AT2030
Case Study: Full Report

Inclusive Design and Accessibility of the Built Environment in Freetown, Sierra Leone

Funded by

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SIERRA LEONE URBAN RESEARCH CENTRE

AT2030

Summary: Becoming a more inclusive city

**An inclusive Freetown is a city that can be experienced by everybody in a fair
and equal way. By creating safe and accessible environments for all members
of the community, the city can allow everyone to access and participate in the
opportunities they would like.**

The city of Freetown has a population of 1.06 million people that includes 7,807
persons with disabilities according to the 2015 census. However, literature suggests
this is an underestimate as disability prevalence in country is at least 4.3%. More
comprehensive data is needed to support holistic action towards disability inclusion in
the city. Freetown has numerous urban development challenges including: complex
topography and the occupation of disaster-prone land; poor transport and road
networks; a lack of water,
sanitation and waste
management; inadequate
housing and other basic
necessities. These
challenges exacerbate
inequality in the city and the
need for improvements in
infrastructure across all
sectors for the benefit of the
whole population.

Example of inaccessible surroundings

This case study, produced by the Global Disability Innovation Hub (GDI Hub) and
Sierra Leone Urban Research Centre (SLURC) sets out the current state of
accessibility and inclusion in the built environment in the city of Freetown. Research
was conducted between December 2021 and May 2022 with persons with disabilities
living in Freetown and key urban stakeholders such as policymakers and built
environment professionals. This participatory, inclusive, research combined
interviews, participatory activities and workshops to identify priorities and
recommendations to 'take action' towards becoming a more inclusive city and build
consensus among stakeholders.

*"Our physical disability is not our problem, we already accepted it. But the
environments and the perception of the people are now our disabilities."*

Living in Freetown for persons with disabilities is not easy. Large parts of the city are inherently inaccessible due to geographic conditions such as the steep terrain and development patterns that have led to many people living in informal settlements on high-risk land. Many people, especially those living in informal settlements, lack access to basic and essential services within their communities where infrastructure is limited and connectivity is poor. Persons

Housing stock and terrain in Freetown

with disabilities cite transport links and road networks; access to healthcare and education; and access to basic necessities like housing, food, water and sanitation as high priorities.

*"I would need easy access to safe drinking and an affordable water
supply…free or affordable quality medical care, easy access to transportation
facilities as well as an improved assistive technology to live an independent
life."*

Inclusive policymaking is leading the way. From the stakeholder perspective there is awareness of the urgent need for progress. The city has a strong track record of developing robust policies, including examples of inclusive policymaking processes such as the new AT strategy (Assistive Technology (AT) Policy and Strategic Plan 2021-25). However, implementation of the policies and their relevance to the reality on the ground, especially for those communities living in informal settlements, remain significant challenges.

**Stakeholders would benefit from adopting more community-led approaches
and learning about grassroots inclusive design.** Good examples do exist in the city. For example, where persons with disabilities led the development of an

accessible home that is future-proofed for family members. These examples could be collated to create a suite of case studies that policy makers can use and learn from and that could be scaled up or replicated.

> **"I want to reiterate it and I want it to come out strongly in this study that it is only with an honest and sincere collaboration among various actors that we can amicably improve the lives of persons with disabilities, otherwise, we are only wasting our time because the resources are not enough and when actors workers are fragmented, we are only doing a duplication of efforts. Therefore, we need that coordination and synergy among us."**

Access to basic services including sanitation and food is a major theme. The way in which water is managed and accessed in the city affects daily life. Many persons with disabilities have no independent access to clean drinking water. They are also often prohibited from leaving their homes or getting around their communities due to open drains and sewers that are not fit-for-purpose. People also regularly experience stigma due to the lack of privacy in public toilet facilities which are not accessible, leading to long-term mental health impacts.

> **"Having access to an improved toilet facility, a decent, affordable and easily accessible home to sleep in will make life a bit better for me."**

Healthcare and education also urgently need to be more inclusive and will require a systems approach to address infrastructure, products and technology, service design and awareness. The inaccessibility of the physical environment amplifies exclusion and stigma.

Climate plays a major role in the city. Incidences of disasters are likely to increase, so the time is now to ensure disaster and emergency responses are inclusive of persons with disabilities. This should be addressed in city wide strategies that deal with the challenges of climate change and should also be reflected in any disability strategy for the city. An inclusive city vision must be resilient and adaptive, just as a climate resilience strategy must be inclusive.

The lack of any additional physical space to help improve accessibility in the city is also a prominent challenge. Freetown is busy, congested and overcrowded and there is a need to make space that supports persons with disabilities. Doing so will help provide better public spaces for all residents of the city. Key public spaces that are a priority for improvement include improving streets to provide safe pedestrian environments and improving public spaces in communities that connect housing with other areas and facilities. Housing areas are also very congested and typically inaccessible. Identifying areas where appropriate, accessible and affordable housing can be built will be key.

Assistive technology (AT) is widely regarded as a vital enabling tool to support daily life for persons with disabilities. However, accessing AT remains a challenge and the current state of the built environment and infrastructure does not support AT use. There is a need for AT that is locally adapted and sustainable to suit the existing environment.

Example of using assistive technology

Ultimately, **participation of persons with disabilities is key**. 'Nothing about us without us' must be at the core of inclusive city planning. Persons with disabilities living in Freetown have the best knowledge of the challenges they face and can be the designers of an inclusive city. City government and built environment professionals must ensure active participation of persons with disabilities in all that they do.

> **"Whenever the government wants to do any road construction or building construction, the involvement of people with disabilities will be felt, the planning exercise should include people with disabilities. How about this door? How about this step? How about this ramp?"**

Key barriers to an inclusive Freetown include:

Physical Barriers:

- Lack of physical space in the city

- The natural topography of the city being steep and hilly

- Poverty and a lack of basic infrastructure

- Poor sanitation and often no access at all

- Congested roads and traffic and no access to public transport

- Poorly built housing

- Vulnerability to climate change and disasters

- Inaccessible healthcare and education

Non-physical Barriers:

- Lack of participation of persons with disabilities

- Policies not reflecting reality on the ground

- A lack of accountability and responsibility for implementation

- Lack of awareness and understanding of the issues and wider impacts

- Poverty cycle being difficult to break

- Limited access to good healthcare and AT

Priority Recommendations:

- Produce an inclusive city strategy, centred on the participation of persons with disabilities, adapted to the local context and local resource-constraints. This should consider informal settlements, essential infrastructure needs and the scarcity of resources. It should also address climate resilience and disaster response as it relates to the city.

- Prioritise action across the key barriers reported including access to transport, housing conditions, access to education and livelihood opportunities, access to sanitation and healthcare.

- Finance an inclusive built environment by allocating funding and resources to support implementation.

- Raise awareness around the co-benefits of inclusive infrastructure, for example, how accessible housing and sanitation supports better health and livelihoods.

- Develop case studies of community-led inclusive design initiatives in the city and informal settlements to be used as good examples that inspire.

- Develop building codes and accessibility standards in a way that ensures an inclusive design approach is implemented and inclusive outcomes delivered relevant to the local context. These should consider the user experience and journeys across the city.

- Contextualise legislation and standards to local development plans through participation of local persons with disabilities.

- Embed inclusive design in the implementation of all essential infrastructure and services. This must include improvements to the informal settlements and lower income areas, which must be viewed as part of the city.

- Provide disability equality and awareness training to service providers and inclusive design training to all key urban stakeholders to help reduce stigma and increase inclusive solutions. .

- While essential services are a priority, don't underestimate the importance of access to recreation, sport, culture and public space as this supports positive mental health and wellbeing.

- Develop targeted education and training programmes with persons with disabilities to support education attainment and ensure participants are financially supported as required.

- Support local communities to lead, facilitate, and resource development projects in their area.

- Champion what good looks like in the local context by showcasing good examples with a global audience

- Develop a fairer assistive technology distribution system in line with the new strategy on AT that addresses existing barriers.

- Promote use of local materials and resources to ensure sustainability and longevity.

Different stakeholders have different roles to play in shaping an inclusive environment and specific recommendations for **policy, practice and people** are found in the full report.

Creating an enabling environment

Ultimately, an inclusive city is a vital part of an enabling environment where persons with disabilities can thrive. An enabling environment for persons with disabilities should integrate: a supportive legislative environment, an inclusive culture and mindset, participation in planning, design and decision-making, positive cultural change, an accessible and inclusive built environment, access to good quality and affordable assistive technology and inclusive climate resilience. There is good progress across some of these factors in Freetown. However, there is work to do.

So what might an inclusive Freetown look like?
- Inclusive mobility and transport
- Accessible and affordable housing for all
- Inclusive and accessible healthcare and education for all
- Enjoyable urban life: recreation, culture, sport and safe inclusive public spaces
- Inclusive infrastructure, urban planning and services: from water and waste to electricity
- Inclusive climate resilience, adaptation, and disaster preparedness
- Thriving and connected communities
- Access to opportunities and livelihoods

What's next?

This report outlines the key findings from our AT2030 Inclusive Infrastructure case study on the city of Freetown, Sierra Leone. As the fifth of six case studies on inclusive design and the built environment in lower-and-middle-income countries, it will go on to inform our Global Action Report.

The data collection that informed this case study took place during the COVID-19 pandemic and we recognise the impact it has had on partners and communities. We hope this research on inclusive environments can support strategies for a more inclusive recovery.

To find out more:

The full case study is available at www.at2030.org/inclusive-infrastructure and you can contact the Inclusive Design Team at GDI Hub to find out more.

Acknowledgements

This research has ethical approval from University College London (UCL) and permission from the Sierra Leone Ethics and Scientific Review Committee

Global Disability Innovation Hub
www.disabilityinnovation.com

GDI Hub is a research and practice centre driving disability innovation for a fairer world. Our vision is of a world without barriers to participation and equitable opportunity for all. We believe disability innovation is part of a bigger movement for disability inclusion and social justice. GDI Hub works across 5 domains, research, innovation, programmes, teaching, and advocacy. We are solutions-focused experts in; Assistive & Accessible Technology; Inclusive Design; Inclusive Education Technology; Climate & Crisis Resilience and Cultural Participation. Based in East London and a legacy of London 2012 Paralympic Games, we deliver world-class research, ideas and inventions, creating new knowledge, solutions and products, and shaping policy through co-creation, participation and collaboration. An Academic Research Centre (ARC) and a not-for-profit Community Interest Company (CIC) we are operational in 41 countries, with more than 70 partners and have reached 28 million people since launching in 2016.

Sierra Leone Urban Research Centre (SLURC)

The Sierra Leone Urban Research Centre (SLURC), based in Freetown, is a globally connected research centre created through a partnership between the Bartlett Development Planning Unit (University College London) and the Institute of Geography and Development Studies (Njala University).

The centre aims to generate capacity building as well as research initiatives in cities across Sierra Leone focused on the well-being of residents of informal settlements. This will be achieved by:
- strengthening the research and analysis capacities of urban stakeholders in Sierra Leone
- significantly improving the quality and quantity of available knowledge on the informal settlements in Sierra Leone
- making urban knowledge available and accessible to those who need it, prioritizing residents of informal settlements; and
- delivering world leading research in order to influence urban policy and practice.

Contents

Foreword

Glossary of Key Terms

Inclusive Design - can help all human beings experience the world around them in a fair and equal way by creating safe and accessible environments for all members of the community. Inclusive design is a mindset, a methodology that embraces diversity to create a world that is more intuitive, elegant and usable for all of us.

Infrastructure - is the physical and organisational structures, services and facilities that support society. Good infrastructure should contribute to inclusive prosperity, including health and wellbeing. The term often refers to; transport, water and waste-water systems, energy and telecommunications industries, and social welfare structures such as health, education and social support systems[1]. For the purpose of this report all structures (whether physical, institutional or digital) that contribute to the participation of persons with disabilities in daily life and society fall under the remit of infrastructure.

Inclusive and Accessible Infrastructure and Environments - promote access, opportunity, participation and equity in society. Inclusive and accessible infrastructures and environments take into account the principles of inclusive design, embracing diversity and acknowledging that designing for people who experience the least equity in the built environment, such as persons with disabilities, has the potential to benefit all of us.

Persons with Disabilities – throughout this report the term 'persons with disabilities' is used as it is more commonly used internationally including in the UNCRPD. However, we acknowledge that in the UK the term 'disabled people' is preferred. At GDI Hub we prefer to use 'disabled people' in accordance with the social model of disability.

Participants - local persons with disabilities who took part in the research study.

Stakeholders - other stakeholders who took part in the research study such as local government representatives, policy makers and practitioners

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[1] Anjlee Agarwal and Andre Steele, 'Disability Considerations for Infrastructure Programmes' (Evidence on Demand, 8 March 2016), https://doi.org/10.12774/eod_hd.march2016.agarwaletal.

Acronyms and Abbreviations

ADB: Asian Development Bank

AT: Assistive Technology

AT2030: UK Aid-funded programme, 'Testing what works to enable access to life-changing assistive technology for all'

DPO: Disabled Persons' Organisation

FCDO: UK Government's Foreign, Commonwealth and Development Office *(incorporating what was formally known as DFID)*

GDI Hub: Global Disability Innovation Hub

ILC: Independent Living Centre

LMICs: Lower-and-Middle-Income Countries

PwD: Persons with Disabilities

SDGs: the UN's Sustainable Development Goals

SLURC: Sierra Leone Urban Research Centre

WASH: Water, Sanitation and Hygiene

WHO: World Health Organisation

UN: United Nations

UNCRPD: United Nations Convention on the Rights of Persons with Disabilities

AT2030 and Inclusive Infrastructure Programme Background

About AT2030

This case study is part of the FCDO UK Aid-funded 'AT2030: Life-changing assistive technology for all' programme. The AT2030 programme aims to explore 'what works' to increase access to life changing assistive technology (AT) for all. The World Health Organisation (WHO) estimates that there are currently 1 billion people around the world who need assistive technologies, but 90% of them do not have access, and this figure is project to rise to 2 billion by 2050. The programme has reached 21 million people so far through activities that cut across the domains of data and evidence, innovation, country implementation and capacity and participation. The programme is currently operational in over 35 countries and works with more than 70 delivery partners[2].

About Inclusive Infrastructure

The Inclusive Infrastructure sub-programme of AT2030 responds to the idea that successfully reaching people that need assistive technology is also dependent on supporting accessible and inclusive environments and infrastructure.

GDI Hub believe that 'Inclusive Design' has an important role in facilitating enabling environments for persons with disabilities[3]. Research on the current state of accessibility in different cities around the world and the capacity and appetite for inclusive design in policy and industry in those places is needed both to enable better access to assistive technology and contribute to the inclusion and participation of all assistive technology users in society.

Current knowledge around disability inclusion and inclusive design is largely limited to high income settings[4]. This research aims to counter that by building local and specific knowledge of what constitutes an inclusive environment in diverse, lower-and-middle-income countries (LMICs) by engaging directly with communities,

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[2] For further information on the AT2030 programme please visit http://www.at2030.org

[3] For more information on GDI Hub's approach to inclusive design please visit: http://www.disabilityinnovation.com/inclusive-design

[4] Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries', Inception Report: Summary, 2019, http://icedfacility.org/resource/delivering-disability-inclusive-infrastructure-low-income-countries/.

industry and policy makers. This will build knowledge and generate actions around inclusive design that is adaptive to these diverse contexts. Research will take place in three main areas:

1. **People** - the community experience of disability and the built environment;
2. **Practice** - industry focused research on the awareness and application of inclusive design in practice; and
3. **Policy** - focused research on the governance, guidelines and protocols of accessibility and inclusive design at local, regional and national levels of government.

Through qualitative and participatory research, the project will engage diverse stakeholders interested in and influencing the built environment such as; decision-makers, urban planners, architects and persons with disabilities. It will generate new insights on the challenges and opportunities for an inclusive built environment and build a picture of what good inclusive designs looks like in different settings and cultures.

Inclusive Infrastructure summary:
- Four-year research programme
- 6 cities in 6 different countries, in low-and-middle-income settings
- Engaging local partners and diverse stakeholders
- Conducting research and engagement across the domains of policy, practice and people

Why does 'inclusive infrastructure' matter?

'Access', in its various forms, is a primary factor in the connection between disability and poverty. Where there is a lack of access, such as access to employment, access to essential infrastructure such as water or electricity, or access to safe spaces for women, inequality and social exclusion will increase. This can be both a cause or effect of either disability or poverty and is described as a 'vicious cycle'[5], reinforcing the relationship between disability and poverty[6]. For example, in Mongolia, (where

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[5] Department for International Development, UK Government, 'Disability, Poverty and Development' (Department for International Development, 2000).

[6] Christoffel J. Venter, Thomas E. Rickert, and David A. C. Maunder, 'From Basic Rights to Full Access: Elements of Current Accessibility Practice in Developing Countries', *Transportation Research Record: Journal of the Transportation Research Board* 1848, no. 1 (January 2003): 79–85, https://doi.org/10.3141/1848-11.

we undertook our first case study) households with at least one person with a disability have double the poverty incidence of other households[7]. Research on the multi-dimensional nature of poverty has also shown higher incidences of poverty in households with disabilities in middle-income settings compared to low-income settings, indicating a 'disability development gap'[8] and making clear the importance of disability inclusive development programmes.

People have a right to access the spaces, services and activities they would like. It is a basic human right as set out in the UNCRPD[9]. Access can be either enabled or disabled by the built environment and infrastructure and this is understood best by those who experience inaccessibility in the built environment most profoundly, persons with disabilities[10]. To break cycles of disability and inequality, it is necessary to design accessible and inclusive environments. To do that there must be consensus on what barriers to accessibility exist in the built environment and what the barriers to designing, building, implementing and regulating accessible environments are. Justice-based approaches to disability and the built environment propose that, 'the distribution of space is an important aspect of realising justice for disabled persons'[11] highlighting the importance of designing and building inclusive infrastructure to create more equitable societies.

Infrastructure, transport and the built environment represent one of the largest areas of investment for any country and 'good' infrastructure can be a driving force for positive change and achieving development goals. Infrastructure should be designed to support society. However, if it is inaccessible, it can exclude individuals or groups, diminish quality of life and infringe on human rights.

In lower-resourced settings, where basic infrastructure needs are great, accessibility is often considered as an extra and is rarely integrated as part of mainstream infrastructure development[12]. Yet inaccessible infrastructure profoundly impacts the

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[7] Asian Development Bank, 'Living with Disability In Mongolia: Progress Toward Inclusion' (Manila, Philippines: Asian Development Bank, December 2019), https://doi.org/10.22617/TCS190596-2.

[8] Monica Pinilla-Roncancio and Sabina Alkire, 'How Poor Are People With Disabilities? Evidence Based on the Global Multidimensional Poverty Index', *Journal of Disability Policy Studies*, 17 May 2020, 104420732091994, https://doi.org/10.1177/1044207320919942.

[9] Disability Inclusive and Accessible Urban Development Network (DIAUD), World Enabled, and CBM, 'The Inclusion Imperative: Towards Disability-Inclusive and Accessible Urban Development. Key Recommendations for an Inclusive Urban Agenda', 2016, 40.

[10] Aimi Hamraie, 'Designing Collective Access: A Feminist Disability Theory of Universal Design', *Disability Studies Quarterly* 33, no. 4 (5 September 2013), https://doi.org/10.18061/dsq.v33i4.3871.

[11] Victor Santiago Pineda, 'Enabling Justice: Spatializing Disability in the Built Environment', n.d., 14.

[12] The World Health Organisation, 'World Report on Disability' (The World Health Organisation, 2011).

freedom, independence and rights of persons with disabilities and their ability to access opportunities. Some of the factors contributing to inaccessible infrastructure include lack of knowledge or understanding among decision-makers around the implications of design choices, lack of user consultation and consideration of diverse needs and 'missed opportunities' to integrate added value through promoting equal access[13].

Previous research led by the iBuild centre at Newcastle University on inclusive infrastructure has emphasised the importance of a more integrated and holistic understanding of infrastructure, including the wider and longer-term benefits to infrastructure spending and multi-scalar systems-based approaches[14].

The World Report on Disability[15] highlights the importance of 'enabling environments' for persons with disabilities and defines these environments as physical, social and attitudinal environments. The implementation of policy, compliance and the suitability of existing standards on accessible environments in relation to low-resource settings, informal settlements and rural areas are all discussed as barriers to enabling environments. The report also suggests that the pace at which technologies to support persons with disabilities are developing is 'out-pacing' the rate at which standards and regulations in the built environment can be developed calling for a more integrated and adaptive approach to regulating the build environment[16].

A comprehensive understanding and application of inclusive design practices to infrastructure programmes would address some of these barriers. As one of the largest areas of investment in any country, infrastructure development has the opportunity to lead the way in terms of creating an enabling environment for persons with disabilities[17].

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[13] Agarwal and Steele, 'Disability Considerations for Infrastructure Programmes'.

[14] Richard Dawson, 'Delivering Effective and Inclusive Infrastructure', ESRC Evidence Briefings (Economic and Social Research Council, March 2018), https://esrc.ukri.org/news-events-and-publications/evidence-briefings/delivering-effective-and-inclusive-infrastructure/.

[15] The World Health Organisation, 'World Report on Disability'.

[16] The World Health Organisation.

[17] Hamraie, 'Designing Collective Access'.

Why focus on cities in low-resource settings?

The world is rapidly becoming more urban and more than half the world's population live in urban settlements[18]. This growth is not always accompanied by equivalent infrastructure development, leading to wide gaps in urban equality or an 'urban divide'[19]. Urbanisation is most widespread in low-and-middle-income settings, leading to the suggestion that 'poverty is urbanising'[20]. By 2050, 66% of the world's population will live in cities; 90% of which will be in low-middle-income settings[21]. UN-Habitat estimates that in 75% of cities people have less access to basic services, quality public spaces, affordable housing and livelihood opportunities than two decades ago and spatial inequality like this exacerbates social exclusion[22]. The capability to connect to urban infrastructure, services and opportunities such as work and education are vital to building social inclusion.

According to the World Bank, urban inclusion is multi-dimensional and expressed through three domains: spatial inclusion, social inclusion and economic inclusion[23]. These three domains are driven by principles of access (such as access to housing, land and essential services), opportunity (such as access to education and employment or access to increasing prosperity in the place they live) and the right to participation (the ability to participate in society). These principles offer a foundation for planning inclusive infrastructure.

Research on, 'what works' for disability inclusive infrastructure has shown the importance of taking city-wide or holistic approaches, to avoid siloed solutions within one type of infrastructure. Additionally, in low-resource settings, large components of infrastructure still need to be built and so there is an opportunity to 'get it right the first time' highlighting the relevance of focusing on inclusive infrastructure in lower-and-middle-income cities.[24]

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[18] Bharat Dahiya and Ashok Das, 'New Urban Agenda in Asia-Pacific: Governance for Sustainable and Inclusive Cities', in *New Urban Agenda in Asia-Pacific*, ed. Bharat Dahiya and Ashok Das, Advances in 21st Century Human Settlements (Singapore: Springer Singapore, 2020), 3–36, https://doi.org/10.1007/978-981-13-6709-0_1.

[19] Dahiya and Das.

