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Addressing the ‘overlapping’ risks of climate change and urbanization and building a response to gendered well-being in Dhaka, Bangladesh

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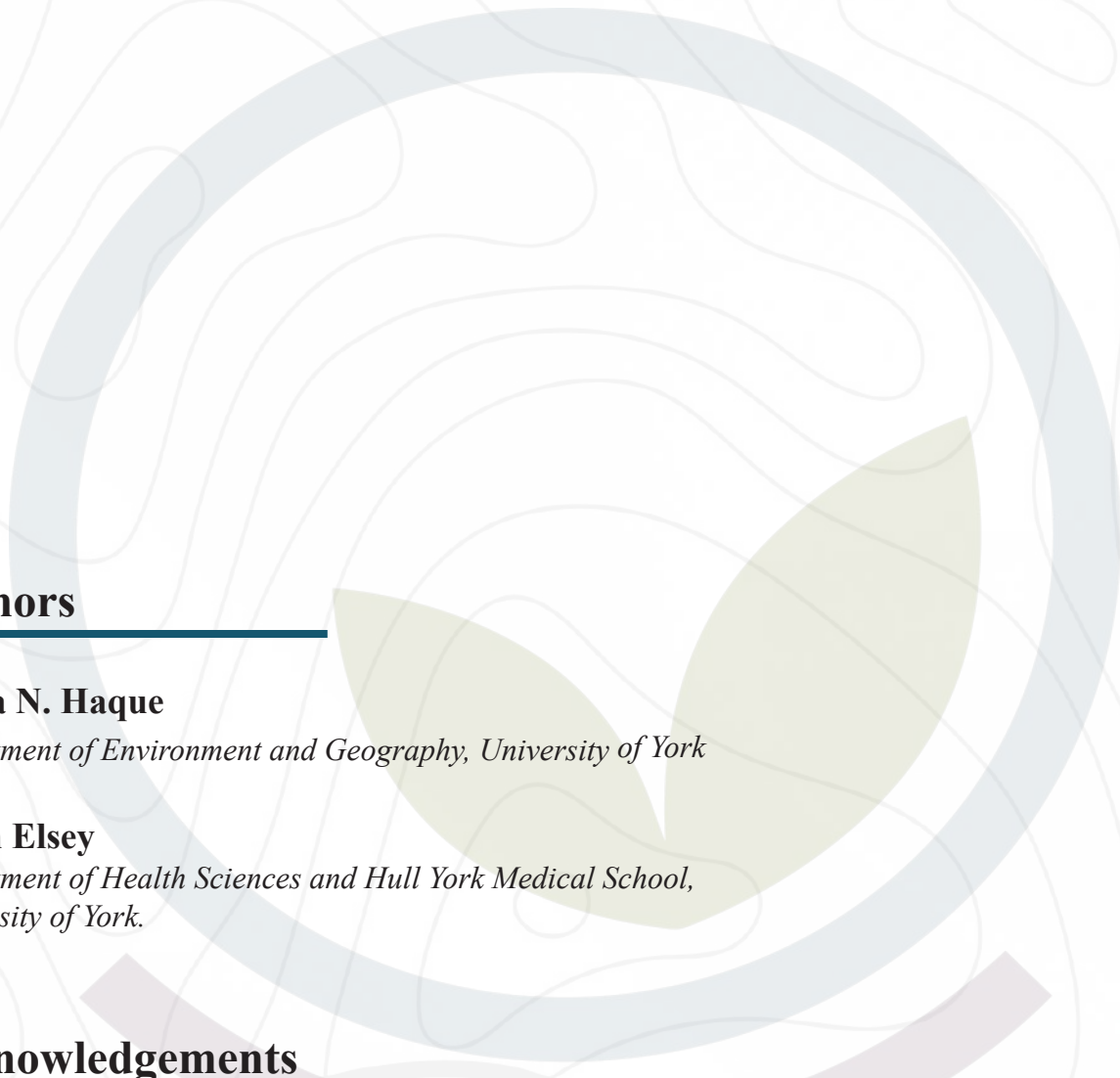


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According to the 2022 population census, 31.5% of the population in Bangladesh lives in urban areas and majority of this urban population is concentrated in some of the primary cities of the country (such as Dhaka and Chittagong), while secondary cities (such as Khulna and Rajshahi) are growing rapidly. Dhaka is one of the fastest growing mega cities in the world and is now estimated to house more than 23 million people with 23,234 people per square kilometre (World population review, 2023). Despite the economic opportunities offered in the city, 34% of the city's population is living below the poverty line (ibid) and mostly reside in slums and underserved areas. Dhaka is also one of the most vulnerable cities globally to climate change (Maplecroft Climate Change Vulnerability Index, 2013). Every day more than 2000 people migrate to the city (MMC, 2021). More than half of this population are climate migrants (i.e. migrated due to environmental hardship), and the number is growing (The Third Pole, 2023). Hence the (fast) urbanization processes in Dhaka are further exacerbated by climate change. Local governments are struggling to keep pace with this rapid urbanization and the result is unplanned development and overstretched health, transport, housing, water, garbage and sanitation infrastructure.

