008).

However, experts' views reveal that transport systems contribute to and are impacted by social inequity, and can therefore play a role in alleviating this. As part of Freetown's Development Agenda to reduce women's unemployment (FCC, 2024), transport policy could centre employment for women to address gender inequity in public transport provision and promote a sense of safety for female transport users.

Active travel infrastructure investments are important for improving mobility, as women are more likely than men to use active travel (Goel *et al.*, 2022) and their mobility is more significantly inhibited by road traffic (Bradbury, 2014). For disabled and elderly people, accessibility improvements to pedestrian infrastructure are crucial to provide motility and connectivity to public transportation. The implementation of formal transport systems must recognise the structural, psychosocial, service quality, sociodemographic and institutional barriers that prevent transport justice for such groups (Duri & Luke, 2022).

## 5.4. Policy Recommendations

The following policy recommendations, informed by this study and analyses, could help to foster a just transition towards SUM in Freetown. These may be applicable to other cities in SSA with similar conditions to Freetown, that are looking to adopt policies which consider transport and mobility justice.

1. **Enhance cross-sectoral coordination**
   To build long-term institutional capacity and improve participatory decision-making, cross-sectoral cooperation should improve to more effectively address land planning issues and future transport development. In particular, knowledge sharing and coordination is encouraged between the: Ministry of Transport and Aviation; Ministry of Lands, Housing and Country Planning; Ministry of Energy; Roads Authority; Road Safety Authority; Road Transport Corporation; Traffic Police; and Road Maintenance Fund Administration. This could lead to greater efficiencies, for example where consultation processes could be co-designed and shared.
2. **Place greater priority on active travel infrastructure**
   Though actions related to pedestrianisation are present in the transport section of FCAP, emphasis is largely placed on the bus and cable car projects. The value of enabling safe active travel must be recognised as a key element of a just mobility transition, especially for informal settlement, low-income, and vulnerable communities.
3. **Integrate informal transport sector workers**
   Incremental investments that integrate informal transport sector workers will account for the 85% of transport sector jobs in the informal economy, protecting people's livelihoods and recognising that injustice occurs with employment and income loss. The voice of transport unions and associations should be strengthened in the integration process, to create a representative multi-modal network that can unlock systemic change in public transport.
4. **Implement affordable fare policies for formal public transportation systems**
   Fare systems must take into account the pricing of other public transport services to incentivise the use of new formal transport systems, reflecting the reality that every step in a multi-modal journey presents an additional cost to the user. A cost barrier will exacerbate transport poverty and social exclusion, preventing a just transition to SUM.
5. **Recognise and provide for the differing needs of vulnerable communities**
   The accessibility requirements of vulnerable communities was noted as a key gap in the transport section of FCAP and must be recognised in the development of transport infrastructure. Develop societal support systems for women, children, disabled people and the elderly, that increase the ease and safety of using formal public transport systems. The representation of women in public transport provision should be increased to address gender inequity in employment.

6. **Implement climate resilient transport infrastructure as a priority**
   Greater focus should be paid to the climate resilience of transport systems in the face of heavy rainfall and intense heat events. Investment should prioritise climate resilience over mitigation, recognising the future increase in extreme weather events that will disrupt transport, and most severely impact low-income and vulnerable communities.
7. **Assess transport decarbonisation in tandem with energy decarbonisation**
   Vehicle electrification is important to reduce GHG emissions, but the opportunity cost of investing into low-carbon mobility should be examined within the context of Freetown's energy system, which requires high levels of renewable investment. Ensuring reliable electricity in Freetown is vital to reduce energy poverty, and renewable energy should constitute the main power source for future low-carbon mobility.
8. **Monitor the public health risks and benefits associated with changes in air quality**
   Public health is a key factor in SUM and road transport impacts on air quality must be monitored to prevent public health issues. It should be acknowledged that air pollution often impacts low-income and vulnerable communities most, and that such groups have lower access to healthcare. Since air quality improvements can lead to measurable benefits for public health, this should be monitored and used as evidence to help influence future transport developments.

# 6. Conclusion

While the transport section of FCAP acknowledges the need for a "*just transition through an inclusive approach*" (FCC, 2023, p.81) and makes some attempt to plan for this, Freetown could benefit from further consideration around how a just mobility transition could be achieved. In this instance, the study hypothesis that the current iteration of FCAP does not sufficiently enable a just transition towards SUM, is accepted.

Attempts are currently being made in Freetown to ensure inclusive growth in the transport sector, with a primary focus on the implementation of formal public transportation systems. This study shows that policymakers must further interrogate justice and equity in the development, implementation and use of such systems, and that changes are required in governance to build institutional capacity. The needs of vulnerable, low-income and informal settlement communities must remain at the fore of transport and land-use planning, recognising that these population groups are key in securing a just transition towards SUM in Freetown. The transport sector itself also constitutes an integral part of this, requiring climate resilient systems that stand against increasingly likely weather hazards, and provide opportunities to women and informal transport sector workers, without whom a just transition cannot be achieved.

The policy recommendations in this study can be used to guide policymakers in Freetown, and similar cities in SSA, towards more just and equitable SUM systems. This study represents the first effort to apply the conceptual framework to SUM transitions in SSA, supporting real-world policy evaluation and evidencing how it can be used within transport, sustainability and climate policy studies. The combined method of applying the conceptual framework alongside semi-structured interviews was successful in highlighting key omissions in the transport section of FCAP, and helped to reveal a number of important considerations for equitable transport planning in Freetown. This study therefore contributes to a small but growing body of literature investigating just mobility transitions in the Global South. Advancing the concepts of transport and mobility justice is important to achieve just transitions towards SUM in SSA, in a manner that truly leaves no one behind, and recognises the importance of sustainable transport systems in achieving the SDGs.