[20] The World Bank, 'World Inclusive Cities Approach Paper' (The World Bank, May 2015), https://documents.worldbank.org/en/publication/documents-reports/documentdetail/402451468169453117/world-inclusive-cities-approach-paper.

[21] 'New Urban Agenda' (United Nations, 2017).

[22] UN-Habitat, 'Flagship Programme 1: Inclusive, Vibrant Neighbourhoods and Communities' (UN-Habitat), accessed 19 September 2020, https://unhabitat.org/programme/inclusive-vibrant-neighbourhoods-and-communities.

[23] The World Bank, 'World Inclusive Cities Approach Paper'.

[24] Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries'.

Meeting global goals?

Cities, and particularly cities in low-resource settings, are central to the UN 2030 Agenda and the Sustainable Development Goals, most clearly marked through SDG 11: 'Make cities and human settlements inclusive, safe, resilient and sustainable'. Habitat III and the New Urban Agenda represent a shift in thinking around cities and urbanisation as a cause of poverty and exclusion to thinking about cities as sites of opportunity and marked an important moment of centring inclusion in development processes through participatory approaches to sustainable development. These global agendas have generated a vast amount of discussion on the topic of 'inclusive cities' [25] [26] [27]. However, inclusive cities are often discussed in its broadest meaning and explicit attention to *disability-inclusive cities* and the design and construction of accessible and inclusive environments and infrastructure in high level policy agendas remains limited.

The UN2030 Agenda recognises that disability inclusion must be at the heart of poverty eradication[28] and the UNCRPD Article 9 and Target 3 of the Incheon Strategy to 'Make the Right Real for People with Disabilities in Asia' in 2012 explicitly connects access to the physical environment and an inclusive society: "*Access to the physical environment, public transportation, knowledge, information and communication is a precondition for persons with disabilities to fulfil their rights in an inclusive society.*" The Global Disability Summit in 2018 was a pivotal event in which inclusive infrastructure was highlighted as one of six spotlight issues where commitments to embedding disability inclusion in the infrastructure sector were made[29]. To realise these policies, knowledge and guidance on disability inclusive design for cities in low-resource settings is necessary and so our research and these six case studies will help support making these policy goals a reality.

Why inclusive design?

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[25] Asian Development Bank, 'Enabling Inclusive Cities: Tool Kit for Inclusive Urban Development' (Manila, Philippines: Asian Development Bank, 1 December 2016), https://doi.org/10.22617/TIM157428.

[26] The World Bank, 'World Inclusive Cities Approach Paper'.

[27] Diana Mitlin and David Satterthwaite, 'On the Engagement of Excluded Groups in Inclusive Cities: Highlighting Good Practices and Key Challenges in the Global South', Urban Development Series Knowledge Papers (The World Bank, 2016).

[28] The World Health Organisation, 'World Report on Disability'.

[29] Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries'.

"Inclusive Design can help all human beings experience the world around them in a fair and equal way by creating safe and accessible environments for all members of the community." [30]

Inclusive design was highlighted by the former UK Department for International Development (now FCDO) as one of six key opportunity areas for 'delivering disability inclusive infrastructure'[31].

An accessible environment is often considered to be one that offers step-free level access whereas an inclusive environment goes further, looking at equality of experience in the built environment and infrastructure. Inclusive environments embrace diversity and flexibility, understanding that everyone has different needs and those needs are constantly changing[32].

Inclusive design is about genuine engagement and innovation, listening and making space for people. It is a practice that embeds participation and embraces diversity in solving design problems. It differs from universal design in how it embraces difference and recognises that 'one size fits one person' and 'universal solutions' are not always feasible or optimal to promote inclusion for everyone[33]. Inclusive design can help to minimise social exclusion[34] and the inclusive design of the built environment has the potential to embed the principles of access, opportunity, participation and equity in the lived experience of cities, contributing to spatial, economic and social inclusion for persons with disabilities.

In a world where 1 billion people need access to assistive technology, a world that is ageing and experiencing worsening inequality, designing and building a world that limits access or is unnecessarily challenging for persons with disabilities is not an option. Inclusion benefits everyone.

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[30] Global Disability Innovation Hub, Queen Elizabeth Olympic Park, and London Legacy Development Corporation, 'Inclusive Design Standards', May 2019.

[31] Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries'.

[32] Global Disability Innovation Hub, Queen Elizabeth Olympic Park, and London Legacy Development Corporation, 'Inclusive Design Standards'.

[33] World Economic Forum: Strategic Intelligence, 'Global Issue: Inclusive Design. Curated by the Smithsonian Institution', World Economic Forum: Strategic Intelligence, accessed 12 September 2020, https://intelligence.weforum.org/topics/a1G0X0000057IniUAE?tab=publications.

[34] Dr Ellie Cosgrave, 'The Role of the Engineer in Creating Inclusive Cities', n.d., 16.

The application of inclusive design principles, methods and practices to the holistic design of urban development and inclusion - be that policies, a city masterplan, road infrastructure, a building or a service – is an area that is under-investigated and requires research and engagement to understand what inclusive design looks like in resource-constrained contexts.

The holistic approach and practice of inclusive design can be applied to more than physically accessible designs. It can be used to build cohesion across sectors by placing disabled voices at the heart of problem solving. Inclusive design can also contribute to achieving the World Health Organisation's Disability Action Plan by offering methods to develop 'culturally appropriate person-centred approaches'[35].

Evidence shows that isolated interventions for urban development have limited success. To improve quality of life in cities, interventions and urban programmes need to be holistic and sustained over long periods of time[36]. This calls for a deep understanding of context-based planning and design, where inclusive design can help, by bringing together the people with the most intimate knowledge of the challenges to be solved. The opportunity for inclusive design in disability inclusive infrastructure does not just lie in technical design solutions but in how its practice could mediate multi-sectoral and cross-thematic approaches to pressing urban development challenges for persons with disabilities.

What do we want to find out?

The over-arching research question for this sub-programme is, **'What is the current state of inclusive and accessible environments and infrastructure in LMICs and what is the role of inclusive design in creating an enabling environment for disabled people?'**.

1. What legislation, policy, regulation and guidance currently exists to protect the rights of persons with disabilities in the built environment in each case study city?

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[35] F Khan et al., 'World Health Organization Global Disability Action Plan: The Mongolian Perspective', *Journal of Rehabilitation Medicine* 50, no. 4 (2018): 388–366, https://doi.org/10.2340/16501977-2207.

[36] Dahiya and Das, 'New Urban Agenda in Asia-Pacific'. Pg.23

2. What is the current awareness, understanding, acceptance and application of inclusive design in built environment policy, planning, design and construction among key stakeholders in each case study city?

3. What are the current barriers to and opportunities for inclusion in the built environment for persons with disabilities in each case study city?

4. How can inclusive design contribute to creating enabling environments for AT and AT users?

Introduction to the Case Study in Sierra Leone

This purpose of this case study is to explore the state of inclusive and accessible environments for persons with disabilities in Freetown, Sierra Leone, through engagement with policy, industry and community stakeholders (policy, practice and people). Through this engagement, the case study is developing evidence on the challenges and opportunities for implementing inclusive and accessible design in Freetown and makes recommendations on local actions towards becoming a more inclusive city.

This is the fifth of six case studies analysing the state of accessibility and inclusive design in low-resource contexts around the world. The six independent case studies will then be analysed to develop a comparison report and finally a global action report that will offer evidence and recommendations that support making infrastructure, the built environment and urban development in low-resource settings more accessible and inclusive.

Across the African region, urban economic growth has not been equal and the urban poor carry this burden. The region has the fastest urban growth in the world, which is set to double between now and 2050.[37] Major inequalities in access to housing, infrastructure and services, and affordable transportation are found across cities in Africa. These inequalities in urban development, disproportionately affect persons with disabilities and these case studies will contextualise the lives of persons with disabilities across Asia, Africa and South America through research on inclusion and accessibility in the built environment. According to the UN, there are an estimated 80 million persons with disabilities in the African region.[38] This figure may however be conservative as the World Health Organisation consider forty percent of African citizens to be persons with disabilities, which would equate to about 300 million people.

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[37] OECD / SWAC, 'Africa's Urbanisation Dynamics 2020: Africapolis, Mapping a New Urban Geography', accessed 31 August 2022, https://read.oecd-ilibrary.org/development/africa-s-urbanisation-dynamics-2020_b6bccb81-en.

[38] 'Incheon Strategy to "Make the Right Real" for Persons with Disabilities in Asia and the Pacific' (UNESCAP, 2012).

There are an estimated 304,960 persons with disabilities in Sierra Leone and according to the 2015 census, 7,807 living in Freetown. These numbers are likely underestimated based on other academic studies that have taken place in the region.[39] [40] From the demographic data it appears populations of persons with disabilities are higher in rural areas (67%), but this may also be due to the lack of data coming from informal settlements and peri-urban areas. Freetown is a challenging city in terms of accessibility with large numbers of informal settlements which are often found on steep terrain or unsuitable, disaster-vulnerable-land. These settlements frequently lack access to basic services making daily life activities more challenging, particularly for persons with disabilities. As a result, many persons with disabilities are living in poverty and unable to access opportunities or education, in part due to the inaccessible environments. The city has ambitious development plans but there is a mismatch between top-down approaches and the grassroots reality of the city on the ground.

This case study will build a picture of the current state of inclusion and accessibility in the built environment and infrastructure in Freetown through engaging local stakeholders and communities and exploring the understanding of and potential for inclusive design to address some of the current barriers to inclusion.

The case study will first describe the background research and contextual factors that influence questions of access and inclusion in the built environment in Freetown. It will then describe the activities that took place before discussing insights, lessons learned, and actions towards inclusion for the city of Freetown.

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[39] 'Sierra Leone Inclusion Project', Disability Africa, accessed 15 February 2023, https://www.disability-africa.org/sierra-leone.

[40] Ignacia Ossul-Vermehren, Mark T Carew, and Julian Walker, 'Assistive Technology in Urban Low-Income Communities in Sierra Leone and Indonesia: Rapid Assistive Technology Assessment (RATA) Survey Results.' (London: Bartlett Development Planning Unit - Global Disability Innovation Hub, 2022), https://at2030.org/assistive-technology-in-urban-low-income-communities-in-sierra-leone-and-indonesia/.

Background and Contextual Factors

This section provides some background information that supports and contextualises the primary data collection undertaken in this case study on Freetown.

Statistics on Disability in Sierra Leone[41]			
Population of Sierra Leone	7,092,113 million people		
Population of Freetown	1,056,000 million people		
Population of Persons with Disabilities in Sierra Leone	310,973 people[42] (2018 Household Survey)	155,744 female	155,229 male
Population of Persons with Disabilities in Freetown	7,807[43] (2015 Census)	3,543 female	4,264 male

The statistics above give an indication of the population demographics and prevalence of disability.

Disability and Accessibility in Sierra Leone

As of the 2018 integrated household survey, it has been recorded that there are 310,973 persons with disabilities living in Sierra Leone, representing a prevalence of 4.3 per cent in the general population. This figure has increased as in the 2015 census there was a disability prevalence of 1.3 per cent. This increase may be resultant effect of the Ebola outbreak from 2014-2016 and population growth. [44]

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[41] Statistics Sierre Leone, 'Sierra Leone 2015 Population and Housing Census Thematic Report on Disability' (Statistics Sierre Leone, 2015), https://www.statistics.sl/images/StatisticsSL/Documents/Census/2015/sl_2015_phc_thematic_report_on_disability.pdf.

[42] Statistics Sierre Leone, 'Sierra Leone Integrated Household Survey (SLIHS) Report 2018', 2019.

[43] Statistics Sierre Leone, 'Sierra Leone 2015 Population and Housing Census Thematic Report on Disability'.

[44] Statistics Sierre Leone, 'Sierra Leone Integrated Household Survey (SLIHS) Report 2018'.

Given global estimates of disability prevalence at 15%, it is also likely there is significant under-reporting of disability. According to the 2015 census, 33% of persons with disabilities are living in urban areas and 67% in rural areas.

Organisations working in Freetown estimate disability prevalence in Freetown to be much higher, for example Disability Africa estimate 50,000 young persons with disabilities live in the city.[45] A WHO Rapid Assistive Technology Assessment (rATA) conducted under AT2030 Sub-Programme 9 led by UCL's Development Planning Unit and GDI Hub found in a survey of 4,000 people living in Freetown and Surakarta (a city in Indonesia), that 26% experience some level of impairment.[46] The team also highlight that statistics for persons with disabilities living in informal settlements do not exist which impacts the accuracy of official figures.

Sierra Leone has been working to improve the lives of persons with disabilities through different policies and plans. Since 1991, Sierra Leone's constitution included an article (27) which addresses protection against discrimination including disability. Efforts towards inclusion have heightened since the Sierra Leone Parliament ratified The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) on 4th May 2009 after campaigning by Organisations of Persons with Disabilities (OPDs) in the country. The convention exists to enable persons with disabilities to live independently and achieve a full and active participation in society. Soon after this ratification, Sierra Leone issued the Persons with Disability Act in 2011 and established the National Commission of Persons with Disabilities in 2012. These were followed by recent developments such as the relaunch of The National Rehabilitation Program of Sierra Leone in 2017 to improve rehabilitation services in the country; The National Development Plan (2019-2023) which discusses inclusion, inclusive education and accessibility under section 5.3 "Empowering persons with disabilities"; Transform Freetown Plan 2019-2022 which outlines accessibility as a precondition for persons with disabilities to fulfil their rights in an inclusive society and the National plan of Sierra Leone 2019-2023 that aims to enhance the mobility of persons with disability by requiring buildings, schools and public utilities to install facilities and other devices, to become more accessible and inclusive.[47]

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[45] 'Sierra Leone Inclusion Project'.

[46] Ignacia Ossul-Vermehren, Carew, and Walker, 'Assistive Technology in Urban Low-Income Communities in Sierra Leone and Indonesia: Rapid Assistive Technology Assessment (RATA) Survey Results.'

[47] Handicap International, 'Leave No One Behind', June 2016, https://mbsse.gov.sl/wp-content/uploads/2021/06/Factsheet-on-Disability-SL-1.pdf.

Other government policies that impact the lives of persons with disabilities include:

Education:
- The Education Act of 2004 which provides for the establishment and maintenance of separate education systems for pupils of the two sexes or for religious or linguistic purposes. Special schools provide education for persons with disabilities. [48]
- The 2018–22 Education Sector Plan which outlines Sierra Leone's process of developing an inclusive education policy. [49]
- The 2022 – 2026 Education Sector Plan: transforming learning for All (ESP) which focuses on improving learning outcomes for all children and youth.[50]
- Since 2018, Government allocation of 20 per cent of the national budget to education. Accessible and Quality Education is the flagship initiative of the President's administration; as part of this initiative, the Free Quality School Education programme was introduced to ensure every child gets an education, irrespective of their background and status.[51]
- 2021 National Policy on Radical Inclusion in Schools which is Sierra Leone's first ever policy on inclusive education. "The policy seeks to increase enrolment, retention and successful transition of all students in pre-primary, primary and senior secondary education regardless of disability, gender, pregnancy or parenting status, geographic location and socio-economic background" [52]
- The National Development Plan 2019-2023 – which aims to provide free educations for people with disabilities at preschool, primary and secondary levels, provide teaching materials and assistive devices required for inclusive education, train teachers to deliver inclusive and special needs education and on how to reduce stigma and discrimination in the classroom and to: "Formulate and fully implement policy on inclusive and special needs education at primary, secondary, and tertiary levels" [53]

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[48] 'Sierra Leone | INCLUSION | Education Profiles', accessed 28 January 2023, https://education-profiles.org/sub-saharan-africa/sierra-leone/~inclusion.

[49] 'Sierra Leone | INCLUSION | Education Profiles'.

[50] Sierra Leone Education Sector Plan: Transforming learning for All. 2022-2026, accessed 16 March 2026. https://www.unicef.org/sierraleone/media/1306/file/Sierra%20Leone%20Education%20Sector%20Plan%202020 22%20-%202026.pdf

[51] 'How Sierra Leone Is Using Technology, Data and Innovation to Overcome Service-Delivery Challenges', Institute for Global Change, accessed 28 January 2023, https://institute.global/advisory/how-sierra-leone-using-technology-data-and-innovation-overcome-service-delivery-challenges.

[52] 'Sierra Leone | INCLUSION | Education Profiles'.

[53] Government of Sierra Leone, 'SIERRA LEONE'S MEDIUM-TERM NATIONAL DEVELOPMENT PLAN 2019–2023', 2018.

Construction:

- While there is currently no formal accessibility standards in Sierra Leone, The Persons with Disabilities Act 2011 lists it twice in its "Rights and Privileges of Persons with Disability" under section 24. Right to barrier free environment and 27. Right of access to public premises, services and amenities. Under section 24, subsection 1 – "Persons with disability shall be entitled to a barrier free environment to enable them to have access to buildings, roads and other social amenities and assistive devices and other equipment to assist their mobility" with subsections 2 and 3 aiming to ensure the implementation of this within 5 years of this Act. This is backed by Section 26 which states "Where the Commission considers that any public premises are inaccessible to persons with disability by reason of any structural, physical or other impediment, the Commission may serve on the proprietor of the premises concerned an adjustment order", thus allowing the commission to force implementation in public buildings. However, the National Development Plan 2019-2023 highlights that the implementation of this act has been weak.
- In Sierra Leone's Medium-term National Development Plan there are however also mentions of physical accessibility in its disability specific objectives where it aims to "Undertake infrastructural modifications to ensure learning institutions are physically accessible". [54]

Health:

- The Free Healthcare Initiative (FHCI), launched in 2010, aimed to increase access to healthcare for vulnerable populations such as pregnant women, children under 5 years, and lactating mothers. While credited with reducing child mortality rates, FHCI faced challenges, including funding shortages and inadequate healthcare infrastructure. [55]
- The National Health Sector Strategic Plan 2017-2021 outlines the government's priorities for improving the country's health system, including strategies to address major health challenges such as malaria and infectious diseases. [56] While the Community Health Worker Programme has been successful in improving access to healthcare in rural areas, persons with disabilities in Sierra Leone face discrimination and are often denied healthcare services due to their disabilities. They also encounter physical

[54] Government of Sierra Leone.

[55] Mohamed Boie Jalloh et al., 'Impact of the Free Healthcare Initiative on Wealth-Related Inequity in the Utilization of Maternal & Child Health Services in Sierra Leone', *BMC Health Services Research* 19, no. 1 (3 June 2019): 352, https://doi.org/10.1186/s12913-019-4181-3.

[56] Freetown Ministry of Health and Sanitation, 'National Health Sector Strategic Plan 2017-2021' (Freetown, Sierra Leone, 2017).

barriers such as inaccessible healthcare facilities and a lack of transportation options. [57]

- To improve access to healthcare services for persons with disabilities, the National Health Sector Strategic Plan 2017-2021 includes a section on disability, outlining strategies such as training healthcare workers to provide disability-inclusive care and improving the accessibility of healthcare facilities. [58]

- The National Development Plan 2019-2023 – This plan aims to improve the lives of Sierra Leone's people through inclusive growth. Some of its strategic objectives plan to transform the heath sector into a "well resourced and functioning national health-care delivery system that is affordable for everyone and accessible to all". One of its disability specific objectives that may move to achieve this is to provide free healthcare for "the physically challenged and the aged". [59]

Climate policies:

- Sierra Leone's National Adaptation Plan (NAP), which was developed in 2018 is intended to provide a framework for addressing the country's vulnerability to climate change, particularly in the areas of agriculture, water resources, coastal zones, and health. However, while the NAP recognizes the importance of inclusive approaches to climate action, it does not specifically address the needs of persons with disabilities. [60]

- National Disability Strategic Plan (NDSP), which was developed in 2018 is intended to provide a framework for promoting the rights of persons with disabilities in Sierra Leone, including in the areas of health, education, employment, and social protection. While the NDSP recognizes the importance of addressing the impacts of climate change on people with disabilities, it does not specifically address the role of climate policies. [61]

- C40 Cities – Freetown, Sierra Leone joined C40 in 2019 which is a network of cities committed to addressing climate change. In 2020, Freetown committed to planting 1 million trees to build resilience against flooding and absorb carbon dioxide. It also launched the Transform Freetown plan, a comprehensive development plan that aims to transform Sierra Leone's capital city, Freetown, into a modern, sustainable, and resilient city. The plan

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[57] Lina Magnusson, Ismaila Kebbie, and Victoria Jerwanska, 'Access to Health and Rehabilitation Services for Persons with Disabilities in Sierra Leone – Focus Group Discussions with Stakeholders', *BMC Health Services Research* 22, no. 1 (5 August 2022): 1003, https://doi.org/10.1186/s12913-022-08366-8.

[58] Freetown Ministry of Health and Sanitation, 'National Health Sector Strategic Plan 2017-2021'.

[59] Government of Sierra Leone, 'SIERRA LEONE'S MEDIUM-TERM NATIONAL DEVELOPMENT PLAN 2019–2023'.

[60] Government of Sierra Leone, 'National Adaptation Plan 2021', 2021, https://unfccc.int/sites/default/files/resource/SierraLeone_iNAP_Final.pdf.

[61] Government of Sierra Leone, 'National Disability Strategic Plan', 2018, https://www.un.org/development/desa/disabilities/wp-content/uploads/sites/15/2019/10/Cambodia_National-Disability-Strategic-Action-Plan-NDSP-2014-2018.pdf.

was launched in 2018 by the Mayor of Freetown, Yvonne Aki-Sawyerr, and is based on six thematic pillars: improving governance, improving human development, improving urban mobility, improving urban planning and land use, improving the environment, and improving urban resilience.[62] One of the key goals of the Transform Freetown plan is to address the impacts of climate change on the city. Freetown is located on the coast and is particularly vulnerable to sea-level rise, coastal erosion, and flooding. [63] The plan includes a number of measures to increase the city's resilience to these impacts, including improving drainage systems, constructing sea walls and other protective infrastructure, and implementing early warning systems for floods and other natural disasters. The Transform Freetown plan also includes initiatives to promote sustainable development and reduce greenhouse gas emissions in the city. For example, the plan includes a target to increase the share of renewable energy in the city's energy mix, and to promote sustainable transportation through the development of a bus rapid transit system and other measures. [64]

Assistive Technology

- Assistive Technology (AT) Policy and Strategic Plan 2021-25 - The Plan was developed by the Clinton Health Access Initiative under the AT2030 Programme Country Investment Fund. The Plan intends to guide the government, MoHS, intersectoral ministries, Organizations of Persons with Disabilities (OPD), development partners, donors, and private players in the development of assistive technology services for the country. The Assistive Technology (AT) Policy and Strategic Plan developed in Sierra Leone includes 5 policy statements, 8 strategic objectives, and 40 activities. The plan addresses the provision of AT products and services to persons with disabilities at national and regional centres, and emphasizes the need for partnerships with technical institutions to build in-country capacity for producing, distributing, and monitoring AT services. The plan also includes the creation of a disability medical board and on-site and online training and certification for AT professionals, with the long-term vision of a National Assistive Technology Program.[65]

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[62] 'Freetown, Sierra Leone Joins C40 Cities Demonstrating Global Commitment to Tackle Climate Change and Inequality', C40 Cities, accessed 3 March 2023, https://www.c40.org/news/freetown-joins-c40-cities/.

