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## Urban risk in Freetown's informal settlements: making the invisible visible

Rapid urban development and a rising population have led to significant changes in Freetown over the last decades. Although the city's status as the nation's economic heartbeat has been bolstered, the growth and sprawl of informal settlements and the continuous lure of rural-urban migration have led to a range of risks, both episodic and 'everyday'. These risks are more concentrated in the pockets of informal settlements and are becoming progressively embedded in the way of life of its residents, with adverse effects. In order to 'make visible' and capture the hidden vicious cycles of risk accumulation and risk traps, the city needs to be re-examined through a lens of urban risk. This policy brief reflects on the participatory approaches adopted to improve knowledge of small-scale and everyday urban risks. Through these approaches, urban risk traps were captured to assess mitigation efforts by a range of actors, revealing the embedded 'capacities to act' on the captured risks.

The city of Freetown has seen a significant growth rate of about 3.07 per cent since 1985. Internal displacement during the civil war (1991-2002) and migration in search of employment to the city contributed to this population growth. Today, its population of over one million residents make it the most populous and densely settled city in Sierra Leone. Rapid urbanisation has led to the creation of pockets of informal, unplanned settlements. These are underpinned by a number of factors, notably the local economy, which is dominated by small-scale and informal businesses (mainly petty trade), and a growing demand for proximal living to business centres and markets, coupled with unaffordable land and housing in formalised areas.

The topography of Freetown, a peninsula constrained between the sea and the hills, limits the spatial expansion of the city, forcing low-income groups to settle mostly on marginal

lands. The city has developed in three geographic areas: coastal settlements along rocky beaches of the Atlantic Ocean; sprawling inland settlements along the Sierra Leone River estuary; and hillside settlements on the steep hills of the city, which are rapidly encroaching onto vital forestland. In these settlements, flooding, rock falls, building collapse, and landslides are common phenomena, which result in significant economic and other losses, such as the destruction of property and infrastructure, and can include injuries, diseases and fatalities. The incidence of epidemics, especially of waterborne diseases, is significantly high.

Urbanisation in sub-Saharan Africa is increasingly coupled with the production of risk accumulation cycles or urban 'risk traps', which are not exclusively driven by, but exacerbated by, climate change.

## Policy Pointers

- Beyond major floods and epidemics, invisible everyday risks and small-scale disasters, such as fire and landslides, occur frequently and have cumulative and significant impacts on the life and assets of low-income households.
- Risk accumulation cycles can be made visible by capturing—spatially and over time—who is affected, how and why. The external designation of an area as risk prone represents a major risk for residents and their livelihoods because such designation is often used to justify eviction threats. In turn, uncertainty linked to these threats undermines the collective and individual capacity to act of those most vulnerable to these everyday risks and small-scale disasters.
- Disasters (particularly flooding) and the spread of disease are strongly linked. Therefore, disaster risk reduction strategies should be designed in conjunction with initiatives addressing public health.
- The urban poor have significant capacity to mitigate everyday risks, but their efforts need to be acknowledged and their rights recognised. Shifting from risk mitigation to risk reduction and prevention requires vigorous and concerted action between community organisations, public institutions, and external support actions.

### Box 1: Urban risk traps

Everyday risks, such as waterborne and diarrhoeal diseases generated by the lack of access to water and sanitation, and small-scale episodic disasters, such as flash flooding, among others, are common conditions that frequently affect the most vulnerable sections of the population and contribute to the creation of vicious cycles or 'risk traps'.

'**risk traps** are defined here as 'the sum over time of the articulation and reproduction of vulnerability and daily and episodic dangers or threats coupled with an eroded capacity to act'.

There is a variation in the perception, experience and understanding of risk amongst the residents in the various informal settlements, as well as an unequal distribution of the burdens of risks, with some women and men disproportionately more affected than others. This inequality seems to affect the capacity of local communities to work collectively to harness coordinated multi-stakeholder action to disrupt risk accumulation cycles.