## 6.1. Limitations and Areas for Further Study

Each action in the transport section of FCAP could not be interrogated equally, limiting analysis to key points as identified by interview participants. This limits the range of specific actions referenced, but ensures a breadth analysis of key considerations relevant to the conceptual framework. It is also limiting that the study solely uses interviews with experts. The value of hearing views from transport users, workers and relevant communities should be recognised as vital within just transitions research. Nonetheless, this was not feasible for the study, and consulting experts who could link the transport section of FCAP with justice and SUM principles was valuable and time efficient in most effectively developing policy recommendations for a just mobility transition.

In Freetown, further study into the decentralisation of power to build institutional capacity and improve participatory decision-making is crucial to ensure mobility justice, and more widely, just transitions in sustainable urban development. Future studies should aim to encourage just transitions towards sustainable systems by applying the conceptual framework to other priority sectors in FCAP. The framework can also be applied to study future transport projects in both Freetown and alternative cities in SSA. Beyond this framework, other principles such as reparative and epistemic justice can be used to assess transport and mobility justice in future Global South research (E7, 2024). Reparative justice

considers who is, or what systems are, responsible for climate change reparations (Broto *et al.*, 2021), while epistemic justice looks at fairness in valuing and accepting diverse knowledge (Lowe *et al.*, 2023). Future research should acknowledge the role of mobility systems in sustainable urban transitions, as part of a holistic approach to generate equitable sustainability in just transitions that achieve the SDGs.

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# Appendix

Appendix 1: Topic Guide

**Topic Guide: Semi-Structured Interview (Online)**

**Research question:** To what extent does Freetown Climate Action Plan promote a just transition towards sustainable urban mobility?

**Researchers:**
Indhi Gupta, MSc Student (UCL)
Dr. Clemence Cavoli, Lecturer (UCL Primary Researcher/Supervisor)

**Topic guide and research questions**

1. **Description**
   a) Format
      - A set of questions sent before the interview
      - Online semi-structured interviews (audio and/or video recorded)
      - Follow-up questions are allowed
   b) Length: 45 minutes
   c) Aim: To gain a better understanding of where gaps exist in the transport section of Freetown Climate Action Plan related to sustainability and justice principles, within the context of 'just' sustainable urban transitions in Sub-Saharan Africa.

2. **Verbal consent**
   Participants will be asked to answer the following questions:
   a) Please answer 'yes' or 'no' – would you like to participate in this interview?
   b) Please answer 'yes' or 'no' – do you agree for the interview to be audio/video recorded and kept anonymous, for the purpose of transcription only? The recording will be stored securely, deleted upon completion of the dissertation, and only seen by the researcher team. The transcription will be anonymised.

3. **Personal Information**
   a) Name
   b) Email address
   c) Job position
   d) Organisation

4. **Background information**
   Participants will be asked to briefly discuss their experience and perspective on the research topic.

   Key concepts and definitions that may be referred to during the interview:
   a) **Just transition:**
   Socio-environmental concept that asserts development for sustainability transitions must provide **equitable socio-economic benefits**. This strongly considers the concept of transport equity, i.e. equal accessibility of transportation systems, to reduce transport poverty. For this study, this pertains to the urban environment of Freetown and a 'just mobility transition' to describe a just transition towards sustainable urban mobility that leaves no one behind.

b) **Procedural justice:**
**Fair decision-making processes** throughout project development stages, to ensure that local community views are heard in planning processes.
**Example:** In the development of electric vehicle charging infrastructure, will there be a consultation process/involvement from local stakeholders about their siting and how this development will impact local communities positively or negatively.

c) **Distributive justice:**
The **equitable distribution of benefits and burdens** arising from development.
**Example:** If a new mass transit bus system is successfully implemented across Freetown, how will this be configured to ensure accessibility and affordability for all (including those in informal settlements), and that this does not persist issues such as poor air quality, congestion and fossil fuel dependence, which will further social inequity.

d) **Recognition justice**: The consideration and **inclusion of vulnerable communities** during and after development.
**Example:** In the development of a cable car system, will this adequately consider disabled people, as an example of a marginalised community. Will there be considerations for women travelling long distance who may be concerned for their safety? Such provisions will ensure inclusive growth for Freetown.

**5. Topic guide**

**Freetown, Sierra Leone**

a) In your view, what are the biggest transport challenges currently in Freetown?

**Conceptual framework (See definitions and examples of its application above)**

b) I have developed an analytical framework to assess the extent to which the transport section of Freetown Climate Action Plan can lead to a just transition. In your view, is this an adequate framework?

**Freetown Climate Action Plan: Urban Mobility (See table on next page)**

c) To what extent do the **goals** of Freetown Climate Action Plan (Table 1) promote a just mobility transition?
d) To what extent do the **actions** in Freetown Climate Action Plan transport section (Table 1) present an opportunity for:
   i. Procedural (in)justice
   ii. Distributive (in)justice
   iii. Recognition (in)justice
e) Based on your knowledge and expertise, are there any additional actions you would suggest to address the challenges and injustices outlined in the questions prior?
f) To what extent do the transport plans take into account the high vulnerability of Freetown to climate change, and the disproportionate impact this will have on low-income and vulnerable communities?

