

Policy Briefing

Just and Resilient Infrastructures in Pakistan and Kenya

The relationship between infrastructure development and intensifying climate crisis is generating new cycles of 24-hour risks in the urban global South. These risks are particularly severe in low-income neighbourhoods and informal settlements. They create complex microgeographies of risk, unfolding across time, space, multiple scales, and intersectionality, compounding gendered vulnerabilities. Complex interactions between risks and infrastructure development are overlooked in research and policy action at the urban scale. Research from Karachi and Nairobi points to opportunities to build resilient infrastructures that strengthen and support community networks and inclusion.

Key messages

- State-led infrastructural development – including in response to climate crisis – is changing the landscape of risk in the urban global South, with implications for residents of informal settlements and low-income neighbourhoods.
- Initiatives led by municipal governments and multilateral organisations to develop resilient infrastructures risk overlooking community experiences of risk.
- New conceptualisations of risk and infrastructures can help us understand the multiple pathways through which risk is transferred onto gendered, poor and vulnerable communities.
- Policy debates and actions must integrate community networks in developing just and resilient infrastructures.
- The climate crisis and new infrastructures exacerbate both visible and invisible forms of violence against women and girls, restricting their mobility and safety.



State-led infrastructural development is changing the landscape of risk in the urban global South, with implications for informal settlements.

Who needs to act and at what scale?

Most of the urban infrastructure that will be required by 2050 is yet to be built. Dialogue is underway between the G20 nations and multilateral organisations as to how this infrastructure will be affected by climate crisis and disaster risks, and how to build resilient infrastructures in the global South. This stresses the need for multi-hazard risk assessments of physical infrastructures, stress testing, and developing appropriate regulatory standards. However, the social dimension of resilience is often missing. Infrastructure development in cities has often led to disruption, loss of livelihoods, and displacement of households. In Karachi and Nairobi, the climate crisis is interacting with these processes of infrastructure development to generate new and complex landscapes of visible and invisible violence for poorer residents. Our study in Nairobi shows that new transport infrastructure has exacerbated local insecurity and flood risks within informal settlements and low-income neighbourhoods, with a disproportionate effect on women and girls. The construction of the 27.1km Nairobi Expressway triggered the loss of small-scale businesses and livelihoods, destruction of property and green spaces, and the demolition of more than 13,000 homes, **rendering over 40,000 people homeless**. Even though the research participants welcomed improved road infrastructure and enhanced mobility and flexibility, it has also increased insecurity.

In Karachi, drainage upgrading projects aimed at flood prevention have triggered **large-scale housing demolitions in low-income settlements** along multiple drainage channels, resulting in the destruction of over 6,600 households. Families have been torn apart and forced to relocate well-beyond the metropolitan limits. People faced job losses due to the increased mobility challenge; household incomes plummeted; and children were withdrawn from school with re-enrolment financially unfeasible even years later. Half-demolished homes have become vulnerable to subsequent floods, and destroyed water,

gas, and electricity connections expose residents to chronic heat stress. Financial and housing insecurity have hampered their ability to repair homes and have further decimated health and wellbeing.

Our study from Karachi and Nairobi highlights the following four dimensions that are often missing from current debates about developing resilient infrastructures and tackling interacting risks and crisis in urban areas.

Risks and mega infrastructures: Risks in cities are produced and exacerbated when they interact with the existing dynamics of infrastructural development and poor governance. Even though infrastructure development is important, there is a growing need to understand the multiplicity of risks that accompany such developments and how they affect different populations. In Karachi and Nairobi, mega-road initiatives and the upgradation of drainage channels have spurred on associated risks of disease, accidents, injuries, and financial loss. In Karachi, 29 per cent of respondents in Kausar Niazi Colony (KNC) reported demolitions as their primary fear, followed by flooding (25 per cent) and *nullah* (drainage channel) accidents (18 per cent). Seventy-one per cent of KNC survey respondents experienced more than five symptoms of heat stress, and 52 per cent reported incurring financial costs due to loss of mobility during floods. These risks disproportionately impact poor, marginalised communities located adjacent to the developments, thus exacerbating existing vulnerabilities and inequalities. Hence, new conceptualisations of risk can help to articulate the relationship with dynamic infrastructural development. Moreover, the complexity of urban risk is owed to its spatial and temporal dimensions; that is, risks are geographically distinct, and evolve over 24-hour cycles in the everyday context.

Risks and mass displacements: Large-scale infrastructure projects are blind to the dynamics of 24-hour risks that arise in the wake of mass displacements and

microgeographies of climate risks. In Karachi, living in half-demolished homes has amplified residents' vulnerability to urban floods and heat stress wrought by heatwaves and chronic heat. The ongoing construction work has damaged water pipelines, lowered the groundwater table, and made access to water extremely challenging. In Karachi, 88 per cent of survey respondents reported having no access to formal water infrastructure. In Nairobi, the demolition of homes has created hotspots of vulnerability marked by the disruption of public transportation, loss of businesses and jobs and, ultimately, has led to a rise in insecurity as many youths lost their employment when their businesses were destroyed. Moreover, the impermeable road infrastructure has increased the intensity of flooding in adjacent communities.