[63] 'Transform Freetown – Freetown City Council', accessed 3 March 2023, https://fcc.gov.sl/transform-freetown/.

[64] 'Transforming Sierra Leone's Capital', UNEP, 19 August 2020, http://www.unep.org/news-and-stories/story/transforming-sierra-leones-capital.

[65] 'Assistive Technology Policy and Strategic Plan | AT2030 Programme', accessed 7 March 2023, https://at2030.org/assistive-technology-policy-and-strategic-plan/.

Life for persons with disabilities in Sierra Leone today

Despite the wide range of policies, plans and programs in place to ensure disability inclusion in Sierra Leone, there are still ongoing issues for persons with disabilities living in the country. According to Humanity & Inclusion, these include poverty, stigma, difficulty accessing livelihoods, healthcare and education and gender inequality.[66] In Sierra Leone, the general population are affected by both poverty and a strained healthcare system. It is estimated that 57% of Sierra Leoneans live in poverty.[67] The healthcare system is fragile having overcome multiple disease outbreaks and civil unrest such as the civil war with a polio outbreak from 1991-2002, the Ebola virus outbreak from 2014-2016 as well as the ongoing battle with communicable diseases and increased injury rates.[68] These problems are heightened for persons with disabilities with the World Bank stating that persons with disabilities are at a higher risk of living in poverty, being unemployed and lacking access to adequate healthcare than other members of society.[69] Persons with disabilities can have more complex healthcare needs, requiring both general and specialised healthcare. As mentioned above, Sierra Leone signed The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2009, with article 25 and 26 identifying healthcare and rehabilitation as human rights for persons with disabilities. To achieve this, the government of Sierra Leone passed the Disability Act which states that people with disabilities are entitled to free healthcare in public healthcare facilities.

Education also plays a vital role in development, empowering people to improve their wellbeing by strengthening their ability to meet their basic needs and those of their families. Sustainable Development Goal 4 aims to, "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". Only 37% of persons with disabilities aged 3 years and above in Sierra Leone have ever attended school, leaving 67% without education. There are more males with disabilities who have attended school (24.1%) than their female counterparts (13.2%). For those who have never attended school, the majority are female (32.8%), while males constitute 29.9%. This gender imbalance has an impact on future employment as more males

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[66] Humanity & Inclusion, 'Humanity & Inclusion in Sierra Leone', 2023, https://www.hi-us.org/sierra_leone.

[67] Statistics Sierre Leone, 'Sierra Leone Integrated Household Survey (SLIHS) Report 2018'.

[68] Freetown Ministry of Health and Sanitation, 'National Health Sector Strategic Plan 2017-2021'.

[69] World Health Organisation, 'World Report on Disability.', 2011, https://www.cabdirect.org/cabdirect/abstract/20113217187.

are employed (58.6%) than females (41.4%). This may also be due to societal views on gender, work and family responsibilities.[70]

For persons with disabilities in Sierra Leone, issues preventing access to Assistive Technology (AT) impacts daily life. Evidence collected from the wider AT2030 programme considers life for persons with disabilities in Sierra Leone through this lens, including the rATA surveys conducted in five urban low-income communities in Sierra Leone and Indonesia. These surveys and their resulting report evaluated the need, use, supply and impact of AT in the regions. Four of these surveys were conducted in areas seen as 'mainstream' settlements which are largely occupied by low-income people without specific existing provisions for persons with disabilities. In Sierra Leone, these communities included Thompson Bay and Dworzark. The fifth survey in Freetown, was undertaken in the Help Empower Polio Persons Organization (HEPPO) community who focused on the needs of wheelchair users and people affected by polio. This study showed that there was a high disability prevalence in Thompson Bay and Dworzark at 20.6%, with over half of the older population having a disability. The study also showed a gender imbalance with disability prevalence among women slightly higher at 21.6% compared to 19.5% in men in Thompson Bay and Dworzark. Women were also identified as having less access to assistive technology and more self-reported need for it.[71] Another aspect of AT provision considered by AT2030 is its position as a mediator of participation in citizenship activities for persons with disabilities living in informal settlements. This is an important study as it shows the need for AT to allow full participation in society by all people to enable fully inclusive decision-making. This was demonstrated as vital in 2018 via the 'Persons with Disabilities Manifesto' during elections when political participation was registered as the top demand.[72]

Historical Development of Freetown

The city of Freetown was established in 1787 by the Sierra Leone Company to settle 1,600 freed slaves from the West Indies and Nova Scotia (today part of Canada)

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[70] Statistics Sierre Leone, 'Sierra Leone Integrated Household Survey (SLIHS) Report 2018'.hous

[71] AT2030 et al., 'Assistive Technology in Urban Low-Income Communities in Sierra Leone & Indonesia', January 2022.

[72] Victoria Austin et al., '"Give Us the Chance to Be Part of You, We Want Our Voices to Be Heard": Assistive Technology as a Mediator of Participation in (Formal and Informal) Citizenship Activities for Persons with Disabilities Who Are Slum Dwellers in Freetown, Sierra Leone', *International Journal of Environmental Research and Public Health* 18, no. 11 (January 2021): 5547, https://doi.org/10.3390/ijerph18115547.

during the emancipation of slaves in British territories. Freetown was a forested peninsula used for trading due to its proximity to the estuary of the Sierra Leone River. As a Creole settlement, the history of Freetown has affected its urban development. Always a planned city, the houses were laid out on a grid pattern by settlers and arranged into a series of villages or sub-divisions. The houses were largely based on a Creole-style 'chattel house' due to the construction skills brought by settlers originating from the Caribbean. This style of housing was very different from the approach taken by the local indigenous Temne ethnic group who inhabited the land before the settlement of the Creoles. The Creoles used more permanent materials, carpentry skills and emphasised a stronger sense of individual ownership of land and dwellings.[73]

In 1808, the Crown Colony was established in and around the city of Freetown, with the Protectorate established in 1896 to include the rest of the country. Freetown served as the capital of British West Africa until 1874. While racial segregation had been low in Freetown since its establishment, in the 19th century authorities began to separate residential areas along racial lines. In 1899, the urban design of Freetown began to be altered in response to the mosquito and malaria risk. Dr Ronald Ross visited Freetown in 1899 and in 1902 and made three recommendations that had significant impact on the city's planning. He recommended the installation of wire screens on public buildings, the isolation of sick people, the use of mosquito nets, drainage of the soil and segregation of Europeans. This led to the segregation of Europeans, relocating them to purpose built two storey dwellings at Hill Station, out of town and up the hill slopes. These dwellings were large and constructed on stilts, their location was connected to the central city and port area in 1904 by a narrow-gauge railway. The railway serviced this area until the 1920's when the car and bus became more readily available. Today the Hill Station area is surrounded by affluent neighbourhoods, hotels and diplomatic residences.[74]

Between 1789 and 1893, the area of Freetown sprawled from 0.32km² to 12.4km². By 1973, it had grown to 68km², with many original villages being incorporated into the metropolitan area. This naturally led to population growth from 33,000 in 1914, 195,023 in 1963 to over 1 million in the last census of 2015. With a population density of 8450 persons per km², Freetown is one the most crowded cities in the

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[73] Kenneth Lynch∗, Etienne Nel, Tony Binns, '"Transforming Freetown": Dilemmas of Planning and Development in a West T African City', 5 June 2019, https://doi.org/10.1016/j.cities.2020.102694.
[74] Kenneth Lynch∗, Etienne Nel, Tony Binns.

world. As the area of Freetown is small and the surrounding hills restrict further outward growth, rapid population growth led to overcrowding, deteriorating living conditions and the development of informal settlements.[75]

From 1939 to 1945, Britain maintained a naval base at Freetown serving World War II. After the war in 1951, the 1924 Sierra Leone Constitution was replaced with one which united colonial and protectorate legislatives and provided a framework for decolonization. Two years later, an African cabinet was installed with expatriate ministers remaining on as advisors and Dr. Milton Margai, an ethnic Mende, named Chief Minister. This title was then changed to Prime Minister in 1956.[76]

On April 27th of 1961, Sierra Leone became independent of the United Kingdom, making Freetown its capital. Since independence, Freetown became the centre of Sierra Leone's hotly contested elections and was occupied by troops from Guinea from 1971 to 1973. The city was also the centre of the civil war from 1991 to 2001, which resulted in 50,000 deaths and the occupation of the country by United Nations Peacekeepers until 2005. Since 2005, democracy has been re-established with the military taking back full responsibility for security. The government now prioritises urban development, job creation and ending corruption.[77]

Informal Settlements

Over the past 40 years the population of Freetown has increased from 128,000 to 1,070,200, a ten-fold increase. In the years pre-dating independence, urban planning and management focused on managing existing problems and not planning for growth. Moves that were made to improve living standards such as the 1900 City Improvement Act gave legal sanction to enforce public health standards and introduce physical planning and building code regulations. However, the implementation of these western planning standards through enforcement was unaffordable for the majority of city dwellers, with demolitions just moving the problem rather than solving it. More pragmatic approaches were attempted in the 1940s with Slum Clearance Reports, where housing policy linked the provision of accommodation for those displaced. However, this failed as housing was not provided as planned. In the years from the 1940s to independence urban planning

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[75] Kenneth Lynch∗, Etienne Nel, Tony Binns.
[76] 'Freetown - New World Encyclopedia', accessed 15 December 2022, https://www.newworldencyclopedia.org/entry/freetown.
[77] 'Freetown - New World Encyclopedia'.

improved with planning acts introduced. However, due to financial constraints, programmes of rehousing and redevelopment were not undertaken.

Issues of overcrowding and housing provision still exist today with the following slums and informal settlements in and around Freetown including Thompson Bay, Dworzark, Wellington, Fourah Bay, Cockle Bay, Moyiba, Portee, Kroo Bay, Susan's Bay, Kuntoloh, Greybush, George Brook, Old Wharf, Jamaica Town, Marbella, Kissy Brook, Red Pump, Mar of War Bay, Sorie Town, Moa Wharf, Dockyard, Crab Water, Banana Water, Odokoko, Portee Wharf, Congo Town Wharf, Tengbeh Town, Ginger Hall, Bomeh, Granville Brooke, Gwent Height and Moyiba.[78]

Environment and Health

The climate in Sierra Leone is tropical, with the coastal areas having hot and humid weather and inland locations having temperate weather. The average annual temperature is 26.7°C and average rainfall is 2,746 mm. The rainy season is controlled by the movement of a tropical rain belt called the Inter-Tropical Convergence Zone (ITCZ), a belt which oscillates between the northern and southern tropics over the course of a year. [79] The summer rainy season is between May and November with most rain falling between July and August. The Harmattan desert wind blows between November and February, relieving the high humidity in Freetown and making this period the coolest time of year in the city. [80]

Lying on the African Plate between 7th and 10th parallels north of the equator, Sierra Leone's main geographical features included wooded hill country, an upland plateau and the mountains in the east. The highest peak is Mount Bintumani, which is 1,948 meters (6,391 ft) above sea level. The coastline has a belt of mangrove swamps and Freetown has one of the world's largest natural harbours. [81]

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[78] UN-HABITAT, The United, Nations Development Programme and The Government of Sierra, and UNHabitat, 'The Improvement of Slums and Informal Settlements in Freetown':, May 2006, https://mirror.unhabitat.org/downloads/docs/6125_11215_TheImprovementSlumsInformalSettlementsFreeto wn.pdf.

[79] 'World Bank Climate Change Knowledge Portal', accessed 28 January 2023, https://climateknowledgeportal.worldbank.org/.

[80] 'Climate and Weather in Sierra Leone | Trip Report', accessed 28 January 2023, https://www.tripreport.com/countries/sierra_leone/climate.

[81] 'Climate and Weather in Sierra Leone | Trip Report'.

Sierra Leone is among the 10% of countries in the world that are most vulnerable to the adverse consequences of climate change, with the UN saying it is also "one of the least able to cope with the effects". Climate-related challenges include unpredictable weather patterns, severe flooding, mudslides, associated crop failures and deforestation. As the country concurrently suffers from poverty and an energy deficit there is a need for the country to look at innovative climate finance and sustainability solutions which address not only climate but also issues related to livelihoods, employment generation, human capital development, public health, environmental protection, gender equality, food security, and energy access. There is opportunity for Sierra Leone to harness its natural resources to better leverage the finance and technologies that the country needs for an inclusive and sustainable future rather than exporting key resources cheaply as lower cost primary products.[82]

The Ebola outbreak in Sierra Leone from 2014 to 2016 disproportionately affected people with disabilities, who faced barriers in accessing healthcare and disability-inclusive information on prevention. These problems were similar during the COVID-19 outbreak where people with disabilities also faced challenges due to communicable nature of the diseases as people with disabilities often rely on physical support e.g. pushing of a wheelchair or guidance by the link of an arm for someone with a visual impairment. This type of support became problematic as people became nervous of disease transmission. [83]

Healthcare access in informal settlements in Freetown is unequal and often limited or unavailable, leading residents to self-administered treatments. Limited data on informal communities hinders policy reforms, making joint advocacy by health workers and communities necessary. Gender balance in health worker recruitment, ethics training, and inclusion of religious leaders in health sensitization are recommended. Poor physical structure, limited availability, and inadequate equipment in formal health facilities hinder access, disproportionately affecting poor and marginalized communities. [84] Persons with disabilities face additional challenges

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[82] 'Why COP27 Matters to Sierra Leone', Africa Renewal, 4 November 2022, https://www.un.org/africarenewal/magazine/november-2022/why-cop27-matters-sierra-leone.

[83] 'Sierra Leone: Educating People with Disabilities about Ebola', HI, accessed 3 March 2023, https://www.hi-us.org/ensuring.

[84] Arise Consortium, 'Sierra Leone', *Sierra Leone* (blog), n.d., https://www.ariseconsortium.org/our-approach/where-we-work/sierra-leone-2/.

due to inadequate infrastructure. [85]. Persons with disabilities often live in lower resourced households and are hence disproportionately affected by environmental risks, such as natural disasters, poor housing, sanitation, and water supply, and communicable diseases. The ARISE consortium is working to promote inclusivity and meet the needs of persons with disabilities by establishing Disability-Inclusive Health Committees.[86] The government and NGOs struggle to coordinate effective responses due to limited data. A multi-faceted approach is necessary, including joint advocacy, gender balance in recruitment, ethics training, religious leader involvement, and Disability-Inclusive Health Committees.[87]

Disability and Humanitarian issues in Freetown

Sierra Leone is prone to natural disasters and disease. The deadly outbreak of Ebola in 2014, which originated in Guinea and made its way across the border into Sierra Leone, weakened the country's health system and devastated the lives and livelihoods of many. Heavy rainfalls and mudslides can also cause widespread displacement. In these kinds of humanitarian crisis, women, adolescent girls, children and persons with disabilities face heightened risks of experiencing health problems and violence. Gender and age inequities exist here as they are often left to care for the sick and must travel long distances to find basic resources and shelter. [88]

The recent Covid-19 pandemic outbreaks in Freetown have had a devastating impact on persons with disabilities living in the city. While well prepared for pandemic procedures due to the recent Ebola outbreak, early lockdown responses still led to problems for persons with disabilities.[89] Physical barriers to assistance and communication barriers to information were exacerbated due to social distancing. Lockdown periods put additional financial stress on persons with disabilities with

[85] 'Health & Living Conditions in Freetown's Informal Settlements', Sierra Leone Urban Research Centre, accessed 15 March 2023, https://www.slurc.org/health--living-conditions-in-freetowns-informal-settlements.html.

[86] Arise Consortium, 'Sierra Leone'.

[87] SLURC, 'SLURC Policy Brief', 2017, https://www.slurc.org/uploads/1/0/9/7/109761391/slurc_policy_brief_1.pdf.

[88] 'The Pathology of Inequality: Gender and Ebola in West Africa', Social Science in Humanitarian Action Platform, accessed 15 March 2023, https://www.socialscienceinaction.org/resources/the-pathology-of-inequality-gender-and-ebola-in-west-africa/.

[89] Clare Ahern, 'What Sierra Leone's Ebola Experience Can Teach Us about COVID-19', Concern Worldwide, 6 May 2020, https://www.concern.net/news/sierra-leone-ebola-covid19.

stay-at-home procedures causing persons with disabilities to lose incomes. One livelihood or income driver hit significantly by this was begging which is a common way for persons with disabilities in the city to generate income.[90] Due to this loss in income, basic needs such as food were priorities and most persons with disabilities were not able to access preventative measures such as face masks or hand sanitiser. Persons with disabilities were often in the most at-risk groups for contracting COVID-19. Alongside the enacted curfews, this led to persons with disabilities not being able to access necessary therapy or medication. There were also increased risks in travelling outside the home. 21.8% of persons with disabilities in Sierra Leone experience mobility problems, meaning they are reliant on supporting themselves on walls or caregivers when they do not have access to adequate assistive technology. This put persons with physical disabilities at increased risk of contracting Covid-19 from surfaces or through close physical contact with assistants.[91]

Summary

The previous sections describe contextual factors that influence the state of accessibility and inclusion in Freetown. From recent disease outbreaks to historical development planning, the city has complex challenges to overcome in making the city more inclusive. It is evident the city has a strong track record of developing policies and various programmes and initiatives to support the lives of persons with disabilities exist, the primary data from this study will now look at the reality on the ground.

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[90] 'COVID-19: People with Disabilities Facing Tougher Times', Africa Renewal, 8 May 2020, https://www.un.org/africarenewal/magazine/coronavirus/april-2020-special-edition-covid-19/covid-19-people-disabilities-facing-tough-times.
[91] 'Disability, Inclusion and Cities Can COVID19 Trigger Change | AT2030 Programme', accessed 10 March 2023, https://at2030.org/disability,-inclusion-and-cities-can-covid19-trigger-change/.

Pathway to inclusion – where are they?

1991 – 2002

Civil War and Polio Outbreak

1991

Constitution includes article 27 on protection against discrimination including disability

2009

Sierra Leone Parliament ratified The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) on May 4th, 2009

2011

Sierra Leone issued the Persons with Disability Act

2012

The National Commission of Persons with Disabilities is established

2014–2016

Ebola Virus Outbreak

2018

The 2018–20 Education Sector Plan which outlines Sierra Leone's process of developing an inclusive education policy.

Government allocation of 20 per cent of the national budget to education

2019

Transform Freetown Plan 2019-2022 which outlines accessibility as a precondition for persons with disabilities to fulfil their rights in an inclusive society

National plan of Sierra Leone 2019-2023 that aims to enhance the mobility of persons with disability by requiring buildings, schools and public utilities to install facilities and other devices, to become more accessible and inclusive.

2021

2021 National Policy on Radical Inclusion in Schools which is Sierra Leone's first ever policy on inclusive education

Summary of activities

Research activities took place from December 2021 to April 2022 in three phases. The research combined virtual and face to face research activities and followed local protocols around the COVID-19 pandemic.

Phase 1 focused on understanding the current state of accessibility in the built environment in Freetown through desk research, document reviews, working sessions and stakeholder mapping. Interviews took place with key stakeholders including government officials, architects, urban planners, project managers, academics and entrepreneurs.

Example of workshop using journey mapping

Phase 2 focused on capturing the lived experience of persons with disabilities in Freetown and in particular, their experience of the built environment and infrastructure. Interviews, photo diaries and co-design activities were employed to understand; the challenges and barriers persons with disabilities face in the city, areas where good practice can be found and aspirations for a more inclusive city.

Phase 3 focused on synthesising the findings of the previous two phases by holding workshops to discuss and validate the initial findings. The aim of these sessions was to identify, 'actions towards inclusive environments' by identifying shared challenges and opportunities across the diverse stakeholders involved. The workshops employed participatory inclusive design techniques to elicit insights and prioritise

areas for action while allowing participants to gain experience of inclusive design methods that could be applied to their own work.

The research engaged three key stakeholder groups;
- **Policy**: government officials and policy makers;
- **Practice**: industry professionals such as architects, urban planners;
- **People**: persons with disabilities, community groups, OPDs, other citizens.

15 stakeholder interviews were undertaken with government and industry professionals operating in the domains of inclusion, accessibility and/or the built environment. 11 stakeholders were male and 4 were female. 10 stakeholders were aged between 40-49, 4 between 30-39 and 1 under 30.

10 interviews and 5 photo diaries with interviews were conducted with 11 persons with disabilities, as some completed both tasks. An additional 7 persons with disabilities participated in the workshops. The gender balance among our disabled participants was 11 male to 7 female. Age groups ranged from 18 to 60+ with 9 between 30-39, 6 between 18-29 and 2 aged 60+.

Our disabled participants had a mixture of mobility impairments (13) and visual impairments (4). One participant identified as a person with albinism. Due to the pandemic the local team reported it was difficult to recruit persons with hearing impairments to participate. Five of our government and industry stakeholder interviewees also identified themselves as disabled.

Limitations of the research include a limited representation of different disabilities, related to recruitment challenges during the research.

Multiple workshops with disabled participants and stakeholders took place where exploratory co-design activities were used to discuss the findings from the primary data collected. Activities included journey mapping, participatory mapping and priority setting. An additional

Example of a journey map

workshop took place with the immediate research team to validate the research findings.

15 persons with disabilities attended the co-design workshop including 7 new participants. 10 stakeholders representing a diverse set of ministries, departments and agencies from the government and Organisations of Persons with Disabilities attended the multi-stakeholder workshop.

Example of a workshop with stakeholders

Who has a stake in inclusive design and an accessible built environment in Freetown, Sierra Leone?

To identify who has a stake in a more inclusive and accessible built environment, the team conducted stakeholder mapping exercises with all project partners. The initial insights from the stakeholder mapping were used for participant recruitment and later synthesised with the findings from the primary data collection to build a picture of all the key stakeholders, including those who benefit most from a more inclusive built environment, and those that shape it, resulting in the diagram below.

Insights

Thematic analysis was used to explore the research data which identifies key themes across the three different stakeholder groups: policy, practice and people. In-depth insights from the research are described through these themes and relay the different stakeholder perspectives throughout. The themes are:

- Daily life for persons with disabilities
- Living in informal settlements
- Challenges for housing and public spaces such as overcrowding
- Access to services and neighbourhood accessibility
- The importance of community, belonging, recreation and play
- Societal exclusion
- How the built environment is a barrier to inclusion
- Multi-sensory challenges
- Safety and hazards
- Quality of construction
- Barriers in mobility: public transport and road infrastructure
- Sanitation and water infrastructure
- Landscape and topography
- Stigma and understanding of disability
- The role of language in attitudes to disability
- Visible and non-visible disability
- Mental health impacts of an inaccessible environment and society
- Support systems and family dynamics
- Independence and enabling environments
- Social isolation caused by disabling environments
- AT and technology enable access to services and infrastructure
- Access to opportunities: Education
- Access to opportunities: Employment
- Poverty
- Recreation and culture
- Policy implementation
- Inclusive policymaking and governance processes
- Leadership and genuine participation of persons with disabilities is necessary
- Responsibility
- Accountability and access to justice
- Awareness of policies and benefits of inclusive design
- Implementing inclusive design: consistency, quality and broken links
- Barriers to inclusive design: cost
- Impact of climate

- Health risks due to a lack of infrastructure
- Accessing healthcare
- Disaster risk and inclusive disaster responses
- Using data and evidence
- AT networks and relationships
- What are people's priorities for accessibility?
- Progress on disability inclusion in Freetown
- Is proximity accessibility?
- Accessible by design
- Inclusive in use – management and maintenance
- Future-proofing design and inclusion
- Finding the space to implement inclusive design
- What do good solutions look like?
- Adaptations required to AT
- Is Freetown an inclusive city?

