INDIA UK
DEVELOPMENT PARTNERSHIP FORUM

Policy Brief

Resilient Communities for Resilient Infrastructure: Opportunities for India-UK Collaboration

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Executive summary

India and the UK have elevated infrastructure resilience to a priority area of development cooperation. The focus of this cooperation, led by the Coalition for Disaster Resilient Infrastructure (CDRI), has been to develop the resilience of critical infrastructure systems primarily through the lens of engineering interventions and innovation. This Policy Brief argues that India and the UK should, in parallel, work to facilitate and promote cooperation on institutional infrastructures that build community resilience to disasters.

This note presents three policy recommendations:

- Fostering Triangular and South-South knowledge-building:

  Stakeholders from India and the UK could work together to develop a flagship study that showcases best practices and case studies on the role of institutional infrastructures in building community resilience in India, with a broader objective to demonstrate the potential for replicability and scale-up by the UK and/or Southern partners from the CDRI.

- Creating institutionalised spaces for dialogue between decision-makers and local communities:

  Non-state stakeholders from India and the UK could collaborate with the CDRI to set up mechanisms that allow local communities from India to articulate their resilience needs to infrastructure planners and decision-makers, as well as offer their own insights to inform formal planning processes.

- Developing forums to catalyse Triangular policy exchange on community resilience-building:

  The UK and India governments could work together via the CDRI to create institutionalised spaces for Triangular policy exchange on community resilience-building in cities, within existing 'paradiplomatic' urban initiatives such as the C40 Alliance or the Urban 20. They might also work together to create new convening spaces to deliberate upon issues around urban and community resilience – for example, within the Commonwealth Heads of Government Meeting (CHOGM) processes, or the United Nations Climate Change Conference (COP).

1. Introduction

Global infrastructure systems[1] are under threat. Due to increasingly extreme weather events, infrastructure systems face significant physical vulnerabilities. Complex infrastructure systems - ever more reliant on new technologies - also face cyber threats. The United Nations Office for Disaster Risk Reduction (UNDRR) has estimated that economic and environmental damage due to disruptions in critical infrastructure services could reach USD 415 billion over the next fifteen years. As the recent glacial burst in Uttarakhand illustrates, vulnerable infrastructures destroy lives, threaten livelihoods, and diminish economic development gains when they fail. In the meantime, inadequate investment, excessive deregulation, and unrestrained oligarchical profit seeking in various combinations has left many infrastructure systems poorly prepared to deal with extreme events, as was shown with the recent Texan energy crisis. Recognising the scale of these real and potential disruptions, the Government of India (GOI) launched the Coalition for Disaster Resilient Infrastructure (CDRI) in partnership with the UK government in 2019.[2] Not only is the CDRI a means to meet global sustainability and climate change goals, it is also a vehicle to advance shared geopolitical and economic agendas, particularly in Africa and the Indo-Pacific region.

The current focus of the CDRI is on promoting technical assistance and knowledge exchange around engineering and design solutions, developing resilience standards and certification, and supporting member-states in the preparation of bankable resilient infrastructure projects.[3] The sectoral focus is on energy, telecommunications, and transport infrastructures. The CDRI's intention is to mobilise governments, UN agencies, multilateral development banks, the private sector, and academic institutions around this agenda. At present, it is working on several resilience projects, is running a fellowship programme, and has commissioned a flagship report that will focus on creating nature-based infrastructure to build resilience. The Indian government hopes to also engage the CDRI to elevate the profile of Indian innovations and thinking in resilience-building, with a view to exporting these in context-appropriate ways.

There is no question that enhancing critical infrastructure systems' capabilities to withstand disaster will be integral to any disaster risk reduction strategy. To be consistent with the global mandate of 'building back better', however, these strategies must be complemented with efforts to build the resilience of local populations - particularly those of marginalised communities - through just and participatory governance systems, entailing community-led actions. In the aftermath of the recent disaster in Uttarakhand, practitioners have highlighted the importance of investing in long-term crisis response mechanisms, pointing out that this requires investment not only in in climate proofing and hard engineering, but also in emergency response, training and capacity-building of local communities to reduce risks.[4] While the CDRI acknowledges this broader need to build resilient communities and societies, it has yet to engage substantively with this agenda or chart out a practical way forward.

