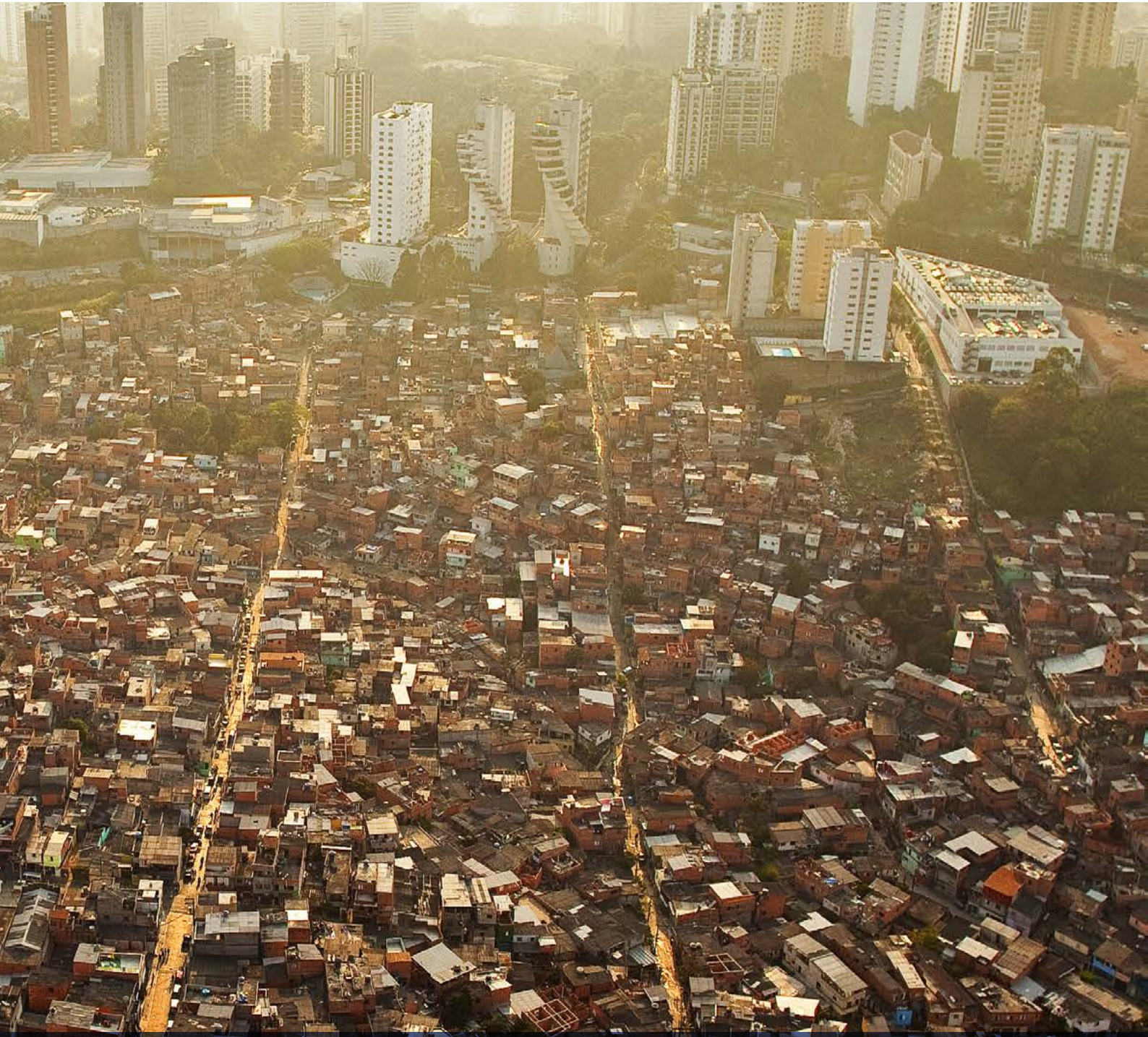

The SECURe framework

An approach to thinking about power and politics when using co-production interventions for urban resilience

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Adaptation Research Alliance

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About the Adaptation Research Alliance

The Adaptation Research Alliance (ARA) is a global coalition responding to the urgent challenges faced by vulnerable communities from climate change. Their membership is made up of researchers, funders, policymakers, development bodies and community-based organisations committed to action-oriented research for adaptation that supports climate resilient futures.

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Cover photo: The informal settlement of Paraisópolis alongside the high rises of the affluent Morumbi district in São Paulo, Brazil. © Eric Bergeri

The SECURe framework

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Contents

Summary

According to the United Nations, more than half of the world's population lives in towns and cities. These urban areas are almost always located along the coast or rivers, and concentrate large numbers of vulnerable people. Therefore, enhancing the resilience of cities to the impacts of a changing climate is a critically important task. However, urban areas are 'complex systems' where diverse individuals, networks and organisations with different visions of urban development, incentives and institutional protocols interact continually. Understanding these dynamics is essential for finding urban resilience interventions that are aligned with the unique contextual characteristics of each city.

This is why co-production, an approach that seeks to explore and reframe complex problems through dialogue and knowledge-sharing between different groups of stakeholders, has been seen as highly effective in determining the right urban resilience interventions. Co-production, when done right, flattens power asymmetries and enables all key points of view to be factored into decision making. In the context of resilience, co-production helps shine a spotlight on how risk affects marginalised populations.

This report presents the Strengthening and Enhancing Contextual Urban Resilience (SECURe) approach for achieving strategic and systematic co-production for urban resilience. SECURe was produced through a co-creation process that drew on the work and lessons of over 100 participating organisations across three regions: Latin America, sub-Saharan Africa and Asia.

The approach argues that any entity attempting to co-produce urban resilience solutions will approach this task from one of five thematic areas, by:

1. **Enhancing the resilience of community assets and services.** This includes community food production, housing, basic services such as health provision, income and social capital.
2. **Increasing the availability of knowledge/data and raising awareness of risk and resilience solutions.** This should span innovations in acquiring and analysing data on risk and providing information on potential hazards.
3. **Using governance, management and other aspects of decision making.** This involves actions that handle, direct, govern or control aspects of human hazard interaction. These would include institutional and policy reform interventions that improve a city's ability to anticipate, absorb or adapt to climate-induced shocks and stresses.
4. **Developing grey infrastructure or nature-based solutions.** This is one of the most widely used entry points and can be done either by enhancing the resilience of planned infrastructure or developing new infrastructure to mitigate risk.
5. **Helping people to secure financial resources for reducing risk and building resilience.** This is an increasingly important area of intervention.

In essence, each of these domains acts as an entry point through which an individual or organisation would approach urban resilience. The choice of entry point depends on a range of factors, including organisational mandates or preferences, resilience deficits and available budget, among others. These thematic domains effectively serve as points of confluence where different actors, networks and organisations interact and help focus the context analysis that should precede the strategic design of an intervention to enhance urban resilience.

Once a domain is chosen, the SECURe approach urges those attempting to co-produce urban resilience solutions to understand the institutional, cultural and environmental context of the city. This, in essence, entails understanding the drivers that influence urban development and how these interact with different actors, networks and institutions in a city, by:

- **Understanding the way in which public and private institutions contribute to producing vulnerability patterns and differentiated adaptive capacity.** The analysis should examine the regulations and processes that structure the interactions of these organisations. Understanding the institutional context would also entail mapping key actors and networks of relevance to the chosen domain for resilience, as well as their visions, incentive structures, capacity to effect and influence change, determining the rules and protocols that they are subject to, and who they might be in conflict or competition with.

- **Understanding the cultural context.** As this shapes the nature of risk, it is essential for enhancing resilience, particularly social norms and intersectional identities. Social norms produce asymmetric vulnerability patterns and different levels of adaptative capacities in a city. By imposing limits to what an individual or group can do, social norms constrain development and adaptation pathways, including the possibility of a more inclusive, resilient future.
- **Understanding the biophysical characteristics of a city.** This includes ecosystem services and the built environment that enable food production, maintain water supply, and allow people and goods to move around. Understanding the climate and disaster context is also key.

However, it is essential to underline that, unlike a range of existing risk assessment approaches, the SECURe approach does not argue for merely analysing vulnerability, hazards and exposure. Instead, it argues that learning from the knowledge exchanges that arise as a result of these shocks and stresses, as well as identifying any windows of opportunity, is valuable. Untangling this is essential for focusing on the right intervention.

Understanding the context of a city will reveal what a co-production intervention for urban resilience can effectively achieve. This includes:

- **Changing the behaviour of individuals and communities to better deal with risk.** For instance, this may include interventions around encouraging slum dwellers to develop neighbourhood disaster risk reduction plans and ultimately mobilise community resources to fund some of these activities.
- **Empowering marginalised groups to confront the structural causes of their vulnerability.** These may span interventions where an external agent supports a set of actors, organisations and networks to self-organise in response to a particular window of opportunity by aligning their incentives. For instance, a pattern of increasing drought and declining yields from peri-urban farming may provide fertile ground for building resilience by bringing previously dispersed agriculture cooperatives together to demand subsidies and support from government.
- **Brokering agreements between different groups or individuals to temporarily tackle risk.** They may do this by aligning their framing of the problem at hand to discover common incentives for collaboration. For instance, in a context of increasing flood pressure and impending elections, two civil society organisations (CSOs) with a base in two ethnic groups, whose historical relation has been one of mistrust, may find a window of opportunity to broker a temporary agreement and collaboration.
- **Enabling systems reform.** This is most relevant when formal regulation, policy and institutional norms need to be changed, enhanced or altered to improve resilience. An example of this may be the adoption of innovative planning processes that closely consider the risk experience of vulnerable groups while prioritising infrastructure investments.