### A fresh look at urban risk: co-learning through the lens of risk

In an attempt to delve deeper into an understanding of the risk burdens and coping capacities of informal communities in Freetown, in July 2016 a pilot workshop was jointly organised by the Sierra Leone Urban Resource Centre (SLURC)<sup>1</sup> and the Urban ARK team at the Bartlett Development Planning Unit (DPU) at University College London to explore methodologies of community-led risk assessment and the co-production of risk knowledge. The workshop was also the initial engagement of a SLURC-DPU partnership under the Urban Africa: Risk Knowledge (Urban ARK) research programme. Participants were drawn from various backgrounds and disciplines and comprised academics, researchers, government officials, NGOs and development practitioners, as well as community residents from the two target field locations – Cockle Bay and Dworzack – where further in-depth studies were carried out.

In the last decade, Sierra Leone, like many other African countries, has adopted a framework that promotes a decentralised governance approach to disaster risk management (DRM). While this approach seeks to enhance the capacity of local authorities and local dwellers to mitigate those hazards that are frequently documented and monitored, such as large-scale floods, it does not fully address the combined impacts of everyday risks and small-scale episodic disasters.

The workshop offered an opportunity to contrast the officially established framework that governs DRM with the actual practices deployed by ordinary citizens, state agencies and external support agencies, such as donors and NGOs to mitigate, reduce and prevent risk. In order to achieve this, specific participatory methods were adopted to capture where and when risk accumulation cycles manifest, and what actions or practices are taken by local communities and public organisations.

### Participatory methods used to capture urban change trajectories

Several methods can be applied and articulated to capture different trajectories of urban change so as to understand where change happens, why it happens, who is affected, and how. Co-producing this information with those who experience negative trajectories of change is essential to reverse such processes.

**Settlement timelines:** This method outlines demographic changes and the efforts deployed by local communities to improve housing, services, and infrastructural conditions to cope with and mitigate disaster events in a settlement over time.

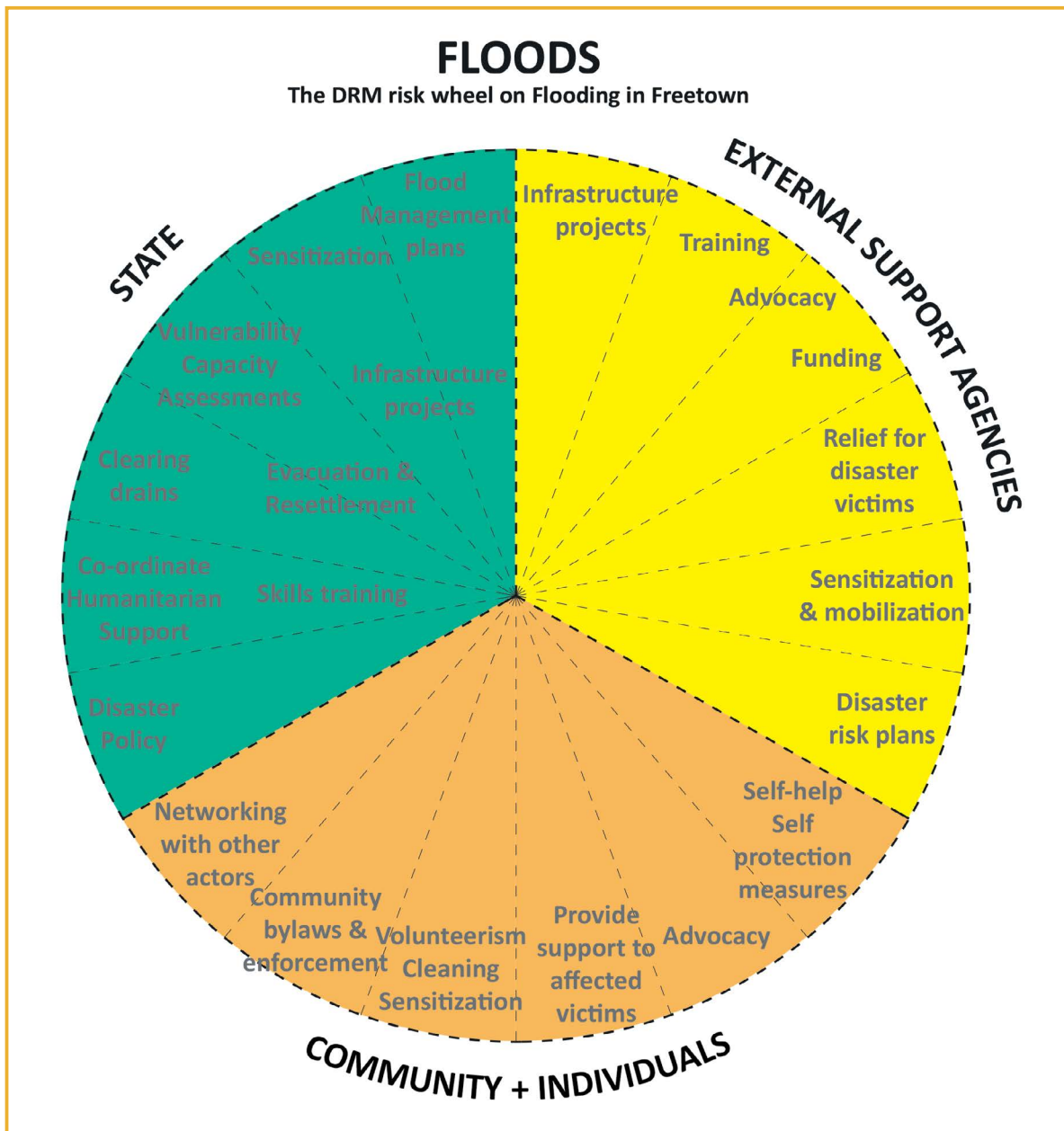
**Community-led mapping:** The production of settlement timelines are integrated into the processes of transect walks, with external participants and community residents engaging in a focus group discussion prior to the walk to share and finetune their experiences, knowledge, and perceptions, in order to build a risk profile of the area. The process of transect walks to document known risks is further enhanced through the use of open source mobile phone applications such as Ramblr, which participants are trained to use. Ramblr allows participants to track their location on a map and document points of interest, such as hazards, risk mitigation interventions, sites of previous disasters, etc., as media files (photographs, audio, video and text).

