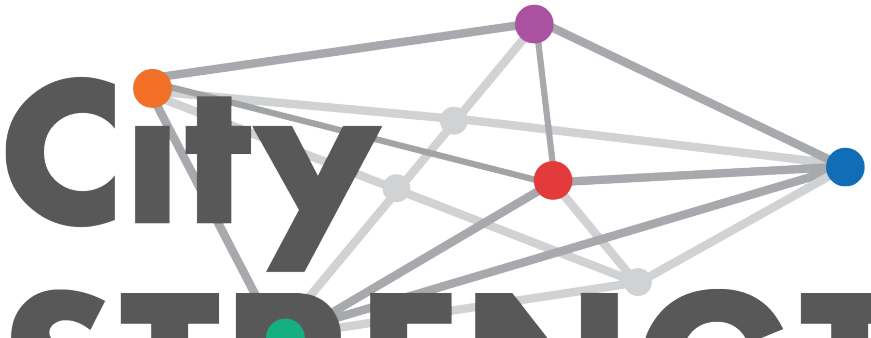


CityStrength

RESILIENT CITIES PROGRAM

CityStrength Diagnostic

Methodological Guidebook

May 2018

WORLD BANK GROUP

GFDRR

Global Facility for Disaster Reduction and Recovery

CityStrength Diagnostic

Methodological Guidebook

May 2018

WORLD BANK GROUP

GFDRR
Global Facility for Disaster Reduction and Recovery

Contents

Acknowledgements

The development of the CityStrength Diagnostic and its revision was led by Catherine Lynch with guidance from Stephen Hammer and Maria Angelica Sotomayor. It was financially supported by a grant from the Global Facility for Disaster Reduction and Recovery.

The methodology and guidebook benefited from the contributions of: Fernando Armendaris, Margaret Arnold, Axel Baeumler, Judy Baker, Farouk Banna, Edgar Blanco, Timothy Bouley, Maria Cordeiro, Giuliana De Mendiola, Marc Forni, Roger Gorham, Marketa Jonasova, Silpa Kaza, Somik Lall, Barbara Minguez Garcia, Thomas Moullier, Neha Muhki, James Newman, Niels Holm-Nielsen, Rosanna Nitti, Jonas Parby, Tatiana Peralta Quiros, Ifeta Smajic, James Tefft, Horacio Terraza, Asmita Tiwari, Roland White, Astrid Westerlind Wigstrom, and Hal Wolman.

The sectoral module on Cultural Heritage was produced in collaboration with UNESCO and a technical review of the CityStrength Diagnostic was conducted by Arup International.

CityStrength Pilot in Can Tho, Vietnam

Margaret Arnold
Marc Forni
Roger Gorham
Stephen Hammer
Hoa Thi Hoang
Pavel Kochanov
Catherine Lynch
Iain Menzies
James Newman
Dzung Huy Nguyen
Hoa Thi Mong Pham
Ifeta Smajic
Van Anh Thi Tran
Astrid Westerlind Wigstrom

CityStrength Pilot in Addis Ababa, Ethiopia

Abebaw Alemayehu
Ahmed Alkadir
Fernando Armendaris
Gulilat Berhane
Issa Diaw
Roger Gorham
Alex Kamurase
Catherine Lynch
James Markland
Rosanna Nitti
Chukwudi Okafor
Elisa Portale
Manjusha Rai
Dinkneh Tefera
Astrid Westerlind Wigstrom

CityStrength Implementation in Ethiopia

Yusuf Haji Ali Abdurahman
Asferachew Abate Abebe
Abebaw Alemayehu
Fernando Armendaris
Alemseged W Yohannes Bedane
Tassew Bekele
Donald Bliss
Chalida Chararnsuk
Christopher J. Chung
Sophia Craig
Assegedetch Legesse Demissie
Issa Diaw
Mareile Drechsler
Nunush Elias
Gulilat Birhane Eshetu
Wondosen Feleke
Stuart Fraser
Dr. Tegegne GebreEgziabher
Roger Gorham
Ejigayehu Teka Habte
Sonu Jain
Sheila Kamunyori
David John Lerpiniere
Ato Fikre Mengiste
Thomas Moullier
Abdu Muwonge
Andrew Norris
Kanta Rigaud
Charles Scawthorn
Toshihiro Sonoda
Maria Angelica Sotomayor
Dinkneh Tefera
Asmita Tiwari
Berhanu Kassa Woldemichael
Gelila Woodeneh
Abebe Zerihun

CityStrength Implementation in Greater Accra

Frederick Amoako Addison
Rachael Dede Annan
Sajid Anwar
Fernando Armendaris
Roderick Babijes
Demba Balde
Naraya Carrasco
Carl Christian Dingel
Harold Essekou
Charlotte Hayfron
David Lerpiniere
Emmanuel Nkrumah
Martin Onyach-Olaa
Kadir Osman Gyasi
Jonas Parby
Richard Poulter
John Richardson
Su Jung Song
Maria Angelica Sotomayor
Asmita Tiwari

Terminology

Actions	'Soft' measures to enhance resilience such as capacity building, institutional strengthening, or regulatory improvements.
City Focal Point	Local government staff responsible for working with the World Bank on day-to-day planning and implementation issues.
CityStrength Coordinator	World Bank staff responsible for providing support to Task Teams that are implementing the CityStrength Diagnostic with client governments.
DRM	Disaster Risk Management
Facilitator	Individual who serves as an unbiased enabler of cross-sectoral dialogue during the Launch Workshop and Prioritization Session.
GDP	Gross domestic product
ICT	Information and communications technology
Investments	'Hard' measures to enhance resilience such as the construction of infrastructure, establishment of safety net systems, or creation of service delivery programs requiring significant financial resources.
NGO	Non-governmental organization
Resilience	The capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience. A resilient city can adapt to a variety of shocks and stresses while still providing essential services to its residents, especially the poor and vulnerable.
SARS	Severe acute respiratory syndrome
Shock	A single unpredictable event.
Stress	An ongoing hardship that a community experiences every day.
Task Team	Group of World Bank staff and consultants with multi-sectoral expertise responsible for implementing the CityStrength Diagnostic.
Task Team Leader	World Bank staff responsible for guiding the implementation of the CityStrength Diagnostic and leading dialogue with government officials.


TEA
MẮT KÍNH
Á · ÂU
KHUYẾN MÃI MÙA HÈ


NHÀ THÔNG TIN
Rabbit

Introduction

With most of the global population and capital goods concentrated in urban areas, cities are key to social development and economic prosperity. Generating more than 80 percent of global GDP, cities are drivers of national economic growth and innovation, and act as cultural and creative centers (World Bank 2013a). But the rapid pace of urbanization also brings challenges. Population growth and urbanization are projected to add 2.5 billion people to the world's urban population by 2050, and most of this expansion—nearly 95 percent—will occur in developing countries with limited planning (OECD, 2017). With a greater concentration of people, assets, and infrastructure in urban areas, an increasingly complex range of shocks and stresses can jeopardize human wellbeing and hard-won development gains.

The risks that cities face are becoming more complex and unpredictable. Urbanization, globalization, and climate change are interacting in a way that is unprecedented; and, at the same time, urban service delivery systems are becoming increasingly interlinked. This requires different ways of thinking about cities and how to address the shocks and stresses—both natural and manmade—that could inhibit their ability to achieve development goals.

Shocks impact on all aspects of development. Impacts are felt directly through the loss of lives, livelihoods, and infrastructure, and indirectly through the diversion of funds from development to emergency relief and reconstruction (DfID, 2005). Just the impact of extreme natural disasters is equivalent to a global US$520 billion loss in annual consumption, and forces some 26 million people into poverty each year (World Bank, 2016).

Moreover, shocks disproportionately affect the urban poor given that they live in the most exposed areas—often in informal settlements on the edge of the cities—and have poor access to early warning systems or adequate infrastructure (ODI, 2016). When poor people are affected, the share of their lost wealth is two to three times that of the nonpoor, largely because of the nature and vulnerability of their assets and livelihoods. During the 2011 Thailand floods, for example, 73 percent of low-income households in Bangkok were affected compared to only 21 percent of the total city population (UNISDR, 2013a). Furthermore, countries that experienced major violence over the period 1981-2005 have an extreme poverty rate that is 21 percentage points higher than countries with no violence (World Bank, 2011a). And, fragile and conflict-affected countries typically have the highest poverty rates (United Nations, 2015).