**Table 1: Priority and non-priority actions listed in the transport section of Freetown Climate Action Plan, with reference to the three goals for sustainable urban mobility. Actions are highlighted in either blue, green or yellow to denote which goal they aim to achieve.**

**Source: Freetown City Council (2022)**

| FREETOWN CLIMATE ACTION PLAN: URBAN MOBILITY | |
|---|---|
| **Vision: Building a cleaner, safer and more equally accessible transport system** | |
| **Goal 1** | Encouraging public transport and maintaining the share of private to public transport at low levels |
| **Goal 2** | Proactively address historical land-use planning challenges in support of efficient and low-carbon transportation and transit-oriented development |
| **Goal 3** | Promoting behavioural change and enabling and encouraging the use of public transport, cycling and walking |
| **Priority Actions** | |
| **2025** | |
| **A** | Partner with the Ministry of Transport and Aviation to introduce a regulated high-occupancy bus service along the Freetown East-West Corridor |
| **B** | Conduct a feasibility study for and procurement of the Freetown Cable Car East Line (pilot route) |
| **C** | Introduce on-street parking controls |
| **D** | Improve pedestrian walkways |
| **2030-2050** | |
| **E** | Partner with the Ministry of Transport and Aviation to increase the proportion of high-occupancy electric buses |
| **Non-Priority Actions** | |
| **2025** | |
| **F** | Support a ban on import of high-polluting vehicles |
| **G** | Cooperate with national stakeholders to implement a national vehicle emission testing roadworthiness regime |
| **H** | Support the development of a system for and the performance of on-the-spot vehicle emission testing |
| **I** | Promote transit-oriented development to minimise car travel by introducing high density development at locations with good public transport links |
| **J** | Partner with the Ministry of Transport and Aviation in developing a Sustainable Transport Management Strategy for the Western Area |
| **K** | Devolution of planning controls to local councils |
| **L** | Devolution of the maintenance of local roads to Freetown City Council |
| **M** | Through the development of the Western Area Structure Plan, policy interventions will seek to restrict development in hard-to-reach areas that are difficult to service due to limited levels of accessibility |
| **N** | Freetown City Council planning policies will give priority in developing Action Area Plans targeted at preventing unsuitable development in hazard prone areas |
| **O** | To stem the rapid rate of deforestation on the periphery of the city, areas will be identified in the Local Area Plans as Protected Forest Areas. The approach will aim to protect areas within existing water supply catchment and areas at risk of funding. |
| **P** | Create pedestrianised streets |
| **Q** | Improve street lighting in the Central Business District area |
| **2030-2050** | |
| **R** | Implement the cable car pilot and other routes as part of the integrated transportation system |
| **S** | Implement a Low Emission Zone and congestion charging schemes |
| **T** | Introduce car free days |

Appendix 2: Participation Information Sheet

**Participant Information Sheet for Experts: Sustainable Urban Mobility, Freetown Climate Action Plan, and Transport Justice**

UCL Research Ethics Committee Approval ID Number: **28253/001**

**YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET**

**Title of Study:** To what extent does Freetown Climate Action Plan promote a just transition towards sustainable urban mobility?

**Department:** Department of Civil, Environmental and Geomatic Engineering

**Name and Contact Details of the Researcher(s):** Indhi Gupta (ucesigu@ucl.ac.uk)

**Name and Contact Details of the Principal Researcher:** Dr. Clemence Cavoli (clemence.cavoli@ucl.ac.uk)

**Invitation Paragraph**

You are being invited to take part in this MSc dissertation project. Before you decide, it is important for you to understand why the research us being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is unclear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

**1. What is the project's purpose?**

The study focuses on the extent to which the transport section of Freetown Climate Action Plan promotes a just transition towards sustainable urban mobility. It will utilise a conceptual framework from energy justice literature centred on justice principles, with applications to the transport sector and specific reference to sustainable urban mobility plans for Freetown. The study will draw on qualitative research methodologies based on a case study approach involving semi-structured interviews, offering an analysis of transport plans utilising procedural, distributive and recognition justice principles. Interviews are expected to elicit views on experiences and the potential for current plans to generate systemic change that provides the foundation for a sustainable urban mobility system that offers equitable benefits to the growing population of Freetown.

**2. Why have I been chosen?**

You have been chosen because of your expertise in one or more of the following: sustainable urban transitions, sustainable urban mobility, Freetown Climate Action Plan, just transitions in the Global South, and transport/mobility justice. A lower age limit of 18 years has been established to ensure all experts are consenting adults, and we are looking to interview around six experts.

**3. Do I have to take part?**

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time without

giving a reason and without it affecting any benefits that you are entitled to. If you decide to withdraw you will be asked what you wish to happen to the data you have provided up that point.

**4. What will happen to me if I take part?**

Semi-structured interviews will be conducted including one or more of the following fields: sustainable urban transitions, sustainable urban mobility, Freetown Climate Action Plan, transport justice, mobility justice, and just transitions in the Global South.

Interviews will last around 45 minutes and will be undertaken in July 2024, remotely. Interviews will be conducted, recorded, and transcribed using the online platform Microsoft Teams or Zoom depending upon your preference. A topic guide has been designed for the interviews and is shared alongside this Information Sheet for you to read prior to the interview.

**5. Will I be recorded and how will the recorded media be used?**

The audio and video during the Teams/Zoom meeting will be recorded. Once the interview is completed, a transcript will be generated and edited as necessary.

Results from the semi-structured interviews will be analysed using qualitative analysis to find common themes that are mentioned frequently amongst participants, and how this relates to the conceptual justice framework. The findings will be used in conjunction with wider literature and the application of this framework to Freetown Climate Action Plan, to build on the emerging concept of 'transport justice' and 'just mobility transitions' within the specific context of Freetown, and more widely, Sub-Saharan Africa and the Global South. This shall create a coherent argument between theoretical findings in literature, how these are applied in practice, and their interpretation amongst interview participants.

**6. What are the possible disadvantages and risks of taking part?**

If at any point you feel uncomfortable sharing a personal view related to a question that is posed or an avenue of discussion, there is no need for this line of questioning to be taken further. With any such discomfort, a question can be skipped and we can move onto a different aspect of discussion.