"Our physical disability is not our problem, we already accepted it. But the environments and the perception of the people are now our disabilities."

Daily life for persons with disabilities

"The community is also constrained with access to safe drinking water, sanitation, and other basic amenities."

Many persons with disabilities in Freetown are living in poverty. Accessing livelihoods, paying rent and just going about daily activities is often a struggle. The more affordable homes are in less accessible environments where opportunities are limited, reinforcing cycles of disability and poverty.

An example of poor implementation of inclusive design features

"My home is neither affordable nor is it easily accessible because I need to save for the entire year so that I can pay the house rent; also, the house is a bit disabled-friendly especially with the type of disability I have but there is a

small drainage along the way to my house and I cannot cross over it without someone helping me."

Due to the inaccessibility of the built environment, many persons with disabilities are dependent on support from family members, which has an impact on relationships and can affect an individual's wellbeing.

"I used to be the breadwinner for my family but now, it is the other way round. I only depend on what people can offer me to eat and survive."

Throughout the day, accessibility of the city varies due to demand on infrastructure and services. Persons with disabilities are more affected by rush hours and this can further limit their opportunities for participation.

An example of people with disabilities having to walk on the vehicular road to carryout day to day activities

"I normally use public transport … but this is among the most difficult things to do. I try to minimize my movement from places outside the community; if I must go to the city centre, I must leave as early as 6 am, do what I have to, and prepare to return between 8:00 and 9:00 am because if I wait longer, I will spend hours struggling to return."

There are time burdens created by inaccessible conditions, which has knock on effects on people's ability to engage in the community, go to work and live their lives.

"I normally walk at a slow pace to avoid slipping off and thus, my movements from place to place is now very slow; in fact, there are certain areas in the community I can never attempt to visit because if I do, I might risk falling on the ground or even lose my second leg. My case is a bit better because I use a prosthesis leg but wheelchairs users can't just survive living here."

Access to AT can also take time.

> **"I have received crutches from the government before; although the arrival time exceeded many months but, in the end, I finally got the crutches."**

Accessibility is vital to supporting livelihoods, and stakeholders must recognise this.

> **"If you talk to persons with disabilities, … they will tell you is about livelihood … the first thing I will tell you is accessibility. Because with accessibility, you can get your livelihood. Once you improve accessibility challenges, they will access education, once they access education, they will acquire knowledge after acquiring the required knowledge they will be gainfully employed. So accessibility is important."**

> **"I normally find it difficult to access my family house because of the steep hill I must walk through; this is something I do every day otherwise I don't eat."**

Living in informal settlements
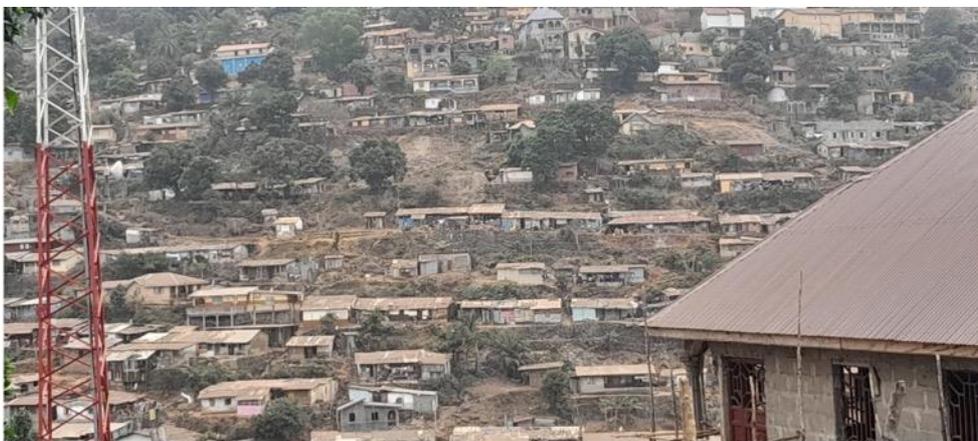
Informal settlement on hill

Most research participants who identified as a person with disabilities were residing in informal settlements with Thompson Bay in the western part of Freetown mentioned most frequently. Informal settlements are unregulated and not considered legal tenure and are mainly based in disaster-prone areas where land was reclaimed to build houses. The most inaccessible informal settlements are those in mountainous areas due to the steep terrain.

Participants highlighted the difficulties of living in these areas due to the poor living conditions. Common issues raised include difficult unpaved terrains with poor road infrastructure, lack of access to basic and social services such as health care, education or safe drinking water and sanitation. Participants described the settlements as overcrowded and with poor housing conditions.

> **"I live in a mountainous community in Freetown; the terrain is so bad that many houses are constructed in disaster-prone areas. The community is deprived of many social amenities and so, it is regarded as one of the informal settlements in Freetown. The community experience floods during the rainy season leading to the loss of life and property."**

Life in the informal settlements can be hectic, with many residents commuting to other parts of the city for work, leaving little support for people who are less able to leave the community. If more work opportunities were available within the vicinity of the informal settlements, there could be huge benefits for community livelihoods.

> **"In this community, people are so busy. They leave the community early and return late at night finding a daily livelihood-hand-to-mouth survival. Therefore, they hardly have time to support others, especially us living with a disability."**

Land tenure is not always secure living in informal settlements and so people are also living with the constant threat of eviction.

> **"The good thing is that my house is both easily accessible and affordable because I don't find it difficult to access my house and I don't pay house rent as a result of my stay in this government land. Although we get eviction threats, we have been staying here freely for a long time."**

Challenges for housing and public spaces such as overcrowding

While rents were not affordable for most participants, the housing provided was also often not accessible or adequate to meet their needs. Participants felt affordable, accessible, well-built housing was something the government needed to address as a priority.

An example of inaccessible steps leading to housing

"Yes, my house is affordable because I don't pay house rent but this is also because I sleep in the parlor [living room]. Accessibility-wise, my house is not easily accessible because I must cross a narrow bridge before entering my house, and to do so, I need someone to help me."

Due to the high cost and lack of stock, many homes house multiple generations of families, resulting in high average household sizes. Communities have high density with houses clustered together, making mobility between spaces even more difficult.

"The houses are so close to one another to the extent that people find it difficult to move around, I have only been managing by getting help to move me to specific locations where I spend time."

Overcrowding creates challenges in public spaces and streetscapes for persons with disabilities as there is a lack of space and often unsafe pedestrian environments.

"Overcrowding is another big challenge especially for the visually impaired because they can easily get hit by a vehicle. After all, the city is not spacious to designate sidewalks for persons with disabilities. Pedestrians are just clustered all over the place."

Overcrowding is also reflected in the high demand and overuse of the limited infrastructure that does exist, such as communal toilets. This overdemand makes these sanitation services even more inaccessible often rendering them not fit-for-purpose.

"We only have one toilet facility which is not easily accessible and hardly tidy as a result of the number of people using it."

Access to services and neighbourhood accessibility

"This settlement is an area that is sloppy, highly populated with a poor road network, and lacking access to many basic and social services like a health centre, educational centres, access to safe drinking water as well as improved sanitation."

To gain access to most basic services from informal settlements, people must be able to access main roads. However, due to inaccessible secondary routes, many persons with disabilities cannot access vital services such as hospitals, food shops, markets, water, education and employment without seeking assistance. These inaccessible secondary routes are typically not paved, are too narrow, covered in waste and mud and poorly maintained. This lack of access to vital services can prove fatal.

"This part of the settlement is built so densely that it is inaccessible to motorized vehicles. One needs to be able to get to the main road. The other day a relative of mine was seriously sick. There is no health care facility in this community. The hospital other residents asked me to take my relative to for treatment does not operate an ambulance service and it is outside this community. So, I was not able to get help. I lost my relative due to a lack of certain basic facilities as well as my disability because I can't afford the cost of her treatment."

"Public transport does not come inside the settlement because the paths are too narrow for motorized vehicles. I would need to get to the main road to take suitable transport, but my crutches are too old and too fragile to be used on the steep, uneven, and narrow paths in the settlement. Some bridges are unsafe and too narrow to cross with unsuitable crutches."

Access provisions and improvements are often focused on main routes. However, it is the secondary routes and neighbourhood mobility, especially within the informal settlements, that is really critical for persons with disabilities to be able to go about their daily activities.

"Another place I find accessibility issues is the route to the main road because it is steep with gravel that can easily drag me to the floor, the market area also

poses challenges because the path is always sticky with waste and mud and if I use that route, my crutches will get stuck in the mud."

Persons with disabilities often do not feel supported in public spaces. Seeking assistance or support to cross the road can be hard, with many people feeling ignored and excluded.

"Take a look at the streets of Freetown, we are supposed to use the pedestrian area but there are so many gaps. The traffic police officers, for example, can see a disabled person standing for more than 10-20 minutes waiting to cross but pay less attention to them."

Key public services are often located in the more affluent parts of the city, which are on higher terrain, making them inherently more challenging for many persons with disabilities to access.

"The services are normally distributed in hard-to-reach areas like hilltops and far distances outside the community where people like me will find it extremely difficult to access them."

The importance of community, belonging, recreation and play

Living in a community where there is an awareness and an acceptance of disability has a positive effect on people's quality of life over and above the physical accessibility of the surroundings.

"One of my favourite things about this community is the inclusive nature of people, I have been staying here for a very long time and I have both abled and disabled experiences; I have never experienced any form of marginalization in this community because we all see each other as a family."

Example of recreation opportunities

Communities where persons with disabilities could come together, helps create a strong sense of belonging. Being able to identify with others in the community, including other persons with disabilities helped create a more positive experience and support greater confidence.

"The thing I like most about this community is the fact that every member is a disabled person and so, there is no discrimination or marginalization. We are united as a family in carrying out our daily activities and a problem for one is a problem for all."

Having open and accepting communities is also important in helping reduce stigma, including with future generations. Supporting persons with disabilities to be visible and active members of the community helps perpetuate better attitudes towards them.

"The favourite thing about this community for me, is my interaction with children and their willingness to always give a helping hand to disabled people. I find so much joy in interacting with children in my community because they make me feel like I belong"

Recreation and sport are a very important part of life for many people. However, persons with disabilities can often experience stigma in these settings.

Example of sporting activities enjoyed by participants

"For instance, people sometimes marginalize me at the football pitch by calling me names and reminding me of my inefficiency."

Societal exclusion

"Societal behaviour is a big problem for us and to be honest if I had my way, I do not want anything to do with abled persons; I only manage because I have no choice. Able-bodied individuals stigmatize, marginalize and discriminate against us; I can understand their plight because we are always on their feet begging for survival."

Persons with disabilities spoke about how social networks and connections enabled better access to services. This is another example of perpetuating cycles of disability and poverty, as those worse off are less likely to have these social networks or connections and so can expect to be left even further behind.

"The services are delivered based on connections; people with connections have always been benefiting while those without connections hardly benefit."

"The physical barriers are vivid and can be seen everywhere; this we have accepted but the social barriers are killing some of us slowly."

How the built environment is a barrier to inclusion.

The current state of the built environment is not considered to have been designed or built with inclusion at its core. Persons with disabilities feel excluded from the planning and design process as much as the physical built environment itself.

"The challenges are vivid because buildings were erected with no intentions to make them disabled-friendly. Disabled people were never consulted during the process; they were never part of the plan. Building structures, we need to create ramps to be used by persons with disabilities. Even the public toilets within these public buildings made no provision for persons with disabilities."

Example of a ramp into a home over a drain

"I find it challenging to use the path leading to the main road because it is so narrow that my wheelchair can hardly pass through plus the gravels, mud, and stones that make movement uneasy for me and the person pushing me."

"All of the pathways are steps thinking that everybody is able. The road leading to where they are is not paved. If the roads are paved, they can take motorbikes or tricycles."

Daily tasks such as going to the market are not possible for many persons with disabilities due to physical access barriers. In these scenarios most people are forced to rely on support from others such as friends, neighbours and family members. However, the lack of independent access places a higher risk on the provision of daily essentials like food.
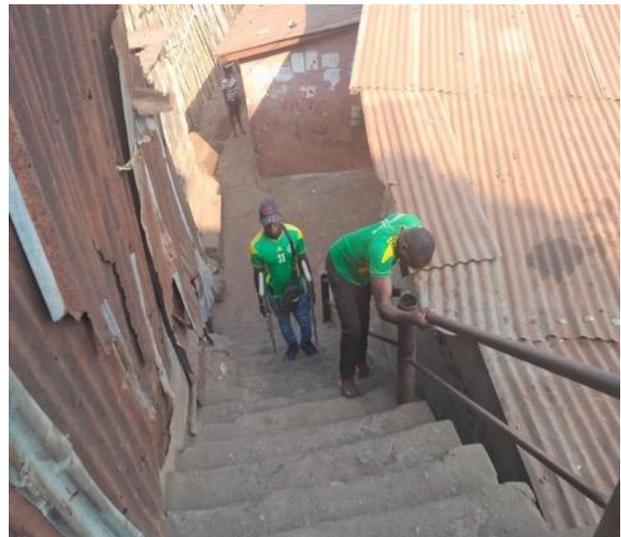
Example of a stair causing difficulty to people with physical impairments

"I do not go to the market because there is big drainage that I cannot cross and so, my siblings do the buying and I do the cooking."

An inaccessible built environment makes using AT more difficult and costly as parts need to be replaced more frequently due to breakages. AT and the built environment need to work well together and complement each other to provide inclusive solutions and experiences.

"The physical environment makes it difficult to use the wheelchair, eroded rocks, gravels, and mud gets hold of the tires and resist movement; this is the more reason why most times people refrain from carrying me around."

"We spend a lot of money in repairing or buying wheelchairs."

Inaccessible buildings create barriers to every life for persons with disabilities. Essential services such as schools, hospitals, banks and key government services are often located in buildings that are impossible to access for most persons with disabilities. This presents a barrier not just to the physical space, but to the service itself including health, education and livelihood opportunities.

"People are still putting up buildings which are not accessible, even in public places, you talk about schools, the schools are still being constructed with no accessibility concerns. They still build doors, which are narrow for children with disabilities, when they want to go to the toilet, they can't access that toilet. So consequently, those children will not come to school because they cannot access the toilet, they're going to be embarrassed."

"The access to government and administrative buildings is another physical barrier limiting persons with disabilities from participating and benefiting from government services like employment for instance."

While there are a few good examples of accessible buildings that provide ramped access and passenger lifts, this is still no guarantee of an inclusive experience due to wider infrastructure issues. Electricity supplies can be unreliable which is an issue for passenger lift access, resulting in a lack of reliability and trust in the service.

"We barely have good examples in this city, except for buildings with lifts or elevators; even at that, there is a challenge to that, because there is no regular electricity supply to ensure that those things are always functional."

There are plans to amend the building code and hopefully this can be done with strict implementation strategies as stakeholders themselves admit there is a long way to go to an inclusive Freetown.

"Most of buildings are not accessible to persons with disability. Lifts are not there, and ramps for access are hardly seen in most of the buildings. We're revising the national building code, hopefully this year, we already have funding for that. We will include in the national building code to ensure there is access to buildings for persons with disabilities. But at the moment, even the roads, footpaths, are not accessible. So we have a lot to do as a city and as a country to ensure that our environment is friendly to persons with disabilities, we have a long way to go."

Multi-sensory challenges

Freetown is a congested city that can feel chaotic at times. This creates an environment that can be overwhelming for many people, including people who are

neurodiverse and people with learning disabilities. This can be just as big a barrier to people participating in daily life as physical access barriers.

"Among the things I despise so much about this community are the noise from vehicles, music and motorbikes".

Safety and hazards

"The risk of being knocked by a vehicle as well as falling into big drainage are among the major challenges to services needed."

Safe and accessible pedestrian environments are a fundamental aspect of inclusive city design. Urban planning must ensure that adequate space is provided in the city's development to accommodate these environments. Allowing safe, comfortable and accessible pedestrian routes that are kept clear and are intuitive to use will support all users, including persons with disabilities.

"Overcrowding is another big challenge especially for persons who are visually impaired because they can easily get hit by a vehicle. After all, the city is not spacious to designate sidewalks for persons with disabilities. Pedestrians are just clustered all over the place."

The natural topography of Freetown creates steep hills and routes that are challenging for many. Coupled with unclear and often unplanned road networks and a general lack of handrails and support systems creates a landscape that can be hazardous and dangerous, especially for many persons with disabilities.

"The topography of the land is terrible because there is a hill that one needs to walk through to access the main road, unguided footbridges as well as a poor road networks that makes the movement of vehicles and people difficult. I cannot move around the community alone because I will end up hurting myself and adding to my problems."

Incidences of disability due to injury are high in Sierra Leone. Due to the relative inaccessibility of Freetown and the subsequent barriers this presents, for many people who acquire disability in later life, the reality can be difficult to deal with. This can go on to have extremely negative consequences on people's mental health and well-being.

"I used to be a good football player and I enjoyed playing before the accident that led to the amputation of one of my legs. I used to be an able-bodied young man with the ability to do everything on my own but today, I am among the persons with disabilities. Sincerely, I went through hell trying to adapt to the new situation; there was so much psychological trauma because each time I think about the fact that I can no longer function well like before.

Quality of construction

Building materials and the quality of finishes, fixtures and fittings also play an important role in the accessibility of a place or space. Material finishes often dictate the slip resistance, acoustic quality, aesthetic and literal feel of a space and so they are important to get right. Building materials also play a pivotal role in protection against disasters.

Example of a poorly implemented inclusive design feature

"In Freetown, the houses are poorly constructed (not disabled-friendly)"

"The materials used for the construction of these buildings also endanger the lives of persons with disabilities. For example, the tiles used can be risky for people who use crutches especially if the tile is so smooth or wet."

Barriers in mobility: public transport and road infrastructure

The ability to easily move around a city independently, safely and with confidence is an integral component of any inclusive city. Barriers to movement around a city create obstacles that reach far beyond access to any specific transport service.

"Transportation is among the worst issues in Freetown and it is a challenge that affects everybody but persons with disabilities suffer the most."

Example of inaccessible public transport

Public transport in Freetown is not considered accessible, with persons with disabilities often telling how they are refused entry on to public transport in favour of persons without disabilities as they can board and alight faster. Inaccessible vehicles, competition for spaces and road congestion are all expressed as a deterrent to using public transport in the city.

"I cannot use minibuses because they are high and the competition to access them is high and people do not give preference to people like us which is why I hardly go to the city centre."

The Disability Act of Sierra Leone states that priority must be given to persons with disabilities when accessing public transport. However, the reality on the ground is that this law is not widely known or enforced.

"Even though there are laws within the Disability Act that give priority to persons with disabilities in terms of accessing public transport, these laws are not in force."

Persons with disabilities often face additional costs when using public transport as vehicle drivers sometimes charge an additional fee for transporting assistive technology (AT), such as wheelchairs or crutches. In addition, some persons with disabilities are forced to take more expensive transport options that are accessible for them such as private taxis rather than shared bus services.

Example of participant taking a motorbike taxi

"The use of public transport is among the most difficult undertakings within this city; moving outside my purview does not only cost me a lot of financial resources but also time."

Participants also spoke about feeling discriminated against through stigma and negative attitudes when using public transport. Often, staff and operators were rude, disrespectful and unwilling to provide any support or guidance to persons with disabilities.

"Public transport drivers disrespecting disabled people, we are discriminated against a lot."

For many persons with disabilities, making use of public transport is currently only possible with support from others. This limits people's independence and ability to make the most of opportunities across the city. It also requires a support network which many people simply do not have.

"Whenever I need to make movements out of the community, I normally go with my son and we always go on public transport. It is challenging because transportation is a big problem for people in the city but with the help of my son the challenges are minimal. I hear people shouting at him for trying to protect me in the fight for transportation and in my quiet moments I accept the fact that I cannot do it alone."

Complex road networks and a lack of good road infrastructure also present major limitations on public transport and urban mobility.

"In my settlement, the roads are not disabled friendly. Other areas within the community like the hill, poor road network, and open drainages pose serious challenges for my movement."

"I think the road network should be improved with special provisions for persons with disabilities; like for students, I think it will also be nice if the government can provide disabled-friendly buses to ease our movements around the city."

Example of participant taking a

Road safety is also a major issue, with roads not wide enough to provide adequate, safe pedestrian spaces. Coupled with high levels of congestion, this creates hazardous conditions where pedestrians are often left vulnerable and traffic accidents are common.

"Also, the roads must be constructed widely and spaces provided for wheelchair users to reduce the risk of being run over by a vehicle."

Participants spoke about the inaccessibility of journeys beyond just physical barriers such as disconnected public transport links, inconsistent services and being charged additional costs to transport vital AT. Stakeholders also reflected that current road and streetscape designs did not follow the principles of inclusive design and were difficult and often dangerous for many disabled people to use.

"I will push myself to the city centre, wait for a vehicle that has a provision for my wheelchair; when I finally do, the conductor will charge me Le 5000 for my wheelchair and Le 7000 for my transport fare. This is a huge sum, plus the accessibility challenges to get a vehicle among the many able-bodied individuals."

Improving the road infrastructure was identified as one of the highest priority transformations needed in Freetown. This would help support more people, including many persons with disabilities, to travel beyond their immediate communities.

"I think the road network is the most important improvement I would like to see because with a good road network, people like me will find it a bit easier to move within and outside the community."

Sanitation and water infrastructure

"The issues of access to water and sanitation are so alarming that people only manage to survive."

The lack of access to adequate sanitation facilities and clean safe drinking water is a significant driver of poor living conditions in Freetown. There is limited intervention by the authorities in terms of infrastructure in informal settlements meaning there is still no proper waste management system in these communities. As a result, most residents dispose of their waste in open drainage leading to water-borne diseases through contamination and stagnant water. Most homes lack toilet facilities and those that do exist are generally not accessible. Many people have to travel to access clean drinking water which is made more challenging by the inaccessible environment. The result is that many persons with disabilities, especially those living in informal settlements have no access to suitable accessible toilets and also have no means to independently access safe, clean drinking water. The ongoing health implications are significant.

Informal drainage system

"Sanitation is a major issue here. There is no proper waste management system in this community. Most residents dispose of their wastes in drainages, waterways. Also most of the houses lack toilet facilities so most people use the sea, other open places. Poor sanitation has exposed most residents to health issues but since this is an informal settlement, there is no authority we can make accountable for it."

Example of bridge over drain

The prevalence of open drains also poses a serious challenge for persons with disabilities, especially wheelchair users and people with a visual impairment. Open drains often make areas inaccessible and present a significant injury risk. They create barriers to places and spaces as many persons with disabilities will choose not to travel to places where there are open drains that lack safe and accessible crossings, essentially leading to no-go zones.

"The big drainage located along the way to my house is by far the worst place for me in this community because it is not only big but also it's left widely opened and for someone to get to the other end, you must walk inside it. This is a place that has denied me movement on many occasions because when there is nobody to help me through, I go back home and sit down."