Given this global context, many development partners and other organizations are active on the topic of resilience in cities. There has been a recent upswing in the development and promotion

of innovative programs, tools, and initiatives. For example, UN-Habitat's City Resilience Profiling Tool, designed as a self-assessment, aims to help city officials and other stakeholders identify a host of possible risks facing urban areas and prioritize policies and action plans accordingly. Arup International and the Rockefeller Foundation developed the City Resilience Framework, which provides a lens through which the complexity of cities and the numerous factors that contribute to a city's resilience can be understood. The framework is being used to facilitate agenda-setting sessions in cities selected to participate in the 100 Resilient Cities Challenge. UNISDR has the Disaster Resilience Scorecard for Cities, which is intended to provide a single integrated perspective on a city's total disaster resilience posture. The World Bank launched the City Resilience Program in 2017 with the objective of facilitating ambitious, large-scale urban resilience investments in developing countries through the deployment of an integrated platform of resilience-enhancing measures in cities, including upgrading infrastructure, strengthening governance and policies, and broadening of financing options for capital investment.

In an effort to promote partnership and enhanced impact for cities, nine institutions, including the World Bank, formed the Medellin Collaboration on Urban Resilience in 2014. The aim of the collaboration is to facilitate the flow of knowledge and financial resources necessary to help cities become more resilient to disruptions related to climate change; disasters caused by natural hazards; and other systemic shocks and stresses, including the socio-economic challenges associated with rapid urbanization.

Within this global context, the CityStrength Diagnostic was developed in 2014 to help World Bank staff apply this new holistic approach to urban resilience to operations. It was designed to help facilitate a dialogue about risks, resilience, and the performance of urban systems among stakeholders, which include multiple levels of government, civil society, residents, academia, private and non-profit sectors, and other development partners. It is important to note that CityStrength Diagnostic is an engagement process, not an analytical study. The CityStrength Diagnostic results in the identification of priority actions and investments that will enhance the city's resilience as well as increase the resilience-building potential of planned or aspirational projects. It promotes an integrated and holistic approach that encourages cross-sectoral collaborations to more efficiently tackle existing issues and to unlock opportunities within the city.

Because cities depend on a complex network of infrastructure, institutions, and information, the resilience of each informs the resilience of the city as a whole. With this in mind, the CityStrength Diagnostic is structured around sectoral modules that cover topics within the city and metropolitan area purview. These modules were based on a review of over 40 tools and methodologies related to resilience and the analysis of over 600 indicators contained within them. Some modules were created specifically for the CityStrength Diagnostic.

The CityStrength Diagnostic can be used in any city regardless of size, institutional capacity, or phase of development. As a qualitative assessment, the effectiveness of the diagnostic depends on

the capacity of the specialists involved, significant stakeholder participation, and local government commitment to the process and follow-on engagement. One of the greatest assets of the CityStrength Diagnostic process is that it brings together diverse stakeholders to not only develop joint solutions to "wicked" urban resilience problems but also to raise awareness and necessary momentum for implementation of identified joint solutions.

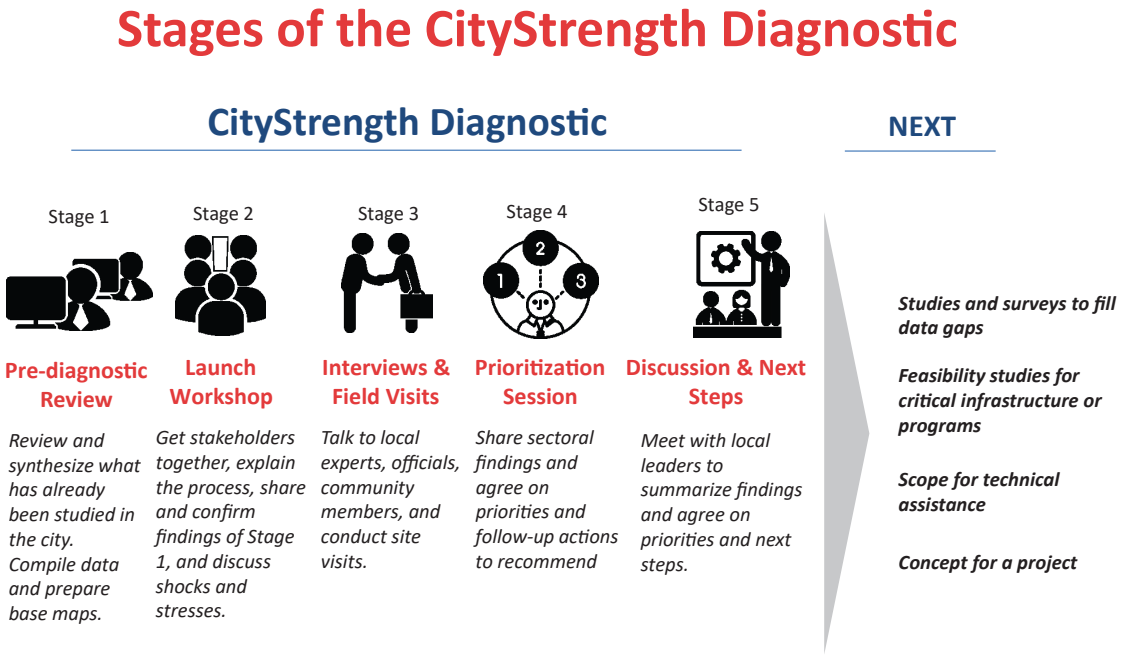
Since its inception, the CityStrength Diagnostic has been implemented in 28 local governments, including at the metropolitan level in 16 municipalities that make up the Greater Accra Region in Ghana as well as in 9 regional capitals and a charter city in Ethiopia. It was first piloted in 2 cities—Can Tho, Vietnam; and Addis Ababa, Ethiopia—which provided very different contexts for assessing the benefits of the process. Can Tho is a city of 1.25 million residents located on the Hau River in the Mekong Delta. It suffers from chronic river and tidal flooding and is likely to be impacted significantly by sea-level rise. In contrast, Addis Ababa is the largest city in Ethiopia with a population of approximately 3.3 million that is anticipated to double by 2020. Over 28 percent of the population is officially below the poverty line, and it is estimated that 29 percent of households have an unemployed adult. Addis Ababa is challenged by water scarcity, urban fire, unprecedented urban growth, and social vulnerability, among other shocks and stresses.

The rationale for this revised second edition of the CityStrength Diagnostic Guidebook is threefold: (a) to integrate lessons learned from the implementations at different scales such as multiple cities coordinated by the national government and multiple cities as part of a metropolitan region; (b) to add new sectoral modules that have been developed based on client demand; and (c) to convert the diagnostic into a web-based tool in which all modules, exercises, and prioritization lenses are independently accessible.

Stages of Implementation

The CityStrength Diagnostic consists of 5 stages, book-ended by a front-end dialogue with the client government on the topic of urban resilience and a back-end, longer-term engagement through financing or technical assistance (Figure 1).

Figure 1: Stages of the CityStrength Diagnostic



Initiate the dialogue, the first step, includes ensuring the participation and engagement of city leaders and World Bank Management from the start and throughout the entire diagnostic process. At this time, decisions are taken such as selecting the sectors to be included, identifying the City Focal Point on the government side and the Task Team on the World Bank side, and defining a timeline.

Stage 1 focuses on collecting information and leveraging efforts that have already been undertaken in the city. A review is conducted of all relevant studies, reports, or plans developed by the city, World Bank, or other development partners. *Who prepared it? Why? And how was it used?* Key findings are summarized in order to brief participants during the Launch Workshop as well as Bank specialists supporting implementation of the diagnostic. Specific background studies or data collection initiatives, including hazard mapping and urban growth trends, could also be undertaken during this stage depending on the context.

Stage 2 is a Launch Workshop. The objectives of the workshop are to officially launch the CityStrength Diagnostic process in the city, allowing the opportunity to explain the concept of urban resilience,

to learn about the city's goals and objectives, to verify the initial findings from the first stage, to introduce the multi-sectoral World Bank team, and to engage with a broad set of stakeholders.

Stage 3 consists of interviews and site visits to help the Bank specialists better understand the challenges and opportunities in the city and to qualitatively assess how well key systems are performing in relation to defined *Qualities of Resilience*. It is also meant to give the city departments the opportunity to learn about each other's work programs and ongoing resilience activities.

Stage 4 defines the time for identification and prioritization of actions and investments to enhance resilience in the city. This is done using 4 "lenses" to qualitatively identify measures that the Bank specialists recommend as the most important for the city leaders to consider. While the ultimate goal of the CityStrength Diagnostic is to enhance the city's long-term resilience, it is important to understand the nature of any immediate threats to people and assets (Lens 1). It is also crucial to understand dependencies and interdependencies within urban services and systems, which can cause cascading disruption or failure, or compound existing vulnerabilities (Lens 2). Thinking holistically (rather than sectorally) about the city's resilience (Lens 3) is necessary to identify critical gaps or areas of weakness at the city scale. Finally, aligning recommended actions and investments with local goals and objectives (Lens 4) increases the likelihood that the recommendations will have sufficient stakeholder support to become a reality.