**7. What are the possible benefits of taking part?**

You will be provided with an open platform to express your views on how best to ensure justice within sustainable urban mobility transitions. This will offer a chance for you to gain insight about the study, of which results shall be shared, and to further your understanding of justice principles, and how these concepts can be applied to ensure a just transition in Freetown. If the research project is successful in its approach and findings, your participation could contribute towards further considerations that could be made in the transport section of Freetown Climate Action Plan that promote justice, equity and climate sustainability.

On a wider scale, taking part in this study will give you an opportunity to contribute to a transport justice framework in the hopes of advancing this emerging concept and applying it within the context of international development in the Global South. This will have a positive impact on Freetown as a

pioneering city in Sub-Saharan Africa, and more widely for the discipline of sustainable urban transitions in the Global South.

**8. What if something goes wrong?**

If you wish to raise a complaint about the research interview process, you can contact the project supervisor, Dr. Clemence Cavoli based at the Centre for Transport Studies, clemence.cavoli@ucl.ac.uk.

If your complaint has not been handled to your satisfaction, you can contact the Chair of the UCL Research Ethics Committee – ethics@ucl.ac.uk.

**9. Will my taking part in this project be kept confidential?**

All the information that we collect about you during the course of the research will be kept strictly confidential. Recordings (audio and video) will be stored securely on a central store (UCL OneDrive). Transcripts will be pseudonymized as soon as possible (i.e. your name will be replaced with a random identifier). We will also try – as far as possible – to ensure that you cannot be identified in any ensuing reports or publications.

The recordings and transcripts will be stored during the research period and will be deleted following completion of the MSc, by the end of September 2025.

**10. Limits to confidentiality**

Confidentiality will be respected subject to legal constraints and professional guidelines. However, kindly note that as the number of people interviewed is small, and the number of specialists in this field is also limited, it may be possible that you are identified in a publication through a description of your role or profession and/or from a quote that you gave during the interview.

**11. What will happen to the results of the research project?**

Once the data has been analysed, the results will be available in the research project – an MSc dissertation. The supervisor, the researcher, and participants that request this via email request will have access to the research results.

**12. Local Data Protection Privacy Notice**

**Notice:**

The controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice:

For participants in research studies, click here

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The categories of personal data used will be as follows:

- Name
- Email Address
- Audio recordings
- Video recordings

The lawful basis that would be used to process your *personal data* will be performance of a task in the public interest.

Your personal data will be processed until completion of the MSc, and will be deleted by September 2025. it is required for the research project. The data you will provide will be anonymised and will endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

**16. Contact for further information**

If you wish to have further information, please contact Indhi Gupta ucesigu@ucl.ac.uk or the Project Supervisor Dr. Clemence Cavoli clemence.cavoli@ucl.ac.uk.

Participants will be given a copy of the information sheet and, if appropriate, a signed consent form to keep and remember to thank the participants taking part in the project.

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

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Appendix 3: Participation Consent Form

**CONSENT FORM FOR ADULTS IN RESEARCH STUDIES**

**Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.**

**Title of Study:** To what extent does Freetown Climate Action Plan promote a just transition towards sustainable urban mobility?

**Department:** Civil, Environmental & Geomatic Engineering (Faculty of Engineering Sciences)

**Name and Contact Details of the Researcher(s):**
Indhi Gupta (ucesigu@ucl.ac.uk)

**Name and Contact Details of the Principal Researcher:**
Dr Clemence Cavoli (clemence.cavoli@ucl.ac.uk)

**This study has been approved by the UCL Research Ethics Committee:** Project ID number **28253/001**

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

**I confirm that I understand that by ticking/initialling each box below I am consenting to this element of the study. I understand that it will be assumed that unticked/initialled boxes means that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.**

| | | Tick Box |
|---|---|---|
| 1. | *I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction and would like to take part in an individual interview. | |
| 2. | *I understand that I will be able to stop the interview at any time, and withdraw my data up to 2 weeks after the interview. | |
| 3. | *I consent to participate in the study. I understand that my personal information *(name, email address, audio recording, video recording)* will be used for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing. | |

| | | |
|---|---|---|
| 4. | **Use of the information for this project only**<br><br>*I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified.<br><br>I understand that my data gathered in this study will be stored securely. The research team will make best efforts to ensure that it will not be possible to identify me in any publications. However, I am aware that given the expertise and small number of participants identification may still be possible.<br><br>I would be happy for the data I provide to be archived at a password-protected computer on UCL OneDrive password-protected account. The recordings and anonymised transcripts will be stored during the research period and will be deleted once the MSc degree is awarded, expected to be in the last quarter of 2025. | |
| 5. | *I understand that my information may be subject to review by responsible individuals from the University monitoring and audit purposes. | |
| 6. | I understand the direct/indirect benefits of participating. | |
| 7. | I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study. | |
| 8. | I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future. | |
| 9. | I understand that the information I have submitted will be published as a report and I wish to receive a copy of it. (Yes/No) | |
| 10. | I am aware of who I should contact if I wish to lodge a complaint. | |
| 11. | I voluntarily agree to take part in this study. | |

| _____ | _____ | _____ |
|---|---|---|
| Name of participant | Date | Signature |