A lack of proper sanitation infrastructure and reliance on open drains coupled with the climate and increasing prevalence of heavy rains and flooding leads to increased health risks for residents living in the informal settlements.

"This happens because the community is hilly and has a poor drainage system; residents are of the habit of disposing of their waste in drainages within the community when it rains."

Example of open drainage on streets

Participants spoke about the need for access to water and sanitation in their own homes as part of an accessible solution. They also reflected on the impact of these provisions on their general wellbeing and ability to be independent.

"In such a condition, I will need a self-contained house with the toilet and bathroom inside as this will enable me easy access to the sanitation facility as well as add value to my wellbeing."

Even accessing the communal toilet facilities is not straightforward when the urban environment is so inaccessible. Here, the lack of proper drainage infrastructure continues to

Example of open drainage on streets

be barrier to sanitation, with open drains creating obstacles that many cannot overcome.

"I also find it difficult to access the toilet because there are several open drainages I need to cross before getting to the toilet facility."

Making use if the communal sanitation and water services also have associated costs which can be a financial burden and barrier.

"The issues of water and sanitation are also extremely challenging because we spend a lot of money trying to access water for the home."

Communal sanitation facilities in the informal settlements should offer privacy, dignity and safety for all who use them. People expressed anxiety and shame about using these communal facilities as where they are not safe or private. This has a huge impact as it is deterring people from using proper toilets and bathing regularly which has a significant health impact as well as affecting mental health, well-being and quality of life.

"I will also need a stick and a decent toilet facility to cover my shame. This may sound funny but it is the reality, I can stand naked in front of people thinking that the door of the toilet is closed while it is open because the toilet is outside and many people access it."

Local government policy stakeholders spoke about how sanitation is a major concern for the city that already occupies a significant portion of the city's budget. However, it is clear that even with budget allocation, the current situation is unacceptable and requires significant investment and development.

> **"As a council, we are charged with maintaining cleaning the city, and the greater chunk of our source revenue is being taken away by sanitation."**

> **"Within the next month, you'd see you'd be having more people more waste is generated services that we provided are overstretched because they cannot meet the demand since we have limited supply."**

Landscape and topography

Image showing difficult topography

> **"The topography of our country is hilly so it's not very easy to have a flat design, designers and engineers need to think creatively and also, land availability is another challenge."**

The hilly and often steep topography and terrain of some Freetown communities makes moving around the city especially difficult for many persons with disabilities. In the mountainous communities, many persons with disabilities cannot even leave their homes due to uneven, muddy hills, gravelled routes and slippery surfaces.

> **"The steep nature of the community makes movement difficult for people like me, and the difficulty in accessing water especially for persons with**

disabilities because the wells are not disabled friendly and are located in far distances."

In some places, the topography can be so steep that it can make people feel unwell and light-headed. Uneven terrain can also enhance this feeling by not providing any stability under foot.

"The hill is so steep that I have this spinning sensation in my head whenever I am going down the hill."

Stigma and understanding of disability.

"There is a common saying that "*he who feels it knows it*". Disabled people face lots of challenges; including labelling, finger-pointing, discrimination, offensive description by non-disabled people."

In general, there is a stigma around disability in Freetown. Many persons without disabilities do not understand disability and so do not feel confident or comfortable interacting with persons with disabilities. Many persons with disabilities living in the city face discrimination daily and are often labelled solely by their disability. It is considered that there is a prejudice against persons with disabilities in the city and that persons with disabilities are typically viewed as being unable to contribute positively to society.

"Nevertheless, societal perceptions about disability are appalling. The majority of people do not want anything to do with me; some people prefer going to the main road just to avoid having any dealings with me. It is so sad that the community considers the disabled useless and should not be involved in activities of the community; some people call me names and say ill things about me and don't even care how I feel about it."

"People do not even think that we do exist as human beings. If we do exist we should be involved in all other developmental areas. We don't want people to work for us, we want to work with people. I believe co-learning will exist because you will also learn more from us and we learn from you thereby changing the perception people have about us. Sometimes people say we are rude, violent, you name it, but learning to talk with me or anybody with disability issues will learn that this is why these things are happening."

This discrimination and prejudice further limits access to opportunities for persons with disabilities. Employers are less likely to view persons with disabilities as a positive addition to their staff. Persons with disabilities are also less likely to pursue opportunities if they have experienced negative attitudes, stigma and discrimination growing up, in school and other settings.

> **"I experienced bullying, stigmatization, and discrimination especially at the early stages of my disability. Because I was not born with a disability. However, I appreciate the intervention of the school administration each time my classmates tries to laugh at me, it makes me feels better and safe."**

There is a cultural aspect that plays a significant role in attitudes towards disability and persons with disability in Freetown. This comes from the view that disability is somehow associated with 'witchcraft' and is a punishment placed on people for wrongdoing. This superstition is dangerous as it can often legitimise mistreatment of persons with disabilities. It also demonstrates how important education is to inform people about disability to dispel these myths and resulting attitudes.

> **"I was told that some of my family members who envy me because of my hard work used witchcraft to take away my sight so that I can be a nobody in society."**

> **"I was happy because I was able to interact with other children in the community until age eight when I became disabled due to a strange sickness that was said to be witchcraft."**

There are some awareness-raising activities already taking place in the city to try and change perceptions about disability. However, some participants felt that even with training and such initiatives, the attitudes of some people towards disability will never change.

> **"I sometimes listen to radio discussions about disability issues and the slogan "disability is not inability" is gaining popularity but the truth is that many people are stubborn and their perceptions about disabled persons will never change no matter what we do."**

There is also significant stigma around begging which is common as a means of survival for many persons with disabilities. This is another example of people trapped in a poverty cycle where they have no choice but to beg while the action of begging is compounding stigmas that are having a detrimental effect on their ability to break out of poverty.

The role of language in attitudes to disability

Language and terminology are important and play a big role in how disability is perceived in the community. Inappropriate language and terminology can also perpetuate stigma and discrimination. Again, education needs to be provided here to support people to understand the effect language can have on people and to know what language and terminology is appropriate and acceptable.

> **"The language people use to describe disabled people in this community is not encouraging to disabled people. People called me by my disability ("*the one-legged lady, the amputee*") and that irritates me a lot. But people always do that even when they knew I'm not happy about it. Honestly, I can't explain how bad I feel, but I have no choice but to burn inside because there is nothing I can do about it. After all, the reality is that I have one leg."**

Visible or non-visible disability

Stigma and discrimination can be greater towards people with a more visible or obvious disability, such as wheelchair users. Use of visible AT has also been noted as affecting things like cost of travel.

> **"During a privileged conversation with a close friend of mine, he confessed that people are this nice to me because I always look good and with the prosthesis well covered and placed in my shoes, it is difficult for someone to detect that I am having a disability and I think I agree with him to some extent because I often see other disabled persons been given ill-treatment and marginalized in the society."**

Mental health impacts of an inaccessible environment and society

For some, the negative impact of being disabled and living in a city, or part of a city, that is hard to navigate and where attitudes are still generally negative towards

disability and persons with disabilities can have a significant and long-term impact on a person's mental health and well-being.

> **"Being visually impaired is among the worst things that can happen to someone in this life…I now depend on others for virtually everything."**

The stigma and often daily discrimination that many persons with disabilities experience and have to deal with, can have a serious detrimental impact on mental health.

> **"Some people are so intolerant to an extent that they use every opportunity to insult us about our disability; I think this needs serious attention because it causes us so much emotional trauma in this city. I get agitated every time someone provokes me."**

Such is the level of stigma that some experience as a result of their disability, it can affect their confidence, family relationships and play a role in their living conditions. The impact on daily life is substantial.

> **"I now have self-doubt in participating in certain activities, I had to cut off ties with my friends which hurts me to date, I cannot fully participate in every activity my mates organize, and most importantly, I would not have been residing in a slum community because my aunty wanted me to move in with her, but everything changed when this happened."**

Support systems and family dynamics

Family plays a big role for persons with disabilities living in Freetown. In the research interviews undertaken, most disabled participants received daily assistance from a family member, such as:

*Participant being guided by family
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- financial support
- support accessing public transport and moving around the city
- everyday chores such as cleaning, cooking and cleaning
- support to complete education.

"Yes, my daughters help me with a lot of house chores that involve movement. They help me with things like fetching water, sweeping the compound as well as pushing me to the toilet and other places around the community but I do the rest because I do not like being considered unable to do things on my own."

"I count myself among the luckiest women in this community because it is almost impossible to get an upright man to be this caring and proud of me. Unlike others who only sneak into the houses of their partners at night, my husband is always around me, determined to give a helping hand."

Family dynamics are complex and this is no different for persons with disabilities. In terms of providing support, some of our disabled research participants were conflicted about receiving support from family members. While they were grateful that the family were being supportive and were willing to help, some also felt that their independence was being taken away as a result.

"Pampering from family members is another reason why I left my family house to stay alone because I do not like it when people do my stuff. I am so grateful I do not fall among the category of people who got abandoned by their families when they become disabled."

Many of our disabled research participants also had family members with disabilities. This means there are many households with more than one person with a disability residing in them. The impact of high housing costs and overcrowding also means that many homes in Freetown, including in informal settlements, are multi-generational. As the incidence of disability increases with age, it is expected that many older family members are likely to also be disabled.

> **"I am currently living with my mother, father, 5 siblings and 2 other relatives. We all stay together in the same house. Our house is a small house, and it's not disabled friendly, but it's all my parents can afford for us."**

Some participants spoke about the negative impacts of strained family relationships, especially with parents, which can result in persons with disabilities being left homeless with no support from anyone. This is often when they will turn to the streets and begging as a means to survive.

> **"I think one of the main reasons leading disabled persons to the streets is the exclusion from parents at home. A vast majority of parents give up on the disabled children they give birth to and I also went through a similar situation but then, it has to do again with the personal determination and the decision to endure the challenges posed to you. There is severe psychological torture to this especially when you get neglected by the people you expect much from; I can assure you that most of the people you see on the streets begging have serious plans for their lives and that is the reason you see them forming disabled organizations to be able to advocate for themselves."**

Independence and enabling environments.

For many persons with disabilities in Freetown, their ambition is to be able to thrive in their communities and support themselves independently the same as everyone else. To do so, they want the tools that can make it happen such as, assistive technology (AT) products and devices, accessible infrastructure and transportation and access to education and livelihood opportunities. They also require others to understand disability to reduce stigma and improve attitudes towards persons with disabilities.

> **"I do not work at the moment but I have the intention to do business if I have the capital; I know it could be challenging but I want to do it because it will not only make me feel good but also help me to be self-reliant."**

Some participants felt able to conduct most day-to-day activities while others felt more limited by their environments. The most essential task that was cited as being the most challenging for all is fetching water.

> **"The only thing I cannot do is fetch water due to the long distance and the topography (the location of the water facility) but all other things I can do with the help of my crutches except for extreme cases."**

Employment and access to livelihoods is a critical factor for everyone's quality of life and persons with disabilities are no different. Local government stakeholders also recognised this and that supporting persons with disabilities into employment was helpful for their individual well-being, and also for tackling wider social issues such as stigma and discrimination.

> **"Another one is disability capacity building and employment. Because giving somebody money every day when they come will not help the person. Money will only last for a while but if you build capacity, and empower them, it will help them to be independent."**

> **"They don't like you to look at them with pity. So, they would like you to look at them as if they have the capability. And with that impression in mind, we give them the support they need."**

The inaccessibility of the built environment is a significant factor in persons with disabilities having a lack of independence and therefore a lack of access to livelihood opportunities.

> **"I cannot do anything on my own; I have no source of income; I cannot do anything independently and I have been reduced to a mere beggar. Each time I think about my past and the plans I had for the future and compare to what I am right now, I can't hold back but shed tears. But all the same, I have no choice now, I only have to manage."**

Social isolation caused by disabling environments.

"I try as best as possible to maintain a good relationship with the few people I interact with and for this reason, they all open their arms to me in time of need."

Maintaining close family and social relationships are often a vital support system for many persons with disabilities. There is a risk of isolation for many persons with disabilities for whom leaving home is either extremely difficult or at worst, not possible. In these scenarios, having a pro-active support network is essential.

"I have lived in this community almost all my life but I relocated to the lower part of the community when I discovered that I can no longer climb the hills. I used to stay with my family but I am now staying alone to avoid the hills and rocky paths."

While the local community and neighbourhoods are often a source of positive support, there are occasions where the local community are negative towards persons with disabilities, due to stigma and a poor understanding of disability. This can make life very difficult for persons with disabilities, especially those living alone in those communities.

"The thing I dislike about this community is the constant backbiting and slandering nature of people. They take advantage of the fact that I cannot recognize who says what and talk negatively about my impaired vision, the way I dress, and the food I eat."

In these scenarios, persons with disabilities typically experience social isolation. This can have a significant negative impact on a person's mental health and well-being. It can also further support stigma and negative attitudes towards disability by keeping persons with disabilities hidden and in the margins of society.

**"No, I cannot live a social life because I am almost a nobody.
I am among the most side-lined and secluded people in this community; no matter what happens, I don't get consulted and my participation is less considered. Nobody tells me when there is a meeting, nor do I get informed about happenings around me. Many people disrespect me regardless of my**

age and there is nothing I can do about it because I cannot even identify them.”

Social relationships and networks can also be affected by the stigma that exists around disability in society. Many of the disabled research participants spoke about losing friends after becoming disabled and the negative impact this had on their life.

“As for friends, I do not make time for them anymore because I gave up on friendship when they all shunned me after I underwent the surgery that led to my disability.”

AT and technology enable access to services and infrastructure

“Assistive technology is not a luxury for persons with disabilities…it is a necessity.”

Assistive Technology (AT) is an enabler for many persons with disabilities. Having access to adequate and appropriate AT can make an enormous difference to a person's quality of life. In many cases, such as for wheelchair users, the AT becomes part of a person's identity. Therefore, when the built environment does not support that person using their AT, the impact is extremely negative.

“My wheelchair represents my legs and without it, I am a nobody but the physical environment makes it difficult for me while using my wheelchair.”

Government stakeholders have recently given attention to the importance of AT and its role in shaping a more inclusive society.

“What we need to look at as a ministry is mobility this is very key because, without assistive technologies, persons with disabilities cannot even move around or access healthcare facilities.”

Having appropriate AT allows many people to then access essential services, such as healthcare and education. However, it is vital that the AT is easy to access, good quality and affordable.

“For instance, the Ministry of Health now has a national program on assistive technologies in various districts assessing children with different disabilities

and providing them with their needed devices like canes, crouches, as well as prosthetic limbs so that we can reduce the problem of mobility.”

Mobile phones and computers were also discussed as enabling technologies, supporting access to education, work, navigation and socialising. Also important is the infrastructure needed to support such devices including reliable electricity supply and internet connectivity.

“I think a lot of these things, have to do with financing, and maybe access to technology as well. Because as a disabled person, if you're able to access technology you don't need to walk to the DM office to access anything because you can easily go online, and then just go to the hospital.”

Access to opportunities: Education

“Most persons with disabilities cannot benefit from the free quality education the government offers because they can barely even feed themselves and their families. Free transportation for persons with disabilities can help many children to access their schools. The majority of persons having visual and hearing impairments can only attain basic education because their schools are unequipped and understaffed to effectively run the activities that qualify them to higher educational standards.”

Mainstream education is not considered to be disability inclusive in Freetown. This means that for many persons with disabilities, accessing education can be very challenging. The result is that non-attendance and drop-out rates for persons with disabilities are high. Significant barriers to education for persons with disabilities includes:

Example of inaccessible school

- Inaccessible built environments
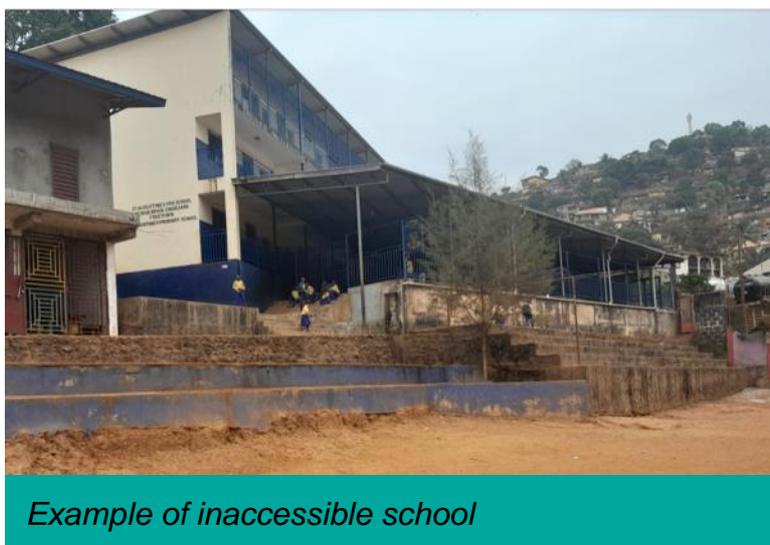
- Not being able to afford school fees
- Lack of assistive technology or other support needed
- Bullying from peers and stigma – including being the only student with a disability in a class and singled out for this

"Schooling for us comes with serious challenges such as constant bullying by non-disabled schoolmates, discrimination, provocation, and stigmatization. In addition, my mother could not afford to pay my fees and other charges for me to continue my education, so I had to drop education and chose dancing at public places for a living."

Example of a participant in an education setting

An accessible built environment and access to assistive technology would greatly support persons with disabilities to attend and stay in school. Many of our disabled research participants felt they had been unfairly treated in comparison to their non-disabled peers by a lack of inclusive education.

"It is a daunting task for students who are physically challenged or have polio to climb maybe six or seven stories to attend classes."

"Most of my colleagues in secondary school are now either in the university or have travelled abroad and here I am in a wheelchair; I use to be the most intelligent among them but I could no longer compete with them."

"Another challenge…is that we're facing visually impaired students, they don't have Braille machines…and it limits their education."

"With political will, we have been able to rearrange the policy environment and come up with the radical inclusion policy that frowns at discriminating against or marginalizing children with disabilities in schools."

In terms of access to higher education, some of our disabled research participants shared that their university was somewhat accessible. However, it is also expensive to attain higher education and so not everyone has the opportunity to attend university. The Disability Act states that persons with disabilities have free access to education up to the tertiary level. However, the implementation of this can be challenging for a number of reasons, including a lack of access, livelihood challenges, stigma and discrimination. The removal of a financial barrier to education is a great step, however if a family is facing daily challenges to maintain livelihoods, people will be less likely to continue in education,

"In terms of the university, I would say not everywhere is accessible. The areas within the university that are difficult to access are the classrooms because there are no ramps there for persons with disabilities. We struggle to climb the stairs and often take a long time to register in the class."

Tertiary education opportunities should not be limited solely to a university place. It should also include for further training in alternate career paths to support livelihood opportunities. There should be choice that allows persons with disabilities to fulfil their own employment potential.

"I don't mean just for my classroom education. It can be anything it can be learning skills like carpentry, mechanics, tailoring, plumbing, etc."

Access to opportunities: Employment

Unemployment of persons with disabilities is a big issue. Many of our disabled research participants were unemployed for several factors including:
- Being unable to access appropriate education and training
- Inaccessible transport options making it impossible to get to work
- Inaccessible built environment making it impossible to access certain workplaces
- Stigma, negative attitudes and stereotypes towards persons with disabilities even when they have the necessary skills and qualifications

- Difficulty accessing basic needs due to poverty result in persons with disabilities finding it harder to work
- A lack of assistive technology to support persons with disabilities perform certain tasks or activities

"I applied and I was shortlisted for the interview; I was interviewed and was even congratulated. In the final stage […] the moment they saw that I am disabled using crutches, their minds changed […] they told me it is really heavy to say but they have problems regarding my employment […] the office which we have for you is not disabled-friendly. So our physical disability is not our problem, we already accepted it. But the environments and the perception of the people are now our disabilities."

Participant in the mini-shop he runs

"I just lost a teaching offer in a school that could have earned me more income due to the stairs of the school."

The limiting access to education has an enormous impact on people's lives. Without good access to education, many persons with disabilities have no choice but to pursue other livelihoods either connected to the family or making use of the limited opportunities in their local neighbourhood such as farming and informal labour. For others, they are often left in a position where their only remaining option is to beg.

"I dropped from school and decided to start farming as a career since my father was also a farmer."

Example of the benefits of access to technology

People in Freetown often rely on informal labour markets to sustain livelihoods, including labour, trading and dancing. While these forms of employment are inconsistent and not regulated in any way, they do offer some source of income and can be more flexible than other forms of employment. For example, one of our disabled research participants was able to sell phone cards from directly outside their home, which was accessible and convenient for them.

> **"I live in an informal settlement where a large portion of the population depends on fishing and petty trading."**

> **"Also, I sometimes go to Abacha street where I purchase cheap items for sale at home to diversify my income because begging has not proved a sustainable means of livelihood but it is as well a big challenge for me going to one of the busiest streets of Freetown."**

Some local organisations such as such as The Dorothy Springer Trust, The Disability Empowerment Movement Sierra Leone and Handicap International (now operating as Humanity & Inclusion internationally) are prioritising certain types of skills training for persons with disabilities to support them into more accessible employment routes. For example, optimising the ability to do remote working online, where the internet infrastructure allows.

> **"They found that a lot of IT work is very suitable for people with disabilities. … Because whether you are blind, you have your hearing-impairment or you have mobility issues, the fact of the matter is you can sit in front of your computer, … just as effectively as the next person because it has been found to provide a level playing field."**

Persons with disabilities also experience barriers to accessing financial services, including loans. This is often due to stigma and discrimination around disability and persons with disabilities. Many assume that persons with disabilities will not have the resources to pay back a loan or to uphold a financial agreement, such as a rent agreement. This is another example of the poverty cycle, as many recognise that persons with disabilities have reduced and limited opportunities to livelihoods which is in turn negatively affecting their ability to establish livelihoods in the first place.
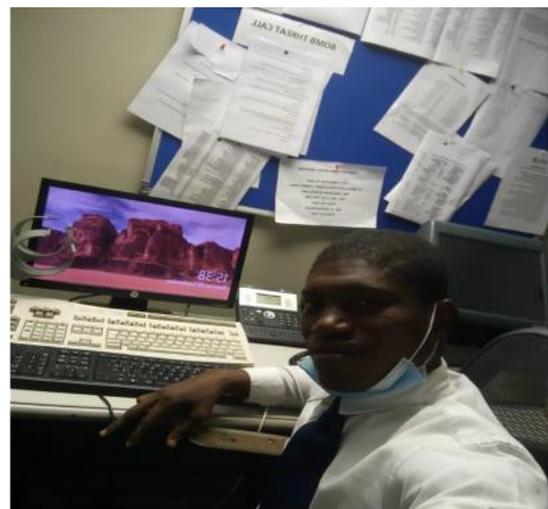
Participant relies on access to technology for employment

"Yeah, in some areas, we are marginalized. For example, if you are disabled, even if you have the money to rent a house, the moment they realize you are disabled, the landlords will refuse to take your money."

General infrastructure issues such as frequent power shortages create barriers for everyone. However, this can impact persons with disabilities even more greatly if they are reliant on electricity for home working, communication and AT charging and use. There are wider health issues to consider for anyone reliant on a powered medical device where the electricity supply is unreliable.

