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What Do We Mean By Urban Resilience?

A Rapid Resource Review

Summary

Urban residents and environments are increasingly subject to climate change-related shocks and stresses like natural disasters, pandemics and famine. These events make communities vulnerable, accelerate poverty and undermine long-term economic and social well-being. Developing resilient urban planning and management strategies is one important way to protect these vulnerable communities. However, policy makers and practitioners often struggle to apply resilience thinking to urban planning and management because there is no consensus on how to define, measure, or achieve resilience in urban settings. Moreover, there is limited evidence on the effectiveness and impact of resilience interventions on urban systems and communities. In recent years, actors such as the United States Agency for International Development (USAID), UN organizations, the World Bank, the Organisation for Economic Co-operation and Development (OECD), non-governmental organizations, foundations, regional organizations and academic alliances have developed resources including frameworks, checklists and tools for assessing or enhancing urban resilience. These resources vary widely in their definition of resilience, goals, theoretical lens and the extent to which they are applied to an urban context. This brief provides a rapid literature review of 40 urban resilience resources and highlights opportunities for the development, implementation and evaluation of applied resilience projects such as the USAID-funded Asia Resilient Cities (ARC) Project.

Background

Urbanization leads to rapid population growth in cities around the world (USAID 2023). When urbanization is well-managed, it can contribute to sustainable development, economic growth, improved health outcomes and greater service access. However, unplanned or poorly managed expansion can lead to urban sprawl, pollution, environmental degradation and overburdened service

delivery systems. These circumstances make cities more vulnerable to sudden events (shocks) and ongoing challenges (stresses), which are becoming more frequent and intense (United Nations 2018). Urban systems and communities must be able to cope with and adapt to a changing environment, therefore enhancing their ability to react, respond, and adapt to these shocks and stresses. These abilities are often described as resilience.

Resilience has gained significant attention in recent years, particularly in the context of development agendas and in response to crises. The international community's interest in resilience can be traced back to the 2011 Horn of Africa Famine, which revealed the shortcomings of development and humanitarian organizations in foreseeing and addressing the crises which claimed the lives of 260,000 people, mostly children under five years old, and affected more than 13 million people (USAID 2012). Since then, the term has been adopted by various actors and stakeholders, such as international organizations (e.g., UN-Habitat), national governments (e.g., UK), government agencies (e.g., USAID), city networks (e.g., 100 Resilient Cities), local authorities (e.g., Rotterdam), civil society organizations (e.g., Red Cross), private sector (e.g., Siemens), academia (e.g., Resilience Alliance), and communities (e.g., Transition Towns). But what is "Resilience"?

Despite its widespread use and popularity, the concept of resilience remains ambiguous. Definitions of resilience vary depending on the objectives, perspectives and contexts for each project, organization, or government (Normandin et al. 2019). Despite the proliferation of resilience frameworks and tools for assessing or enhancing urban resilience, there is limited evidence on the effectiveness and impact of these resilience building practices or approaches on urban systems and communities (International Initiative for Impact Evaluation (3ie) et al. 2023; Sharifi 2016). There is also no consensus on how to measure or monitor resilience in urban settings. This makes it difficult for policy makers and practitioners to build resilience within urban planning and management.

Methods

This literature review analyzed a final list of 40 global, Asia region, or Asian country-based resilience frameworks, tools, or checklists (collectively called resources) developed or applied in English between 2010 and June, 2023. We found these resources from institutions such as US agencies, UN organizations, the World Bank, foundations, non-governmental organizations and academic alliances using Researchgate, Google Scholar, donor and organization websites. Search criteria included "Resilience" prefaced with or without "Urban", "City" or "Municipal" and "framework" or "tool" or "checklist." These terms could be modified by location, funder names; terms for systems; or terms for plan/policy/approaches or similar. We only included resources aimed at two or more sectors, and that included urban areas as part (or all) of the geographic focus. We excluded any purely academic resources that were not tied to practical resilience building goals, or were explicitly not designed to be tested in the real world. We assessed these resources for their strengths and weaknesses across 12 resilience and systems-thinking based criteria.

The [USAID-funded Asia Resilient Cities \(ARC\) Project](#), initiated in October 2022 and concluding in 2027, conducted this rapid literature review to understand how urban resilience is defined, who is

providing guidance on urban resilience, how the guidance varies and where there are opportunities to move this concept closer to a practical, implementable goal for our partner cities.