It is not possible to predict which of these types of change or goals are better than others. They merely present the range of strategic opportunities for those leading co-production interventions and should be chosen after analysing the institutional, cultural and environmental context of a city.

In this way, the SECURe approach argues that adopting a thematic entry point, analysing the context of a city and then determining the most appropriate type of change, allows the most sustainable, equitable and impactful urban resilience intervention to be targeted. This, in turn, would ensure that marginalised populations in vulnerable urban contexts are able to not only function, but flourish, despite the impacts of a changing climate.

Introduction

In the context of climate change and increasing climate-induced disasters, climate resilience has become a normative goal for policy and programmes around the world (Leichenko 2011; Meerow and Newell 2016; IPCC 2022). Rapid rates of urbanisation, particularly in low- and middle-income countries, increasingly expose highly vulnerable populations living in informal settlements to climate-related hazards (Dodman et al. 2017; IPCC 2022). With the majority of people living in cities, resilience ought to be examined from an urban perspective. However, enhancing urban resilience is a complex issue (Maslow 1943; Valdivia 2018; Williams 2005). Top-down, technocratic and linear approaches to planning, policymaking and institutional reform have failed to deliver impact (Dorst et al. 2015; Lang et al. 2012). This is largely because resilience has different meanings for different social groups, who often have competing priorities and conflicting approaches, while simultaneously relying on and contributing to the same urban system (Arnstein 1969; Folke et al. 2005).

In this context, co-production methodologies have emerged as a promising approach (Cash et al. 2003; Hilgartner, Miller and Hagendijk 2015; Jasanoff 2004, 2010, 2013). Co-production can be broadly understood as a set of approaches that connect researchers with various social actors — from policymakers and CSOs, to private sector actors — so they work collaboratively, exchanging knowledge and acting collectively to effect social change. The promise of co-production is that solutions to complex problems are more likely through legitimate and trustworthy processes, facilitating the engagement and dialogue of various forms of knowledge and expertise, including that of the individuals who will use these solutions (Wyborn et al. 2019; Clark et al. 2016; Lemos et al. 2018; Bodin 2017). While this approach is generally accepted as the way to influence complex systems such as cities, there is a lack of understanding around which approaches and methods have the most impact (van der Hel 2016; van Kerkhoff and Lebel 2015). These concerns have been voiced in the context of sustainable urban development and urban justice, highlighting that co-production methodologies risk reinforcing the status quo, further delegating government responsibilities to CSOs (Perry and Atherton 2017). Most methods have also been criticised for their lack of specificity in relation to the power and politics that articulate the institutional and community relations of the context of intervention (Lemos et al. 2018; Musch and von Streit 2020; Turnhout et al. 2020; Järvi, Kähkönen and Torvinen 2018).

This report presents the Strengthening and Enhancing Contextual Urban Resilience (SECURe) approach: a framework for the design of co-production interventions that overcomes these limitations. It is written with the primary objective of providing a roadmap for organisations leading these types of intervention. While the framework draws on an extensive consultative process, described in this section, the way in which it is presented has the primary objective of offering methodological and practical guidance. To make the text more reader-friendly, it does not include evidence derived from the consultative process.

SECURe is a methodological approach for co-producing contextually relevant urban resilience solutions that focus on the urban and risk politics shaping the urbanisation process, and likely future risks.

Five domains of action can be used as entry points for interventions: community assets and services, knowledge and data, governance and institutions, grey and green infrastructure, and finance for resilience. Focusing interventions in a thematic area can act as a convening space for city actors and groups. Domains of action help to focus SECURe's context analysis in teasing out the sociopolitical, economic, cultural and biophysical drivers of urbanisation and risk accumulation. To this end, it deploys a network analysis that explains the way in which actors and organisations collaborate and exchange information and resources, but also compete and conflict with each other while driving the city's urbanisation.

The resulting analysis can then inform the design of co-production interventions, accounting for the windows of opportunity and constraints imposed by these drivers. Informing the design with an understanding of the collaborative and conflictual dynamics is helpful to maximise the effectiveness and long-term impact of co-production interventions. As this approach works through the power relations that articulate social, economic and political actors and networks of a city, it is a way of affecting the drivers that shape the city's trajectory of urbanisation and risk accumulation. This in turn means that co-production may have a sustainable impact.

This report draws on the work of over 100 organisations that participated in a co-creation process convened by the Adaptation Research Alliance made up of researchers, funders, policymakers, development bodies and community-based organisations committed to action for adaptation that supports climate-resilient futures.

At the heart of this process were three interactive workshops where the author team engaged with a range of organisations working on issues of sustainable urban development. In these, the team attempted to understand the risk context of the cities where participants were based, their urban risk profiles and resilience needs, and examples of solutions that had proved effective in tackling risk. This provided a rich bank of data which was analysed using a detailed review of literature on urban political economy and resilience (Barcena and Bahadur 2023).

Key insights were then presented to a group of 20 organisations formed of donors, researchers, practitioners and city networks, who came together as an advisory committee. This committee helped the author team shape and refine the key learnings, questioned assumptions and provided additional perspectives from their own institutional experiences, resulting in a draft of the approach. This was further refined through a range of individual conversations with key informants and reviews of additional literature. At this point, the author team also solicited a set of case studies from practitioners and researchers engaged in sustainable urban development. These studies helped illustrate the different components of the approach and infused the development process with rich empirical insights to ensure that SECURe spoke to the needs of urban practitioners in the global South. A forthcoming working paper contains the insights of this analysis (Roden and Hutchin 2024). Finally, the approach in its current form was tabled to the advisory committee and to an open meeting of all those who attended the workshops with city practitioners, for final suggestions and improvements. A detailed description of the methodology is described in Annex 1.

The rest of this report is organised as follows:

- **Section 1** describes five 'domains of action' on which a co-production intervention can focus. These are sectors which lead organisations, city actors and communities can relate to while working on urban resilience. They tend to be resourced and reflect the mandate of organisations.
- **Section 2** presents the context analysis framework, first focusing on institutional drivers; second, on cultural drivers; third, on how they come together to form city networks; and fourth, on how the biophysical environment opens windows of opportunity for transformative change.
- **Section 3** offers a design framework for co-production interventions. It starts by presenting four possible goals that can motivate co-production interventions in relation to city networks and their institutional and cultural drivers. The section concludes with three types of intervention that can be used to achieve these goals.
- **Section 4** describes three prototypes of co-production interventions presented as a way to offer a heuristic for lead organisations to connect context analysis and intervention design. Taken together, the three prototypes explore how different domains of action invite the consideration of different networks of actors; how these require the consideration of different institutional and cultural drivers, and distinct windows of opportunity; and ultimately, how these can be leveraged for change by different intervention goals and modalities.

1

Domains of action: entry points for urban resilience interventions

Over the past 20 years, there has been a proliferation of frameworks from practitioners and policymakers aimed at exploring a wide range of solutions to reduce risk and bolster resilience to shocks and stresses in urban areas. A landscape analysis conducted by the United Nations Development Programme, reviewing a decade of urban resilience initiatives, identified the following domains on which these interventions had focused: planning and project preparation support, enhancing the data ecosystem for urban planning and policy, fostering networking and coalition building, and undertaking community-level actions to boost resilience (Cao et al. 2021). Another study, drawing from over 1,500 resilience-building activities, categorised solutions into different domains, including individual and material wellbeing, relational wellbeing, awareness, urban governance and infrastructure (Paterson and Charles 2019). This classification closely aligns with the framework on entry points for urban resilience (Asian Development Bank 2016), which highlights six solution domains: data, planning, infrastructure, capacity, community development and finance.

Similarly, the City Resilience Framework (Rockefeller Foundation and Arup 2015), developed through a comprehensive review of approaches, underscores leadership and strategy, health and wellbeing, economy and society, and infrastructure as critical domains determining a city's resilience. Likewise, UN-Habitat's City Resilience Action Planning Tool identifies key domains for resilience, including governance, planning and urban design, resilient infrastructure and basic services, economy and society, and disaster risk management (UN-Habitat 2018).

Drawing on these analyses, this report argues that any entity attempting to co-produce urban resilience solutions will approach this task from at least one of five domains of action. These are entry points or thematic areas that help enhance urban resilience. In the context where a co-production intervention is meant to be deployed, the choice of domain of action will attract the attention and invite the participation of key city stakeholders. Domains of action also help delimit subsequent components of the SECURe framework. They act as a boundary to focus the context analysis, described in Section 2, which aims to tease out actors, networks and organisations that interact with a city's institutional, cultural and environmental context. Put another way, it would be an enormous exercise to analyse the context of a city comprehensively, but once narrowed down to one of these domains, this exercise becomes more feasible. Therefore,

these five domains provide a point of reference for lead organisations to start their analysis of factors that influence urban risk and resilience.