Stage 5 begins a period of continued dialogue with local leadership and other stakeholders to present the findings of the diagnostic, discuss recommendations, and agree on priorities and next steps. A description of the process and recommendations could then be captured in a publication that the city can use for internal purposes or as a tool to seek funding from development partners.

Long-term Engagement. The diagnostic will identify specific actionable projects that can be implemented by the city with the technical or financial support of the World Bank or other development partners. Like all World Bank activities, decisions about the World Bank's role will be driven by the government and relevant Country Management Unit.

When is the CityStrength Diagnostic an Appropriate Tool for Engagement?

The World Bank has many tools available to task teams to support technical assistance and operations related to resilience, especially focused on disaster risk management and climate change adaptation. CityStrength Diagnostic is unique in that it specifically targets the urban context with a holistic approach, one that is inclusive of a diverse set of shocks and stresses and evaluates multiple sectors. CityStrength promotes urban resilience in the context of a broad spectrum of risk that could result from a wide range of shocks and stresses. As an engagement tool, it is especially useful for starting a dialogue with a new World Bank client or when the client is at a very early stage in its thinking on resilience issues.

How to Use this Guidebook

This Guidebook is designed for use by World Bank task teams who are implementing the CityStrength Diagnostic in a client country, metropolitan region, or city. This new methodology is evolving, reflecting state-of-the-art approaches to holistic urban resilience. As more cities implement the diagnostic, this Guidebook and other guidance materials will continue to be updated and revised.

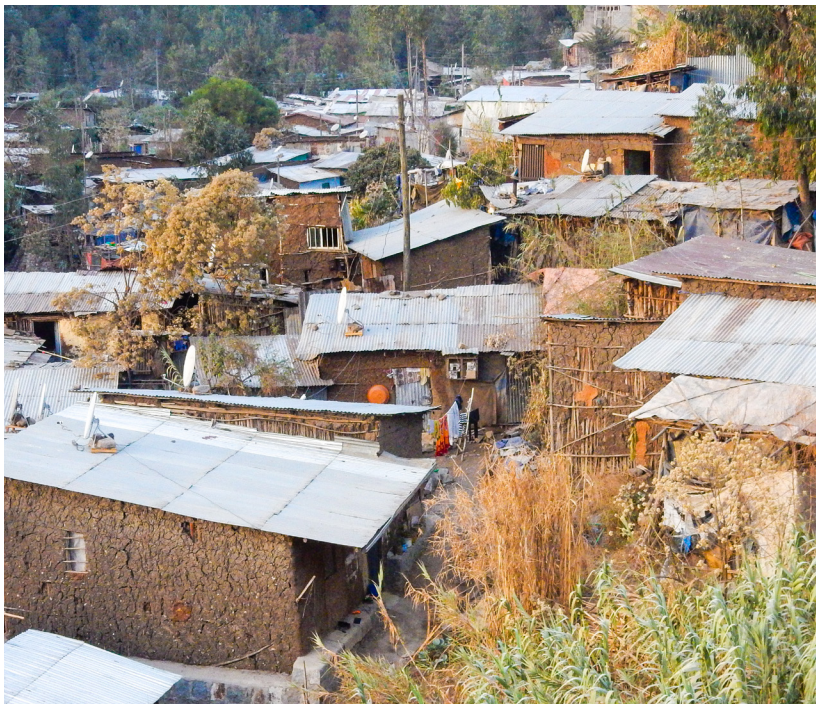
For the team implementing the diagnostic, the Guidebook provides an introduction to urban resilience, offering guidance on initiating the CityStrength Diagnostic process, forming a strong implementation team and stakeholder coalition, and detailing the 5 main stages of the diagnostic. Each chapter offers step-by-step instructions, advice, and examples from the implementations of the tool in different contexts. A series of resources are provided with the Guidebook. Teams choosing to use the CityStrength Diagnostic to further a dialogue with a city client will receive support from the CityStrength Coordinator within the World Bank as well as access to a repository of useful materials such as templates, sample communications and agendas, and lessons learned from colleagues.

Each implementation of the CityStrength Diagnostic will be different; every city has a unique set of attributes and development constraints. This Guidebook offers a framework that can be used by World Bank specialists to guide engagement with a client government or to obtain advice on matters specific to different stages. Each team's experience will help to enrich the methodology. It is therefore important for each team to share its ideas and lessons learned with the aim of improving the Guidebook and the effectiveness of the CityStrength Diagnostic.

.


65K - 7114


HDSC
HDSC
HDSC
HDSC



What is Resilience?

Resilience is the capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.[1] A resilient city can adapt to a variety of shocks and stresses while still providing essential services to its residents, especially the poor and vulnerable.

Resilience is not synonymous with disaster risk management or climate change adaptation. Urban resilience accepts the possibility that a wide range of disruptive events—both stresses and shocks, either natural or human induced—may occur in a city but are not necessarily predictable. Disaster risk management is typically limited to natural hazards and, to a growing extent, incorporates climate change adaptation.

Resilience is not synonymous with sustainable development either. Resilience works toward long-term sustainability objectives—meeting the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987)—but specifically embraces the turbulence of daily life (Arup International and others, 2012). Resilience is about learning to live with the spectrum of risks that exist at the interface between people, the economy, and the environment. Where sustainability aims to put the world back into balance, resilience looks for ways to manage in an imbalanced world (Zolli, 2012). Resilience and sustainability are complementary approaches.

Resilience is more than the ability to recover from shocks; it incorporates the ability to avoid shocks and to manage risks. The *World Development Report 2014, Risk and Opportunity: Managing Risk for Development* (World Bank, 2013a) argues that risk management can be a powerful tool for development and contends:

> …the solution is not to reject change in order to avoid risk but to prepare for the opportunities and risks that change entails. Managing risks responsibly and effectively can save lives, avert economic damages, prevent development setbacks, and unleash opportunities. It has the potential to bring about security and a means of progress to people in developing countries and beyond.

Trade-offs and synergies must be considered in order to identify "win-win" situations that reduce the possibility of loss and increase potential benefits.

Resilient city development is a dynamic and ongoing process focused on strengthening the ability of the urban system to change, adapt, absorb, and learn from a wide range of acute shocks or chronic stresses it encounters along its path toward sustainable development.

1 Adapted from 100 Resilient Cities pioneered by the Rockefeller Foundation.

Resilience as a Development Priority for Cities

Natural disasters like storms, droughts, and earthquakes are not the only risks cities face. Cities are also vulnerable to economic downturns, crime and violence, public health epidemics, mass migrations, and even infrastructure failure. These shocks can have devastating effects, bringing some or all of an urban system to a halt, and possibly causing asset damage and loss of life. Acute shocks and chronic stresses can also have a deep and lasting impact on human development. Disaster losses are often linked with or exacerbated by poverty and vulnerability of the poor that stem from socio-economic and environmental imbalances. While the origins and long-term impacts of shocks may differ dramatically, the necessity of the city to absorb, adapt, and continue functioning in the short-term remains constant.

To put the economic impact of these risks into perspective, the United Nation's *Global Assessment Report on Disaster Risk Reduction* highlights that for 3 consecutive years direct economic losses from disasters soared past US$100 billion: total expected annual global loss from earthquakes and cyclone wind damage alone now amounts to US$180 billion per year (UNISDR, 2013a). Moreover, sea-level rise and subsidence in the 136 largest coastal cities could result in losses of US$1 trillion or more per year by 2050 (Hallegate and others, 2013). The Arab Spring resulted in US$800 billion in lost output (HSBC, 2013) and over 50,000 deaths (Ibish, 2012) in the 7 hardest-hit countries, Singapore's exposure to SARS cost the government nearly US$570 million (Sitathan, 2003), and the collapse of the Rana Plaza building in Dhaka in 2013 resulted in the death of over 1,000 people. Cities' greatest strengths for economic growth—efficiency and interrelation of infrastructure and density of population—can also be their potential weaknesses to cascading failure during overstress from disasters (Graham, 2010).

The resilience of a city depends on the overall performance and capacity of its systems and not solely on its ability to cope with specific natural hazards or to adapt targeted areas to the impacts of climate change (Brugmann, 2012). Cities are complex systems; and like all systems, a city depends on the smooth functioning of its constituent elements and the larger organization in which it is nested. A city's resilience is therefore affected by the resilience of those smaller and larger systems. Disruptions to the basic services they provide can have cascading impacts well beyond the city itself. The complexity of cities also makes resilience building especially challenging. Focusing on one policy goal such as climate protection without considering others can lead to undesirable outcomes. These decisions may come as explicit trade-offs, unintended consequences, or some combination of the two. Building a resilient city, therefore, requires a holistic, multi-sectoral, and flexible approach to urban development.