In the era of climate change, growing inequality, rapid urbanization, we are dealing with complex and deeply entangled crises which may, at first glance, look distinct. However, due to the complex entanglement of these crises, together they are posing much higher risks and causing greater harms than their combined individual harms. It is very important to understand this risk synchronization from a whole systems perspective. Invariably there exist complex causal links (many of which may, as yet, be unrecognized) between the physical and social systems. These complex and largely hidden causal links are causing multiple risks to overlap and create new sets of more dangerous and damaging risks. We are calling these 'overlapping risks' and they are generated through these complex interrelationships amongst multiple risks. If not addressed, the complex crises developed through such overlapping risks will ultimately overwhelm our capacity to adapt.

Overlapping risks of climate change and development

Dhaka is experiencing weather extremities with extreme heatwaves during summer and intense and prolonged rainfall during monsoon. Heat stress is further exacerbated by the haphazard and largely unplanned development in the city. The city is losing its green spaces in the name of development¹, hard surfaces are increasing, and these hard surfaces reflect heat and this further adds to the heat stress. Also due to the rapid unplanned urbanization, the water bodies and water retention areas are disappearing, and evermore buildings are being constructed. In the past, water bodies acted as natural drainage for the city, but these are almost non-existent now and the physical drainage is largely inadequate for the city (only 38% of the city is covered with a storm sewer drainage system). This results in waterlogging even with a few hours of rain in most parts of the city. Unsurprisingly, urban flooding is more frequent than before.

Gender(ed) vulnerability

These overlapping risks have differential impact across genders. Women, for example, are one of the most vulnerable groups to these overlapping risks due to multiple reasons, for example, sociocultural norms, limited access to resources and urban services, marginalization from the decision-making processes at all levels- from household to macro level. Their voices, particularly women from the low-income households are rarely included or heard in the decision-making processes despite the fact that they are bearing the brunt of these overlapping risks.

Health implications

The health implications of the combination of climate change and urbanisation are many and complex. For example, globally over the last 30 years, new cases of dengue fever have doubled each decade. Bangladesh – and Dhaka in particular – has seen some of the highest numbers of dengue cases. New research by Kamal et al (2023) identified how areas of the city with dense population and little vegetation had higher temperatures, and this, coupled with areas with stagnant water – provides the perfect breeding ground for the mosquitos that transmit dengue. The increased heat found in cities does not only impact on communicable diseases such as dengue; it also affects people living with non-communicable diseases. This is because the body must work harder to keep to its normal temperature, this puts pressure on the heart, lungs and kidneys. This means that heat can be dangerous for people with diseases such as diabetes and heart disease. In fact, a review of many studies by Liu et al 2022, found a clear association between increases in temperature and deaths related to cardiovascular disease. Prolonged rainfall combined with lack of drainage results in prolonged waterlogging or in some cases causes urban flooding which results in outbreak of water borne and vector borne diseases (Ley et al. 2018). Research has also shown that increases in heat can trigger gender-based violence as it increases stressors and the underlying drivers of violence against women and girls (Thurston et al. 2021).

¹ Studies suggest 56% decrease in green spaces between 1989 and 2020 (Nawar et al. 2022).



Current decision-making processes

Often decision-makers and practitioners assess these risks from siloed perspectives which results in siloed practices. Current structures mean they rarely go beyond their existing knowledge to understand 'other' systemic risks in the context. This means that we cannot start to find solutions which are in turn, likely to require action across multiple sectors, stakeholders, policies and practices.

METHODOLOGY

The findings and the policy pointers in this brief are based on a multi sectoral stakeholder workshop that was conducted in Dhaka in July, 2023 where practitioners, national, city government and NGO/civil society officials from three sectors-environment, development and health-were brought together to: a). explore if (and how) the concept of overlapping risk is understood by relevant stakeholders with reference to gendered wellbeing; b) investigate how different stakeholders approach overlapping risk in response to gendered wellbeing and identify the enablers and barriers to multi-sectoral action/s addressing overlapping risks; c) identify knowledge and practice gaps for effective multi-sectoral responses addressing these overlapping risks.