This policy brief suggests that there is an opportunity for India and the UK to draw upon the analytical framework of "institutional infrastructure" to advance international cooperation in support of building resilient communities. It further argues that it is at the city level where opportunities are most ripe for international cooperation, and where there is a clear opportunity and role for Indian leadership in particular. After introducing the framework of institutional infrastructure, this policy brief offers focused policy recommendations for how India and

[1] Critical infrastructures are broadly understood to be networks, or components, that are strategic for the provision of basic public services, and for the delivery of national security goals (Ferrari 2020). They refer to physical assets that play an essential role in the functioning of society and economies (Mitchell and Lovell 2015). It includes energy, transport, water, telecommunications, waste management, health and educational facilities.

[2] The CDRI is said to be the brainchild of Indian Prime Minister Narendra Modi, whose interest in resilience is thought to have arisen out of his experiences presiding over the rebuilding critical infrastructures in Gujarat, following the devastating earthquake in 2001.

[3] See https://cdri.world/cdri-overview for more information on its vision and mandate.

[4] See https://www.thehindu.com/opinion/op-ed/a-resilient-future-for-uttarakhand/article33813220.ece

the UK might jointly advance this agenda, through bilateral and trilateral arrangements involving mutual learning, exchange, and collaboration.

2. Institutional infrastructures: an analytical framework for community resilience

Modern disaster risk reduction (DRR) planning typically regards resilience as the ability of infrastructure systems to absorb or offset damage from hazards (Birkmann, 2006, Giordano and Pagano 2018). This builds on an engineering conception of resilience, whereby resilience represents the ability of a system to withstand or minimise the magnitude of a disruption, and to 'bounce back' to its pre-disruption steady state of equilibrium. This has been described as 'narrow resilience' by some (Doorn et al 2018), since the state of equilibrium to which the system returns, post-disaster, may not necessarily be one that is either inclusive or just. While some engineering experts seek to go beyond this approach, for many an engineering approach to resilience is guided by an instinct to support post-disaster recovery, with a view to re-establishing the status quo. Under this approach, planners first focus on identifying hazards and risks to critical infrastructure systems - electricity, transport, communications, hospitals, and schools – and then invest in engineering fixes.

By contrast, an institutional infrastructure-oriented approach to resilience focuses on enhancing the everyday capacities of people, organisations, or systems, to anticipate, prepare for, respond to, and recover from risk. In other words, this approach sees resilience as a quality of individuals, organisations, or systems (Zaidi and Pelling, 2015:219), a function of social relations, and an outcome of organisation, social learning, and functional persistence (Zaidi and Pelling, 2015, Pelling et al., 2007). Drawing on a larger corpus of work on the social roots of vulnerability to disasters, it recognises that 'community' is itself not a monolith, and that different groups – based on gender, age, disability, sexuality, religion, geography, socio-economic circumstances, and other variables – experience disasters differently. The concept of community resilience is widely associated with increasing local capacity, social support, and resources, and on decreasing risks, miscommunication, and trauma (Patel et al 2017). A key pillar of this approach is that institutions and management need to be able to identify and respond to new hazards and vulnerability that might not have been predicted.

To build community resilience, investment in 'institutional infrastructures' (Birkmann et al., 2008; Zaidi and Pelling, 2015) will be critical. Here we focus on the role of both formal institutional infrastructures (participatory governance) and informal institutional infrastructures (soft infrastructures) in building community resilience. We also note the close interdependence between the two. For example, when citizens participate in governance and management, they are better able to use the soft infrastructures available to them.