Risks and social security systems: Just as physical infrastructures may not withstand the effects of climate crisis, social security systems have also come under threat as community disruption has torn apart the neighbourhood's social fabric. Such risks are manifested in 24-hour cycles and impact everyday life. In Karachi, most households across our research sites had reciprocal arrangements of lending money, shared private spaces, water for daily use, and even toilets. In KNC, 65 per cent of surveyed households borrowed money for daily household expenses. Thirty per cent of respondents accessed water through shared community connections. Twenty-nine per cent of respondents used shared communal and open-air bathrooms. These were crucial to making their daily life tenable. But the climate crisis has severely affected the ability of households to participate in these networks. Similarly, climate crisis-induced displacement, and the loss of homes and public spaces, has fragmented established social networks and kinship ties, which are critical to the recovery of poor and vulnerable communities in Nairobi's low-income settlements.

Risk perceptions and gender: Women's lived experiences have directly influenced their perceptions of risks and their strategies for

coping and adapting. Patriarchal power relations and fear of violence have restricted women within both public and private space. Women's feelings of uncertainty, insecurity, and exclusion are heightened during evictions, loss of home due to flooding, long-term damage to their health/body due to heat stress, and even delivering community health care during periods of violence. In Karachi, 36 per cent of female survey respondents reported flooding as their primary fear, 83 per cent reported experiencing heat exhaustion, and 79 per cent experienced heightened anxiety and aggression. Our research has shown that community networks are crucial for the wellbeing of poor and marginalised groups, and that their disruption can be a major risk factor to collective efficacy and resilience of neighbourhoods.

With regards to large infrastructure development, adaptation is increasingly becoming a lens that is applied by or required from some multilateral and bilateral funders. For example, the Global Center on Adaptation (GCA) is adding a strong adaptation focus to major programmes, including the second phase of the World Bank-funded Kenya Urban Support Program, and driving adaptation thinking in major infrastructure projects such as the new Nairobi–Mombasa Expressway. A major blind spot is that adaptation investments focus on the resilience of the physical infrastructure itself, or on larger-scale ecological and economic functions that are transversed by corridor infrastructure (e.g. agricultural systems, conservation areas), but without a consideration of multiple smaller-scale impacts and risk accumulations at the local and municipal level.

Finally, even though **certain policy debates** and interventions take a gendered perspective on adaptation planning, these seldom focus on the multiple, interacting dimensions of risks across spatial and temporal dimensions that affect women and girls. Thus, integrating the notion of 24-hour risks with a gendered perspective is essential for enhancing infrastructural resilience in the urban global South.

Policy recommendations

- Road infrastructure projects funded by multilateral agencies such as the World Bank and Asian Development Bank in Pakistan and Kenya must prioritise the everyday experiences of residents and of vulnerable groups living around the infrastructures.
- Multilateral agencies such as the World Bank must ensure that social impact assessments of mega-infrastructure projects pay special attention to the gendered and interlinked impacts on employment and security risks to avoid hotspots of vulnerability. A gendered lens for assessing the 24-hour nature of urban risks is essential for building resilient infrastructure needs and must be prioritised.
- City council leaders must ensure that policies on infrastructure projects prioritise community participation in such projects, including focusing on unskilled labour engagement. Such policies need to integrate community networks to strengthen social cohesion and facilitate local adaptive behaviours. In cities such as Karachi and Nairobi, leveraging community organisations and local leaders can help build trust, disseminate information, and mobilise resources effectively, thereby enhancing the overall resilience of vulnerable communities.
- Multilateral agencies at national and local levels must ensure that infrastructure planning and environmental and social impact risk assessment analyse and assess the 24-hour nature of risk through blended and participatory methodologies. These must be geared towards capturing the economic, social, and physical aspects of life, which together shape the risks and uncertainties that residents of low-income, informal settlements face.
- Municipal governments and multilateral agencies must ensure that environmental impact assessment and social economic assessment are required for infrastructure projects in Pakistan and Kenya, to highlight and lessen the effects of infrastructure projects on the environment and society. ■

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Further reading

3if (2022) *Integrated and Inclusive Infrastructure Framework for Kenya* (accessed 6 August 2024)

Anwar, N.H.; Anjum, G.; Macktoom, S. and Saleem, A. (2021) 'Land, Governance and the Gendered Politics of Displacement in Urban Pakistan', *KUL Policy Brief 1*, Karachi: Karachi Urban Lab (accessed 6 August 2024)

IDS (2024) *Building Infrastructures of Climate Repair in the 24-Hour Risk City: Learning from Karachi and Nairobi* (accessed 6 August 2024)

Sameer, D. and Arsam, M. (2023) *Exploring Urban Risk, Climate Change and the Emancipatory Possibilities of Climate Repair Infrastructures in Karachi and Nairobi*, Geography Directions blog, 27 November (accessed 6 August 2024)

Wakhungu, M. et al. (2024) *Double Disaster: Flood Fallout and State Eviction in Nairobi and Karachi*, IDS Opinion blog, 23 May (accessed 6 August 2024)

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