"The business I'm doing needs electricity as the phone needs to be charged. However, frequent power failures are also a major issue in Freetown and Sierra Leone at large."

Poverty

"The only thing I will like to add is the need for food. As a disabled person with no source of income, I normally find it difficult to feed myself and my family. Hence, I am begging that you consider us in that regard because we sometimes have no choice but to go without food."

As many persons with disabilities in Freetown have no livelihood opportunities they are forced to beg on the streets. Beggars face discrimination and negative attitudes

as there is a lack of understanding around what has led someone to rely on this means of survival. Persons with disabilities are forced to beg due to social and physical barriers to education and employment which violates their basic and fundamental human rights.

"No disabled person wants to just go on the streets and beg. I think we all have dignity. We have our dignity to maintain but a lack of education, lack of access, all those things create a big problem."

"You can see that I am a beggar and begging is what I do for a living but unlike other disabled persons, I sit at the entrance of my compound because the main road passes through my community. Many people now know me and some of them give me money almost every day and I am grateful to them for their generosity even though the hard-hearted ones sometimes make me feel bad about myself."

Even when reduced to begging, there exist barriers for persons with disabilities. Some of our disabled research participants spoke about the need to travel to other parts of the city to beg as their local communities were too small and the people living there were also living in poverty. Therefore, barriers to public transport are still an issue.

"I do not have a job, I am a beggar; I normally go to the city centre to beg because the community is almost always empty and the people in my surrounding could not earn enough to give money to beggars."

The government is aiming to reduce begging on its streets through upskilling initiatives. However, the government must also consider the need for financial support. People will require help to survive while undertaking the training. This demonstrates the need for a holistic view on government support services.

"We have done some skills training. […] The big challenge we have now is that you can't just say forget about begging come and learn skills, within the process of learning the skill, this person needs to eat, this person needs shelter, or maybe this person already has a family to take care of the family and without financial support, you cannot be able to do that."

Solutions taken by the government to reduce begging on the streets must also be sustainable. In the past there have been short-term solutions, such as paying for accommodation for a period of time, that some consider have been intended to hide the problem, especially from tourists, to support a more positive image of the city. What is needed is long-term structural change that can address and solve the problem.

> **"The vast majority of the people with disabilities live on the streets. A few years ago, we met with the mayor of Freetown because a lot of visitors were coming to Freetown and it occurred to the mayor that there is a need to reduce the number of disabled people who live along the cotton tree axis…the council didn't want the visitors to see the disabled people in this area. And the disabled people were arguing that we are human and that they want the visitors to know that they are homeless. But the mayor wanted to remove them…and that's why he paid for a few accommodations for a month or two when the visitors return and cannot pay for the following year, the street beggars came back. And right now as we speak, they are there."**

Some of the most accessible parts of Freetown are more affluent and so not affordable for many persons with disabilities, many of whom live in poverty. This segregation can present additional barriers to participation and access to opportunities for persons with disabilities.

> **"Most of those persons with disability will not have the means to reside in areas where accessibility is better. So, many based on their earning power may live in areas that are not very accessible."**

Recreation and culture

Sport and recreation are important to persons with disabilities in Freetown with football frequently mentioned by disabled research participants. Many enjoy watching football with those who can also enjoying playing football.

Many of our disabled research participants also spoke about religion and the importance of attending church for worship and social activities. Some participants were not able to attend church services, or could only do so with support from others, due to accessibility issues and barriers.
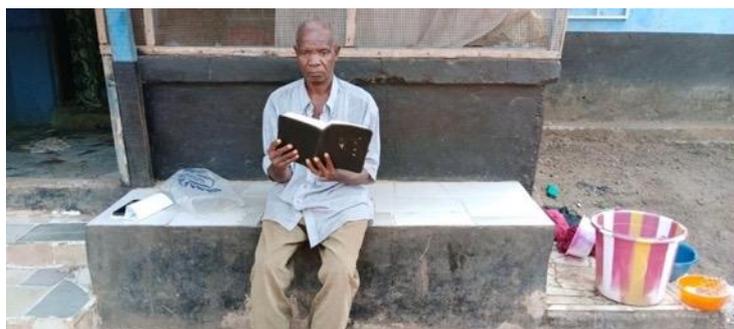
Example of the importance of religion

"Congregational worship is very important to me and going to the church to worship is also another good opportunity for me to socialize with other people."

"I can go to church but with the help of someone to push me through the hill because the church is not easily accessible."

Other recreational activities such as going to the beach, the cinema and informal gathering are important to many persons with disabilities as they are for everyone and all residents of Freetown. Having accessible, inclusive public spaces where groups of people can gather to socialise and do activities together are incredibly important. They support community collaboration and encourage persons with disabilities to leave home and engage in their community, building relationships and social networks. This is important for access to opportunities as well as the mental health and well-being benefits.

Persons with disabilities playing football on the beach

"I like spending time at the beach with my friends because I get so much fun out there."

The reality for many persons with disabilities is that accessible and inclusive recreational opportunities are limited. Many of the locations mentioned such as the

beach, public spaces and churches are not accessible. The result is that for most persons with disabilities, access is not possible. For others, access is only possible with support from others.

"I will recommend that people with disability be included in all spheres of life, for example, sports ... So, I want to suggest that whenever people are planning for sports activities, for example, football, volleyball, basketball, they should involve people with disabilities. Also, create facilities where people with disabilities will go and train or learn skills ... Because not everybody will go to school and those that are within the age of school going should be encouraged ... Most of the time, people with disabilities are being discriminated against by their parents which often frustrates them and pushes them to the streets."

Policy implementation

Freetown has many laws and policies that aim to support persons with disabilities such as:
- the Disability Act of 2011
- the Education Act of 2004
- the Child Rights Act of 2007
- the Radical Inclusion policy 2021

However, many of these policies are not being implemented in a way that sees demonstrable change to the daily lives of persons with disabilities. Most persons with disabilities are still facing the same issues that they have been for years despite having this legislation and policies in place.

"Well, I think one key recommendations is that we can't just be developing policy, policies, and documents. We need to look at what we already have and implement it … I think the law should take its course and it should act ... so I think that's one key recommendation."

Inclusive policy-making and governance processes

There are good examples of inclusive policy development processes in Freetown such as when the Disability Act was developed and subsequently revised. This inclusive process ensured that persons with disabilities were directly involved in the development of the legislation and had a say in the outcome.

"A concrete example is the Disability Act. There was the inclusion of people with disabilities. But I think the revision of the Disability Act of 2011 or 2020, involves people with disabilities directly. It involves consultative meetings, that engage people with disability, that seek their advice, their input into the process; into the document itself."

Additionally, a recent Assistive Technology Policy (Assistive Technology (AT) Policy and Strategic Plan 2021-25) has been developed in an inclusive way by ensuring the involvement of local Organisations of Persons with Disabilities (OPDs) who helped shape its outcome.

"Then you take, for example, the assistive technology policy that was recently developed that involves quite a lot of engagement with OPDs, people with disabilities themselves, through several workshops, validation workshops, making sure that these things address issues of persons with disabilities"

While provision for persons with disabilities may have been considered at the policy level, this does not always translate to positive action on the ground. For example, policies may require housing to be accessible for persons with disabilities. However, the reality for most persons with disabilities living in Freetown is that they have no way to access inclusive housing.

"For example, in any development of the National Development Plan, in which we provided for the provision of housing for the populace, we ensure that housing provision provides access for persons with disabilities in any construction."

Inclusive policies, such as the Radical Inclusion Policy, aim to embrace diversity in the widest sense and consider the inclusion of all under-represented groups, including persons with disabilities. There are some examples of these policies delivering change. However, a holistic approach is needed.

"The policy speaks toward curriculum readjustments, and recruitment of specialized teachers in schools; the issues of equity, equality, and other key global issues were also captured to ensure that children with disabilities also have equal opportunity to access education as their abled counterparts. This

has reduced stigma and enhanced class participation for disabled children in school; the radical inclusion policy creates that ground-breaking space for not just disabled children but also other vulnerable groups like pregnant girls, lactating mothers as well as children from underserved communities."

"We, Social Welfare, led by example ... Then we also see the schools, they don't construct any schools now that is not accessible to persons with disabilities. And the existing schools are being modified. In terms of our public buildings...This building here, the court at Pademba court is better. Just like I told you, it is gloomy. Many places you can look, for example, Youyi building is better because they have a lift."

The development of policies in an inclusive way, involving persons with disabilities in the process, can also be used as a means to build capacity and provide some training for persons with disabilities. This will help to empower them and could support some into livelihood opportunities.

"And through the work of Dorothy Springer Trust, we do a lot of advocacy to make sure that policies are developed, encourage people with disabilities to show their talents and their abilities not only building their capacity but also ensuring that they're able to implement what they've learned to ensure that they have access to employment opportunities."

Leadership and genuine participation of persons with disabilities is necessary

Better representation of persons with disabilities in government and in policy making is needed, including through the use of OPDs. Important too is the stage of involvement. Persons with disabilities should be involved at the very start of any policy development, review or new project. Then their voices and opinions can be incorporated from the beginning and not when it's too late to make changes.

"They also have been doing things relating to people with disability…they invite us at the latter stage of the process. And we find it very difficult because we are not starting. And when it comes to implementation, they call upon us because they don't know where these disabled are; they don't know the types

of disability; they don't know the method of communication… They said we can't do this thing without these people. So we were called to be involved."

"The challenges are that the people have to accept that we are humans just like them. Failing to do so, you cannot involve us... So in terms of any project or any activity, national issue, we should be involved, not at the end part of the exercise, but at the starting stage… We should be fully involved."

It was also recognised that disability is a cross cutting issue and so collaboration is key. No single organisation or ministry can achieve systemic inclusion and that is what is needed.

"I think disability issues cannot be addressed by a single organization. If you look at education from a health perspective, children cannot easily access education without assistive tools like brails for the visually impaired children, wheelchairs for the physically challenged and the list goes on; this aspect is being linked with the Ministry of Health. Therefore, I think the Ministry of Education should work closely with other ministries that work in diverse aspects of disabilities."

Genuine participation of local persons with disabilities in urban development allows programme designs to respond directly to the specific needs of the people living in those communities. This is so important when it comes to delivering solutions that will have real impact and deliver positive change.

"They know what hurts them and where their shoe bites. So they need to be able to give input or provide inputs as to which work needs to be done ... I think also means that people with disabilities need to be included in every program design, all the way through to implementation."

Involvement of persons with disabilities must be genuine and adopt the mantra of, 'nothing about us without us'. Their points of view must be listened to and then actioned accordingly.

"Even within the environment, things are not done properly. They fail to involve us. People do not even think that we do exist as human beings. If we

do exist we should be involved in all other developmental areas. We don't want people to work for us, we want to work with people."

Participation is important as is leadership. However, the end goal aims to see demonstrable action and positive change on the ground that impacts the daily lives of persons with disabilities. This point was recognised by our disabled research participants and policy stakeholders alike.

"Well, I think one key recommendation is that we can't just be developing policy, policies, and documents. We need to look at what we already have and implement it."

Responsibility

Responsibility and accountability are necessary to ensure implementation of inclusive city design. Currently there is a lack of clarity around where responsibility and accountability for disability inclusion in the city of Freetown sits across different sectors, departments and ministries. This needs to be addressed to support effective and consistent implementation of legislation, policy and guidance on the ground.

"I would say the Ministry of Works of course, because it is part of our mandate, to ensure that all public buildings and infrastructures are accessible to all…we do all the designs for government buildings; when someone wants to construct a building, they come to us, with details of the kind of structure they want to erect and we send our officers out there to do the assessment and during the assessments, all our demands are looked out for; when the report finally comes out, we can detect XYZ is captured or not."

Responsibility and accountability include ensuring compliance with legislation, policy and regulation as required. In some cases, education is needed, to make sure construction professionals are aware of their obligations. It is also important that a lack of compliance has ramifications or there is a risk that non-compliance will be tolerated, often to the detriment of access and inclusion.

"I want to emphasize the need for a legal framework that must be followed by engineers and other professionals and ensure that all roads or other infrastructure projects neglecting the provisions for PWD must be notified."

"When you review somebody's plan before you give building permits or any other approval to go ahead and build, you should note that this is a public building, it should cater to disabilities."

Inclusive city development and management involves a wide range of ministries and departments. Disability inclusion is a cross-cutting issue and so these different ministries and departments must collaborate and speak to each other on this subject. A holistic inclusive city strategy could help support more seamless implementation and therefore more inclusive experiences, for persons with disabilities living in the city.

"There are many ministries, departments, and agencies that are responsible."

"As a ministry we are responsible for the provision of housing, definitely those are things in the design of houses. We have to ensure that those buildings are accessible."

"In terms of infrastructure, we don't design. The responsibility for the issuance of development control and building permits is the core function of the Council."

"The government and all responsible partners must ensure that all bridges and feeder roads are constructed properly."

Collaboration is key. Most of our disabled research participants and policy stakeholders acknowledged that the journey towards an inclusive city is not easy and will not be realised without working together.

"Alone you can achieve so little, but together you can achieve so much"

Accountability and access to justice

"Compliance with the provisions in our legislation will also help."

"If those roads cannot be accessed by people with disability, then it is not inclusive. Everybody must have access. It is within the act to void those

> **contracts as long as the work has started, and they see that those provisions are not made."**

There is frustration from many persons with disabilities who feel that while the legislative acts and policies are generally well-designed and inclusive, they do not fully reflect the reality on the ground.

> **"We only have beautiful acts and policies designed for persons with disabilities but those acts do not reflect on the lives of the people because they do not act on them. There is an act that says persons with disabilities should have access to free healthcare but the reality is the complete opposite."**

Fair and equal access to justice is another fundamental human right. Even here, the accessibility of the physical built environment has a direct impact on a person's ability to access justice. A lack of physical access, while itself a barrier, also acts to de-motivate persons with disabilities in their fight for justice.

> **"Imagine you take a case to court, and you can't go to court number three, say, for example, or a court which has steps ... You know, that does not give you the motivation to sue that person, because you're not going to be able to defend yourself in a court of law. So the inaccessibility of the environment automatically prevents you from taking that case any further."**

Researchers and practitioners also have equal accountability towards justice for persons with disabilities. One of our disabled research participants shared how knowledge exchange is not always equal, with local people being promised AT for their participation which was then not provided. There is a need for openness and honesty when conducting research in this area.

> **"I have had a sad experience with a guy who arranged an interview with me as you did, and after asking me many questions, he then made beautiful promises on improving my life and getting me a new wheelchair but since then, I have never set eyes on him. Hence, I consider some of the government workers to be deceptive because they only use us for information findings."**

Awareness of policies and benefits of inclusive design

One of the barriers to implementation is a general awareness about disability and disability related legislation and policy. Many people are unaware of the various Acts and policies that exist in Freetown and across Sierra Leone to support and protect persons with a disability. People cannot implement what they do not know, or are not aware of, and so communication and training is key.

"There needs to be the popularization of the Disability Act. Within that act organizations and businesses are not aware of the benefit that they get by employing people with disabilities. So that Act needs to be popularized, even more, to enable businesses to be aware that they have a 15% tax rate cut when they have persons with disabilities among their staff."

"The Disability Act of 2011, which mandates accessibility that buildings and the built environment should and must be made accessible to people with disabilities, … And unfortunately, we still have buildings that are going up, which are not being followed with the provision in the Disability Act."

Implementing inclusive design: consistency, quality and broken links

With proper awareness of the Acts and policies that apply, coupled with accountability and responsibility for implementation, we should start to see more consistent delivery of inclusive buildings in Freetown. Consistency is important to create inclusive environments and cities. Persons with disabilities should expect the same levels of accessibility wherever they go. This supports confidence in use and encourages persons with disabilities to be more engaged in their communities and wider society.

"According to the persons with Disabilities act of 2011, all buildings constructed as of that time, should be done with consideration of the needs of persons with disabilities and since then, we have been working in that line to ensure that public infrastructures are disabled friendly with ramps or lifts."

"People are still putting up buildings, which are not accessible even in public places, you talk about schools, the schools are still being constructed with no accessibility concerns."

"But the good examples are like Youyi Building which has a lift, but the main door that leads you to the lift has stairs."

Ensuring consistent implementation of policy helps prevent certain aspects of that policy being missed out are diluted over time. This requires continued commitment and diligence from those responsible for the implementation.

"I think the ministry of Education needs to get these things embedded; I think radical inclusion should be radical inclusion and particularly focus on people with disability. That's what it was set up for. It's been diluted."

Stakeholders recognised the importance of good technical expertise in order to provide both consistent and good quality inclusive design solutions. A lack of understanding and good technical knowledge can result in solutions and interventions that are not built to correct standards are therefore not fit-for-purpose. In many cases, such as ramps that are too steep, this creates additional barriers that are a health and safety risk and can be dangerous.

"I think it is about bringing in someone knowledgeable about those types of designs like designing ramps because the gradients are something that also matters. If you design a ramp that, the landing, you know, it's causing more accident and it's more harm than good."

Stakeholders also spoke about how stigma and a lack of understanding on disability acts as a barrier to implementation, if there is genuine inclusion and acceptance, policies would be adhered to and there would be better compliance with accessibility requirements.
Consistency is also important for service delivery. Many of our disabled research participants spoke about the delivery of government services often being in unsuitable venues that are frequently changing. This makes it hard to plan journeys with any certainty or confidence.

"They are not easily accessible because they are not delivered in designated locations and times which is why on every occasion, there is a new venue."

Barriers to inclusive design: cost

Urban development in Freetown is limited by constrained resources. The government is under huge financial pressure and the distribution of resources is considered a challenge across all sectors.

> **"One of the biggest challenges people do not understand is that the government is normally constrained for funding and without funds, the city cannot be planned properly for even the abled never mind for persons with disabilities."**

A distinction was made between new buildings and existing buildings. For new buildings, inclusive design features, such as passenger lifts were considered an additional cost that required additional funding. For existing buildings, the first step would likely be an assessment or access 'audit' of these buildings to create a list of recommendations for remedial works. At present, even finding budget to pay for access audits was considered challenging.

> **"It all depends on funding because for the old constructions you need to include ramps and lifts; all of these involve money and if there is money, we can consult statistics to give us the number of schools and public buildings to be readjusted across the country and we do the design and have them constructed in a disabled-friendly manner but if there is no money to do the assessment, there is nothing we can do about it..."**

Land availability and ownership issues, the cost of land and a challenging, hilly topography also create additional financial challenges for urban development in Freetown.

> **"For example, within our project, they've come in with some funds, so maybe not funds for implementing a whole project on inclusive designs, but maybe the technical capacities there so if there are funds from outside technical capacities there but I think we are restricted also in terms of space."**

> **"It's difficult topography and also, land availability is another challenge. Everywhere is taken up by somebody or the other. So you start using half of your funds acquiring land before you even implement your project."**

> **"For example, within our project, they've come in with some funds, so maybe not funds for implementing a whole project on inclusive designs, but maybe the technical capacities there so if there are funds from outside technical capacities there but I think we are restricted also in terms of space."**

Resources are required to make progress on accessibility and disability inclusion in Freetown. This is linked to responsibility and accountability, as ultimately there must be some resource and accountability in order to implement what the Acts and policies are prescribing.

> **"We clearly need financial resources, to support any free access to any service. Even if you say something is free, free healthcare for instance is not free because somebody somewhere is paying for it … even though you are accessing it freely."**

Stakeholders also discussed the potential costs to set up a disability inclusion department within government. This was viewed as being a lot of work, that required dedication, passion and some resource. It needs leadership that provides the responsibility and accountability.

> **"It is our unwillingness and maybe unpreparedness to ensure that we established the unit because establishing the unit has financial strings attached. The unit needs the offices, you need the person, you need a logistics plan."**

Often, and due to financial constraints, the city government need to seek public/private partnerships in order to deliver urban development projects. This can bring an additional layer of complexity in terms of who is responsible for delivering disability inclusion.

> **"Some of them we have not been able to implement yet, for example, the development of housing units, ensure that they provide disability access…. We've not been able to undertake housing development yet because we do not have the resources yet. We're trying to get our development partners in the housing sector to come in on a PPP basis."**

Impact of climate

Most persons with disabilities live in informal settlements in Freetown, which are disaster-prone areas. Climate instability poses a large risk and makes life seasonally more difficult. During interviews, all persons with disabilities talked about the severe impact of heavy rains on their daily life. During the rainy season, environments become slippery and muddy with drainage systems flooding and overflowing. This exacerbates barriers to mobility for all and has a significant impact on mobility for many persons with disabilities. Overflowing drains and stagnant water also pose serious health risks, exposing people to mosquitoes and water borne diseases.

"Movement within and outside the community is almost impossible because when it rains, the streets and drains get flooded and the roads become muddy and difficult to move around. Additionally, I normally get sick frequently during the rainy season because of the weather and exposure to mosquitoes."

Houses built poorly and on unsuitable land is one of the main causes behind the significant building damage caused by the heavy rains and associated flooding.

"When it rains, the floor becomes gummy because people domesticated the land by stuffing the sea bank with rubbish and stones upon which our houses were erected."

During heavy rains, most persons with disabilities cannot leave their homes to make a living or access basic needs. This is then compounded with the likelihood of significant property damage, all of which has a huge detrimental impact on people's lives. The heavy rains also create mudslides that often result in loss of life, something of particular concern to persons with disabilities unable to leave their homes or take any mitigation measures.

"The rainy season is terrible, it makes everything difficult for me ... I can barely even go out because it is dangerous as many areas including my community experience flooding that claims the lives and property of many people. Accessibility during this period is even a problem for the abled and it is even worst for people like me."

"Climatic exchange between the rainy season and the dry season affects us gravely."

While heavy rains can bring significant disruption and damage, even regular wet season rainfall has a significant limiting effect on mobility. This is felt most keenly in areas with poor infrastructure and where the topography is steep and challenging.

"There was a time I had an exam, but the rain was too heavy, my dad had to carry me on his back just to ensure that I don't miss out on the exam."

"When it rains, the floor becomes sticky with mud, drainages flood and we have also suffered bitter experiences where water enters into our houses especially during the night hours. As a precautionary measure, I do not go out of the house when it rains because it is very risky to do so."

The dry season is also not without its challenges. Access to water is difficult for many persons with disabilities most of the time. However, during the dry season, water scarcity can make accessibility to water even more of a problem, especially for people living in poverty.

"During the dry season, well owners demand payment for fetching water which most disabled persons cannot afford."

Health risks due to a lack of infrastructure

Better sanitation infrastructure is required at a city-scale and particularly in informal settlements where it is often lacking completely. Informal settlements in particular do not support maintaining better health. The infrastructure is basic and does not provide adequate shelter or protection from disease. Basic items, such as mosquito nets, are needed.

"The excess mosquitoes make life so uncomfortable for us even though some of us use mosquito tents; I believe that this crisis is due to the filthiness of the community."

Poor roads and street infrastructure also pose a serious health risk. Roads can be dangerous and have a high risk of accidents and injury. Pathways are often

informal, unprotected from vehicles and have numerous obstacles. This is a substantial source of anxiety for many persons with disabilities.