| | A | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|
| 1 | Topic | | | | | | | |
| 2 | Question | Procedural (in)justice | Distributive (in)justice | Recognitive (in)justice | General comments for JT | Consideration of vulnerability to climate change | Anything missing / would change | Other thoughts |
| 3 | | | | | | | | |
| 4 | E1 | Ministry of Transport and Aviation consult during development process, especially with involvement of external or private partners who include public consultation as a 'must' in development process. Boils down to individual projects/actors and whether these decision-making processes are fair with regards to the inclusion of these stakeholder views. In their experience, consultation groups have consisted of variety of stakeholders beyond government, including civil society and NGOs, and have been quite consultative. Integration with other systems should continue to be considered, e.g. links between energy and transport. Where power lies in decision-making has large impact, i.e. mandates and influence to development; difficult for National Ministry to oversee development across an urban space like Freetown. Says more engagement for FCAP would have been beneficial in terms of just transition, in line with Transform Freetown engagement | Harder to secure than procedural; uses CBD centrality as an example for if development is focused here, they must improve connectivity to hillside communities; at same time must consider links to unsafe settled areas, i.e. want to increase accessibility but don't want to jeopardise safety by encouraging settlement in unsafe locations; uses concept of '15 minute city' to explain need for local public infrastructure/services/amenities/employment opportunities that can promote equity and reduce the need to travel | In general, vulnerable communities are well considered in new Freetown development as share of vulnerable people is quite high, and is accounted for in consultative processes; high-level actions don't necessarily capture this but more detailed action planning should aim for recognition justice through procedural justice action | | Adaptation must take more of a precedent than mitigation to ensure climate- and future-proofing; changing climate in terms of temperature and precipitation need to be considered; notes recent flooding and how planning needs to more greatly consider such risks; development of cable car system should account for tendency to deforest hillside areas for construction of poles (increasing risk of landslide) and that landslide would be disastrous for cable car system; links climate change considerations for low-income/marginalised communities so inherently tied to JT because it is these communities that will be most impacted by climate change in Freetown, so emphasises importance of long-term planning in this way | | |
| 5 | E2 | "Nothing for us without us" - the attitude of those in informal settlements in MWH experience and that projects cannot be sustainable without acquiring this (LINK WITH SOCIAL LICENSE TO OPERATE?); notes lack of project success without procedural justice; has to tie in multiple aspects including: terrain, type of bus, feeling inside bus, what is inside the bus; priorities for bus travel; currently procuring consultant to advance further bus routes | Cable car project is ambitious and innovative project that takes into account geography and built environment, but city would not only be able to advise/enforce regulation, regulation done by Ministry of Transport or body set up under Ministry. Cable car will increase accessibility of transport significantly; highlights project as being important in securing justice of informal settlements, with most along hilltops that are high risk landslide areas or along coastline so high risk flooding; cable car takes into account inaccessibility of hilltop areas that two-wheelers cannot even access, promoting transport access (mobility justice) for informal communities and thus access to employment opportunities. Collab with UNEP looking at pilot for electrifying "15 three-wheelers and link them along bus corridor, but small amount so unsure of wide benefit and charging facilities will be located near CBD/city hall to reduce need for going to garage; council will influence siting of charging facilities in hard-to-reach areas. Injustice in bus pilot scheme which is more expensive for end-users than previous bus services, and people expected it to be cheaper, meaning potential further inequality by outpricing low-incomes; also continuing congestion with new bus service; key aspect for distributive justice is to have a well-formed pricing mechanism that takes into account children, elderly, women as currently it is just a flat rate which creates injustice; not within city's remit to adjust pricing mechanism this is higher level decision but can emphasise this to Passenger Transport Authority; mentions improving street lighting as good measure to promote active travel and that these developments (alongside cable car) should depend on low-carbon energy sources, mainly solar but also hydroelectric; CBD street lighting will be 100% solar and cable car mixture of (1) solar, (2) grid, (3) diesel generator | Cable car proposed to have women-only cabin that they can carry trade with them; seamless platforms for disabled access; injustice in existing pilot bus service - meant to make it safer esp for women/girls but its more expensive, so prevents access; women/girls unable to benefit from improved safety considerations in new buses; notes lack of comfort for women in affordable bus services; started bus scheme with 50 buses and 70-80 drivers, all of which are men and now 2 women have joined fleet - "maybe sometimes when you see your own kind driving a bus" will encourage use of this mode of transport and promote safety; "not a good sign in this modern age" when we know women are capable; mentions efforts in new Transform Freetown document that wants to create 120,000 jobs for youth and women - i.e. should link transport developments with this target, not just bus drivers but operators for cable cars, etc. | Notes importance of just transition for Freetown embodied by the term "nothing for us without us"; linking heritage and tourism with transport system to promote transport use that is more leisure-based rather than means to an end; notes that with time, city will be able to leverage their knowledge/expertise to ensure that views are heard at central gov't; notes that grid infrastructure is too unstable to rely upon and renewable energy sources will be prioritised; would highlight overall that women and girls need more prioritization in FCAP and general development in attainment of SDG 5 as women are most often left behind, e.g. disabled have a strong forum in Freetown but for women this is so far reaching and spread out that it's hard to capture all needs for women/girls across the board, so MWH would make more efforts to single women out positively | Believes FCAP does best job given limited institutional capacity in accounting for vulnerability to climate change | electrification of two- and three-wheelers, too important to forget in overall transport strategy and decarbonisation esp in terms of accessing hillside/hilltop areas that are inaccessible by any other vehicle type and include those populations within transport systems; have to provide alternatives for people where bus and cable cars may not work; would add Q to D (FCAP) and will mention this when reviewing FCAP | |
| 6 | E4 | Cable car requires lots of external actors (i.e. for funding, feasibility study process, project contractors) presenting potential injustice; mentions willingness of FCC/other authorities in investing into research that will significantly shape development to the needs of local people; when looking at job creation, need to hear peoples' views on what jobs they want or are actually willing to do; how will you attract people to these jobs otherwise? | Notes lack of statistics (data) prevent a well-informed bus system from being configured (identify key routes, fuel usage, occupancy of buses along particular corridors) to handle intensity of flows; on-street parking controls addresses need to reduce congestion and promotes justice, but must be enforced well by FCC to get things under control as problem is exacerbated by multitude of traders; they also represent opportunity for high revenue with proper [fining] systems in place (i.e. money that can be hypothecated); ban on high-polluting imports must be considered within affordability of Freetonians and majority of current vehicles used in public transport are all old imports, so if this supply would be eliminated how would demand be met?; cable car should work well to connect further locations and minimise car travel but must be accompanied by investments into NMT infrastructure; Western Area Structure Plan currently being developed (completion ~2025) and should comprise wider metropolitan plan so will apply not just to Freetown but wider areas in Western Area Urban/Rural; could encourage spread/movement of people to surrounding locations and reduce density of settlement in Freetown | | questions why improving pedestrian walkways doesn't include partnership with Roads Authority as FCC does not have complete mandate for that so could create potential conflict (procedural injustice?); large focus needed on ensuring job provision and transitions in job roles when changes are made; social protections required in formalisation processes, i.e. integrating formal public transport means loss of drivers in informal sector; not just about setting one sector right but need broad approach; unemployment esp youth unemployment huge issue | Draws some elements from REDD+, National Adaptation Plan and NDCs but thought they would be referenced more; expected that vulnerability to and risks of high temperatures would be reflected more strongly; talks about recent heavy rainfall on 20/21 July weekend that flooded many areas and caused some building collapse; i.e. FCAP does not currently reflect the severity of climate change effects and so climate resilience needs to be at the fore; reflects Transform Freetown agenda more than climate change | | FCAP is pioneering for a place like Freetown with limited resources but looking forward to the review of this |