First, urban resilience interventions may aim to **strengthen community assets and services** to ensure that vulnerable communities are better able to withstand climate-induced shocks and stresses. These could be material or nonmaterial and could be used to reduce the degree to which communities are sensitive to disturbances, their capacity to adapt and the extent to which they are exposed. This includes a whole range of interventions and might span community food production, housing and basic services, including health provision, income and social capital (Archer et al. 2020). Examples might include the development of climate-resilient housing for vulnerable urban communities, such as one in Danang, Viet Nam, where an international donor financed a local women's union to build community networks and issued soft loans to those households at risk of suffering harm from cyclones, allowing them to make structural changes to their houses (Tran, Tran and Tran 2014). A number of projects focused on strengthening community sanitation are good examples of how this domain has been used for enhancing resilience. In Gorakhpur, India, for example, a local nongovernmental organisation (NGO) supported the self-organisation of poor urban communities that were highly affected by waterlogging, enabling them to negotiate with the city government for improvements in local drainage networks (Bugler 2017).

Second, **enhancing the availability of knowledge/data and raising awareness** of risk and resilience solutions is another important domain of changes to their houses (Tran, Tran and Tran 2014). A number of projects focused on strengthening community sanitation are good examples of how this domain has been used for enhancing resilience. In Gorakhpur, India, for example, a local nongovernmental organisation (NGO) supported the self-organisation of poor urban communities that were highly affected by waterlogging, enabling them to negotiate with the city government for improvements in local drainage networks (Bugler 2017).

Second, **enhancing the availability of knowledge/data and raising awareness** of risk and resilience solutions is another important domain of action. This covers an entire spectrum of initiatives spanning innovations in acquiring and analysing data on risk, and providing information on potential hazards. This could then be employed to reduce vulnerability or to catalyse processes to mitigate hazards — including community-based early warning systems to alert at-risk communities. For example, in Nairobi and Dar es Salaam an international NGO has brought meteorologists and slum dwellers together to co-create a new system through which early warnings can be provided (Resurgence 2023). By brokering a better understanding of what at-risk populations needed and the constraints that meteorologists faced, this initiative facilitated a process for providing more effective warnings. These in turn helped alter the behaviour of at-risk communities in relation to a range of climate-induced shocks and stresses. This domain of action could also include initiatives aimed at assessing risk to influence policy. For instance, Slum Dwellers International has pioneered a process through which those living in informal settlements survey themselves to make key features of their previously 'invisible' neighbourhoods 'visible' to policymakers (Beukes 2015). In cities across the world, this information has contributed to spurring government action and provided a viable domain of action for reducing risk and building resilience.

A **third** set of interventions spans **governance, management and other aspects of decision making**. These involve actions that handle, direct, govern or control aspects of human hazard interaction as a starting point for enhancing urban resilience (Paterson and Charles 2019). In essence, these would include institutional and policy reform interventions that enhance a city's ability to anticipate, absorb or adapt to climate-induced shocks and stresses. A number of examples illustrate how this is being used as a domain of action to enhance resilience in cities across the world. For instance, an international programme is bringing poor urban communities, urban policymakers, NGOs and academics together in 'urban labs' established across cities in Central and South America (IIED nd). These labs aim to reframe problems and explore innovative policy solutions and have resulted in a range of solutions including shifts in land use planning regimes and mainstreaming nature-based solutions. Interventions aimed at enhancing city capacity to tackle risk are also included in this category. For instance, an international organisation funded the installation of city resilience officers within city governments across the world who were tasked with mainstreaming resilience into urban development policies.

A **fourth** domain of action is illustrated by entities attempting to build resilience by **developing grey and green infrastructure**. This can be "infrastructure for physical hazard defence, either based on engineering efforts (such as sea walls) or utilising ecological properties for protection" (Paterson and Charles 2019). Essentially, this type of

intervention is focused on mainstreaming risk into traditional infrastructure, developing new protective infrastructure or deploying nature-based solutions to tackle risk. This includes risk mitigation infrastructure such as the Thames Barrier, which attempts to reduce flood risk in London, UK, by controlling storm surges through a system of gates. It could also include mainstreaming risk and resilience in planned infrastructure, such as in Ho Chi Minh City, Viet Nam, where the city's metro system had to be 'climate proofed' to reduce exposure to and the frequency of disruption. This included insulating and waterproofing electrical and mechanical operating systems, and building flexible tunnel entrances and exits that can be opened and closed swiftly to prevent flooding or to eject flood waters (Bahadur and Tanner 2021). Increasingly, environment-based approaches or green infrastructure is also being used to enhance resilience. A good example comes from Selsey, UK, where an intertidal habitat was created to allow natural patterns of tidal flooding, thus preventing catastrophic coastal flooding.

Finally, helping cities and urban populations **secure financial resources** for reducing risk and building resilience is an increasingly important domain of action. This is because urban areas receive a very small proportion of global climate finance, so there are major adaptation financing gaps. One subset within the finance category is a range of activities aimed at supporting cities to raise and deploy international public finance for resilience through project preparation support (Cao et al. 2021). An example of this is an initiative run by a global network of city governments to support local and regional governments to develop climate action projects by providing technical assistance, financial services and increased international exposure (ICLEI 2023). Another vision of finance for urban resilience entails ensuring poor urban communities can access resources to take measures to reduce risk. For instance, Slum Dwellers International has helped organise networks of the urban poor to pool resources into a community fund that can be accessed to support risk reduction measures (Smith, Brown and Dodman 2014).

2

Analytical framework: networks, institutions, culture and the environment

This section presents an analytical framework that helps identify the drivers of urban development, which are responsible for the production and accumulation of climate risk in a city (IPCC 2023). The underlying concept here is that risk is produced over time, along a development pathway. Economic activities, planning processes, the way in which different knowledges are integrated into policy, or how racism and patriarchy systematically exclude certain groups, are responsible for the specific urbanisation trajectory of a city. They also affect how certain groups become incrementally exposed and vulnerable to climate extremes. Seeking to transform these drivers of urban development is therefore an effective approach to sustainably contribute to urban resilience (Wijaya et al. 2020). It allows lead organisations to contribute to urban resilience without having to mitigate the effects of an urbanisation trajectory as it keeps producing risk.

This analytical approach is thus helpful in indicating co-production interventions for urban resilience. But what are the drivers of urbanisation and how do they relate to the way in which co-production interventions seek to foster change? A co-production approach aims to facilitate the circulation and exchange of risk factors in a city, so they influence decision-making processes (Jasanoff 2004). For instance, this means that the knowledge of slum dwellers in relation to flood exposure and its management can influence municipal resilience investments. This approach also recognises that not everyone's knowledge and experience matters equally when it comes to influencing economic, public or social investments.

A co-production approach therefore highlights the link between knowledge and decision making across economic, public, political and research organisations. However, these organisations do not operate in isolation (Muñoz-Erickson, Miller and Miller 2017). City actors from each of these organisations collaborate as members of like-minded networks. They share complementary visions of development and control a variety of institutional powers and resources that effectively drive the urbanisation of a city, reinforcing their authority and influencing capacity along the way. For example, governments could establish public–private partnerships with businesses to build and exploit transport infrastructure, thereby increasing their tax take and improving the city's economic connectivity with regional and global markets. It is evident that multiple networks operate in a city, and while actors within a network may collaborate with each other on particular domains or issues, relationships across networks may be confrontational.

The rest of this section presents an analytical framework that teases out how the institutional, cultural and biophysical contexts of a city simultaneously constrain and facilitate the process of signposting organisations and actors into the networks that drive the urbanisation of a city. The framework also helps identify windows of opportunity to overcome

the limitations that the contexts impose on network collaborations, and hence this analysis forms the design basis for a co-production intervention.

2.1 Public institutions, the economy and knowledge

Lead organisations should understand the way in which public and private institutions contribute to producing vulnerability patterns and differentiated adaptive capacity across the population (Adger 1999; Pelling 1999, 2003, 2010). This analysis illuminates the institutional landscape that drives the production of risk related to a domain of action, and hence offers entry points for a co-production intervention.

The analysis should examine the regulations and processes that structure the interactions of these organisations. Political, economic and bureaucratic interactions are relevant here, including exchange of resources, funding information, government permits and rights, as well as the exercise of institutional influence. For instance, where municipalities have limited resources, they may aim to privatise public land and allow land speculation to increase tax revenues. Where this is the case, forced evictions often follow to clear the informal settlements that occupy the land (Sharma 2021). Such an analysis may show that the drivers of vulnerability of informal residents is related to a process where austerity measures translate into land speculation.

An inductive approach is recommended here, where the identification of an issue relevant for vulnerable groups and urban resilience is taken as the entry point for the analysis. The domains of action described in Section 2 are helpful for identifying these issues.

The following dimensions should be investigated in relation to the production of patterns of vulnerability and adaptative capacity:

- **Organisational and key actors mapping:** Map government bodies, NGOs and other actors that are capable of influencing the problem at hand and those affected by it. Government departments, private businesses, political groups and actors, CSOs, researchers and organisations involved in producing data, evidence and knowledge, and vulnerable groups are relevant here.
- **Vision and incentive structure:** Specify the incentive structure directing the strategic actions of the actors and organisations mapped above. These include motivations and agendas as well as what they value and aim for in their strategic manoeuvring. Some examples are economic growth for businesses and inclusive development for some governments.
- **Capacity and influence:** Identify what confers influencing power to each organisation. This is likely to be related to the incentives that motivate their strategic actions. For instance, capital allows businesses to invest and sometimes grow, political legitimacy and authority make it more likely for governments to be able to implement their development and resilience vision, and data and forecasting capacity allows thinktanks to influence public policy.
- **Economic regulations, policy and planning processes, and electoral norms:** Understand formal and informal norms and regulations affecting economic activities, including land tenure, property rights, work relations, employment security and market structures. Also investigate any relevant policy and planning processes, such as urban development planning, municipal management, fiscal policies, monetary policies, trade policies and welfare programmes. Formal and informal norms that regulate political representation and how they interact with economic regulations and policy and planning processes are also important.
- **Windows of opportunity:** Understand the periods of time conducive to institutional change. For instance, electoral cycles reflect windows of opportunity for shifts in socioeconomic policy.