Defining Resilience

It is difficult to pin down an exact definition of urban resilience as it is often a label for successfully moving through and past a shock or stress, which may require various different behaviors, viewpoints, capitals, or structures depending on the context and type of shock or stress. Within the literature we reviewed, eight distinct definitions of urban resilience (or resilience that related to urban settings) were put forward, with many repeating concepts across resources. Across those, four emphasized the positive aspects of resilience, with terms such as sustainability, inclusiveness, growth, development, or transformation (e.g., UNDRR 2023; Spaliviero et al. 2019; UN Habitat 2018; Gawler and Tiwari 2014); while four mentioned terms related to the potential trade-offs or limitations of resilience, such as persistence, survival, or recovery (e.g., Vasuhe, Mansuri, and Shah 2020; Cardoso et al. 2020; Tyler and Moench 2012). Nearly all definitions frame resilience as a

capacity or ability, but who is displaying this capacity or ability ranges from individuals (even in some cases as specific as vulnerable or slum dwelling individuals), households, communities, organizations/institutions, to countries; in some cases instead of defining the “who” the definition simply states that these are displayed by a system or systems. While all USAID-related resilience definitions included the three steps of absorbing, adapting and transforming a [individual, household, etc] to shocks and stresses, other sources excluded some or all of these processes to focus on coping, mitigating, anticipating, adjusting, maintaining, preparing, preventing, withstanding, or reorganizing in the face of these shocks and stresses. Nearly 80 percent of all literature reviewed include some form of the concept of “bouncing back” to normal in their definition (e.g., USAID 2023; UN Habitat 2018; Béné 2013). This last point connects to a particular split found in the theory used for these sources, which we will discuss later.

Who is Publishing Urban Resilience Guidance?

Based on our search criteria, we found that USAID (USAID 2023; 2021; Downing et al. 2018; Collins 2015; USAID 2014; 2012), UN organizations (United Nations Sustainable Development Group 2020; UNDRR 2023; Spaliviero et al. 2019; UN Habitat 2018; UNDP Drylands Development Centre 2015), the World Bank (Hallegatte et al. 2016; World Bank Group 2017; Pkiongton, Chiapparino, and Eisenberg 2022) and Rockefeller Foundation (Gawler and Tiwari 2014; ARUP 2014; McTarnaghan, Morales-Burnett, and Marx 2022; Tyler and Moench 2012) were the primary funders of resilience guidance in either exclusively urban or both urban and rural settings. Major non-governmental organizations like Red Crescent/Red Cross (Global Disaster Preparedness Center 2019a; 2019b; 2019c; International Federation of Red Cross and Red Crescent Societies 2014; Global Disaster Preparedness Center 2017a), and BRAC (Nasir et al. 2020) also contributed to the literature with practical resources for application of resilience in urban settings.

Regional funders such as the Asian Development Bank (Hallegatte et al. 2016), EU (Kutty et al. 2022; Cardoso et al. 2020; EU Circle 2017), OECD (OECD 2014; n.d.), Asia-Pacific Network for



Global Change Research (Sharifi and Yamagata 2016) and individual country governments funded and/or authored the majority of the remaining resources (The Government of the United Kingdom 2022; Woolf et al. 2016; Rangwala et al. 2013; Béné 2013). There are some academic alliances such as the Stockholm Resilience Centre (Biggs, Schluter, and Schoons 2015) and the Resilience Alliance who have generated a large body of work on resilience, but only a few of their resources directly pertained to urban settings.

How Does Urban Resilience Guidance Vary Across Sources?

There is wide variation in how the literature determines resilience goals

The resources we reviewed differ in their advice on setting resilience goals and devising measurement tools. Some identify specific dimensions, goals, indicators, principles, or factors that contribute to resilience; while others use a more general or flexible approach. For example, the USAID Urban Resilience Technical Guidance document (USAID 2023) outlines five building blocks to strengthen the resilience of urban systems across and within sectors (inclusive planning, governance, finance, social and natural capital). Within these building blocks, USAID provides broad implementation steps and examples, illustrating how these processes might strengthen resilience when applied in urban settings (USAID 2023). The City Resilience Framework (ARUP 2014) identifies four dimensions (health and well-being, economy and society, infrastructure and environment, leadership and strategy), 12 goals, and 52 indicators of resilience. The Seven Principles for Building Resilience in Social-Ecological Systems (Biggs, Schluter, and Schoons 2015) identify seven principles (maintain diversity and redundancy, manage connectivity, manage slow variables and feedbacks, foster complex adaptive systems thinking, encourage learning, broaden participation, and promote polycentric governance) that enhance resilience; while the Resilience Systems Analysis (RSA) Framework (OECD 2014) uses a more general approach that allows users to define their own resilience dimensions, outcomes, and indicators based on their context and objectives.