Participatory governance: Formal institutional infrastructure includes specific structures of management, for example legislation and land-use planning guidance, but also governance concerns such as inclusiveness, flexibility, transparency, accountability, and efficiency (Zaidi and Pelling, 2015; Bulkeley and Betsill, 2003; Pelling, 2003). Participatory governance emphasises the process of coordination, stakeholder dialogue, social learning, and inclusion in policy making (Hajer and Wagenaar, 2003). Governance enables stakeholders to engage and participate in the sharing of responsibility for the management of public affairs (Fan, 2013). Mechanisms that allow citizen participation across multiple levels of governance - corporate, financial, and civic – opens opportunities for transformative, inclusive, just, and sustainable resilience building. All efforts to build resilience must grapple with the difficult questions of resilience 'for whom, what, when, where and why' (Meerow and Newell, 2016). Budgets are always limited, and efforts to build resilience will always have a limited focus. Strong participatory governance models should be equipped to identify routes through this challenge, and be transparent about focus and trade-offs. The UK has been at the forefront of implementing participatory governance with flood and coastal erosion risk mitigation planning (Driessen et al., 2016; Kelly and Kelly, 2019), and with England's National Heatwave Plan (Public Health England et al., 2015).

Soft infrastructures: In addition to formal planning, management, and governance, community resilience is built through informal and shadow systems. These include spontaneous self-help, self-reliance, social networks (or community connectedness), social capital, information, communications, collective action, and indigenously held

knowledge (Pelling and Manuel-Navarette, 2011; Zaidi and Pelling, 2015). These are often collectively categorised in the literature as 'soft' infrastructures. Where these infrastructures are strong, communities are better able to drive their recovery process, and to take ownership of it according to their needs (Doorn, 2018), for example, through their mobilisation of social networks and social capital to disseminate information, risk perceptions, cooperative strategies, and to provide care to others in their community. Soft infrastructures are deeply complementary and catalytic; both amplifying and facilitating official DRR processes. In other words, what the community knows and understands about its own processes to endure and respond to a disaster is crucial information for any formal DRR response. For example, when intergenerational knowledge held by communities living in disaster-prone areas is mapped against data generated by statistical simulations, it can help to produce more accurate hazard and vulnerability maps. The tools that a community has readily available to it (social capital, social networks, indigenous knowledge) is often what allows it to act immediately in the aftermath of a disaster, as it waits for governments, aid organisations and other official actors to arrive at the scene and coordinate a more formal response.

The critical role of community networks and knowledge, and their role in informing and supporting formal DRR responses, is perhaps most strikingly seen in Australia's efforts to build community resilience to wildfires (Reid and Beilin, 2014; Cadag and Gaillard, 2012). Recognising the critical role of communities in DRR responses, recent attention has turned to how communities might be supported to help themselves (Patel et al., 2017). In fact, in a report published by the UK Cabinet Office in 2010[5] community resilience is defined as a process by which communities and individuals are able to harness "local resources and expertise" in order to "help themselves in an emergency, in a way that complements the response of the emergency services".

3. Resilient communities in cities: the opportunity for international cooperation on urban resilience

Cities are contending urgently with the need for institutional infrastructures that build community resilience. As spaces that increasingly suffer from high-population density, precarious housing, outdated drainage systems, and inadequate infrastructures – both critical and institutional – cities are especially vulnerable to disaster and risk. Within cities, marginalised communities are often doubly vulnerable, due to a lack of economic, social, and political resources, or their geographical location. However, some Indian cities have coped and adapted to this onslaught of challenges relatively well, compared to others. At the recently ORF-convened 'Colaba Conversation', for example, the Municipal Commissioner of the Mumbai Municipal Corporation demonstrated the effectiveness of Mumbai's institutional infrastructures in mobilising a rapid and efficient response to the COVID-19 pandemic by immediately putting into motion protocols laid out in the National Disaster Management Plan (NDMP)[6], and by adopting a citizen-centric approach to its pandemic management.