Note that, the findings mentioned in this policy brief are not definitive, these are rather indicative allowing some primary and crucial insights to the current (urban) situation deriving from the multi sectoral stakeholder discussion during the workshop.

FINDINGS

Note: The participants during the workshop highlighted the following points and challenges in understanding and addressing the overlapping risks.

Problematic understanding of the overlapping risks:

- The workshop reveals limited understanding of the overlapping risks of climate change and urbanization with isolated focus on climate related risks, unplanned development, health risks and gender vulnerability without hardly any wholistic understanding involving the interconnections.

Practice gaps:

- This isolated conceptualization of the overlapping risks is reflected in the siloed operationalization where each sector is working in siloes without any meaningful multi sectoral conversation let alone coordination and integration.
- Lack of coordination leads to duplication of works as there is no knowledge or data sharing.
- Although to some extent women are slowly taking up leadership positions, till date it is largely insignificant to ensure the (meaningful) inclusion of women's voices, perspectives and needs in the decision-making processes.
- Despite the fact that heat stress has now become a regular phenomenon in the country with significant health impacts², there is no targeted guidance for citizens or for health professionals to help patients reduce heat stress (let alone gender specific guidance).

Capacity gaps:

- City corporations house multiple sectors and are ideally placed to address these overlapping risks. Yet their budgets are often tight and many sector officials are not used to working across sectors. This involves understanding of other sectors such as health, or transport, or urban planning – their systems and language are different. Working together requires new ways of working to find synergistic solution. Training, guidance and the resources for joint programmes where sectors can work together are needed.
- There is a significant lack of skilled human resources to address the dynamic climate driven health risks in cities which has been resulted from lack of targeted training/s.
- Migration and associated increase in the urban population is posing increasing pressure to the (already inadequate) primary health care services, which urgently need investment to address the needs of the growing urban population
- Health professionals across the health system require training and guidance on how to deal with and advise their patients to cope with extreme heat and the communicable and non-communicable diseases that it exacerbates.

² Dhaka is losing US\$ 6 billion worth of labour productivity every year due to heat stress from extreme temperatures (<https://onebillionresilient.org/hot-cities-chilled-economies-dhaka/>).



Faulty decision-making process:

- There is a considerable lack of consultation with the local communities, let alone the lower income groups living in slums and informal settlements, apart from few handpicked community representatives as a 'window dressing ritual' to acquire the evidence of 'participation'.
- The policy making process/es largely involve 'tokenistic' consultation with NGOs without any meaningful inclusion and integration of their opinions, knowledge, expertise and experience in the decision making.
- Gendered voices are not included in the decision-making processes resulting in structural marginalization of women and girls, which further exacerbates their vulnerability.

Data gaps:

- Climate change data has largely been rural-centric in Bangladesh with very limited knowledge and data on urban climate risks and vulnerability. This has influenced the rural centric climate related investments not only by the international donors but also at national level.
- There is a significant lack of gender disaggregated data on climate vulnerability. Therefore there is very limited knowledge on how- a. women and girls are being affected, b. how men, women and those of other genders are differentially affected- by the climate risks.
- More than 30% of the Dhaka's population live in low-income and informal settlements and majority of these informal settlements do not even exist in the official documents, so they are invisible from the city level data. Hence, their vulnerability is largely unknown, and they are excluded from any development planning. Furthermore, lacking access to basic services they are already (most) exposed to these overlapping risks.
- Due to inadequate public health services (i.e. primary health care) and their restricted opening hours, the majority of city dwellers, particularly in urban poor neighbourhoods use private pharmacies/services on which there is limited or no data (Khan et al. 2012; Improving Health in Slums Collaborative and Watson, 2021).

Knowledge gaps:

- There is no central database which can be accessed by all sectors to identify the gaps/needs and coordinate and plan effectively to address the prioritised issues in a collaborative way.
- There is no data exchange across sectors. These intersectional data and knowledge gaps further impede collaborative actions.

Gap in early warning system:

Despite advancements in meteorological predictions, there is as yet, no early warning system for extreme heat event. Furthermore, there is no coordination and communication between the meteorological department and public health services which further exacerbates the health risks during disasters.³

Gap between policy and practice:

Although in paper the country is decentralised, in practice the governance is very much centralised where the restricted authorities of the local governments are often in conflict with central agenda which impedes the local development planning and implementation.

POLICY POINTERS (in no particular order)

Note: These recommendations for policy and practice were identified by participants during the workshop

- **Inclusive early warning system for heat waves** needs to be developed which are not merely gender responsive but gender specific including targeted (gender specific) guidance on response protocol/s that can be used by health professionals and community groups.
- A **multisectoral repository** needs to be established to address these overlapping risks which can be accessed by all relevant stakeholders. This will assist in prioritising actions, avoiding duplication and facilitating multi sectoral coordination and collaboration.
- It is crucial to ensure **meaningful citizen engagement** in the (participatory) governance systems where the gendered voices are not only represented but also heard and reflected on.