There are at least five different theoretical lens used to frame resilience

The literature on urban resilience reflects five different theoretical perspectives and paradigms that influence how resilience is conceptualized and operationalized. These can be grouped by engineering; ecological; social; technical and political. They are not mutually exclusive, but they do create real differences in how resilience is defined and addressed. Resilience Alliance 2010 and Hallegatte et al. 2016 outline the divides between engineering and ecological approaches to resilience, which differ in their emphasis on stability versus change, efficiency versus diversity, and optimization versus adaptation. Adger 2000 and IFRC 2014 further juxtapose the ecological approach to social approaches, where humans replace natural systems and focus shifts toward agency and social constructs. Finally, UN Habitat 2018 and Meerow and Newell 2016 compare technical and political approaches to resilience, which differ in their degree of participation versus expertise, consensus versus conflict, and neutrality versus normativity. These theoretical divides have implications for how resilience is measured and enhanced in different contexts and scales, as well as how trade-offs and synergies among different dimensions of resilience are addressed.

Not all of these resources have been tested in cities

These frameworks and tools tend to provide general principles, frameworks, indicators and guidelines for urban actors to follow as they implement (UNDRR 2023; Gawler and Tiwari 2014; ARUP 2014). But actual implementation of these resources has been uneven, and empirical evidence on the outcomes of that implementation is hard to find. Almost half of the resources we reviewed have been applied in cities. Those tested resources have been implemented across five continents: Africa, Asia, Europe, North and South America, in approximately 113 countries and 530 cities, often in multiple cities per country (e.g. Brazil, Portugal, Mongolia). We could not identify published examples where these were evaluated for effectiveness within the study period, however, several state that they improved their final resources based on implementation but do not describe specific framework modifications (Global Disaster Preparedness Center 2017b; Woolf et al. 2016). When reviewing Berretta et al 2023's recent extensive review of the empirical literature on resilience, two of those studies were related to the resources on our list (Downing et al. 2018; Béné 2013).

Opportunities for Applied Resilience Projects

The literature we reviewed highlights several implications for applied resilience projects such as the ARC Project. It is easier to garner resources and political will for a concept of resilience that is clear, easy to understand and has consensus of all major donors, governments and implementers. The funders and authors mentioned in this brief should collaborate to develop or strengthen consensus and align tools, frameworks and indicators.

This will take time and the process may end up breaking resilience out into more concrete concepts that could either pull focus away from resilience writ large, or provide an even more compelling concept that can move resources toward resilience-related goals.

In the meantime, governments, projects and donors still need to continue urban resilience activities. We will need to address the trade-offs and synergies that may appear as resilience interacts with urban challenges and goals, such as equity, justice, governance, etc. (Sharifi 2016).

When assessing which resources to pull from, city governments and projects like ARC should consider which ones have goals and procedures that are most relevant and appropriate to the context. If possible, they should also try to clearly state the "5 Ws" (who, what, when, where and why) of resilience for their work, which we found to be a useful rubric to use in lieu of a concrete definition of resilience (Meerow and Newell 2016). It allows practitioners to define the scope and purpose of resilience assessment and intervention, identify the relevant stakeholders, risks, capacities, outcomes, and indicators of resilience. If all projects use this, then it also provides a clear way to compare empirical evidence coming out of each project. Stating which lens the project is using can also help clarify why certain goals were selected over others.

City residents, especially those who are most marginalized, will bear the brunt of inaction on resilience, and have the most clarity on what resilience would look like to them on a day-to-day basis for their context. It is important to include them in any decision making about how to define



the 5 Ws. Several resources reviewed in this brief emphasize the importance of participation, inclusion, collaboration, and partnership for building urban resilience (UNDRR 2023; International Federation of Red Cross and Red Crescent Societies 2014).

Finally, given the dearth of evidence on application of these resources, any new resilience projects should also have sufficient resources to evaluate the outcomes and impacts of the project on urban resilience in a way that is easily comparable to other resilience projects, and produced with the goal of informing cities on what might be the most effective forms of urban resilience programming for their needs.

Conclusions

Urban resilience literature must successfully bridge existing theoretical divides to guide effective resilience building. As more projects start to support urban resilience, their approaches need to consider the inclusion of best advice from multiple sources, and let residents and city governments drive the discussion on what resources are most useful.

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