> **"In that community, it is extremely difficult to access anything generally because the developed footpaths are not only narrow but also not straightforward and contain boulders that one can fall on and get severely damaged."**

Accessing healthcare

Access to healthcare is vital. However, for many persons with disabilities living in Freetown, access to healthcare is either very difficult or not possible at all. The physical built environment is a significant barrier as is access to transport and mobility services.

> **"The beautiful things being said about disabled persons having free access to healthcare are misleading because almost all the structures assigned to serve as health facilities are story buildings and when you look at the Connaught hospital, for example, even the reception area is not accessible to persons with disabilities"**

> **"This part of the settlement that I'm living in is built so densely that it is inaccessible to motorized vehicles. One needs to be able to get to the main road for any movement outside the community. The other day a relative of mine was seriously sick. There is no health care facility in this community. The hospital other residents asked me to take my relative to for treatment does not operate an ambulance service and it is outside this community. So, I was not able to get help."**

Access to healthcare can also be limited by inaccessible service provision. This can include stigma from some healthcare workers and the need to negotiate layers of bureaucracy, which is impossible for some persons with disabilities, without support.

> **"The hospital is also another place I normally face discrimination because the nurses and doctors will tell me that they will deal with better people first before coming to me. Even the so-called free health care in the country is not working for persons with disabilities."**

"The chain of command for accessing the free health care services is just annoying because you need to produce a document endorsed by the National Commission for Persons with Disabilities before the doctors start talking to you."

Disaster risk and inclusive disaster responses

Many persons with disabilities are living in communities at heightened risk of disaster, which further exacerbates poor quality of life and poverty.

"I live in a mountainous community in the central part of Freetown; the terrain is so bad that many houses within the community are constructed in disaster-prone areas… The community most times experience floods during the rainy season leading to the loss of life and property."

Stakeholders reflected that disaster responses in the city are not as inclusive as they should be.

"Persons with disabilities are normally excluded when responding to disasters in slum communities, and in actual sense, they are the most vulnerable and most affected persons that need serious attention. Therefore, a lot needs to be done to minimize the exclusion of persons with disabilities in times of disasters because many of them were unable to access relief items in a disaster response."

Some of our disabled research participants felt that persons with disabilities living in Freetown were only given attention during times of crisis, such as the COVID-19 pandemic.

"Most times, government officials can only consider us when there is a crisis like the Covid19 pandemic."

Using data and evidence

There is not enough data on disability in Freetown. More information and data on disability in Freetown would support better decision making and also provide some fuel for better advocacy work and campaigns.

"The 2015 census data is there? I think 339 and something thousand. But that data is grossly understated…I don't think we have comprehensive data on persons with disabilities."

"I think the main problem here is the lack of a detailed database containing the various types of disabilities across the city. The most dominant ones are those with physical disabilities but many other forms of disabilities exist…we need to capture all those facets and then start the process. I think the Ministry of Social Welfare being the main actor in disability issues must prioritize setting up this database"

Better information and data on the informal settlements in Freetown, including the life of persons with disabilities living in informal settlements, can be transformative. There is work being done to collect this data, including this study.

"We are also collecting a lot of data about informal settlements; we cannot advocate these settlements without having information about them. So, we do profiling and mapping of these communities."

Knowing what data to use and when is also important. Stakeholders spoke about the value of learning from other contexts while also recognising the value of local knowledge and lived experience.

"In terms of design, you look at what is happening on the global stage, look at the context, the local context, if you think you can harmonize. At the local level, if you want to develop a policy, … you look at the need, you look at the situation around. For example, I want to develop a policy on accessibility in Sierra Leone, I have to look at the accessibility challenges that persons with disabilities are faced with, having looked at the accessibility challenges, I have to discuss this at the national steering committee on disability because that is the avenue that brings together key stakeholders that have the reservoir to discuss disability issues in the country."

AT networks and relationships

The built environment must support the safe and effective use of AT otherwise it can be dangerous to use and risks becoming redundant.

"The physical environment of the city is not disabled-friendly and this makes it difficult for the effective use of assistive tools considering the poor condition of feeder roads leading the people's residents across the city."

AT and the surrounding infrastructure must work together as one system. An inaccessible built environment has a severe impact on the availability of and effective use of AT.

"The use of assistive technologies is severely altered by the physical environment in Freetown"

"I can access my educational centre independently with the help of my clutches and a tricycle or a motorbike. The only challenge, in this case, is going to the junction to access transportation."

For AT to be sustainable it must respond to the local context both in terms of physical accessibility but also the resources and materials that are available.

"[on AT] They are not affordable in Sierra Leone because the cost of the consumables is high."

What are people's priorities for accessibility?

In the workshops, a priority setting exercise was conducted with our disabled research participants to better understand their priorities for persons with disabilities living in Freetown.

First priority:
- **Access to transport** (6 participants)
- Access to healthcare (4 participants)
- Access to AT (3 participants)
- Access to education (1 participant)
- Better housing conditions (1 participant)

Second priority:
- **Access to healthcare** (4 participants)
- **Better housing conditions** (4 participants)
- Access to education (3 participants)
- Access to transport and better road networks (2 participants)

- Access to AT (1 participant)
- Access to public buildings (1 participant)

Third priority:
- **Access to education** (4 participants)
- **Livelihood support, business opportunities and financial aids** (4 participants)
- Access to transport and better road networks (3 participants)
- Better housing conditions (1 participant)
- Access to safe drinking water (1 participant)
- Food security – good and nutritious food (1 participant)
- Access to healthcare (1 participants)

From this exercise, it is clear that key priorities for disabled access in Freetown from our disabled research participants are providing better access to:
- Transport
- Healthcare
- Education
- Housing

From the stakeholder group, which includes local government representatives, practitioners and policy makers, the key priorities for disability inclusion in Freetown identified during the workshops includes:
- Mainstreaming disability issues into national plans
- Implementation of laws and policies
- Inaccessible public buildings and infrastructure
- Attitudinal barriers
- The transportation sector
- Livelihood opportunities
- Healthcare service delivery
- Improved assistive technology services
- Affordable housing

During the multi-stakeholder workshop, two groups worked to identify priorities and actions for inclusive cities. In one group, accessible transport was ranked the highest priority. For the other group, mainstreaming disability issues into national plans and policies was considered the highest priority followed closely by the implementation of laws and policies.

The stakeholders, including city government representatives, were then asked to consider what actions they felt were required to make progress against their selected priorities. They were then asked who they felt were the responsible actors that had a responsibility to implement the suggested actions.

Priority Area - Implementation of laws and policies
Actions:
- Raise awareness about laws and policies relating to disabilities among persons with disabilities to keep them well informed about their rights and responsibilities.
- Strengthen networking and coordination among relevant stakeholders.

Responsible Actors:
- The Ministry of Social Welfare
- The National Commission for Persons with Disabilities
- The Sierra Leone Union on Persons with Disabilities (SLUDI)
- All ministries, departments and agencies

Priority Area - Inaccessible public buildings and infrastructure
Actions:
- Enforce the provisions in the Disability Act which make it obligatory for all public buildings to be disabled-friendly.
- Conduct an extensive accessibility audit on public infrastructure and enforce the law on defaulters.
- Increase budgetary support for government institutions working on improving the welfare of persons with disabilities.

Responsible Actors:
- The Ministry of Social Welfare
- The National Commission for Persons with Disabilities
- The Sierra Leone Union on Persons with Disabilities (SLUDI)
- All ministries, departments and agencies

Priority Area - Mainstreaming disability issues into national plans
Actions:
- Creating disability desks in all Ministries, Departments, and Agencies across the country
- Increased public education on disability issues

Actions:
- Roll out and popularize inclusive policies
- Setup coordination platforms across Ministries, Departments, and Agencies

Responsible actors:

- The Nation Commission for Persons with Disabilities
- All ministries, departments and agencies

Priority Area - Healthcare service delivery
Actions:
- Resource mobilization and allocation
- Provision of needed health services
Actions:
- Public education for healthcare workers
- Establish a disability trust fund
Responsible actors:
- The Nation Commission for Persons with Disabilities
- All ministries, departments and agencies

Positive progress on disability inclusion in Freetown

Awareness raising activities are gradually improving attitudes to disability in Freetown and having positive outcomes on persons with disabilities' quality of life.

> **"Even the government make provisions for persons with disabilities to participate in activities that help in building our confidence and make us feel belong to the society. I have participated in many awareness-raising activities within and outside the community; it is a vow I made to myself that I will do the best I can to change the mindsets of people about persons living with disabilities."**

The multi-stakeholder workshop session held as part of this research study highlighted areas where improvements had been made regarding disability inclusion in Freetown, including:
- The development of an Assistive Technology (AT) Strategic Plan (2021-2025)
- A review of the 2011 Disability Act
- New planned road construction to have drop kerbs
- Lifts and ramps have been added to some buildings
- Accessibility audits have taken place on some public buildings resulting in some schools being provided with ramps
- The 'Transform Freetown' plan which aims to support persons with disabilities move away from living and begging in the street and providing them with livelihood opportunities
- The development of a new urban mobility policy

- National policy on radical inclusion in the education sector

"One way to implement it is to involve people with disability."

Stakeholders highlighted the importance of participation of persons with disabilities in the urban development processes, upholding the idea of 'nothing about us without us'. However, they also recognised that to date, urban development processes in Freetown have not been as inclusive as they should have been.

"If we are talking about urban development, there should be involvement of everybody, including people with disability."

There are some examples of persons with disabilities influencing the outcome of urban development projects in Freetown. However, these are often case by case and by chance, not as a result of a structured, accountable process that will bring the consistency of delivery that is needed.

"As persons with disabilities, I told them there was a project to restructure the hospital or the health centre at Hastings. But because our chair lady was involved, she is also disabled, she recommended that there should be a ramp. As we speak now, we have it there. There is a slogan that "he who feels it knows it". So, if we are being involved in the project from the inception stage, thereby giving our little input, then it will be fine."

Is proximity accessibility?

Many of our disabled research participants made the point that often, accessibility for them is measured in how close they are to main routes and throughfares that offer the opportunities to then be mobile in the city.

"As for accessibility, I count myself lucky to get a place that is located very close to the main road and so, accessibility to my home is not a problem at all."

When looking at healthcare services, stakeholders suggested being able to locate a range of healthcare services in one place would support the accessibility of healthcare as a whole.

"I think a quick fix to that problem is the installation of a one-stop to access all the necessary documentation and treatment together. We should have a social worker in that facility who facilitates such movements and address that issue rather than moving from the health facility to the commission and then back to the health facility before receiving treatment."

Accessible by design

Some of the examples given by our disabled research participants of accessibility were because of adaptations they had made through necessity, rather than examples of good, planned inclusive design.

"My house is somehow disabled-friendly because I can manage to use my wheelchair to move in and out of the house."

In some cases, persons with disabilities were able to oversee the construction of their own home, for example in the informal settlements. This allowed them to direct and show those building the home what they needed for it to be accessible for them. This given an opportunity to understand better what makes a home in this context accessible by design.

"My home is affordable and easily accessible because I don't pay house rent and I was present during the construction process even though the houses are of poor quality, we ensured that our needs are taken into consideration."

As well as the design stage, the monitoring stage is also important to ensure what has been agreed in design is actually built. This phase also requires engagement of persons with disabilities to ensure accessibility is not missed.

"During the planning stage, there are actions to be put in place; what is more difficult for us to understand is the monitoring. If we want to see things done appropriately, we have to start involving persons with disabilities in the monitoring teams to ensure that things are happening accordingly … As the saying goes, "what is for me without me is not for me"

Stakeholders recognised that to design in an inclusive way required the involvement of a wide range of end users. Design must consider the needs of multiple and diverse user groups.

"These are the principles of accessibility that we want people to take into consideration. When you construct roads, do you think about the wheelchairs, the persons with disabilities use? Do you think about the white canes that persons with visual impairment use?"

Inclusive in use – management and maintenance

It was recognised that it's not enough to provide an accessible physical built environment through design and construction. Just as important to access and inclusion is how that built environment is used, managed and maintained beyond its design.

"Then you have these market people, who put their stool rights on where the pavement is. So, you have this person come in with his wheelchair and cannot access, and so he has to go down the road."

In order to improve this situation, education and training is needed as often, these barriers are a result of a lack of understanding or knowing, rather than a deliberate attempt to exclude.

"I think I can teach accessibility and inclusive development and I have many, many examples. I mean, take the sidewalk, the government, and the road construction companies are putting in efforts to develop curbs, drop-down curbs, and walkways. Unfortunately, market people, that's where they put their stalls. So somebody with a wheelchair cannot use the walkway, or cannot use the footpath."

The built environment also has challenges when it comes to ongoing maintenance and wider infrastructure issues such as an unreliable electricity supply.

"We barely have good examples in this city, except for buildings with lifts or elevators; even at that, there is a challenge to that, because there is no regular electricity supply to ensure that those things are always functional."

There is clearly a need for awareness raising. Even when planning engagement activities, often consideration is not given to the need for access and inclusion. This can be especially demotivating for persons with disabilities who want to engage but

are being excluded at the first point of engagement. Inaccessible event and activities can lead to negative experiences and impact social relationships.

Example of wheelchair user forced to use the road alongside traffic

"I feel embarrassed and disappointed. How could someone organize an activity in a mountainous place with many staircases to climb and invite me?" "Another challenge is that most of the people have stalls along the routes designated for pedestrians which also makes it very difficult for a disabled person to walk. This is why when you go to the city centre, the wheelchair users are using the main road because there are no pathways where they can use."

Future-proofing design and inclusion

Incorporating inclusive design features also serves to future-proof buildings. As we age, the incidence of disability also increases and so building in the flexibility of good inclusive design supports us to live in our own homes longer.

"Somebody wanted to build a house for his mother. There are certain areas that the builder never thinks of it and this lady cannot move freely. I advised them to create a ramp within the whole building including the backdoor, front door. I even advised them to let the doors be wider and the builder was asking why do you want this thing to be? It may not be now but two to three years later, this mother will need a wheelchair, even the mother was furious when she heard me suggesting this to the builder. One day, her granddaughter pushed her and injured her spine, she later asked me to buy her a wheelchair. The owner of the house came and was happy because, during the construction of the house, I had earlier suggested a ramp and wider doors."

With home design in particular, it was recognised that embedding inclusive design not only supports those who live there, now and into the future, but it also supports any disabled family and friends who may visit, such as older parents.

"So, the question here is, who is paying for these services, and how are resources normally sourced out to maintain the services? Even with the SLESHI and universal health coverage, we're not talking about strategies, on how should finance the schemes."

"If you are building a house, making disability provisions by creating ramps, you may not know who may come to visit you is disabled and cannot climb the stairs. Make sure your entry doors are wide…. For example, if you have somebody that's within your family that is using a wheelchair and your restroom door is very tight such that they cannot pass through, the privacy of that individual has been tampered with. So, my recommendation is that .. you … always prepare for your future."

On policies and provisions for things like universal health coverage, long term sustainability, including funding, is important and not always a consideration.

"So, the question here is, who is paying for these services, and how are resources normally sourced out to maintain the services? Even with the SLESHI and universal health coverage, we're not talking about strategies on how to finance the schemes."

Finding the space to implement inclusive design

In Freetown, space is at a premium. Road infrastructure struggles to cope with traffic congestion and there is limited scope to increase capacity as the land space doesn't exist. This puts pressure on pedestrian movement and often results in inaccessible routes, impossible for many persons with disabilities to use.

"The roads are so small that even vehicle owners find it difficult to move freely and the traffic congestion is massive. Also, there are no provisions for the use of wheelchairs for instance and disabled persons compete with pedestrians to use the small path."

Government stakeholders shared that they can support securing land that can then be used to help creates spaces to accommodate persons with disabilities. Auditing the existing environment is first of all needed to identify priority areas to target. An audit already conducted by the city government on public buildings and spaces in the city demonstrated that there is a long way to go.

"Recently, we undertook an accessibility report and the report is damning. The accessibility audit gauges the willingness of duty bearers to adapt their structures. There is a key provision in the Persons with Disability Act that speaks to modification of structures, after five years of coming into force of this law, this act was passed in 2011. So, ideally, people should have modified their structures in 2016, five years, and until today, when we carried out the accessibility audits, realize that the pace at which people are moving is extremely slow. And this accessibility audit is done in public structures, those of us who should lead by example, are not."

Government stakeholders spoke about the need for mindsets and behaviours to change first in order to then support implementation of inclusive design.

"Once you change the mindset, then you can practicalize it. I think there's a law now that says all buildings should be accessible. But we still have structures that have not yet implemented those … things. Some will not be able to do it. You know, but they should find means and ways to do it. So that has to do with the mindset of people."

What do good solutions look like?

Suggested accessible solutions to support inclusive urban life and living independently included; access to water and sanitation, technology (smart phones and computers), healthcare facilities, education and transport.

"With easy access to tap water in my compound, a good road network within the community, easy and affordable transportation to move around the city, access to affordable healthcare facilities as well as learning institutions, I will surely live an independent life."

Housing appears to have higher rent costs which is a challenge. Existing accessible homes seem to be the result of an inclusive design processes where the occupant

was involved in the design or present during the construction. This is a good example of the difference an inclusive approach can have.

> **"Things are far better, my father had bought a piece of land and constructed a bungalow in the lower part of this community. He made considerations of my disability and that place is disabled friendly … In that bungalow, I can move around freely without being supported by my family and of course, the payment of rent will soon be a thing of the past for my family."**

Stakeholders in our research study, including city government representatives, explained how the need for good, affordable and accessible social housing was a solution they were keen to explore.

> **"In my opinion accommodation is one of the main challenges. I think the council is also beginning to think about whether its municipality has affordable housing like council flats, for people with disability."**

On mobility and transport, providing accessible buses was highlighted as being a priority solution for persons with a disability.

> **"As I mentioned earlier, providing for persons with disabilities, for example, one of the interventions on this project is buses. So, ensuring that the floor of your bus isn't so high that a person with a disability cannot get in.."**

Again, on mobility and transport, one stakeholder suggested an ecosystem approach for buses that would also help eliminate competition for passengers. If buses ran on predetermined routes and schedules, they would be less overcrowded. This would also support people to queue and access buses in a less stressful manner.

> **"Since they are operating within an ecosystem where they don't need to fight for passengers."**

> **"FBC is a good example, I hope you have already seen the centre, it is accessible. The roads are accessible for PwDs, the toilets are somewhat also accessible even for wheelchair users."**

Adaptations required to AT

When it comes to AT, various specific adaptations to support accessing the built environment were mentioned including:

- Stronger wheels and tires on wheelchairs
- Cushions to prevent blisters
- Better prosthetics including sockets

"I think they can be improved by designing them to fit the complexion of the individual using it. That is one of the main reasons why I don't use it because it was designed with a brown colour while I am fair in complexion and whoever sees me with it will know exactly that I am using an assistive and that attracts more attention from the public. Also, the prosthesis is harsh on the skin, and it bruises my skin when I use it for longer periods therefore, adding a sponge in its design as well can be of great help to us."

Is Freetown an inclusive city?

Certain parts of the city were recognised as being accessible for persons with disabilities, either through the physical infrastructure that exists or through the positive attitudes of the community.

"The city hall is somehow accessible for now. So, City hall is a good example because it is disabled-friendly."

"Growing up at Lumley, where we had lived for many years was better for me as a disabled person because the Lumley community is a formal community with lots of opportunities from the government. The community is disabled-friendly with paved roads and my house was also very close to the main road which made my movements easier."

However, there was a general consensus that large parts of the city, including essential infrastructure and services, were not currently accessible for persons with disabilities.

"Freetown is not disabled friendly - the buildings such as schools, hospitals etc that everyone needs to access certain essential facilities are not disabled friendly."

Stakeholders spoke about how the city has been built from the bottom-up, especially considering the informal settlements, but that policymaking is driven from the top-down, leading to a mismatch in city planning.

"We need to conduct an accessibility audit in the city. We all know that the city is not accessible but we need to have a scientific…database. This is to ensure that we capture the true nature of the city in terms of accessibility; this has been done in other places and we have just started and our initial focus is on public buildings. The exercise has a broader scope that looks at accessibility in a bigger picture and issues around accessibility in terms of roads, transport, and all other infrastructure in the city. Having done this, we can now have a base for informed decision-making and recommendations as to what is to be done."

Some participants who had lived elsewhere also reflected on the differences between living in Freetown and more rural settings. While Freetown presents accessibility challenges that might not exist in some rural settings, accessing basic resources, such as food, in rural areas was more difficult.

"Back in the village, life was a bit better in terms of accessibility because there are no hills or stony paths in my village but the problem was access to food."

In terms of aspirations for what an inclusively-planned city might look like, one stakeholder reflected:

"The structures will be well constructed and aligned properly to ensure every part of the community is easily accessible with paved roads that connect the community to other parts of the city."

This highlights the importance of different scales of planning with attention to community accessibility as well as connectivity and mobility throughout the city.

Freetown has made significant progress from the policy perspective, including committing to inclusive policy-making processes. However, it is struggling with implementation and genuine impact of the lives of persons with disabilities.

The city's geographic context and urban development history make urban planning and improvements to infrastructure difficult. It is vital that inclusive design

interventions proven to be successful, including in informal settlements, are celebrated and repeated throughout the city to help make it a more inclusive place to live for persons with disabilities.

What works?

"If we are talking about urban development, there should be involvement of everybody, including persons with disabilities"

Many of the insights discussed focus on the barriers and challenges rather than the opportunities that exist. They provide a clear picture of the challenging circumstances persons with disabilities living in Freetown face. Given the complex nature of the challenges the city faces, it is equally important to highlight and identify examples of good practice that can be replicated across the city and used to spread awareness on why inclusive cities are a good thing.

Understanding what works and who is driving inclusion can unlock opportunities for good inclusive design. The who is important, because champions can advocate for inclusive design and tell the stories of what works. Identifying what matters through participation and co-creation with persons with disabilities and stakeholders can support an incremental approach that addresses people's priorities first.

Without an inclusive built environment, we will not have holistic access to AT.

"The built environment, yes, needs to be improved to ensure that the use of assistive technologies is much improved."

AT was identified as an enabling, vital tool for daily life for persons with disabilities. When good quality AT is available it is life-changing. However, the AT available in Freetown is often not fit-for-purpose or sustainable. AT was also described as being a part of people's identity. Participants spoke about how the current state of the built environment, coupled with poor quality AT, is greatly limiting daily life activities such as leaving the house, going to school or work and socialising. The poor state of roads, particularly in informal settlements, is damaging wheelchairs and can be dangerous and unsafe to use.

"Assistive technology is not a luxury for persons with disabilities. It's not a luxury, it is a necessity."

An Assistive Technology strategic plan has been developed. This is a great step forward for providing better AT. However, it is also important that lessons are

learned from previous implementation failures to help give the plan the biggest chance of success.

Multi-stakeholder collaboration works. During the workshops participants and stakeholders had some disagreements. However, they were able to mediate between conflicting views and often, through discussion and debate, agree on a more practical course of action. This demonstrates the benefit of genuine engagement and involvement and is an example of how these activities can also be applied to deliver inclusive design.