**DRM wheels:** These are used to understand and assess risk mitigation actions, identifying and evaluating collective and individual responses to risk by ordinary citizens, state agencies and external support agencies. The discussion and creation of the wheels are centred on what is done to confront small-scale and episodic hazards (such as fire, accidents, flooding and water-related issues), by whom, and with what resources. These are useful tools to assess the capacity to act of different actors, to evaluate the impacts of concrete actions, projects and programmes, and to design more effective and collaborative interventions.

The main findings from these processes show that residents of informal settlements are prone to multiple hazards and risks, and although this general statement holds true for most informal city dwellers, a closer examination reveals a different set of challenges depending on the geographic location and spatial distribution of informal settlements, as demonstrated by the case studies of Dworzack and Cockle Bay (hillside and coastal communities respectively), purposively sampled for the study.

### Urban risk in hillside informal settlements – the case of Dworzack

Dwozark is a typical hillside settlement which has been populated since the 1940s. However, since the 1980s, rapid urbanisation has outstripped investments in social infrastructure. Estimated to host 32,000 residents, Dworzack is characterised by poorly constructed housing structures (mainly mud bricks



and corrugated iron sheets), together with poor road networks and sanitation facilities. Land ownership in the settlement is contested and this hinders investment in improved housing.

The settlement's characteristics and location make it prone to fire outbreaks (12 outbreaks between 2010 and 2016 mainly from domestic fuel use and faulty electrics), floods (especially for residents living along the edges of the George Brook stream), rock falls (exacerbated by erosion and construction on the steep hillside), and outbreaks of waterborne diseases (from inadequate supply of treated water and solid waste disposal in drains and the stream). Although the number of fatalities from these risks appears to be relatively low (barring the recent 2014 Ebola outbreak), the full extent of vulnerability in this hillside informal settlement is significant when the cumulative effect of losses from these disasters is taken into account.

Although there is some community organisation, including the establishment of a Community Disaster

Management Committee (CDMC) and a system of Community Health Workers (CHWs), these were established in reaction to crises. More proactive and coordinated collective action at community level regarding the management of risks and disasters – including prevention and community preparedness – is not yet in place.