2.2 Social norms and intersectional identities

Social norms produce asymmetric vulnerability patterns and different adaptation capacities in a city. By imposing limits to what an individual or group can do, social norms constrain development and adaptation pathways, including the possibility of a more inclusive, resilient future. Understanding these limits helps identify the goals of a co-production intervention, and whether a lead organisation has the capacity to achieve them.

Social norms influence expectations and preferences towards adaptation and development actions (Adger et al. 2009; Gorddard et al. 2016; Sparkman, Howe and Walton 2021). This could include whose concerns and risk experiences have priority when a community group establishes resilience priorities, or who is expected to perform particular low-paid work, such as domestic labour or waste management.

Social norms constrain what individuals and groups can do if they wish to remain recognised as members of their professional, social and political networks (Eriksen, Nightingale and Eakin 2015). While social norms establish limits to what one can do, recognition allows members of a group to exert influence and access the group's resources. In some settings, for instance, women are expected to take responsibility for a number of household tasks, such as water fetching (Truelove 2019), which means they are vulnerable to various forms of risk. Recognition is a fundamental resource to guide climate adaptation and development decisions, and more generally to exert influence over social, professional and political peers. It shapes whose risk knowledge and understanding is considered to be more authoritative and more valuable.

Social norms do not apply equally to all members of a group. Intersectional identities refer to the fact that the social norms applicable to each person are seen through a matrix of categories, including gender, race, caste, ethnicity, age, religion and class (Davis 2008; Kaijser and Kronsell 2014). For instance, in India, a Dalit woman and a Brahmin man tend to have similar positions in relation to municipal governance (Jakimow 2019).

Social norms interact with public institutions, the economy and knowledge, as described in Section 2.1. For instance, gender norms can play a significant role in shaping relations between colleagues in the technical department of a municipality. This may mean that a violation of technical codes, such as building codes, may be more likely to be overlooked when done by men than women in a context of patriarchal gender relations (De Jaegher 2013; Joseph 1997). Some areas to consider in relation to this interaction are:

- **Knowledge:** How the experiences of different intersectional identities in relation to climate risk are reflected in the evidence and research used to influence policy and planning.
- **Economy:** How working relations shape the vulnerability of different intersectional identity groups. This includes examining employment conditions, and economic security more generally, and how care responsibilities, such as domestic labour and child and elderly care, affect the vulnerability of different intersectional identity groups. For instance, domestic chores, such as water collection, may disproportionally expose women to risks, including water contamination or sexual violence.
- **Public institutions and governance — rights and responsibilities:** How intersectional identities shape civil, political and economic rights, and responsibilities of government bodies and informal governance arrangements towards different individuals.

2.3 Networks analysis: political, economic, technical, policy and scientific

Urbanisation of cities is driven by networks of actors, working from different organisations while trying to implement their resilience and development visions (Fawaz 2008; Goh 2020; Klijn, Steijn and Edelenbos 2010; Varna, Adams and Docherty 2020; Waters and Adger 2017; Wissink 2013). These actors align their agendas and exchange information and resources with like-minded actors and organisations to advance their vision and effectiveness. Understanding what drives the urbanisation of the city takes us away from a focus on a single institution, to consider the ecosystem of organisations and how they operate together.

2.3.1 Organisations and resources

Operating as members of different organisations (government departments, research institutes, businesses), network actors have access and control over a variety of resources, including public and private funding, government permits and scientific authority. This diversity of resources helps to drive urbanisation towards a particular vision.

Identifying networks is helpful as part of the context analysis to inform co-production interventions. These can aim to leverage or lessen the relative influence of some networks, to achieve more inclusive development and resilience trajectories. Section 4 offers insights on how to approach this type of intervention.

However, the identification of networks is not necessarily obvious. Network members might not be willing to declare their alliances, or may not be aware of how adherence to regulations and protocols aligns their actions with others, producing tacit coordination and collaboration. To overcome this, lead organisations may observe the circulation of resources.

2.3.2 Resource exchange and influence

Control over resources means that network actors can exert influence, encouraging the alignment of other actors' visions and strategies. Examining the circulation of valuable resources within a city's incentive structure helps to identify collaborative networks.

Once resource exchanges are mapped, and drawing on the analysis of sections 2.1 and 2.2, lead organisations can:

- Draw boundaries to define the networks of institutions and actors involved
- Identify the regulation, policy, planning and social norms that legitimise these exchanges
- Identify the compatibility of visions and development framings that these networks pursue, and
- Investigate the distribution of resources across networks to explain the difference in their ability to influence capacity.

The lead organisation can then map conflicts between networks that may limit the potential for collaboration.

2.3.3 Conflicts

Networks may have competing resilience and development visions. They may compete for resources. They may mistrust each other for historical reasons. Regulation, policy, planning and social norms may also make collaboration impossible. These conflicts limit the capacity of networks to exchange information and resources, and to develop new resilience and development visions. Ultimately, these conflicts shape the current development and resilience trajectory of a city, precluding other more inclusive pathways.

2.4 The biophysical environment: windows of opportunity for interventions

The biophysical environment of a city facilitates and constrains social, political and economic activities, directing its urbanisation and risk accumulation trajectory (Graham and Marvin 2001; Simone 2014; Simone 2013).

2.4.1 Biophysical environment

Ecosystem services and the built environment are integral to many socioeconomic activities, including enabling food production, maintaining water supply, and allowing people and goods to move around the city. Climate extremes, variability and long-term climate change, on the other hand, disrupt these activities.

Co-production interventions for urban resilience are focused on how risk knowledge is produced and exchanged in the city, influencing decision making and planning. Responding to this objective, lead organisations should aim to understand what learning opportunities and knowledge exchanges exist.

2.4.2 Disasters

Disasters offer opportunities for learning and institutional and policy change (Donovan 2017; Pelling and Dill 2010) and can affect urbanisation and risk accumulation trajectories. They can erode institutional credibility and the cultural bonds that connect network actors, as their economic and social exchanges are disrupted. For instance, in a context where agricultural yields sustain patronage networks between landowners, migrant workers and local governments, persistent droughts can weaken these networks and open space for more inclusive governance. As a result, new networks, visions and framings may emerge.

Lead organisations can seek to understand disasters and the biophysical environment as windows of opportunity to support the emergence and transformation of networks with more inclusive resilience visions. This shifts the stereotypical analysis with which many lead organisations will be familiar, where the focus is on understanding how disasters, the built environment and ecosystem services contribute to socioeconomic vulnerability and hazard exposure. Instead, the SECURe framework invites an analysis that looks to examine how disasters and the biophysical environment open opportunities for new ways of learning in the city, for the transformation of institutions, policy and planning, and potentially the emergence of new CSOs able to hold governments to account for their responsibilities in relation to urban resilience.

3

Design framework: a suite of co-production goals and modalities

This section offers a suite of co-production approaches that can be used to overcome institutional and social constraints and exploit the windows of opportunity identified in Section 2. These design options can flatten power asymmetries between city networks and facilitate exchanges of knowledge, influence and resources to enhance the resilience of vulnerable groups.

The section outlines four types of change to which a co-production intervention could aspire, and how these relate to the collaboration constraints described in Section 2. It then describes three co-production modes that can be deployed to achieve these goals.

3.1 Co-production goals

3.1.1 Behavioural change

Behavioural change refers to co-production interventions that seek to change the behaviour of targeted groups or organisations in relation to the problem at hand (Nightingale et al. 2020; Pykett 2012). This could include ethnic prejudices, or the way a local organisation collects data and produces evidence. Behaviour change interventions therefore aim to transform social norms and inform regulated practice. The ultimate objective is to facilitate exchange between targeted groups and networks. Social norms, such as racial and gender prejudices, can affect trust and how a particular group is viewed, limiting their influence over decision making. Regulated practice, such as data collection procedures, affect the authority of an organisation and its ability to collaborate with a range of partners, such as international donors or policy-oriented organisations.

Design considerations: The design of a behavioural change intervention should therefore be guided by: (a) a network analysis that shows how social norms and regulated practices constrain collaboration and exchange between actors and networks; and (b) a network analysis that shows how incentives and control over resources shape the influence of different networks over the problem at hand. With these two analytical outcomes, the lead organisation can design behavioural change interventions to facilitate collaboration across networks and actors with the ultimate objective of facilitating the exchange of knowledge, resources and influence between them and enhancing their joint influence over other actors and networks. In our previous example, adhering to international standards of data collection and analysis will help the local organisation to partner with international donors, increasing their access to funding and the visibility of their research. If the organisation is well connected to vulnerable groups in a city, their experience of risk

and their knowledge can have influence in decision-making forums, such as donor tables, which may include national and local governments.