| 7 | E3 | injustice related to lack of strong union/unified voice for informal transport operators in Freetown compared to other SSA cities like Johannesburg; K/L actions (devolution) - FCC no statutory powers to meet community needs, related to centrality; decision-making powers far removed from impact and effect of policies; Freetown needs more inclusive bottom-up approaches in governance, especially at informal settlement community level; lots of engagement between FCC and public but it tends to be one-way and more reactive rather than planning-led; not many examples of engaging communities to identify solutions, but highlights lack of power as barrier to implementing any such engagement-led solutions; | injustice related to the incalculable stake of informal sector transport operators in bus corridor, related to inability to come up with injustice related to the incalculable stake of informal sector transport operators in bus corridor, related to inability to come up with funding to own stake - loss of income from not being able to operate in bus corridor is not being compensated; "no special interest in trying to improve [their] access and ensure distributive justice"; "effectively pushed out of the corridor to reduce congestion"; World Bank did not budget for acquisition of informal sector in bus corridor, and FCC or gov't did not have funds to regulate/buy out operators, so they have become disadvantaged; very little monitoring of impact on the informal sector following introduction of bus corridor; seeking budget for Integrated Transport Plan; justice related to siting of cable car stations in most deprived communities and increased access for hillside communities; action C (on-street parking controls) expected to promote distributive justice given this will impact more affluent people given low ownership of private vehicles ("20%); bus corridor began to encourage modal shift but supply cannot meet demand; action D (pedestrianisation) will affect street vendors' livelihoods, trying to find alternative market spaces but require high levels of refurbishment and accessibility improvements to become user-friendly; main focus on walkway improvements seem to be in CBD | bus pilot has not wholly addressed issues related to recognition justice; cable car assumed to improve accessibility for vulnerable communities, given greater ease of regulation and operation of such a system; accidents lower and more consideration for disabled people who cannot access buses, i.e. step-free access for cable car; but injustice related to ability of disabled people to reach stations | | need more low-carbon solutions; planting trees along bus corridors | would reorder some actions based on what is now more short- and medium-term, e.g. action R would be seen as more medium- than long-term | some things may seem far-fetched but could have long-lasting impact, e.g. congestion charge |
| 8 | E7 | Questions how the FCAP was developed, i.e. consultant-based or was there inclusion of different voices/experiences/perspectives, and whether this engagement was done with adequate feedback and response; would need to start at community-based level and then build upwards towards some kind of consensus about priorities. Hard to have a devolved transport planning system "if not all the pieces are going to fit together"; need a more layered approach but unclear how this will be done. Emphasises community engagement on the cable car project to see if people think this will meet their transport needs, while there is a case to be made for it, must be done with a fair and regulated process of building this infrastructure without corruption; shouldn't become a "vanity project" or done for media attention; what companies will benefit and how much public control will there be to ensure fair development process. | Bus corridor injustice related to certain corridor that attracts business real estate investment and economic development around bus service hubs, meaning most marginalised or poorest people unable to afford to live there - pushed out to further peripheries and informal settlements, meaning less connection for those people; unless this is considered within FCAP alongside the division of priority actions this presents injustice. Need to consider integration of informal sector more because they will play a crucial role in connecting people to larger scale public transport that can't go everywhere - "so how's everybody going to get to the corridor?"; mentions moto taxi services being pushed out/discouraged but that they can assist public transit system. Need to consider fare system that will get people across multiple modes of transport without fragmented journeys that impose a huge cost burden on poor people when having to stitch together multiple modes; we know that most journeys are multimodal so need to encompass that. Action M Western Area Structure Plan seems crucial and would expect this to be in high priority action. Building walkways in peripheral areas would help people put together multimodal journeys, but sounds like focus is on CBD. Action F (high polluting bus) would effectively make cars more expensive and costs imposed on people with least economic power, and this higher vehicle cost would get passed on to public transport users in the form of increased fares. Notes conflict over limited roadspace and how changes can lead to change of urban space, meaning an increase in throughput of traffic flow may actually make spaces less desirable for pedestrians - this is in context of street vendors' also and how this is important economic activity for such employment. | Nothing about gender inequities; in cities often men and women have very different economic roles and patterns of mobility, and therfore different needs; seems to be one-size-fits-all approach perhaps because high-level actions; men tend to be the drivers of transport and what are the implications of that from an equity and justice perspective. Also some thinking for requirements of disabled people and pedestrianization. | | Seasonality should be factored into planning; heat when waiting for buses or impact of flooding | Nothing about subsidising the electrification of two- and three-wheelers; would be very affordable and clean way to get around; but would want this to be subsidised and incorporated into SUMP. Would encourage integration of energy system changes into transport plans, e.g. EV battery storage in microgrids to improve resilience in energy infrastructure and allow for small-scale mobility options, and would increase transport access and incorporate informal (popular) sector. Underlying issue of labour force part of transport and energy infrastructure systems and their incorporation into transition planning | Interested about the global climate justice aspect of things, e.g. provision of electric buses via subsidies from Global North; Global North ought to be subsidising and paying climate debt, so hoping climate reparations can be brought into this |