### Urban risk in coastal informal settlements – the case of Cockle Bay

Cockle Bay is an informal settlement located along the Aberdeen Creek on the western coast of Freetown. The land is owned mainly by the municipality and at present is home to an estimated 540 households. The settlement is characterised by poor infrastructure and lacks basic services (electricity, waste management, healthcare, potable water and sanitation). Vulnerability in coastal informal settlements like Cockle Bay is evident through cumulative losses from seasonal flooding, waterborne diseases, and a lack of domestic and community infrastructure.

Residents are faced with persistent (annual) and long-standing threats of eviction on the basis of both a formal designation of the area as risk prone (mainly due to floods and disease outbreaks), and as an area earmarked for ecological conservation. Residents are therefore wary of discussing risk openly with external agencies as these may further increase the threat of eviction. This blanket designation is applied without a systematic analysis of what parts of the settlement can be safe or unsafe for housing. The politics of using risk as a justification for evictions is a major contributor to the uncertainty, which increases the vulnerability of the residents. Such threats and the uncertainty they produce undermine community collective action to address known risks and residents' individual investment in housing, increasing even further the risk vulnerability of the residents.

### Community responses

Residents of informal settlements have the capacity to respond to disasters and risks through awareness-raising and self-help

initiatives to support those affected, through the establishment of structures such as CDMCs, CHWs, and the Federation of the Urban and Rural Poor (FEDURP). Settlements present different response capacities to risk. A major determinant of this capacity is the pre-existence of community governance structures. When these structures are in place and functioning, residents are more likely to be organised into committees and trained. Very effective responses take place when there are joint initiatives carried out by the residents and the city council or other public agencies (eg fire awareness and hazard monitoring in Cockle Bay).

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### Urban Africa: Risk Knowledge (Urban ARK)

breaking cycles of risk accumulation in sub-Saharan Africa

A three-year programme of research and capacity building that seeks to open up an applied research and policy agenda for risk management in urban sub-Saharan Africa. Urban ARK is led by 12 policy and academic organisations\* from across sub-Saharan Africa with international partnerships in the United Kingdom.

\* Abdou Moumouni University; African Population and Health Research Centre; Arup; International Alert; International Institute for Environment and Development; King's College London; Mzuzu University; Save the Children; UN-Habitat; University of Cape Town; University College London; University of Ibadan

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### Recommended reading:

Bull-Kamanga, L, Diagne, K, Lavell, A, Lерise, F, MacGregor, H, Maskrey, A, Meshack, M, Pelling, M, Reid, H, Satterthwaite, D, Songsore, J, Westgate, K and Yitambe, A (2003) 'From everyday hazards to disasters: the accumulation of risk in urban areas', *Environment and Urbanization*, Vol. 15, No. 1, pp 193-204.

International Federation Red Cross and Red Crescent Societies (IFRC) (2013) *Vulnerability and Capacity Assessment Report: Tonkolili, Wester Rural and Wester Urban Districts of Sierra Leone*. Report commissioned by the Government of Sierra Leone.

Kamara, SM (2014) *Sierra Leone Preparatory Components and Studies for the Freetown Development Plan Support to Freetown City Council and to the Urban Planning Authorities; Freetown Structure Plan 2013–2028 Main development issues and analysis*, European Union, October 2014.

Lambert, R and Allen, A (2016) *Participatory Mapping to Disrupt Unjust Urban Trajectories in Lima*. In: Imperatore, P and Pepe, A (eds) *Geospatial Technology – Environmental and Social Applications*. InTech. [www.intechopen.com/books/geospatial-technology-environmental-and-social-applications/participatory-mapping-to-disrupt-unjust-urban-trajectories-in-lima](http://www.intechopen.com/books/geospatial-technology-environmental-and-social-applications/participatory-mapping-to-disrupt-unjust-urban-trajectories-in-lima)

Macarthy, JM and Koroma, B (2016) *Towards Meeting the Knowledge And Capacity Building Gaps for Equitable Urban Development in Freetown*. SLURC Publication.

### References/endnotes

1. SLURC was created through a partnership between DPU and the Institute of Geography and Development Studies (Njala University) with funding from Comic Relief. It aims to strengthen the research and analysis capacities of urban stakeholders in Sierra Leone and deliver world-leading research in order to influence urban policy and practice ([www.slurc.org](http://www.slurc.org)).



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