3.1.2 Brokering agreements

These are co-production interventions that aim to foster collaboration across networks by aligning their framings of the problem at hand and offsetting disincentives for collaboration (Harvey, Cochrane and Van Epp 2019; Pohl et al. 2010; Reyers et al. 2015). Brokering agreements narrowly focuses on a particular issue and its framing, rather than seeking to align actors' wider visions of resilience or overcoming deep-seated social norms that prevent trust. For this reason, when these interventions are successful, they produce prompt collaboration around a specific opportunity, which may arise from a window of opportunity. The ultimate goal of this type of intervention is to enhance the combined influence of actors and networks. For instance, in a context of increasing flood pressure and impending elections, two CSOs with a base in two ethnic groups, who have historically mistrusted each other, may find a window of opportunity to broker agreement and collaboration. A growing flood pressure, disrupting socioeconomic activities, will incentivise CSOs to explore new ways of managing the flood risk beyond individual responses, such as house retrofitting. Impending elections may encourage local governments to be more open and responsive to community demands, particularly if these are framed as a pre-condition for government legitimacy.

Design considerations: The design of a brokering agreement intervention therefore relies on: (a) a network analysis that highlights how current framings of a problem are limiting potential collaborations between networks; (b) a network analysis that shows how incentives and control over resources shape the influence of different networks over the problem at hand; and (c) the identification of windows of opportunity that create momentum to overcome disincentives for collaboration and reframing the problem. Continuing with the previous example, lead organisations may detect the window of opportunity presented by the floods and the elections. Responding to this and understanding the limitations of civil society groups to influence the local government, they may convene a dialogue between CSOs to broker an agreement around flood management and organise a common front to lobby the government. This process may lead to a successful result if CSOs reframe the flood problem as a joint resilience agenda connected to the local political agenda.

3.1.3 Empowerment

This refers to co-production interventions that aim to foster the collaboration and exchange of actors and networks who are in the early stages of organisation, but are committed to self-organise and enhance their influence (Ford and Pearce 2012; Gibbes and Skop 2020; Holt et al. 2019; Matyushkina, Le Borgne and Matoga 2023). These may be neighbourhood organisations with limited resources trying to come together as a network. The impetus and commitment to self-organise may come from a window of opportunity that heightens the importance and offsets previous incentives that prevented them working together. For instance, an increasing pattern of droughts reducing water availability and the yield of urban farming may activate previously dispersed agriculture cooperatives. In this context, empowerment interventions aim to foster the development and alignment of resilience and development visions. They support actors and networks while they frame the problem in complementary ways and develop a formal or informal internal structure or regulation. This approach would ultimately allow emerging networks to coordinate, access and exchange resources and information, and exert collective action, enhancing their influence.

Design considerations: The design of empowerment interventions should be informed by a network analysis that highlights: (a) how windows of opportunity are activating previously dispersed and fragmented networks; (b) how incentives and social norms limit their coming together; and (c) other networks' control of resources and institutions in relation to the emergent framings of target groups. Considering these analytical outputs and continuing with the previous example, a lead organisation may convene a dialogue between agriculture cooperatives. Through this, cooperatives may frame the issue of droughts around one governance problem: how the municipal water authority manages water permits and shares for agricultural purposes. Dialogues may also unearth how some export-oriented agribusinesses have established a close relationship with the municipality, which influences the distribution of water permits. Lead organisations may then help the cooperatives to organise themselves, share data and produce evidence of the effect of current water governance arrangements on the agriculture sector, and link up with other actors to question the legitimacy of the government authority.

3.1.4 System reform

System reform refers to co-production interventions that aim to overcome constraints imposed by formal regulation, policy and institutional norms (Brandt, Josefsson and Spierenburg 2018; Brennan 2018; Charli-Joseph et al. 2018; Christie et al. 2017). An example is the endorsement of innovative planning processes that closely consider the risk experience of vulnerable groups while prioritising infrastructure investments. Similar to social norms, formal regulation establishes limits and constraints to collaboration and exchange between actors, often based on their technical expertise and authority. For instance, governments and development banks involved in large infrastructure projects collaborate with private companies that adhere to well-defined safeguards, which includes conducting socioenvironmental impact assessments. While these tend to implicate impacted communities through participatory processes, they also require a very specific technical know-how that limits the ability of residents to control the quality assurance process. Decision-making processes, including infrastructure design, carry various forms of uncertainty, including the risk of being criticised for ineffective use of public resources. Compliance with formal regulation is a way to reduce some of these risks, protect the legitimacy of actors and projects, and ultimately increase their influence capacity.

Design considerations: System reform changes incentive structures, the influence capacity of different actors and ultimately the circulation and distribution of resources, and hence will have to confront the resistance of networks benefitting from the status quo. The design of this intervention should therefore be guided by a network analysis that demonstrates: (a) how formal regulation and policy constrain collaboration and exchange between actors and networks; (b) how a change of regulation would transform the incentive structure and identify the actors and networks that would support and resist the change; and (c) the relative strength and control over institutional resources of these networks. With these three analytical outcomes, the lead organisation can decide which networks and actors to engage and when, and how to incentivise their collaboration, aligning their framings and visions, and ultimately building a coalition that is capable of pushing the reform, despite resistance from other networks. This may require drawing on other approaches, such as brokering agreements, empowering networks and behaviour change.

3.2 Modes of co-production

3.2.1 Knowledge and evidence

These are produced by lead organisations to: (a) influence the framings of problems; (b) question the effectiveness of regulation to achieve intended goals; or (c) learn how social norms affect certain groups (Burkardt et al. 2019; Leimona et al. 2015; Mitchell et al. 2015). Information and knowledge are most effective in influencing social, political, economic and public institutions when they support their intended goals and visions, and do not challenge the existing incentive structure. For instance, a lead organisation may contribute to:

- **A system reform** initiated by a local government concerned with its responsiveness and effectiveness, by conducting a survey among residents to find out the best way to engage them in local planning issues.
- **Brokering agreements** between a municipal government and a real estate developer about the proportion of social housing that the private sector should build as part of a municipality land concession. The lead organisation might conduct public opinion surveys to show how the agreement would sit within the existing incentive structure (connecting government, socioeconomic vulnerable groups and the private sector).

The extent to which knowledge and evidence can influence organisations and actors cannot be separated from recognition of the organisation producing it. This implies that lead organisations aiming to use this approach ought to self-assess their own authority and influence in relation to target groups.

3.2.2 Establish dialogue and collaboration platforms

Lead organisations can convene platforms for dialogue, negotiation and conflict resolution, between public, private and social organisations (Charli-Joseph et al. 2018; Chatterton et al. 2018; Österblom et al. 2017). This can foster relationships of trust between participants while they: (a) reframe problems; (b) align resilience and development visions; (c) negotiate agreements that offset disincentives to collaboration; and (d) agree on processes to reform regulated institutional practices where participants feel safe to experiment.

The premise here is that platforms are particularly effective in facilitating collaboration and exchange when the risk is tolerable for participants and can be offset by the expected gains from participating. For instance, CSOs may be reluctant to share data about a vulnerable group with government officials in an authoritarian regime, where there is a risk of surveillance or ethnic discrimination. However, where the risk is lower — for instance, selling the data for commercial purposes or political profiling of the population — and sharing the information can help inform social security policy, a similar organisation might be more willing to collaborate. To understand the potential success of convening platforms, lead organisations ought to consider the incentive structure from which risk and expected gains derive their value.

Lead organisations can use platforms to:

- **Achieve empowerment** to facilitate dialogue among neighbourhood associations to develop a resilience agenda and frame it as a political demand
- **Broker agreements** that help facilitate negotiations between well-articulated organisations, such as networks of neighbourhood associations and the government in relation to social security and the provision of basic services
- **Facilitate system reform** that produces inputs from a number of government departments and residents in relation to a transdisciplinary governance reform, such as mainstreaming risk into multisectoral planning, and
- **Facilitate behaviour change** that encourages commitments between members of a community to contribute to a community emergency fund.

Lead organisations will play an important role in mediating risk by carefully selecting participants whose incentives, framings and visions can be aligned, and involving brokers who can offer some safeguards in relation to the promises and statements of different participants. For instance, in the previous example a way to manage the collaboration risk could be the involvement of a reputable third party with long-standing commercial relations with both government and civil society group. This third party could store the data, anonymise it and aggregate it in a way that protects the identity of residents, but responds to the information needs of policymakers.

3.2.3 Experiential learning and pilot testing

Lead organisations can use this as a way to: (a) challenge deep-seated social norms and beliefs; and (b) incrementally adjust regulated institutional behaviour (Kleinhans, Falco and Babelon 2022; Sletto, Bashar and Acuña 2023). This approach is particularly helpful in contexts where change in social, economic or public practices is risky. There may be a lack of trust in existing knowledge, or the incentives for change for a single actor or network may be highly dependent on others adopting a similar approach. For instance, climate expert knowledge may not influence local harvesting cycles if the advice is considered 'foreign'. The implications of missing the right planting and harvesting season are severe for the economic security of farmers. In a context of systematic exploitation of racialised labour, such as the agriculture sector in Spain, even if business owners reject racial exploitation, they may be reluctant to implement more equitable employment policies because of their fear of becoming noncompetitive.

Experiential learning and pilot testing can be used to achieve behaviour change and system reform. For instance, lead organisations can use experiential learning to contribute to:

- **Behaviour change** by establishing farming schools where new techniques and resilient seeds are tested, and farmers develop first-hand tacit knowledge, and
- **System reform** by pilot testing new citizen consultative processes and public audits while conducting urban development planning.