| 9 | E5 | Doubtful of whether political recognition of justice issues translates into actual enforcement, or that changes in institutional arrangement ensure justice at every stage of project development; difficult to say whether FCC currently has the means to oversee FCAP actions in terms of justice, related to (in)sufficient technical and institutional capacity. Injustice comes in form of how policymakers and mobility experts recognise the voices of minority groups in priority actions, i.e. do they agree with actions, and that way they are phrased doesn't show voices of transport unions considered anywhere which is bad given the large impacts on transport workers. Actions K, L indicate notion of justice by drawing power to local levels - promising in terms of current concentration of political power, but devolution doesn't solve everything in transport decision-making unless it is followed up by robust institutional arrangements that ensure evidence based solutions; devolution suggests opportunity for justice to be implemented, esp procedural and recognition, but entrenched institutional culture within existing decision-making bodies means devolution in practice would still have concentrated powers; such change would take a lot of time. | Affordability is one of most urgent issues; in wet season transport fares increase and this isn't reflected in official documentation so transport users not aware of this; frustrating for transport users who do not have any bargaining power; must be stricter enforcement of fare policies to ensure a more standardised transport pricing system so that transport users can benefit from increased transparency and they can make better transport choices by utilising consistent knowledge of transport system. Action M Western Area Structure Plan would deal with planning/land use as well - transport justice cannot be addressed without this, e.g. pedestrianisation and more public spaces; unpacked further - how will public space be divided by different modes of transport?; for NMT the new spatial reorganisation of current space and allocations for transport must be configured; we cannot tell what current implication is from FCAP to achieve goals in this manner and also to promote safety for NMT. Action P (create pedestrianised streets) must ensure protection of street vendors otherwise unjust process; brings in idea of placemaking as human geography concept that could be useful; not entirely novel in transport planning but would be good to insert in Global South context as it is promising but would look very different from common placemaking processes of Global North | Women, disabled people and people of lower socioeconomic class face challenges that cannot just be solved by a women- or disabled-only carriage; more of a cultural issue that is very deep-rooted; e.g. improving street lighting will not just solve issues, but need to have policing, information about available hotlines to call if feeling unsafe, i.e. more long-term societial support networks to accompany transport actions; more lighting still disproportionately demands marginalised individuals to be responsible for their own safety rather than whole society recognising that individuals are targeted; incredibly hard to draft transport policies that can generate cultural change, so answer lies in education; so in line with the justice framework, we have to also recognise that transport curriculum training engineers, economists, geographers, and other transport experts must be educated of this required fundamental change | Overall in phrasing of actions there doesn't seem to be much consideration of justice and equity; actions in general are not specific enough and open for interpretation - future supporting documents required | Doesn't indicate additional funding to climate-proof transport infrastructure; currently indicates more BAU approach to transport investments, rather than indicating how climate change might impact the efficiency and performance of transport infrastructure and assets in the long term | Mentions fare controls and no mention of this despite large impact on distributive justice. Not enough consideration of policy integration and coordination between urban sectors. Questions the way in which different aspects of justice are understood and interpreted within the whole policymaking process and the logics that drive the process itself. | Priority format gives baseline recognition that the said policy issue is important, but doesn't say much about the justice and equity side of things; if we are to assume certain policy actions will be given priority, these should be scrutinised further when it comes to claiming justice or equity; FCAP cannot achieve inclusive growth without interrogating the justice impacts of what is being set out |
| 10 | E6 | Cable car - tried to engage with various agencies and organisations, unsure of outcome. Recent pedestrian infrastructure includes lots of pedestrian bridges that are unpopular; people don't want to walk upstairs to cross the road these are not being used. | Cable car - doing social environmental impact assessment as part of feasibility study; contentious project - potentially more urgent needs in Freetown and is this what the city should be spending money on at this stage; would be interested to see cost-benefit analysis vs. alternative major transport reforms; doubts it will be main mode of transportation; usually developed alongside existing bus and train systems and cable car is last-mile connection, but Freetown doesn't have these main systems; also very concerned about energy aspect; electricity issues so bad in last 6 months - up to 2 weeks without any electricity and longer periods for poorer areas ("1 month no access"); need to think more about renewable energy supply and back up power sources/storage; FURTHER, given electricity issues and lack of faith in government, not sure people would trust cable car; behavioural change aspect will be massive; lack of maintenance of cable car worrisome; given recent issues with Turkish-owned energy infrastructure and that cable car will be externally operated by Exeter company, high risk of a similar situation as energy because of low gov't funds; doesn't see how monthly or annual payments would be made given "real economic crisis" in SL. Bus - disappointed with implementation; buses are full but when speaking to kekeh/okada drivers they say people don't take the bus because it's too expensive; only works out cheaper if you take it from first to last stop; same price if you take it for 5 mins or full route; only caters to subset of population travelling from east all the way from CBD to west; ticketed zones would make sense to YY; bus clearly been challenging to implement and despite them being full, could be more popular; mentions banning of informal transport modes along main bus corridor - just makes it better for cars and goes against disincentivizing private vehicle ownership; also causes tension between formal/informal sectors; recent demonstration from motorbike association caused massive congestion; they can get away with it but kekehs can't because not fast enough and cannot swerve around traffic police; means kekehs getting fined all the time and traffic police see this as opportunity to collect as many fines as possible and try to extort cash; traffic police not been paid in very long time which compounds issue; corruption and extortion a little out of control at the moment. Traffic light system installed highly unreliable and not often running; rumours say effective configuration of traffic lights that doesn't cause massive congestion is still to be determined; doesn't understand why it's taking so long as traffic lights have been on for ~1 year. Doesn't understand why city not investing more in pedestrian infrastructure given high number of tiny corner shops everywhere; uses example of Paris trying to become 15 minute city, i.e. people can access everything within 15 min walk; would be cheaper to invest in NMT infrastructure than cable car system, and more likely to enhance people's day-to-day experience; might be improving pedestrian experience in and around transport hubs, but not really in between. Action E (low C buses) feasibility totally impossible; Freetown doesn't massively contribute to GHG emissions globally right now, so shouldn't be a priority; first city must think about energy infrastructure and increasing RE (mentions solar) to stabilise city-wide electricity supply rather than pump straight into transport. Better assessments for distributive justice required | Mentions safety for women and girls; vulnerability of elderly and disabled; massive issues getting around Freetown even if capable, because potholes everywhere or pavement suddenly ends or no crossing; substantial progress not made to overcome these issues. Notes lack of accessibility for disabled people using bus service - doesn't know how much disabled people feel comfortable with navigating that system as first experience with big public transit system; labour is cheap in Freetown and so for vulnerable groups to feel comfortable, having additional people to help out and provide guidance would be good and doesn't come at a major cost | | Lack of recognition that low-income communities will be most largely affected by climate change in Freetown; | For actions, e.g. I or J, data considerations - data generally awful in Freetown, just calculated GHG emissions inventory and data is so awful it's just guestimating; could develop system of vehicle registration to collect basic data on vehicles; would highly recommend this; could also just include vehicle data in property tax survey. Also missing is efforts for sustained funding; cannot plan on donor-by-donor and project-specific basis but should be done with overarching plan | |