³ Health-related surveillance and early warning systems are under the jurisdiction of the Institute of Epidemiology, Disease Control, and Research (IEDCR).



- **Existing data gaps** need to be addressed and closed through producing not only more **urban** specific and **gender disaggregated** data but also including the **marginalised groups**, e.g. informal settlements. This calls for (more) funding urban focused research.
- Considering the urgency of the situation, it is imperative to produce urban specific and gender disaggregated database on the overlapping risks of climate change and urbanisation and **co-design** targeted multi sectoral collaborative projects addressing this complex problem/s not only to produce the evidence base for policy advocacy but also to **co-produce** solutions. Furthermore, a gender-responsive (central) **monitoring and evaluation framework** should be developed to track the progress.
- The relevant (climate change and development) policies and practices needs to be **flexible** to accommodate changes due to the shifting circumstances driven by climate change (e.g. increased occurrence of heat waves and untimely flooding) and the dynamic patterns of urbanization. And therefore the climate adaptation and development projects need to be adaptable and responsive to the **changing conditions**.
- **WASH**⁴ has been identified as the common priority for all the sectors (environment, development and health) and stakeholders: lack of which is exacerbating the vulnerability to the overlapping risks and addressing this can work as the (primary) solution. Urban WASH needs to be addressed not only from a multi sectoral perspective but also from a whole systems perspective addressing the overlapping risks which is responsive to the changing conditions (as mentioned above).
- It is already well acknowledged that **decentralization** (of authority, administration and services) is one of the core solutions to the increased and concentrated pressure on certain urban centres. However, we cannot ignore the already existing low-income settlements in the cities. Along with the efforts to decentralise the economy and the urban services, the **citizenship rights** of the existing **low-income urban population** needs to be **acknowledged** (in practice). This acknowledgement starts with the provision of basic infrastructure to these settlements and (meaningfully) including them in the development planning not only in situ but also at the city scale to ensure a just and inclusive urban development.
- **Development clusters** should be created which can pave the way for multi sectoral coordination combining not only sector specific but also organizational knowledge and expertise as well as promote a more effective and inclusive approach by pooling skills and responsibilities within the cluster. This will also allow more simplified and efficient resource allocation and reduce work duplication.
- The horizontal (at all levels) and vertical (from micro level of households and communities to macro level organizations) **knowledge flow** needs to be ensured to promote an informed and inclusive decision-making process.
- **Capacity building** at all levels (i.e. policymakers, national government, city corporations and NGO officials, civil societies, communities) is essential to (a) raise awareness and (b) address the overlapping risks in a gender specific way.
- **Appropriate and updated health protocols** needs to be developed and **training** needs to be delivered to the front-line health workers to ensure efficient and effective services addressing these dynamic overlapping risks, for example, targeted training for health care professionals and frontline workers to address health issues of a diabetic pregnant women during heat stress.
- We know that increased vegetation can reduce heat and address noise and pollution, however there are few evaluations of interventions to promote urban green space. For example, Bangladesh has tax policies which encourage residents to develop **urban gardens**. We need to find out how to make such schemes as effective as possible.
- It is evident that our cities need more and improved **urban green spaces**, but it is not only quantity that needs to improve, how do we ensure they are accessible for women and girls and that they are designed so they can still be used during extreme heat, providing a shady, sanctuary in the city.
- Finding sustainable urban planning, development and active transport solutions is fundamental to addressing many of these overlapping risks. We need to ensure that environmental and health impact assessments become a valued part of any urban development and transport planning.
- There is an urgent need to design and implement context specific and targeted community awareness programmes to raise awareness around these complex overlapping issues of changing weather patterns, urbanization and associated (gendered) risks and their implications for communities. This will equip the communities with the appropriate first responses, for instance, diseases like Dengue can largely be prevented through awareness.

⁴ Climate change poses direct impacts on the WASH facilities through for example, lack of drinking water, water contamination, producing new (gendered) health risks. It is also posing indirect impacts through driving the migration processes and thereby posing increased pressure on the existing WASH system.



Last but not the least, it is urgent to identify the (unrecognized) causal mechanism of climate change and urbanization and associated (gendered) health risks from a whole systems perspective to map the risk synchronization possibilities and address those well ahead of time.

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VIDEO VLOG

In this video vlog experts are discussing the importance of addressing the overlapping risks of climate change and urbanization in the context of Dhaka specifically highlighting the gendered vulnerability to these overlapping risks.