Lead organisations will play an important role in offsetting the risk of experimentation, whether this is the result of a lack of trusted knowledge guiding the tests, or the need for a collective shift of behaviour. A good understanding of the incentive structure and the networks required to collectively shift behaviour will be helpful in maximising the chances of success.

4

Prototype interventions: a heuristic to connect context analysis and intervention design

This section describes three prototypes of co-production interventions that illustrate how to connect a contextual analysis to a programme design. As such, they are a useful resource to guide lead organisations while using this framework.

Each prototype is structured in a similar way. First, they describe the objective and domain of action and give a grounded example of what this would look like in real life. Next, they produce a context analysis, following the structure of Section 3. Drawing on these context analyses, each prototype also identifies windows of opportunity for an intervention to influence power dynamics, collaborations across networks and exchange of information and resources. They conclude by offering a possible intervention, specifying goals and modalities as defined in Section 4. Capitalising on the windows of opportunity identified through the context analysis, the intervention design is likely to contribute to urban resilience.

These prototypes are not connected to a particular city or a specific intervention, so they are not case studies. Their objective is to serve as a heuristic for lead organisations while deploying this framework, connecting context analysis to intervention design. However, both context analysis and intervention design of all prototypes are informed empirically. They have been developed following analysis of eight co-production case studies (Roden and Hutchin 2024), and the three regional consultations and bilateral interviews with key stakeholders and organisations described in the methodology in Annex 1.

4.1 Prototype 1: Climate risk evidence to influence government planning or private sector-led infrastructure development

4.1.1 Objective and domain of action

This prototype aims to influence the decisions of policymakers and the private sector through research and evidence to enhance their knowledge and understanding of current and future climate risk, with a particular focus on vulnerable

groups. It can be particularly helpful in addressing issues involving governance and planning, grey and green infrastructure, and climate finance. An example of this may be influencing the design of transport infrastructure led by a public–private partnership involving the national development authority, a number of municipal governments and a development bank.

4.1.2 Context analysis

Actor network/Influence/Resources

- These domains tend to be structured with relatively strong top-down decision-making mechanisms and resource channels. Actors such as governments, the private sector, international donors and development banks have a strong influence over development plans, infrastructure design or the procedures to shape climate finance.

Vision/Framing/Incentives

- Actors hold a relatively clear and inflexible vision and problem framing that the infrastructure project should address. The project is well-resourced and contributes to advancing the credibility and legitimacy of actors involved, whether as an effective development actor, responsive government or profitable company.

Regulation/Social norms

- Processes are well regulated. Research and evidence must adhere to safeguards, which to an extent stipulate methods and validation procedures. The selection of implementation partners also tends to be highly regulated, demanding quite specific technical skills to enter the bids, research or otherwise. However, depending on the context, actors working across public and private sectors may have developed relationships of trust and privilege over the years, through which preferential information about bids and selection criteria may be shared.

Windows of opportunity for change

- Given the hierarchical nature of the networks structuring this prototype, research and evidence will only influence the domain of action when aligned to its objectives and goals, and feeding into the dominant incentive structure.
- This means that, while research and evidence will not be able to challenge dominant narratives, they will be able to optimise decision making within the paradigm of dominant actors.
- Who gets access to influence the decisions, designs and investments is also restricted. Regulation, technical skills and informal norms play an important role in preventing untrusted actors and organisations from influencing these processes.

4.1.3 Design prompts: co-production goal and modality

Co-production goal: behaviour change

- Lead organisations can partner with local research groups that have had some involvement and influence over previous projects within the domain of action, and work with its dominant actors. This would give pro-poor climate research a channel to influence this network.
- Lead organisations ought to be able to influence the way in which these local research groups conduct research, so the risk experience of vulnerable groups is better considered and influences the domain of action.

Co-production modality: experiential learning and knowledge

- For this goal to be achieved, lead organisations must contribute to enhance the credibility of local research groups, increasing their willingness to integrate new ways to conduct research.
- Lead organisations may approach this through: capacity building on how to produce technical proposals that comply with the tight regulation of the domain of action, incorporating inclusive research methods training; or pilot testing a

collaborative intervention where the lead organisation acts as a capacity-building agency and quality assures the work of local research groups.

- In both cases, lead organisations ought to be well recognised by dominant actors. This would allow them to strengthen the credibility of research partners as they offer capacity-building sessions.

4.2 Prototype 2: Institutional strengthening of local governments for more efficient and accountable delivery of urban resilience

4.2.1 Objective and domain of action

This prototype seeks to extend the capacity of local governments to respond to climate risk by increasing its efficiency and effectiveness in risk-informed planning and implementation, and accountability to vulnerable groups. It uses behaviour change and eventual system reform of municipal governance to overcome these constraints, and can be particularly helpful for addressing governance and planning, and climate finance issues. An example of this is the reform of formal urban development planning procedures.

4.2.2 Context analysis

Actor network/Incentives

- Municipalities are embedded in political economy networks that establish a series of often hidden incentives connected to private businesses and political constituencies. They have strong leverage over municipal internal management, recurrent planning and investments. Political recognition and financial health through tax collection are important factors that shape municipal incentives within these networks.

Regulation/Capacity/Influence

- Decentralisation and devolution policy determine the degree of self-determination of municipal governments, but also the extent to which they are responsible for raising taxes and service delivery. These also influence the extent to which municipalities rely on private businesses to remain financially balanced, contributing to their relative negotiating power.

Vision/Framing

- The specific resilience and development vision of a government, and its framing of how it is being affected by incentives structures, matters. The vision partially determines municipal openness to explore alternative governance arrangements if disincentives for change are overcome. Municipal capacity to negotiate with the private sector and political lobbies is a measure of its ability to implement this vision.

Windows of opportunity for change

- Where the leverage of private businesses and political constituencies is such that municipal governments can afford to be more open and responsive to vulnerable groups, reforms are more likely to succeed.
  - This may happen when the interests of influential groups are somewhat aligned with those of vulnerable groups, which may be the case when they are exposed to the same climate stresses.
  - This may also occur when vulnerable groups are relatively organised, and exert a commensurate influence over the government compared to that of powerful lobbies.
- When the context suddenly changes, such as increasing frequency of urban floods and rapid influx of humanitarian and resilience funding, the incentive structure of a place also changes. This could make a municipal government more willing to engage in governance reform.
  - A pro-poor and inclusive governance vision among officials will increase the chances of the government taking advantage of windows of opportunity to implement governance reform.

- In contexts where municipalities are well-resourced, and have significant budget contributions from the central government or their resources stem from a diverse business base, their capacity to implement their vision is expected to be high.

4.2.3 Design prompts: co-production goals and modalities

Co-production goal: behaviour change and system reform

- Capacity building and technical advice are used to instil good governance values, revise existing policy and informal institutional practice, and identify areas where efficiency gains can be derived from better staff and project management — and more accountable, inclusive and responsive planning mechanisms.
- CSOs, especially those representing vulnerable groups, are brought to negotiate and influence the reform. Their involvement strengthens the bonds of accountability with the government, as well as contributing to increased government legitimacy.
- International funding can be leveraged to incentivise the governance transition. This can be done by combining resilience funding to support the implementation of municipal plans with resources to support behavioural change activities and municipal technical assistance.

Co-production modality: experiential learning and dialogue platform

- International resilience co-funding as the testing ground for the reform enhances government legitimacy through resilient service delivery. A phased approach, where funding is gradually reduced, allows municipalities to incrementally build accountability and trust bonds with vulnerable groups as patronage relations with powerful lobbies are eroded.
- This approach can be seen as an experiential learning that aims to encourage incremental behaviour change for municipal governments, aspiring to an eventual reform of governance and municipal management. A dialogue platform serves to articulate discussions between government and CSOs, and create a space to build bonds of accountability.
- A results-based funding approach, where resilience funding instalments in different phases are made conditional on the achievement of good governance indicators, also serves as experiential learning to gradually build trust relations with international donors. With more efficient, responsive and participatory performance, the credibility of municipalities as partners will be enhanced.
- This in turn can diversify municipal revenue sources and enhance their negotiation capacity with powerful lobbies that may seek to reverse the reform after the end of the intervention.

4.3 Prototype 3: Empowerment through networking municipal governments and CSOs

4.3.1 Objective and domain of action

This prototype seeks to enhance the capacity of municipalities and civil society networks to inform and influence nationally-led investments and plans. It can address issues under the domains of action of governance and planning, and grey and green infrastructure planning. An example may be fostering the coming together of a network of municipal governments and the alignment of CSOs to influence the design of an infrastructure plan that seeks to transform a city region in a connectivity node to facilitate international trade.

4.3.2 Context analysis

Actor network: regulation

- Large infrastructure development projects are often led by national development agencies, with funding committed at national level, involving multilateral agencies and development banks. In some contexts, the private sector plays a crucial role in producing a percentage of the investment capital. Here, national governments tend to establish public–private partnerships, whereby the investment risk is partially absorbed by the state, generally drawing on development

banks. The private sector leads the management of development works and then acquires exploitation rights for a fixed period, before the infrastructure is returned to the state for public use.

- Municipalities tend to have limited influence over the design and implementation of these projects, due to the weak accountability mechanisms of national development agencies, which tend to be para-public in nature with closer links to the national government.
- This in turn limits the influence of CSOs over national authorities, whose accountability is diluted as they respond to national constituencies.