Shocks and Stresses

Managing risks from specific shocks and increasing overall resilience of urban systems are different yet complementary practices. The first requires knowledge of the specific shocks the city faces and that the events are measurable and predictable. However, many such shocks and stresses are unpredictable. Resilience building depends on the city's ability to avoid shocks and to manage risks when faced with uncertainty. In these circumstances, the more successful management and decision-making approach is to focus on resilience, including increased risk tolerance, flexibility, and adaptability (Comfort and others, 2010). And resilience focuses on enhancing the performance of a system in the face of multiple shocks and stresses rather than preventing or mitigating the loss of assets due to specific events (Ove Arup and Partners International Limited, 2014).

Considering a broader spectrum of risks in a city is the opportunity to take a strategic view across different types of risks, including the underlying drivers of the risks and the systems they impact, and thereby better prioritize risk mitigation interventions. CityStrength Diagnostic promotes urban resilience in the context of a broad spectrum of risk that may result from a wide range of shocks and stresses.

- Shocks are sudden events that impact the performance of a system. There are many different types of shocks that can strike at different levels, including disease outbreaks, floods, high winds, landslides, droughts, or earthquakes. Outbreaks of fighting or violence, or severe economic volatility, could be included in this category as well.

- Stresses are longer-term trends that undermine the performance of a given system and increase the vulnerability of actors within it. These can include natural resource degradation, loss of agricultural production, demographic changes (e.g., aging and depopulation), climate change, political instability, or economic decline (DfID, 2011). A significant stress facing many cities in developing countries is urbanization itself due to the pressure it places on urban systems and the delivery of basic services. Stresses can be cumulative, compounding gradually until a tipping point is reached, and transformed into a shock.

The CityStrength Diagnostic methodology includes a framework for classifying shocks and stresses (see Figure 10). A total of 96 unique shocks and stresses that could occur in cities have been identified and are listed in Resource 1. Within this universe of shocks and stress, over half are human induced.

Qualities of Urban Resilience

What makes an urban system resilient? Using a systems thinking approach, it is possible to consider how well each element of a city reflects qualities that are typically present in resilient systems and are distinct from other qualities (e.g., efficiency, competitiveness) that might be associated with sustainability or economic performance (Figure 2). The evidence that underpins the qualities has emerged empirically from research on resilient systems, generally as well as specifically in cities. They can be used to describe physical assets, human behavior, network systems, and institutional processes.

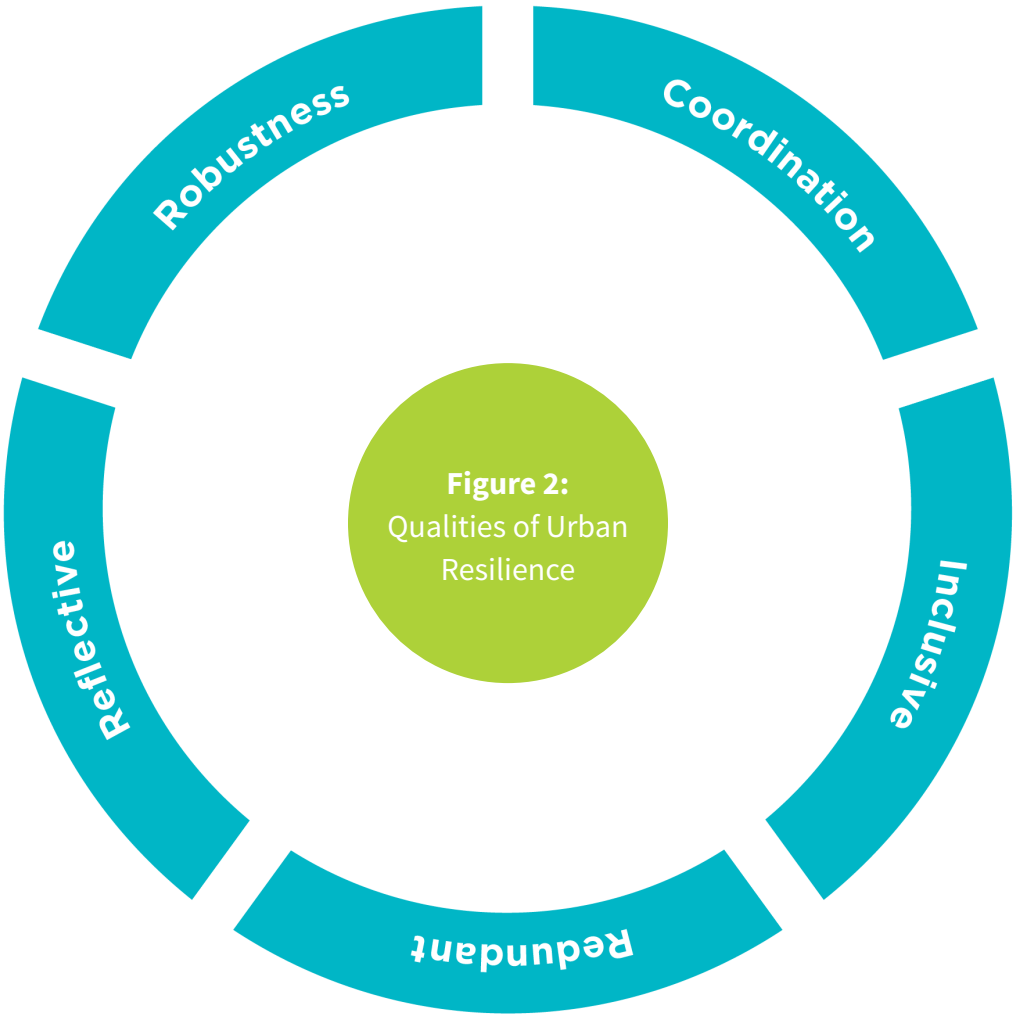


Figure 2: Qualities of Urban Resilience

Robust

Robust systems include well-conceived, -constructed and -managed physical assets so that they can withstand the impacts of shocks without significant damage or loss of function. Robust design anticipates potential failures in systems, making provision to ensure failure is predictable, safe, and not disproportionate to the cause. Over-reliance on a single asset, cascading failure, and design thresholds that might lead to catastrophic collapse if exceeded are actively avoided. An important aspect of robustness is proper operations and maintenance to ensure that systems are functioning properly. (For example of robust, a building is designed to accommodate a seismic event without collapse or excessive damage.)

Rodundant

A redundant network or system has a belt and braces approach, which includes spare capacity or back-up to accommodate disruption, extreme pressures, or surges in demand. Providing diverse ways of achieving a given need or fulfilling a particular function is a means to achieving a redundant system. If one service channel gets disrupted, another can be used. (For example of redundant, a power distribution network is able to rebalance to respond to a surge in demand in a particular area.)

Reflective

Resilient urban systems examine, learn, and evolve based on their past experiences and new information, modifying standards or norms based on emerging evidence rather than seeking permanent solutions based on the status quo. As a result, people and institutions examine and systematically learn from their past experiences and leverage this learning to inform future decision-making. (For example of reflective, a financial management system might make use of information on past shocks and stresses to improve budget-reserving policies.)

Coordinated

Coordination between city systems and agencies means that knowledge is shared, planning is collaborative and strategic, and decision-making is based on investments that are mutually supportive toward a common outcome. Exchange of information between systems enables them to function collectively and respond rapidly through feedback loops occurring throughout the city. (For example of coordinated, a transport systems is not only aligned with urban growth dynamics and land use but also has open communication with other agencies so that it can divert user traffic to different modes of transport based on changing conditions.)

Inclusive

Being inclusive recognizes that risk is perceived differently by different stakeholders and that shocks and stresses mostly affect the most vulnerable. An inclusive approach contributes to a sense of shared ownership or joint vision to build a resilient city. This can be achieved through consultation and engagement with a wide range of stakeholders, including the most vulnerable groups, to ensure that systems are more resilient by considering a wider range of vulnerabilities, risk management capacities, and localized information. Equity in access to infrastructure and services underpins social cohesion and opportunity. (For example of inclusive, a budgeting process could help ensure that the allocation of city resources reflects community priorities.)

Looking at systems in relation to these qualities can help to reveal underlying weaknesses that may not be apparent when using more traditional risk assessment methods. For example, one might ask, *how resilient is our city's road network?* Typically, the approach would be similar to the following: First, an assessment would be done to understand the hazards in the city. In this case, it is assumed the main issue is flooding. The city might opt to increase the height of select roads to ensure they are functional when anticipated flood levels are reached or increase the capacity of stormwater drainage channels to collect a greater amount of run-off. This will make the road system more *robust* by enhancing its ability to absorb and withstand urban floods. *But, what if a section of the city does not have access to paved roads at all (inclusive)? Are there alternative routes if flooding reaches unprecedented levels (redundant)? Does the roads department regularly share information with emergency services providers or the urban planning department (coordinated)? Are roads rebuilt where others have been damaged by repeated disaster (reflective)?* The existing road infrastructure would be resistant to an anticipated level of flooding, but the road system would be far from resilient. Moreover, the road system would likely be contributing little to the overall resilience of the city.