> **"One key issue that is showing up in this whole discussion is the need for collaboration among various actors across the board."**

Accessible and inclusive by design. Where homes have been designed and built with significant input and contribution from end users, the solutions are more successful, demonstrating the value and importance of end user participation. This also includes examples from informal settlements where community-led approaches to design have been successful in future-proofing homes. This is critical as we need good examples for what inclusive design looks like in informal settlements. These examples should be documented.

Participation throughout construction processes. It's not just the design process where involvement of persons with disabilities is needed. During construction, where persons with disabilities were able to observe and advise, often resulted in the most accessible outcomes that ensured their specific needs were accommodated. This demonstrates the importance of engagement throughout the whole process. Currently this engagement is not consistent and can be coincidental, such as a person with disability being part of a hospital board but it has shown to result in more accessible outcomes – such as a more accessible hospital.

This approach should also be applied to the implementation of policies and programmes, participation throughout will ensure accountability.

> **"For sustainability's sake, persons with disabilities must be involved from the inception of planning to the end of the implementation of projects so that they can have a clear understanding of the happenings around them."**

Leading by example. The government is and can continue to demonstrate good inclusive design practice in its processes and with regard to access to government buildings and services. For example, City Hall was cited as quite an accessible building and more audits are taking place on public buildings. This will support greater awareness raising and help to change the narrative around disability to be more positive and inclusive.

Inclusive policies embrace diversity and recognise diverse risks and vulnerabilities. This is important as policies are important tools to affect change. An example is the Radical Inclusion policy that is intended to support children with disabilities and support young pregnant women, young mothers and children from underserved communities. This recognises the reality that many people are experience multiple factors of exclusion - such as disability and gender - and initiatives need to recognise this.

Mindset and behaviour matters, stakeholders identified behaviour change as a key barrier to an inclusive city both in terms of awareness and acceptance of disability. Policies and initiatives are trying to change mindsets by raising awareness of the issues and the benefits that can be had from an inclusive city. A common example here is the need to mediate between informal street traders and accessibility in public spaces.

Recreation and socialising support wellbeing. Where our disabled research participants were able to play an active role in their communities or families, they generally had a better quality of life. Some of the biggest issues for many persons with disabilities are isolation, loneliness and discrimination. Where people were able to access recreational or cultural spaces, such as a church or a place to play football, this seemed to have a positive impact on wellbeing.

Support systems, including family, friends and the local community form a network that can help drive inclusion. This is something that can work well and is recognised more formally, including in local planning policies.

Plan and build for the future, now. Recognise that people are ageing, cities are changing and disasters and climate change are accelerating unexpected risks. Embedding inclusive design now, including in policies, will help futureproof urban development. At an individual scale, an example of a home that had been future-

proofed to support a women in later life was considered successful as the home was adapted for wheelchair use.

Lessons learned

The biggest learning opportunities in the case study were in developing a deeper understanding of the lived experience of disability in Freetown, building a picture of the whole 'system' of accessibility and inclusion needs in the city and starting conversations between diverse stakeholders.

There is an awareness and acceptance that lots needs to be done, which is the first step towards creating a more inclusive city.

"So, we have a lot to do as a city and as a country to ensure that our environment is friendly to persons with disabilities, we have a long way to go"

Infrastructure and AT must work together. Throughout the research, there was a constant understanding presented that to have one without the other is usually ineffective for most persons with disabilities.

"To support the effective use of assistive technologies, the authorities must focus on two key areas; one of them is the road network …, and the buildings across the city must at all costs be constructed in a way that everybody feels comfortable while accessing them."

"The barriers in the physical environment are everywhere and right from my home, many limitations disrupt my daily activities. Hence, the use of assistive technology cannot be enjoyed as intended."

There is a history of exclusion and inaccessibility. The lack of consideration of persons with disabilities in historic city design and planning have led to a situation where Freetown is not only very inaccessible in places, but also very challenging to improve. People living in Freetown are also experiencing spatial exclusion due to other factors such as poverty and many people are living on inaccessible and unsuitable land.

There are spatial challenges to embedding inclusion in city design. A lack of space and the creation of large communities on steep and hilly terrain make even basic infrastructure improvements challenging to achieve. Inclusive design solutions in Freetown needs to work with its topography and density.

People need to access services where they live. Those living in the most deprived areas are also typically further limited by the lack of basic transport and mobility services available to them. This can result in many persons with disabilities being unable to leave their community, or in worst cases, their home, which has a significant detrimental effect in their ability to access essential services and livelihood opportunities.

Neighbourhood and community accessibility matters. Local accessibility, including around informal settlement communities, is just as important as the accessibility of the city centre. The accessibility of where people live dictate their ability to leave home or their community and so are essential to allowing mobility around the city.

Inclusive, affordable and accessible homes are needed to uphold the human rights of persons with disabilities. People should feel safe and secure in their homes and an accessible living environment is the first step in an inclusive experience of urban life. Inclusive design, sustainable construction and tenure security are all aspects of an inclusive home. This would also support meeting development targets of SDG11.

A journey and network-based approach to transportation is needed. This would help provide greater certainty and confidence in using public transport and give persons with disabilities greater confidence that they will be able to access services without the stress of having to fight for a place. Improvement of secondary routes and mobility within neighbourhoods is urgently needed.

A solution for inclusive mobility must consider the seasonal changes in the city. Mobility for all is severely reduced in the rainy season.

Poverty and disability go hand in hand in Freetown. Many persons with disabilities are trapped in a cycle of poverty. A lack of access to services including AT and healthcare can affect their ability to take part in daily life. In addition, a lack of access to education in early life, for example, due to inaccessible infrastructure, has a knock-on effect on their ability to access livelihood opportunities in later life and improve their circumstances. A systemic review is necessary to prioritise

improvements that will have the biggest positive impact on persons with disabilities lives.

Policy doesn't always translate to action. There is a reasonable policy context in Freetown, designed to support persons with disabilities. However, the reality is that the sentiments of these policies often never reach real people on the ground. Better implementation is required, with accountability and responsibility for delivery an important factor.

Top-down progress vs bottom-up solutions. Strong policies have been written but there is often a mismatch with what is possible on the ground. More community-led approaches and participatory implementation processes will help translate policy intent to pragmatic solutions that positively impact people's lives.

There is a lack of clarity on roles and responsibility. The need for accountability and responsibility for delivery of inclusive design solutions on the ground is needed that recognises the cross-cutting nature of disability. An inclusive city strategy, developed collaboratively between the city ministries, local organisations and local communities would be an excellent first step to address this.

Accountability mechanisms support good implementation. Developing compliance mechanisms could really benefit better implementation. Setting clear targets against policies with resources allocated would drive implementation.

Inclusive environments and informality. Large parts of Freetown are considered informal settlements, but all citizens of Freetown should have equal rights to an inclusive environment. Urban planning and design must consider the role of informality in shaping urban life, and it is time for inclusive design strategies and standards that embrace community-led approaches and realistic resource constraints.

An inclusive sanitation ecosystem is needed. This is a fundamental human right and something that many persons with disabilities do not currently have access to. It is important to raise awareness that the issues here go beyond simply providing accessible toilets but requires various accessible infrastructures to work together. Independent access to safe, clean drinking water, in all seasons, is vital. So is access to safe and appropriate washing areas and toilets that can accommodate

people with different needs. These should ideally be within the home or at least in very close proximity, for example in the informal settlements.

The built environment can facilitate or impede access to opportunities and education. Many examples where people had barriers in accessing education and work were partially due to inaccessible environments. This extends from the home they live in, to the infrastructure they need to travel to another place through to the end destination, whether it is a school, university or workplace. Inaccessible spaces are often perceived as a form of discrimination.

Maintenance, consistency and sustainability are key themes for delivering good inclusive design. It is recognised that delivering inclusive infrastructure is only the beginning. Once in use, the built environment must also be managed, operated and maintained in an inclusive way to remain effective. This includes bringing structure to some of the informal uses of public spaces, such as recognising the impact stalls have on the accessibility of pedestrian routes.

Wider infrastructure issues need considered. There are issues around reliable electricity supply that can affect inclusive design interventions, such as passenger lifts. This needs to be considered when planning and designing buildings.

<p align="center">**"There is an elevator but does not work at all times"**</p>

Inclusive city design needs to work with all urban stakeholders and citizens. If other urban stakeholders such as market traders are not engaged, the reality is that improved urban conditions can once again become inaccessible when misused.

Inclusive city design must consider a wide range of end users and disabilities. In particular, an inclusive city design strategy would benefit from considering the multi-sensory environment of the city and not focus purely on physical accessibility.

Climate risks and disasters are urgent health concerns. Persons with disabilities often live in the poorest areas. These areas are then typically the most susceptible to the effects of climate change including disasters such as mudslides caused by heavy rains. While this affects all residents in these areas, persons with disabilities are often most at risk as they are less likely to be able to escape or put in place any

mitigation measures. Living with this constant threat is not inclusive and takes a toll on people's mental health and well-being.

Inaccessible infrastructure is itself a health risk. A clear example of this is seen in open drains and lacking waste infrastructure. These form trip hazards as well as health risks for disease-spread. Inaccessible infrastructure also prevents people from seeking care, leading to a greater likelihood of exacerbating health issues from delayed treatment.

A healthy city must be inclusive. Inclusive health must encompass both accessible infrastructure and accessible and inclusive health systems and services to ensure quality of life and wellbeing.

An inclusive city is better for mental health too. Inaccessible environments, stigma and discrimination lead to inequitable experiences of urban life, social isolation and in some cases even further exacerbate exclusion due to the impacts on mental health.

Behaviour change is needed to support physical infrastructure change. There is a lack of awareness about disability, the barriers the built environment presents and the impact these barriers have on people's lives. Those responsible for the built environment, policy stakeholders and built environment professionals, need better awareness of these issues. This will help support a behaviour change that should result in more inclusive built environments.

Political will is needed to drive progress. Political will is there in Freetown and progress has been made. However, this needs to be backed up with the allocation of financing and resources needed to deliver demonstrable change to the city. It's time for action beyond policy.

> **"This is a country where we are very good at building documents, but implementing what is written on the documents is very, very difficult."**

Locally produced, locally adapted solutions are key. Resources are constrained in Sierra Leone. Where possible, inclusive design interventions, including AT, should prioritise the use of local materials and resources as far as possible. This also supports more effective maintenance and repair in future.

Train built environment professionals to ensure quality construction and implementation. Projects should be adequately financed to ensure corners aren't cut and budget should be ringfenced for accessibility features to ensure they are not designed out in the construction process.

Sustainable resourcing and financing is necessary. When systems rely on donation they are not going to be sustainable in the long-term. Therefore, sustainable models of resourcing and financing to support more inclusive infrastructure needs to be explored.

Services should be where people live. Providing essential services, such as healthcare and education, should ideally be located in the communities where people live. This supports all members of the community but especially persons with disabilities who may not be able to travel beyond their community to access such services. Providing all healthcare services in one facility, without the need to travel between facilities, would also make access easier for all.

Accessible by design does not mean inclusive in use. How people will use and maintain spaces must be a design factor. This is where implementation and action must follow from inclusive policymaking and design. Greater disability awareness from the general public and building or infrastructure operators would support more inclusive experiences for all.

More data on disability and good examples of what works should be a priority. Data on disability is generally considered inconsistent and a genuine picture of what's needed would be helpful. Good documentation of successful initiatives and solutions could drive progress. Participants shared stories of successful home adaptations that should be researched.

There is reasonable consensus on priorities, providing clear direction for resource allocation. Persons with disabilities focused on transport, roads, housing, and access to healthcare and education. Policy stakeholders also added better implementation and disability mainstreaming as priorities, which are areas that can work *with* the key areas identified by persons with disabilities.

Limitations and areas for further exploration

The following limitations were identified during this study:

- The research team had to adapt to the ongoing COVID-19 pandemic, which meant adapting some fieldwork activities. Overall, the team was able to establish an effective working relationship while working remotely. While online collaboration was effective, it is important to remain mindful of the limitations it can have regarding engaging participants and building consensus among a team.
- Reliable internet connectivity could be a challenge when connecting remotely, especially during the workshops
- Accessing and engaging city government stakeholders and persons with disabilities could be challenging. City government stakeholders were very busy while reaching persons with disabilities was also difficult if they had limited access to technology, such as phones or the internet.
- Most of our participants identified as having either a mobility or visual impairment, so further research that captures a more diverse group of persons with disabilities is important, such as neurodiverse people, people with hearing impairment and people with multiple disabilities. In the case of Sierra Leone, participants also highlighted the need to consider persons with albinism who are not normally considered when it comes to access and inclusion.
- The gender balance of participants was not equal, it was much more difficult to reach female participants to interview which may indicate that women with disabilities are excluded to a greater extent. Overall more participants also represented younger age groups, with most participants under the age of 40. Among city government stakeholders there were also very few female participants, indicating that among key stakeholder groups there is a need for better gender diversity.
- The research team was unable to conduct site visits and some collaborative live projects were delayed due to the coronavirus pandemic, limiting the amount of live project work featured in this report
- The research deliberately focused on accessibility and inclusion from a disability perspective. It is important to note that inclusive design also considers groups that may be excluded from participation for other reasons such as race, class, age, religion, gender, or socio-economic status

Areas for further research which would assist some of the actions suggested throughout this report include:

- Quantitative research mapping of accessibility in the city
- Monitoring and evaluation of inclusion projects that are being implemented in the city, including measuring their impact
- Practice-based research on the implementation of inclusive design initiatives
- Research on socio-cultural factors associated with disability inclusion or research on socio-cultural factors in inclusive design approaches.
- To drive policy agendas, it would be useful to develop more robust data on how different aspects of exclusion intersect, such as gender and disability, class and disability and race and disability.
- Research on accessibility and inclusion of the built environment in peri-urban/rural areas, as statistics show more persons with disabilities are living in rural areas and may be harder to reach.
- Further research on inclusive design with persons with disabilities of all genders.
- Research on the role of inclusive design in sustainable development priorities such as the relationship between climate adaptation measures and inclusive design and accessibility.
- Research on humanitarian contexts and disaster risk reduction as inclusive city design must be resilient to disasters and crises, such as the COVID-19 pandemic and disasters.
- Specific research on key urban sectors such as inclusive and green public spaces, pedestrian mobility, and accessible public transport systems.
- Research on accessible healthcare infrastructure and ecosystems.
- There is an urgent need for better national data on disability, as the last census was in 2015.

Conclusion: Actions toward inclusion

An inclusive Freetown is a city that can be experienced by everybody in a fair and equal way. By creating safe and accessible environments for all members of the community, the city can allow everyone to access and participate in the opportunities they would like.

Living in Freetown for persons with disabilities is not easy. Large parts of the city are inherently inaccessible due to geographic conditions such as the steep terrain. Many people, especially those living in informal settlements, lack access to basic and essential services within their communities where infrastructure is limited. People cite transport links, access to healthcare and education and access to basic necessities like food, water and sanitation as high priorities.

"Our physical disability is not our problem, we already accepted it. But the environments and the perception of the people are now our disabilities."

"I would need easy access to safe drinking and an affordable water supply…free or affordable quality medical care, easy access to transportation facilities as well as an improved assistive technology to live an independent life."

From the stakeholder perspective there is awareness of the urgent need for progress. The city has a strong track record of developing robust policies, including examples of inclusive policy-making processes such as the new AT strategy. However, implementation of the policies and their relevance to the reality on the ground, especially for those communities living in informal settlements, remain significant challenges.

Stakeholders would benefit from adopting more community-led approaches. Good examples exist in the city, for example where persons with disabilities have led the development of an accessible home that is future-proofed for family members. These examples could be collated to create a set of case study examples that policy makers can use and learn from and that could be scaled up or replicated.

"I want to reiterate it and I want it to come out strongly in this study that it is only with an honest and sincere collaboration among various actors that we

can amicably improve the lives of persons with disabilities, otherwise, we are only wasting our time because the resources are not enough and when actors workers are fragmented, we are only doing a duplication of efforts. Therefore, we need that coordination and synergy among us."

Access to basic services including sanitation and food is a major theme. The way in which water is managed and accessed in the city affects daily life. Many persons with disabilities have no independent access to clean drinking water. They are also often prohibited from leaving their homes or getting around their communities due to open drains and sewers that are not fit-for-purpose. People also regularly experience stigma due to the lack of privacy in public toilet facilities which are not accessible, leading to long-term mental health impacts.

"Having access to an improved toilet facility, a decent, affordable and easily accessible home to sleep in will make life a bit better for me."

Climate plays a major role in the city. Incidences of disasters are likely to increase, so the time is now to ensure disaster and emergency responses are inclusive of persons with disabilities. This should be addressed in city wide strategies that deal with the challenges of climate change and also be reflected in any disability strategy for the city. An inclusive city vision should also be resilient and adaptive.

The lack of any additional physical space to help improve accessibility in the city is also a prominent challenge. Freetown is busy, congested and overcrowded and there is a need to make space for inclusion and persons with disabilities. Doing so will help provide better public spaces for all residents of the city. Key public spaces that are a priority for improvement include improving roads to provide safe pedestrian environments and improving public spaces in communities that connect housing with other areas and facilities. Housing is also congested and inaccessible and so identifying areas where appropriate, accessible and affordable housing can be built will be key.

Assistive technology (AT) is widely regarded as a vital enabling tool to support daily life for persons with disabilities. However, accessing AT remains a challenge and the current state of the built environment and infrastructure does not support AT use. There is a need for AT that is locally adapted and sustainable to suit the existing environment.

Example of using assistive technology

Ultimately, participation of persons with disabilities is key. 'Nothing about us without us' must be at the core of inclusive city planning. Persons with disabilities living in Freetown have the best knowledge of the challenges they face and can be the designers of an inclusive city. City government and built environment professionals should ensure active participation of persons with disabilities in all that they do.

"Whenever the government wants to do any road construction or building construction, the involvement of people with disabilities will be felt, the planning exercise should include people with disabilities. How about this door? How about this step? How about this ramp?"

Key barriers identified include:

Physical Barriers:

- Lack of physical space in the city
- The natural topography of the city being steep and hilly
- Poverty and a lack of basic infrastructure
- Poor sanitation and often no access at all
- Congested roads and traffic and no access to public transport
- Poorly built housing
- Vulnerability to climate change and disasters
- Inaccessible healthcare and education

Non-physical Barriers:

- Lack of participation of persons with disabilities

- Policies not reflecting reality on the ground

- A lack of accountability and responsibility for implementation

- Lack of awareness and understanding of the issues and wider impacts

- Poverty cycle being difficult to break

- Limited access to good healthcare and AT

Priority Recommendations:

- Produce an inclusive city strategy, centred on the participation of persons with disabilities, adapted to the local context and local resource-constraints. This should consider informal settlements, essential infrastructure needs and the scarcity of resources. It should also address climate resilience and disaster response as it relates to the city.

- Prioritise action across the key barriers reported including access to transport, housing conditions, access to education and livelihood opportunities, access to sanitation and healthcare.

- Finance an inclusive built environment by allocating funding and resources to support implementation.

- Raise awareness around the co-benefits of inclusive infrastructure, for example, how housing and adequate sanitation supports health access and better livelihoods.

- Develop building codes and accessibility standards in a way that ensures an inclusive design approach is implemented and inclusive outcomes delivered. These should consider user experiences and journeys in the city.

- Contextualise legislation and standards to local development plans through participation of local persons with disabilities.

- Embed inclusive design in the implementation of all essential infrastructure and services. This must include improvements to the informal settlements and lower income areas.

- Provide disability awareness and inclusive design training for all key urban stakeholders, including service providers.

- While essential services are a priority, don't underestimate the importance of access to recreation, sport, culture and public space
- Support targeted education and training programmes and interventions as required, developing them with persons with disabilities.
- When implementing upskilling projects ensure participants are financially supported as required.
- Let communities lead, facilitate, and resource community-driven development
- Champion what good looks like in the local context by showcasing good examples to a wide audience
- Develop a fairer assistive technology distribution system in line with the new strategy on AT
- Promote use of local materials and resources to ensure sustainability and longevity.

Recommendations for policy and decision-makers:
Policymakers should have a plan for inclusive design, act on it and be accountable for its implementation.

- Employ a disability officer/team responsible for implementation of policy and standards and the delivery of inclusive infrastructure, ideally led by persons with disabilities.
- Ensure coordination across ministries, departments and agencies
- Undertake access audits on existing public infrastructure and act on the recommendations.
- Increase budgetary support for disability inclusion and inclusive design.
- Build compliance mechanisms into infrastructure construction.
- Ensure participation of persons with disabilities to co-design solutions.
- Make information about development projects publicly available to encourage accountability.
- Partner with communities, private sector and persons with disabilities to achieve goals on inclusion, for example, via a monitoring committee.
- Consider how strategies and policies can be implemented across both formal and informal settlements.
- Facilitate awareness training on disability for all policy and decision makers

Recommendations for industry (Practice):
Practitioners should understand that inclusive design will deliver better results and be motivated to design and deliver good inclusive design by working collaboratively with and being led by persons with disabilities.

- Advocate integration of inclusive design from the start of all projects.
- Ensure the participation of persons with disabilities in decision-making, design processes and evaluations.
- Spread awareness on the value of inclusive environments through demonstrating good practice and advocacy.
- Consider the wider site context during project development including local topography and connectivity.
- Prioritise local materials and building methods to support ongoing maintenance and repair.
- Make sure your staff have had good inclusive design training
- Ensure your workplace is accessible and be pro-active in the recruitment of persons with disabilities.
- Consider climate resilience and disability inclusion together in your projects.

Recommendations for the community (People):
People should feel empowered, be advocates, be involved and affect demonstrable change.

- Identify disability inclusion champions within communities.
- Audit and evaluate the built environment (ideally in a formal and recognised way with local government and agencies) to highlight what is needed.
- Advocate for community needs and aspirations.
- Spread awareness on the value of inclusive environments through cultural activities and advocacy.
- Participate in decision-making, design processes and evaluations, and ask to participate if it is not offered.
- Encourage and support participation of community members who may be less inclined to, ensuring quieter voices are respected and heard.

Creating an enabling environment

An enabling environment for persons with disabilities should integrate: a supportive legislative environment, an inclusive culture and mindset, participation in planning, design and decision-making, positive cultural change, an accessible and inclusive built environment, access to good quality and affordable assistive technology and inclusive climate resilience. There is progress across some of these factors in Freetown but for an inclusive city to maintain an enabling environment it is necessary

to ensure robust, sustainable, disability-inclusive urban development processes are implemented.

So what might an inclusive Freetown look like?
- Inclusive mobility and transport
- Accessible and affordable housing for all
- Inclusive and accessible healthcare and education for all
- Enjoyable urban life: recreation, culture, sport and safe inclusive public spaces
- Inclusive infrastructure, urban planning and services: from water and waste to electricity
- Inclusive climate resilience, adaptation, and disaster preparedness
- Thriving and connected communities
- Access to opportunities and livelihoods

What's next?

This report outlines the key findings from our AT2030 Inclusive Infrastructure case study on the city of Freetown, Sierra Leone. As the fifth of six case studies on inclusive design and the built environment in lower-and-middle-income countries, it will go on to inform our Global Action Report.

The data collection that informed this case study took place during the COVID-19 pandemic and we recognise the impact it has had on partners and communities. We hope this research on inclusive environments can support strategies for a more inclusive recovery.

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