Appendix 5: Coding Process

| | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Subsections: Transport challenges; procedural; distributive (incl. climate subsection); recognition | | | | | | | | | | | | | | | |
| 2 | **Procedural justice** | No. of experts | 'Who? | | | Links to FCAP action | | **Distributive justice** | No. of experts | 'Who? | | Links to FCAP | | **Recognition justice** | | |
| 3 | Concerns regarding devolution | 4 | E2, E4, E7, E6 | | | K,L | | Accessibility for residents of informal settlements | 5 | E1, E2, E3, E7, E6, | | A, B, D, J, M, N, P, R | | Table not required for this section | | |
| 4 | Barrier of government centrality | 6 | E1, E2, E4, E3, E5, E6 | | | K,L | | Upcoming cable car project | 6 | E1, E2, E4, E3, E7, E6 | | B, R | | | | |
| 5 | Public consultation processes | 7 | All | | | Applicable to all | | Bus corridor pilot project | 5 | E2, E4, E3, E7, E6 | | A, E | | | | |
| 6 | Financing models | 4 | E4, E7, E5, E6 | | | Applicable to all | | Integration of informal transport economy | 4 | E3, E4, E7, E6 | | A, B, D, E, F, J, M, P, R, S, T | | | | |
| 7 | Voice of transport sector | 3 | E3, E5, E6 | | | Applicable to all | | Pricing mechanisms and cost regulation | 5 | E4, E2, E7, E5, E6 | | A, C, S | | | | |
| 8 | Limited capacity (institutional, knowledge, labour, technological) | 4 | E2, E4, E5, E6 | | | Applicable to all | | Energy infrastructure | 4 | E1, E2, E7, E6 | | B, E, Q, R | | | | |
| 9 | | | | | | | | Low availability of transport-related data | 3 | E4, E3, E6 | | Applicable to all | | | | |
| 10 | | | | | | | | Street vendor livelihoods | 3 | E3, E7, E5 | | C, D, P | | | | |
| 11 | | | | | | | | Walkability, pedestrianisation and NMT | 6 | E1, E4, E3, E7, E5, E6 | | C, D, I, J, P, Q, S, T | | | | |
| 12 | | | | | | | | Vulnerability to weather and climate change hazard | 6 | E1, E2, E4, E7, E5, E6 | | N | | | | |
| 13 | | | | | | | | Focus on CBD | 3 | E1, E3, E7 | | A, D, P, Q, S | | | | |
| 14 | | | | | | | | Vehicle electrification | 3 | E2, E6, E7 | | E | | | | |
| 15 | | | | | | | | Configuration of actions in FCAP | 4 | E2, E3, E7, E5 | | Applicable to all | | | | |
| 16 | | | | | | | | | | | Total | A5, B4, C3, D5, E4, F1, I1, J3, M2, N2, P5, Q3, R4, S4, T2 | | | | |
| 17 | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | **Transport challenges** | | | | | | | | |
| 19 | | | | | | | | Accessibility | | 5 | | | | | | |
| 20 | | | | | | | | Affordability | | 4 | | | | | | |
| 21 | | | | | | | | Congestion | | 4 | | | | | | |
| 22 | | | | | | | | General lack of public services | | 2 | | | | | | |
| 23 | | | | | | | | Geography | | 3 | | | | | | |
| 24 | | | | | | | | Governance | | 2 | | | | | | |
| 25 | | | | | | | | Insufficient road and NMT infrastructure | | 4 | | | | | | |
| 26 | | | | | | | | Limited institutional, financial, technological and knowledge capa | | 2 | | | | | | |
| 27 | | | | | | | | Minimal gov't provision of public transport | | 3 | | | | | | |
| 28 | | | | | | | | Regulation | | 4 | | | | | | |
| 29 | | | | | | | | Reliance on informal transport sector | | 4 | | | | | | |
| 30 | | | | | | | | Road safety | | 4 | | | | | | |