From Sectors to Citywide Resilience

Despite the inevitability of shocks occurring or stresses accumulating, the ability of urban communities to survive and thrive relies on the performance of the various systems that make up a city. An underlying premise of CityStrength Diagnostic is that a city is more likely to be resilient if its many systems exhibit the qualities of resilience described in Figure 2. This aligns with current thinking on city resilience and addresses the fundamental challenge that cities are complex systems and that city-scale resilience cannot currently be observed or measured directly other than in terms of changing performance over time in response to repeated events.

The CityStrength Diagnostic first evaluates resilience on a sectoral basis and then brings together the findings to think holistically (rather than sectorally) about the city's resilience in order to identify critical gaps or areas of weakness. To support this process, sector-specific modules are provided for use by technical specialists and integrate economic, social, and environmental issues from the perspective of the respective sector. During the group Prioritization Session (Stage 4), technical specialists discuss inter-linkages between and among sectors as well as the extent to which the qualities of resilience are reflected across multiple elements of the city. The focus is on spurring a conversation among experts that cuts across sectors and supports critical reflection on the steps the city need to take to enhance city-wide resilience.


FOOTBALL


THANH SƠN
PHOTOCOPY PHƯƠNG MAI

Initiating the Process

Following are five steps for initiating the CityStrength Diagnostic process:

a. Arrange for a letter of request from the client. The client will vary (e.g., a mayor, regional authority, or minister) depending on whether the tool will be implemented at the city, metropolitan or national level.
b. Identify key local and national stakeholders who will participate in and contribute to the implementation of the diagnostic.
c. Agree on the sectors and city (or cities) that will be included in the diagnostic.
d. Prepare a schedule that identifies the time periods for each stage using either a *rapid* or *incremental* approach to the process.
e. Form the team of World Bank technical specialists who will support the implementation.

Get Government and World Bank Leadership Support

It will be important to ensure the participation and engagement of city leaders and World Bank Management from the start and throughout the entire diagnostic process. As such, the first step in formally launching the CityStrength Diagnostic should be a letter of request sent from either the city, region, or federal government (depending on the scale of the exercise) to the World Bank (addressed to the relevant Country Management Unit). Because CityStrength Diagnostic will result in a series of recommended actions and investments to enhance resilience in the city, it is critical that the Country Management Unit endorses the process as it may result in a request for World Bank support to carry out the recommendations either through analytical work, technical assistance, or financing.

The letter of request should indicate the focal point within the local government. The selected city will also need to designate a City Focal Point responsible for internal collaboration as well as engagement with the World Bank. Ideally, the City Focal Point will have direct access to local leadership and have the ability to convene technical staff from line departments in the city. In the case of implementation at the metropolitan or national level, it will be important to have a focal point in the relative regional coordinating body or ministry. They can facilitate communication with the participating cities and demonstrate support to the process. In the Greater Accra Region, for example, the focal point was a Steering Committee that was established in response to major flooding that precipitated the request for the CityStrength Diagnostic. The Steering Committee comprised representatives from different city agencies and ministries. Even though it required effort to convene the Steering Committee, there was a good level of understanding of the diagnostic across government institutions that fostered full ownership of the process.

The CityStrength Diagnostic is an inclusive multi-stakeholder process that facilitates not only a cross-sectoral and cross-departmental dialogue but also allows and encourages the participation of other key stakeholders in the city such as civil society organizations, the private and non-profit sectors, academia, and other development partners. It is important to consider that building collaboration among multiple stakeholders requires time and effort, yet in order to enable this type of approach, it is important to invest the resources to do so.

Select the City or Cities

In the case of a national-level engagement, the initial dialogue with the government should lead to the identification of the city or cities that will be included in the diagnostic based on urban trends and other considerations such as climate change, history of vulnerability, and contribution to national economic growth. Depending on the number of cities, a decision will be made with regards to carrying out either (a) individual diagnostics in each city or (b) groupings based on specific criteria in the cities. In Ethiopia, for example, while an individual diagnostic was completed for each of the cities, they were also categorized as either cities in emerging regions or cities in growing regions. This enabled a comparison of urban trends, especially population growth. In the Greater Accra Region, cities were grouped under four clusters based on geography and common characteristics such as access to the coast, proportion of urban population, and size of rural areas. This enabled the identification of shocks and stresses and the formulation of recommendations that were applicable across municipalities.

Select the Sectoral Modules

The CityStrength Diagnostic includes 3 required modules—Urban Development, Disaster Risk Management, and Community and Social Protection—that must be used in all implementations. Optional modules also cover various sectors such as human services, basic services, technology, and economics (Figure 3). Modules are continuously updated and new ones are developed based on client demand.

The number of sectoral modules included during any one CityStrength Diagnostic implementation depends on whether a *rapid* or *incremental* approach is taken. With the rapid approach, it is recommended that no more than 8 modules be included. That is, the 3 required modules plus 5 optional modules. The recommendation to limit the number of modules is largely due to logistics, including Task Team size and number of local participants. That said, an emphasis of the methodology is to identify system interdependencies, bottlenecks, and vulnerabilities, which is strengthened by the inclusion of as many sectors as possible. It could be possible to apply all modules if an incremental approach is used. The timing of the diagnostic is described in the following section.

Figure 3: Sectoral Modules

REQUIRED MODULES

- Urban Development
- Community & Social Protection
- Disaster Risk Management

OPTIONAL MODULES

Human Services

- Education
- Health
- Cultural Heritage

Economics

- Local Economy
- Municipal Finance

Basic Services

- Energy
- Environment
- Solid Waste
- Transportation
- Water & Sanitation
- Stormwater and Flood Plain Management

Technology

- Logistics & Supply Chains
- Information & Communication Technology
- Building Regulations
- Food Systems

The decision regarding which sectoral modules to include in the application of the CityStrength Diagnostic in a specific city is made jointly and in a largely negotiated process by the City Focal Point and the World Bank. Factors under consideration should include historic vulnerability of the sector to shocks and stresses, plans for substantial investment, and the local government's decision-making role in the sector in the case of implementation in a few cities.

Prepare the Implementation Schedule

The CityStrength Diagnostic can be implemented using a rapid or incremental approach. CityStrength was initially designed as a rapid diagnostic requiring 3-5 months for completion, consisting of 1-2 months of preparatory work, a large multi-disciplinary mission of 5-10 days, and 1-2 months to prepare a findings report (Figure 4). There are two main benefits to a rapid approach. First, the amount of time and resources that a multi-sectoral group of local officials can commit to the process is limited. This is true on the World Bank-side as well. Organizing the diagnostic around a single, relatively short mission facilitates the participation of World Bank staff specialists, especially those with demanding schedules.

Figure 4: Illustrative Rapid Approach Timeline

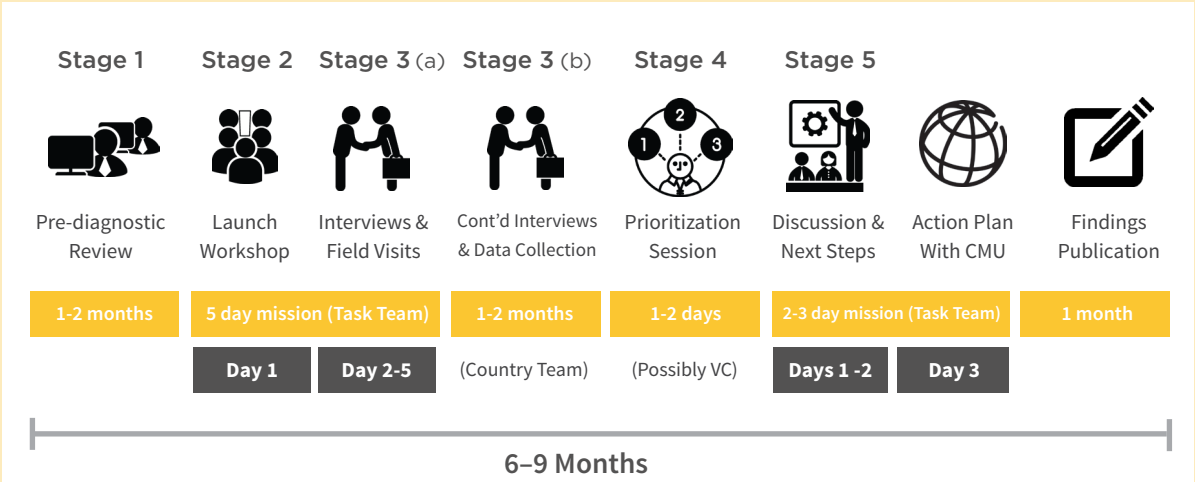
Second, CityStrength Diagnostic is a qualitative assessment that uses a broad brush in order to identify a set of priority actions and investments for more detailed analysis. As such, there is a rationale for quickly moving from the large-scale engagement to the more focused areas that will require a longer timeline for in-depth analysis. A rapid assessment allows cities to move toward the implementation of activities faster.