Some major Indian cities are also looking to international forums and platforms - such as the ICLEI–Local Governments for Sustainability or the C40 Alliance[7] - to gain expertise, knowledge and resources, and to network with other global cities facing comparable challenges in urbanisation and community resilience-building. In some cases, Indian cities are leading and co-leading paradiplomatic initiatives to enhance city-to-city learning and exchange across the Global South. For example, in 2020, the All India Institute of Local Self Government (AIILSG) convened the fifth instalment of the South Asian Cities Summit. Indian cities have also been cooperating with cities from the BRICS nations, under the BRICS Friendship Cities and Local Government Cooperation Forum, established last year in the city of Kazan in Russia.

[5] Cabinet Office. Draft strategic national framework on community resilience. London, UK 2010.

[6] India's NDMP looks to "make India disaster-resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets — economic, physical, social, cultural and environmental — by maximising the ability to cope with disasters at all levels of administration as well as among communities".

[7] Mumbai joined the C40 alliance in 2020, making it the sixth Indian city to do so. Other Indian cities include Bengaluru, Chennai, the National Capital Territory (NCT) of Delhi, Jaipur and Kolkata

4. Policy recommendations

The IUKDPF proposes the following three recommendations to the UK and Indian governments in order to elevate a focus on institutional infrastructures for community resilience:

1 Fostering Triangular and South-South knowledge-building:

Non-state actors (knowledge partners, civil society organisations) from India and the UK could work together to *jointly develop a flagship study to profile best practices and case studies on community resilience-building within India*. A key element of this study could be to unpack what kinds of networks, modalities, exchanges, and mobilities have enabled, or might be needed, to take these best practices to other geographical contexts - both in the Global North and Global South. This study would also tease out actionable strategies for how the CDRI might proactively facilitate South-South and Triangular Cooperation flows of knowledge, expertise, resources, and partnerships to strengthen community resilience-building across the Global North and South.

2 Creating institutionalised spaces for dialogue between decision-makers and local communities:

Non-state actors from India and the UK could collaborate with the CDRI to *set up mechanisms and processes to allow local communities from India (and perhaps later, from other CDRI member-states as well) to articulate their specific resilience needs and priorities* to policymakers, planners, and decision-makers. This engagement with civil society could take the format of structured consultations, regular feedback mechanisms, or collaborative projects. Just as important will be the need to proactively mine indigenously-held expertise, knowledge, and insights on resilience-building, and integrate these into formal planning, strategy-building, and knowledge creation processes at the CDRI. Local communities' knowledge and expertise could also be featured in the 'SSC marketplace' being developed by the CDRI, which seeks to match country demand in resilience-building with expertise available within among member-states.

3 Developing forums to catalyse Triangular policy exchange on community resilience-building:

The UK and India governments could collaborate with the CDRI to *set up institutionalised spaces that facilitate Triangular policy dialogue on institutional infrastructure to build community resilience in urban settings*. This could involve, for instance, creating bespoke institutionalised spaces for policy dialogue within existing 'paradiplomatic' city-based forums, such as the Urban20 platform of the G20, or the C40. Additionally, they might explore creating new urban, 'paradiplomatic' spaces linked to multilateral forums, such as the Commonwealth, to facilitate structured conversations, agenda-setting, and policy dialogue around building community resilience in cities. The UK and India could also work with or via the CDRI to ensure that its resources (financial, technical, and convening power) are made easily available and accessible to city actors looking to translate these conversations into actionable strategies and programmes. For example, they could work with or via the CDRI to set up a facility that offers financial resources and/or technical expertise to support urban stakeholders in the implementation of specific triangular programmes, partnerships, and projects on community resilience. This facility might also support urban stakeholders in the preparation of project proposals and feasibility studies, which could in turn help to unlock funding from other sources – whether Southern development banks such as the New Development Bank or the Asian Infrastructure Investment Bank, or multilateral institutions such as the United Nations.

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