Municipal conflicts: biophysical environment and regulation

- The capacity of municipalities to influence central government, and their alignment with its resilience, development and political vision, differ. This puts them in a difficult position in relation to an infrastructure project. Tense relations between central and local government can lead to political manoeuvring to benefit politically-aligned municipalities and exacerbate conflicts.
- The biophysical environment can also shape the influence of municipalities differently. This includes natural assets, such as access to the coast or exposure to hazards, or physical infrastructure, such as roads, airports and ports. Where decentralisation policy assigns municipalities governing rights over these resources, municipalities with large endowments are attractive to investors. Where economic development is the dominant vision of central government, investment attractiveness translates into local influence over the national government.

Civil society conflicts: social norms/intersectional identities, informal institutional practice

- Communities are often assumed to be united, but this is often not the case. In a context of heightened poverty, vulnerability and marginalisation, and where individuals have diverse histories, origins and identities, conflicts over economic opportunities, public investments and (tenure) rights are not uncommon. This can translate into conflicts between CSOs representing these communities.
- Where there is competition for scarce resources and political manoeuvring, municipal governments tend to trade public resources for political support from civil society groups. This can include municipal projects, such as urban regeneration and informal upgrading, enhanced service delivery or land tenure rights and housing construction permits. These patronage networks limit the potential for collaboration across CSOs.

Windows of opportunity for change

- In contexts with a vibrant civil society and municipal openness to participatory governance, lead organisations have the opportunity to foster collaboration and influence large infrastructure investments. They will have to mediate conflicts between these actors and offset disincentives for their alignment.
- Large infrastructure investments are windows of opportunity for the reconfiguration of city networks, as they affect resource distribution and power. They often have major territorial impacts, sometimes involving the eviction and relocation of residents. They also attract investment capital, as they may reduce production costs, easing the connectivity of commodities and valued workers. They are sometimes seen as opportunities to generate jobs and wealth, hence contributing to the government's legitimacy.
- The extent to which incentives associated with infrastructure projects offset the incentive structure that delimits conflicts between municipal and community networks will partly determine the possibilities of network reconfiguration.

4.3.3 Design prompts: co-production goals and modalities

Co-production goal: empowerment and brokering agreements

- Lead organisations can broker agreements to develop and institutionalise governance mechanisms supporting the constitution of networks of municipal governments. This can include: (a) a resilience agenda and common framing of the infrastructure project; (b) dialogue and negotiation mechanisms to revise priorities and produce a collective position; (c) oversight arrangements to ensure equitable benefits from agreements with national governments and

development authorities; and (d) conflict resolution and enforcement mechanisms to reduce the likelihood of municipal governments violating agreements and undermining the network.

- Lead organisations may pursue the empowerment of CSOs, by fostering their collaboration across municipal boundaries in similar ways to those explained above. They may also need to address deep-seated prejudices stemming from social norms and intersectional identities.
- By facilitating collaboration at two levels, municipal and civil society, lead organisations can aspire to overcome the limits on trans-municipal collaboration imposed by: (a) conflicts between municipalities; (b) conflicts between CSOs; and (c) conflicts resulting from the exacerbation of these through patronage relations between municipalities and civil society groups.

Co-production modality: dialogue platforms

- Lead organisations may convene dialogue platforms between carefully selected municipalities as a mechanism to broker agreements and institutionalise collaborative practices. The selection of municipalities ought to be informed by the conflict analysis and incentive structure, so lead organisations can assess which conflicts can be mediated by them and offset by the window of opportunity of the infrastructure project. A similar approach can be used to broker agreements between CSOs.

Conclusions

The preceding sections have presented the SECURe approach — a systematic and structured approach for homing in on contextually relevant urban resilience solutions through co-production. It has argued that lead organisations can use one of five domains spanning community assets and services, knowledge and data, governance and institutions, grey and green infrastructure, and finance for resilience. Once a domain is chosen, the SECURe approach urges those attempting to co-produce urban resilience solutions to understand the institutional, cultural and environmental context of the city and how these interact with different urban actors, networks and institutions. Understanding the urban context in this way reveals what a co-production intervention for urban resilience can effectively achieve in each context.

The report provides an operational roadmap to ensure that investments in urban resilience are aligned with specific contexts. Calibrating urban resilience interventions with the cultural, political and knowledge economies that shape governance and incentive structures in a city ensures that interventions are sustainable, equitable and therefore more impactful. Not doing so risks the development of resilience interventions that do not demonstrate an understanding of how processes of urbanisation accumulate risk, and are therefore unable to effectively mobilise actors, institutions and networks to collaboratively intercept these. This leads to incomplete or ineffective attempts at enhancing resilience.

In the current context of climate emergency, climate resilience impacts are urgently needed. Consequently, an approach like SECURe, that has an intimate and context-specific understanding of power and politics, may encounter a funding landscape that resists extended investments in preliminary research on urban politics, despite acting as an enabler for impact. This could be overcome if donors, researchers and practitioners establish knowledge hubs that bring together comparative research across cities. Aligning research methodologies across various urban settings and being able to compare the way in which contextual power and network configurations interact with the different methodological orientations and modalities presented in this report could help reduce these investments.

The goal is to develop transferable knowledge that could be used to inform interventions in other cities with minimal preliminary research efforts. Being able to situate and compare a new city and its topology of networks and politics among the constellation of topologies integrated as a knowledge hub may be helpful in identifying what approaches are best suited for the new context and what impacts can be expected.

Annex 1. Methodology

This annex provides an overview of the methodology that has been followed to produce this research report. The research deployed a combination of qualitative research methods to collect data and inform the development of the SECURe framework, including regional workshops, in-depth case studies, and semi-structured interviews and focus group discussions with experts. The research deployed an analytical framework (Barcena and Bahadur 2023) to analyse the data derived from a review of the literature on co-production methodologies within the bodies of work on climate change, development planning, sustainability, collaborative governance, social learning and participatory action research. Data have been analysed following a combination of inductive and deductive theme analysis, starting with codes drawn from the literature and inductively developing new codes from the data. The annex focuses first on the regional workshops, followed by the in-depth case studies, and concludes with the semi-structured interviews and focus group discussions with experts.

Regional workshops

Three regional workshops were organised, involving the participation of 120 organisations, representing researchers, donors, policymakers, development bodies and community-based organisations with a mandate and experience in urban resilience and adaptation. Participants were recruited through four rounds of invitation via email to organisations identified through a structured mapping exercise developed during previous programme work on urban climate justice. Each of these workshops was organised with a regional focus — including Latin America, sub-Saharan Africa and South Asia — for two reasons. First, a regional focus allowed for certain coherence among programmatic approaches to co-production, hence facilitating a generative dialogue among participants. Second, it facilitated participation, as workshops were organised considering time zones and predominant languages of regions. In the case of the Latin American workshop, simultaneous translation to Portuguese was offered. Other workshops were conducted in English.

Regional workshops followed complementary enquiry strategies. All of them explored the links between context, co-production methodologies and impact on urban resilience of programmes where participants have had an active role and engagement. However, as the analysis of data from one workshop revealed new themes for the development of the SECURe framework, these thematics were incorporated in subsequent workshops for more in-depth exploration. Each workshop lasted between 1.5 hours in the case of the Latin America workshop and two hours in the case of the sub-Saharan Africa and South Asia workshops, and had around 40 participants divided into three or four virtual breakout rooms. These were facilitated by one or two research assistants who had received training on the specific objectives and methodology of the session. During the workshops, inputs were collected through digital interactive whiteboards, where participants could add virtual sticky notes in real-time.

The **Latin American workshop** comprised three breakouts and a plenary session, exploring the following questions:

1) What is the challenge that each of the initiatives are trying to tackle? Why is it important? Facilitators prompted answers by asking Who is vulnerable? How is the vulnerability of this group changing over time? Why? What is the urgency of this issue? How is the climate/hazard/environmental context changing?
2) What is the approach of the intervention? How is it trying to tackle the challenge? Facilitators promoted answers by asking How is it producing new knowledge? Who is involved? How is it making this knowledge relevant for policy/practice/planning?
3) What is it about the context that makes the approach of the intervention impactful or not so impactful? What are the enablers/blockers? Facilitators prompted answers by asking participants to think of policy-governance context/priorities, existing dialogue platforms, CSOs, research context.
4) The plenary session aimed to elicit similarities across interventions and contexts. Facilitators prompted answers by asking What common challenges are addressed by interventions and what challenges seem important but are not sufficiently addressed? What common approaches are deployed by interventions and what are the approaches that seem promising but are not often used? What elements have facilitated or hindered the impact of interventions?

The **sub-Saharan Africa workshop** used as the entry point for its enquiry the way in which co-production interventions have engaged, facilitated dialogue and encouraged transformative change in their specific context. When compared with the Latin American workshop, this approach reversed the strategy of enquiry, foregrounding the intervention rather that the context. In so doing, the sub-Saharan Africa workshop sought to elicit the specific ways in which an intervention interacted with its context. To this end, the workshop was organised in four virtual breakout groups who explored the following questions:

- Have you been involved in multistakeholder decision-making processes to find solutions for climate-induced problems in cities? Facilitators prompted responses by asking about the objectives and context of the intervention; and the institutional structure of the intervention (how it was set up, credibility, capacity for action, sustainability over time).
- Tell us about the factors that enabled multiple stakeholders to engage in this decision-making process. Facilitators prompted responses by asking about actions to incentivise participation and overcome participation barriers, and external factors that conditioned the success of these actions.
- Tell us about what worked well (or what did not) to ensure a meaningful dialogue took place between participants. Facilitators prompted responses by asking about tools, exercises and methodologies to facilitate dialogue; and the effect of these approaches on expression and discussion spaces for different stakeholders, particularly those in the most vulnerable groups.
- What difference did this process make and how was the knowledge it generated used? Facilitators prompted responses by asking about changes and impact of intervention in urban governance and urbanisation processes. Changes were defined as institutionalised ways of making decisions, producing knowledge that influences decisions by the government, community/CSOs, households or the private sector.