However, in some cases, it may be more effective to implement the diagnostic incrementally over a longer period of time to ensure that there is sufficient opportunity for relationship building, knowledge sharing related to resilience, capacity building, broad stakeholder buy-in to the process, and support for the ultimate recommendations. Moreover, the size of the city (population and physical extent), degree of decentralized decision-making, availability and relevance of information,

and institutional capacity and complexity may make it difficult to conduct all the required interviews and field visits within a single Task Team mission. A rapid approach may also be challenging if it is a metropolitan or national-level effort, depending on the number of cities involved.

Using an incremental approach, the diagnostic can be spread over a period of 6-9 months or longer (Figure 5). The phasing is amended to allow for two full Task Team missions as well as additional time (Stage 3b) for local-based team members to do follow-up interviews and data collection. Due to the mix of specialists on the Task Team residing in different locales, it may be necessary to conduct the Prioritization Session through videoconferencing to accommodate different locations.

Figure 5: Illustrative Incremental Approach Timeline



The decision on using either the rapid or incremental approach should be made jointly by the Task Team Leader, World Bank Management, and the City Focal Point. Figure 6 provides guidance on items to take into consideration when deciding between the two approaches. However, every city context is unique; the choice of approach will be influenced by many factors, including time and resources.

If the implementation of the diagnostic is taking place on a larger scale and involving more than one city, an incremental approach is recommended. Depending on the complexity of the implementation, the timeline can be longer than 9 months and involve more than two missions. In the cases of Ethiopia and the Greater Accra Region, the Task Team conducted additional missions to make sure that there was continual input on the development of the process given the number of cities and sectors. In Ethiopia, the diagnostic consisted of 10 cities and involved 10 sectors. In the Greater Accra Region, it consisted of 16 municipalities and 9 sectors.

Figure 6: Guidance on Selection of Rapid or Incremental Approach

Rapid approach suggested if...	Incremental approach suggested if...
• Single city. • There is an existing relationship between the World Bank and the local government. • There is a World Bank Country Office in the city. • A project management unit from an on-going operation can support logistics and data collection. • The city has a population of less than 2 million residents. • Local government has medium to high institutional capacity. • Local leadership (i.e., the mayor or equivalent) has strong decision-making ability. • Less than 8 Sectoral Modules will be included.	• Multiple cities. • The World Bank has limited experience working with the cities. • The cities have a population of more than 2 million residents or a physical condition that make it difficult to conduct field visits and interviews in multiple locations. • Local government has low capacity and/or limited data availability. • Local leadership (i.e., the mayor or equivalent) has limited decision-making ability. • More than 8 Sectoral Modules will be included.

In summary, the main advantage of the rapid approach is to reduce the time commitment needed for city stakeholders and sectoral experts and to move quickly from diagnosis to follow-up engagement. However, the tradeoff is that the number of sectors included in the diagnostic process should be limited to no more than 8. The main advantage of the incremental approach is that ample time is provided for fostering ownership of the process and consensus building among stakeholder groups. Moreover, in the incremental approach, it is possible to take a fully comprehensive view of resilience by implementing more of the sectoral modules. The tradeoff is that the incremental approach is more resource intensive.

Form the CityStrength Team

CityStrength Diagnostic is an opportunity to bring a multi-sectoral team of specialists to a city client and deliver recommendations that cut across disciplines and traditional silos. To ensure close alignment with World Bank operations, it is recommended that the majority of Task Team members be World Bank staff rather than consultants. However, in some cases, it may be necessary to augment the Task Team by contracting third party expertise.

The Task Team Leader will coordinate all CityStrength Diagnostic activities and be the main interlocutor with the client. In most cases, the Task Team Leader should be part of the country team and actively engaged in the country, if not in the specific city or cities. It is important that the Task Team Leader has a solid understanding of the local institutional context and history of World Bank engagement in the selected city or cities.

It will be crucial to identify a World Bank staff or consultant based in the country who can be dedicated to the CityStrength Diagnostic process. The person will act as a Focal Point between the World Bank and the government. Tasks will vary but could include following up on data collection, identifying the local stakeholders who should be involved in the process, and facilitating meetings with the government. It is helpful if the Focal Point is knowledgeable of the leadership structure of the city and known among government and other local stakeholders. This will facilitate the flow of information and overall participation in the process.

To support the Task Team Leader, the Task Team should consist of at least one technical specialist for each of the sectors that will be included in the diagnostic. In other CityStrength implementations, the Task Team included two specialists from each sector, one from the country team (usually based in the country office) and one international specialist. This arrangement ensured that global best practices were integrated into locally feasible recommendations. It is also recommended that the Task Team include a member with strong facilitation skills for the Launch Workshop (Stage 2) and Prioritization Session (Stage 4).

Including a local communications specialist on the team is highly recommended. A communications plan should be developed in the beginning to build momentum around joint discussions/solutions on urban resilience. In both Ethiopia and Ghana, the teams used national media (TV and newspaper) to disseminate findings and build awareness garnering strong support for project investments. The communications specialist might also fulfill the moderator role during the workshops. Figure 7 provides an overview of the Task Teams formed for the implementation of CityStrength Diagnostic in Can Tho, Vietnam, and the Metropolitan Accra Region.

Figure 7a: Task Team Composition from Can Tho, Vietnam CityStrength Implementation

Team Leaders and Urban Development

- Sr. Urban Specialist (Country Team based in Hanoi)
- Sr. Urban Specialist (CityStrength Coordinator)

Community and Social Protection

- Sr. Social Specialist (Global Team based in HQ)
- Sr. Social Specialist (Country Team based in Hanoi)

Disaster Risk Management

- Sr. DRM Specialist (South Asia Team based in HQ)
- DRM Specialist (Country Team based in Hanoi)

Energy and Solid Waste

- Lead Urban Specialist (Global Team based in HQ)

Municipal Finance

- Sr. Municipal Finance Specialist (IFC based in HQ)
- Operations Specialist (GFDRR based in HQ)

Transport

- Sr. Transport Specialist (Country Team based in Hanoi)
- Transport Specialist (Africa Team based in HQ)

Water and Sanitation

- Sr. Water and Sanitations Specialist (Country Team based in Hanoi)

Facilitation and Support

- Climate Change Adaptation Consultant (CSD team based in HQ)
- Urban Planning Consultant (CSD team based in HQ)

Task Team Composition from Ethiopia Citystrength Implementation

Figure 7b: Task Team Composition from Can Tho, Vietnam CityStrength Implementation

Team Leaders

- Sr. Urban and DRM Specialist (Global Team based in HQ)
- Sr. Urban Specialist (Country Team based in Addis Ababa)
- Lead Economist (CityStrength Coordinator based in HQ)

Urban Development

- Sr. Urban Specialist (Global Team based in Nairobi, Kenya)
- Urban Specialist (Country Team based in Addis Ababa)
- Urban Specialist (Africa Team based in Nairobi, Kenya)
- Consultant (Country Team based in Addis Ababa)

Disaster Risk Management

- Sr. DRM Specialist (Global Team based in HQ)
- DRM Specialist (Country Team based in Addis Ababa)

Community and Social Protection

- Consultant (Country Team based in Addis Ababa)
- Consultant (Global Team based in HQ)

Transport

- Transport Economist (Global Team based in HQ)

Water and Sanitation

- Sr. Water and Sanitation Specialist (Country Team based in Addis Ababa)

Environment

- Lead Environment Specialist (Country team based in HQ)
- Sr. Environment Specialist (Africa Team based in Accra, Ghana)

Energy

- Sr. Energy Specialist (Countryu Team based in Addis Ababa)

Communications, Facilitation and Support

- Sr. Operations Officer (Country Team based in Addis Ababa)
- Sr. Communications Officer (Country Team based in Addis Ababa)
- Operations Officer (Country Team based in Addis Ababa)
- Consultant (Global Team based in HQ)

The technical specialists implementing the CityStrength Diagnostic will often need to evaluate and make decisions without complete information. As such, the team needs to be comprised of experts with deep knowledge of sectoral issues, along with local and national professionals who have experience working in the city. It may be quite challenging to find experienced World Bank specialists who are available for the specific dates selected for the implementation. In fact, it may require several iterations of team selection and scheduling of missions to accommodate all parties.

Why would World Bank staff want to participate in the implementation of the CityStrength Diagnostic? A challenge to forming a team of seasoned World Bank staff is that they are likely to be very busy working on their own portfolio of projects. CityStrength Diagnostic is an opportunity for technical staff to learn and explore how their sector contributes to overall urban resilience. It is also a chance to work across Global Practices with a finite and well-defined level of effort and deliverables. For staff who are part of the Country Team, participation in the diagnostic could also be an opportunity to engage with their counterparts on future activities.

In addition to the technical specialists who interface with government counterparts during the CityStrength Diagnostic implementation, other Task Team members will be working behind the scenes. This important team effort will come from staff and consultants conducting the desk review of available reports and studies, GIS and mapping support, administrative and logistical support for event planning, and information design for publication of knowledge-sharing experiences, lessons learned, and main findings.


SUA XE

Stage 1: Pre-Diagnostic Review

Stage 1 is a mix of desk-based analysis and field-based engagement. During Stage 1, the Task Team reviews and synthesizes all relevant documentation, maps local stakeholders, prepares the full Task Team, and begins engaging with local leadership on the topic of urban resilience. The key outputs from this stage include a Briefing Note that captures the main findings of the desk review, a preliminary list of shocks and stresses in the city or cities, a detailed stakeholder list, and materials for the Launch Workshop.

Following the initiation of the process, the government should have some knowledge of the type of information that will be key to the diagnostic. However, during the Pre-Diagnostic Review, there is a more in-depth discussion with the local government to reinforce the objectives and implementation steps of the CityStrength Diagnostic. Knowing what to expect allows city departments and leadership to prepare relevant data and articulate expectations for the diagnostic implementation. In terms of larger-scale implementations, having a solid understanding with the counterpart on data availability can lead to targeted support in obtaining data from cities that may not have as much insight on the diagnostic in the initial stages.

Stage 1 is typically conducted by a small sub-set of the Task Team, including the Task Team Leader and 1 or 2 technical specialists. In Ethiopia and Greater Accra, for example, a dedicated consultant was hired to lead the Pre-Diagnostic Review. In both cases, the chosen consultants were already knowledgeable on urban issues. The Briefing Note prepared during this stage is used as input to the Launch Workshop and helps prepare the full Task Team, some of whom may not have previous experience in the city, for the implementation of the diagnostic.

Review Existing Studies, Reports, and Plans

An overview of urban characteristics, existing relevant policies, government's institutional arrangement, city maps, and a raw list of shock and stress profiles constitutes the "bare bones" of the diagnostic background package. A review is conducted of all relevant studies, reports, or plans developed by the city, universities, donor agencies, or other development partners. Figure 8 lists documents that should be sought out for inclusion in the Pre-Diagnostic Review. In some cases, it may be difficult to obtain copies of all the desired reference materials either because they are not publicly available on the internet or because they were never published for distribution. In addition, some documents may be in the local language, requiring additional time and resources for translation.

Figure 8: Types of Studies, Reports, and Plans to Include in the Pre-Diagnostic Review

CATEGORY	DOCUMENT
Institutional	• City organogram • Policies/legislation regarding city management and responsibilities
Spatial Development	• City master plans • Infrastructure master plans (e.g., transport, water supply, energy) • City development strategies • Land use analyses and trends
Human Development	• Poverty assessments • Studies of vulnerable groups • Relevant education and health services policies • Safety net program descriptions
Climate and Natural Disasters	• Vulnerability assessments • Climate change action plans • Damage and loss assessments • Post disaster needs assessments
Economic Development	• Capital Investment Plans • Municipal Budgets • Public Expenditure Reviews • Private Sector Development Strategies • Economic Growth Data
Development Agencies	• World Bank operations (relevant PADs, ICRs, and analytical work) • Development partner initiatives

After the initial screening of available plans and studies, the Team working on the Pre-Diagnostic Review meets with relevant city departments to review the list of documents for relevance and applicability to the city's current and planned activities. The Team explores those documents that are actually informing and guiding the city's work. The story of each document, including purpose and conditions under which it was produced (authors, collaborators, and funders) and real-life application (which department used the document, when and for what purpose) is summarized in the Briefing Note.

A decision could be taken at this point to commission specific background studies or data collection initiatives depending on the context and availability of information. This is particularly relevant for cities with limited baseline data across sectors. At a minimum, it is recommended that a study on urban growth dynamics and a vulnerability assessment be conducted if not already available. If resources are limited, this study could be done using available tools such as *ThinkHazard!* for natural disaster risk and "night lights" data as a proxy for urban growth. Additional information can also be gathered using desk-reviewed data collection, satellite- and drone-captured imagery, and other technologies.

Multi-city Context. The Pre-Diagnostic Review in a multi-city context will require more time. The local staff or consultant dedicated to the CityStrength Diagnostic will likely have to travel to each participating city to explain the process and engage with key government stakeholders and city agencies. During the visit, the local staff or consultant needs to gather as much information as possible, which will probably require more than one day in the city depending on the availability of information, the connectivity to the rest of the country, and proximity to the country office or main city from where the diagnostic is being coordinated.

Metropolitan Context. In a metropolitan context, it can also be time-consuming for local staff to travel to all the municipalities comprising the region. One approach to addressing this issue is to form a steering committee, as was done in the Greater Accra Region, with representatives from each municipality. The committee could convene from time to time for briefings on the progress of the diagnostic and request data as needed.

Map the Stakeholders

During the implementation of the CityStrength Diagnostic, it is essential to identify and organize meetings with key officials at all relevant levels of government as well as other stakeholders such as NGOs, private sector associations, universities, and other development partners. Inclusiveness is a key characteristic of a resilient city, and the diagnostic is an opportunity to strengthen connections that may be weak or non-existent among members of the community. Moreover, these stakeholders may play an important role in developing viable resilience-building strategies and their ultimate implementation.

In order to identify the key stakeholders, the Task Team must develop a clear understanding of the political and institutional reality in the city or metropolitan area. This may include regional and national stakeholders as certain policies and actions may not be within the mandate of the local government and actions taken in the city may have consequences beyond its boundaries. Moreover, the shocks and stresses being experienced in the city may be connected to the actions of neighboring districts and regions such as at the metropolitan level. Finally, to capture and build on ongoing activities in the city and to learn from previous projects carried out, it is important to consult with development organizations and experts engaged locally.

The Pre-Diagnostic Review should provide a good summary of the city's political and institutional context, including responsibilities of local, regional/sub-national, and national government as well as active donor agencies, research institutes, and civil society groups. A comprehensive mapping of actors ensures that a technically suitable and diversified group of stakeholders is included in the diagnostic process. Targeted stakeholders could include:

- Local leadership and technical departmental/committee staff;
- Representatives of regional resilience collaborations and/or central government initiatives;
- Local institutions (i.e., public utilities/service providers, planning agencies, public-private agencies providing household services);
- Private sector (i.e., chambers of commerce, industry groups);
- Civil society (local and international NGOs) and community groups;
- Schools, universities, and research institutes; and
- Other multilateral and international organizations with ongoing activities in the city.

In addition to identifying relevant participants, the Pre-Diagnostic Review mapping should include key information about stakeholders' ongoing and planned activities related to each sector as well as the relationship between the local government and different stakeholders in the city. Figure 9 provides a template for capturing information on stakeholders.

Figure 9: Template for Mapping Stakeholders and Activities

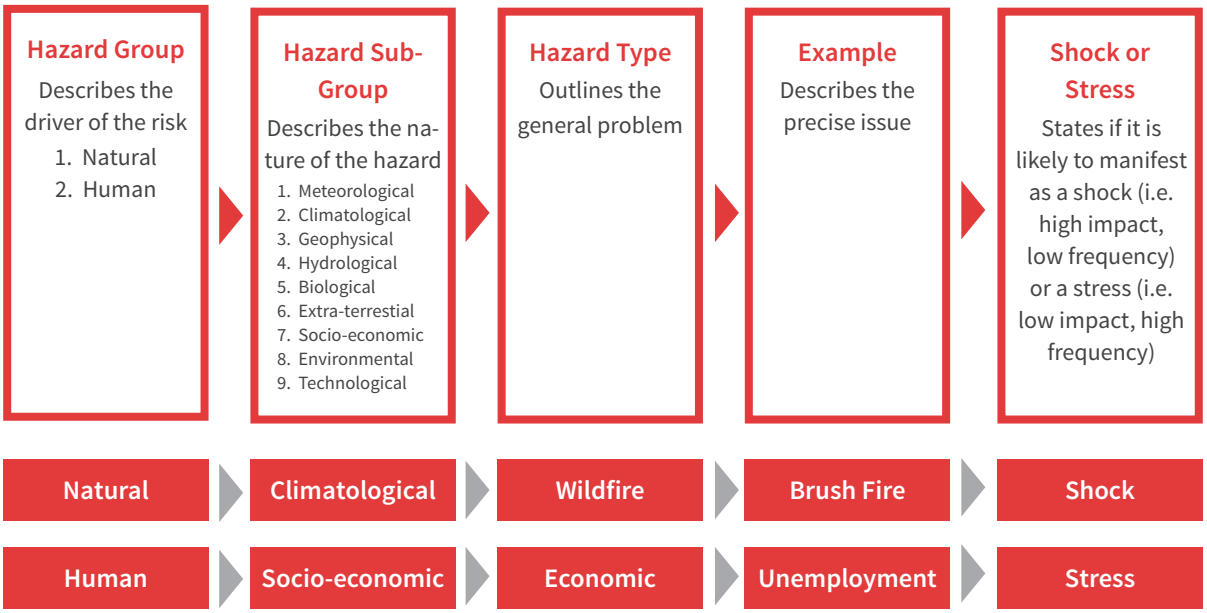
Agency Name	Type of Entity	Expertise 1	Contact	Current Activities	Planned Activities	Activity Collaborators
Water and Sanitation Dept.	Local Government	Water and sanitation; drainage	Ms. X	Developing city-wide sanitation plan	Expanding piped sewerage networks into new district	Dept. of Construction
Climate Institute	Academia	Climate change; natural resource mgmt.	Mr. Y	Modeling regional climate change Impacts	Study on historical levels of subsidence	Climate Change Coordination Office