The **South Asia workshop** used as the entry point for its enquiry the context of a particular intervention, teasing out how its institutional, political, cultural and economic structure drove urban development and the production of climate risk and vulnerability. When compared to the workshops in Latin America and sub-Saharan Africa, this strategy foregrounded the context-specific drivers of urbanisation and risk. In doing so, it offers an analytical approach that elicits responses reflecting on how co-production methodologies influence development and resilience pathways, by influencing their drivers. To this end, the workshop was organised in four virtual breakout rooms, with participants exploring the following questions:

- Think of the city in which your intervention took place and describe how processes of urbanisation might be generating risk. Facilitators prompted responses by asking about the link between urban development and the processes that produced risk and vulnerability in the city.
- Describe the institutional, political, cultural and economic challenges that produce the risks that you identified. Facilitators encouraged responses by prompting political, institutional, cultural and economic structures that could be connected to the urban development and risk production processes in their context.
- Have you been involved in multistakeholder decision-making processes to find solutions for climate-induced problems in cities? How did your intervention foster engagement, dialogue and action to overcome the challenges identified? Facilitators encouraged responses by prompting participants to reflect on incentives to participation and tools to mediate dialogue and collective action.

In-depth case studies

Nine case studies were analysed to inform the development of the SECURe framework (see Table 1). Case study contributions were requested via email, using the same distribution list as for the workshops. Invitations to participate were extended to organisations who had deployed co-production methodologies to facilitate urban climate action. Interest in the process was expressed by 29 organisations, who submitted abstracts for evaluation through an online form that explained what content was expected. Abstracts were evaluated using a grid that assessed the extent to which case studies showed the deployment of co-production methodologies, addressed climate-related stresses, described a methodological innovation and connected the deployment of co-production methodologies to their context.

As a result of this process, nine case studies were selected for full elaboration. Selected organisations were financially compensated for the time invested in producing a full case study to reduce participation biases related to institutional resources.

Table 1. Case study contributions

Case study	Authors	Location
Case study 1: Adaptation of a city square, *Plaza la Paca,* into a functional green space	Daniela Mastrángelo and Andrea Ines Paoloni	Rosario, Argentina
Case study 2: Climate change impacts and adaptation strategies of waste pickers	Sonia Diaz, Women in Informal Employment: Globalizing and Organizing	Brazil
Case study 3: 'Zero Waste Community' initiative	Enrique Kato	Barrio Arriba, Mexico
Case study 4: Co-production of defence strategies for occupants of abandoned buildings	Francisco de Assis Comaru and Talita Gonsales	São Paulo, Brazil
Case study 5: CityAdapt regional initiative urban resilience interventions	Ophélie Drouault	Kingston, Jamaica San Salvador, El Salvador Xalapa, Mexico
Case study 6: Empowering communities for resilience: a story of Unnat Basti (model slum settlement) development	Aravind Unni	Jagannathpur, Ranchi, India
Case study 7: Participatory methodology for monitoring temperature and humidity	Milagros Sanchez, Bárbara Pasik and Patricia Himschoot	Barrio 20, Buenos Aires, Argentina
Case study 8: A placemaking approach for climate action — an urban experiment	Mark Ojal	Luthuli Avenue, Nairobi, Kenya
Case study 9: Sowers of hope: Urban gardens for food security and community climate resilience	Elsa María Arroyo Hernández	Ecatepec, Temoaya, Toluca and Tejupilco municipalities, Mexico

Full case studies were requested to follow a predefined structure, responding to the emerging analytical framework derived from regional workshops and detailed literature review. To ensure that participants fulfilled this requirement, an online form was provided with fields aligned with the intended analytical frameworks. As such, case studies investigated the contexts of intervention through a lens that highlighted the institutional, economic, cultural and political drivers of urbanisation and risk production. They investigated the methodologies and tools they deployed to engage and facilitate dialogue and collective action, overcoming the barriers identified through the context analysis. Finally, they were invited to reflect on the impact these interventions produced and how the context shaped potential for impact on urban resilience. Further to the submission of case studies, interviews with authors were conducted for clarification and further investigation. These were conducted virtually, with the exception of two, which used email exchange due to scheduling conflicts.

Data analysis was done using a combination of inductive and deductive coding, derived from the workshops and the detailed literature review on co-production methodology (Roden and Hutchin 2024).

Expert consultation through semi-structured interviews and focus group discussions

Findings from the literature review, regional workshops, and case studies were discussed through semi-structured interviews and focus group discussions with urban resilience and knowledge co-production experts. To this end, the project established an advisory board composed of 30 experts (16 women, 14 men), with representation across donor, research, practitioner and policy-influencing organisations.

Four advisory board consultations were conducted in the course of the project, lasting two hours each. Consultations were structured similarly, first presenting emerging research findings and then inviting feedback on the relevance of findings, with guidance on which elements to focus on in subsequent consultations. A range of tools were used to collect expert advice, including open discussions, interactive digital whiteboards and participant polls. One-to-one unstructured interviews were held with the chair and co-chair of the advisory board.

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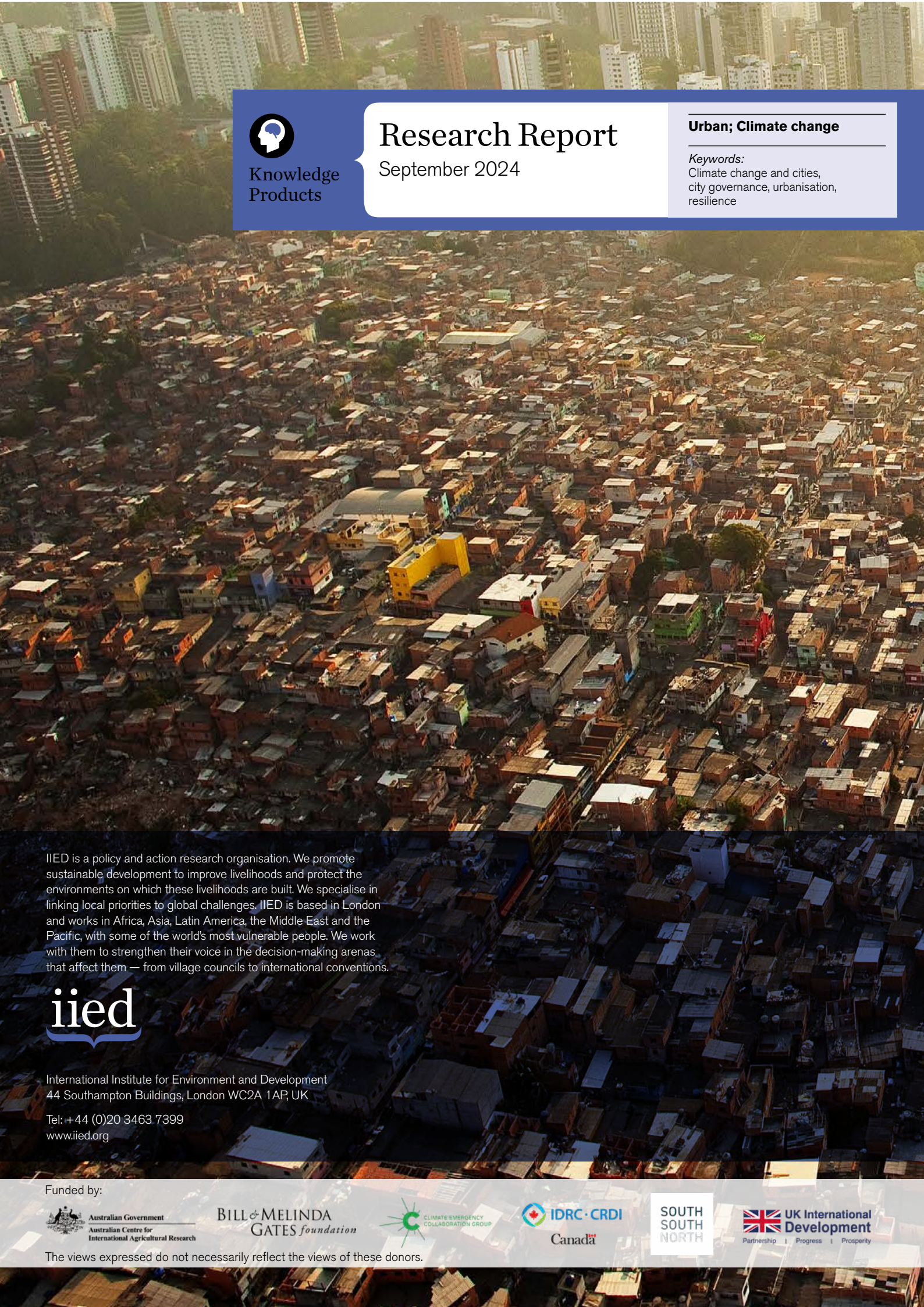

Knowledge Products

Research Report

September 2024

Urban; Climate change

Keywords:
Climate change and cities, city governance, urbanisation, resilience

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