Identify Preliminary Shocks and Stresses

Generally speaking, a *shock* is a single unpredictable event and a *stress* is an ongoing hardship that a community experiences on a daily basis. The CityStrength Diagnostic methodology includes a framework for classifying shocks and stresses (Figure 10); a total of 96 unique shocks and stresses that could occur in cities have been identified and are listed in Resource 1.

The purpose of the framework is to help city stakeholders explore the range of shocks and stresses that could inhibit the city from achieving its goals. The framework is intended to facilitate a high-level discussion regarding the likelihood of particular shocks and stresses. Consideration of the shocks and stresses from a vulnerability perspective, including current city actions to prepare for and mitigate the potential impact of shocks or to reduce stresses, will take place later in the process.

Figure 10: Framework for Classifying Shocks and Stresses



Natural is disaggregated into geophysical, hydrological, meteorological, climatological, biological, and extra-terrestrial. This is consistent with widely accepted disaster risk reduction hazard classifications used by organizations such as the Centre for Research on the Epidemiology of Disasters. *Human* is disaggregated into socio-economic, political, and environmental issues. *Climate Change* could be considered as a third hazard group placed at the end of the classification. Task Teams are asked to first consider the shocks and stresses that the city currently faces, and then contemplate how these might change as a result of climate change. However, it is important to note that climate change is just one dynamic factor and other issues such as rapid urbanization and demographic change may also compound or create shocks.

Consulting as appropriate with the City Focal Point, city departments, research institutes, academia, and other expert groups, the Task Team uses a participatory approach to identify a preliminary list of shocks and stresses exhibited in the city. This preliminary list will be used during the Launch Workshop at which time a broader set of stakeholders will be able to comment on and confirm the set of shocks and stress that should be used during the diagnostic.

Weighing and prioritizing shocks and stresses is a challenging process. The CityStrength Diagnostic uses an approach that mixes perceptions of risk with available data. The facts available in any existing vulnerability assessments, hazard maps, and sectoral studies are presented to local stakeholders, but their perceptions of which shocks and stresses are most important can be skewed by recent events or personal experiences.

Figure 11 shows the draft list of shocks and stresses identified during Stage 1 of the CityStrength implementations in Can Tho and Addis Ababa versus the final agreed set of shocks and stresses at the conclusion of the process.

Figure 11: Evolution of Shocks and Stresses from Pre-Diagnostic Review to Final List

PILOT CITY	SHOCKS	STRESSES
Pre-Diagnostic Review List of Shocks and Stresses		
Can Tho	• Flooding • Draught and saline intrusion • High temperatures • Storms	• Rapid urbanization • Encroachment on channels • Conflicting water usage
Addis Ababa	• Flooding and landslides • Fire • Earthquake	• Sprawling growth • Housing shortage/informality • Water scarcity • Unemployment
Final List of Shocks and Stresses		
Can Tho	• Flooding • Subsidence	• Uncontrolled urbanization • Insufficient sanitation
Addis Ababa	• Flooding • Fire • Earthquake	• Unprecedented urban growth • Water scarcity • Unemployment and social vulnerability

Prepare the Briefing Note

The purpose of the Briefing Note is to pull together and synthesize all the available information regarding the sectors covered in the CityStrength Diagnostic as well as important institutional information to provide the Task Team with a solid understanding of the current situation in the city before they begin the field work component of the diagnostic. The Briefing Note will serve as a reference for the Task Team as they embark on the Launch Workshop and follow-up interviews with city stakeholders. The Briefing Note needs to strike a balance between comprehensiveness and brevity. The challenge is deciding which pieces of information are essential for the Task Team members to know while also providing a coherent overview.

At a minimum, the Briefing Note should contain the following information:

- Listing of documents available and included in the review;
- Demographic and service delivery snapshots and trends;
- Institutional structure of the local government;
- Key findings of relevant studies and plans, highlighting the actual usage of these document by city departments to inform policy and projects;
- Preliminary list of shocks and stresses, including the rationale for their selection; and
- An overview of all relevant stakeholders in the city, ongoing activities, and future plans.

When the tool is implemented in a multi-city or metropolitan context, it may be challenging to capture all the information in a succinct Briefing Note. One approach is to provide general information on urban trends and demographics while highlighting key issues about the participating cities.

The Briefing Note and library of documents are shared with the full Task Team as early as possible in the process. It is not assumed that the Briefing Note alone is sufficient to fully prepare technical specialists who are not familiar with the city, rather it is intended to serve as a guide so that the specialists are aware of the full library of resources available to them for further, more detailed review. It is the individual specialist's responsibility to make sure that he or she is adequately prepared to participate in the diagnostic. In addition to the Briefing Note, any relevant maps or geo-referenced data that could enable the Task Team to better understand spatial issues in the city should be collected. Figure 12 provides a list of useful maps for the diagnostic.

Figure 12: Useful Maps

TYPE	ATTRIBUTES
City Baseline Map	City boundaries and sub-municipal boundaries (e.g., districts, wards)
City Baseline Map	Topography: elevation, water bodies
City Baseline Map	Major roads
City Baseline Map	Major infrastructure: water supply, sanitation and sewerage, roads, highways, bridges, ports, power supply, among others
City Baseline Map	Natural elements, mangrove, hills, rivers, plantations, among others
City Socio-economic Map	Incomes
City Socio-economic Map	Densities
City Socio-economic Map	Land use designations
City Socio-economic Map	Economic activities, including commercial zones, central business districts, hotels, and tourist facilities
City Socio-economic Map	Industrial areas including ports, industrial zones, and factories
City Socio-economic Map	Major community buildings, religious buildings, and historic/cultural assets
City Socio-economic Map	Social services infrastructure, including schools, hospitals, and clinics
City Socio-economic Map	Informal development areas
City Hazard Profile Map	Vulnerability and risk
City Hazard Profile Map	Affected areas
City Hazard Profile Map	Housing destroyed and damaged
City Hazard Profile Map	Infrastructure and services damaged
City Hazard Profile Map	Economic impact
City Hazard Profile Map	Hazard mitigation infrastructure, including location of sea walls, dikes, retention ponds
City Future Growth Map	Changes in the overall city's boundaries
City Future Growth Map	Planned investments
City Future Growth Map	Changes in land use designations
City Future Growth Map	Projected changes to population densities and economic activity
City Future Growth Map	Projected changes in location of vulnerable populations
City Future Growth Map	Changes in intensity, frequency, and location of hazards based on hazard modeling

Train the Task Team

This Guidebook offers a comprehensive overview of explanations and procedures for conducting the CityStrength Diagnostic. However, in addition to reviewing this guidebook, Task Team members may require additional training on the CityStrength Diagnostic and the concepts underpinning urban resilience prior to engaging with local stakeholders. This could be done through a combination of group meetings and presentations and one-on-one transfer of knowledge and experiences. The training process could be logistically challenging with the full Task Team at one time; therefore, it would be necessary to conduct multiple training sessions or meetings with smaller sub-groups. Organizing a brown bag lunch or other informal sessions in the country office also provides opportunities to train the specialists participating in the implementation as well as invite other stakeholders to be informed about the initiative and process.


FORMULA

Stage 2: Launch Workshop

Stage 2 has multiple objectives in the project city centered around the official launch of the CityStrength Diagnostic process; this will be the time to explain the concept of urban resilience, to learn about the city's goals and objectives, to confirm the initial findings from Stage 1, to introduce the multi-sectoral World Bank team, and to engage with a broad set of stakeholders.

Invite Workshop Participants

Since the Launch Workshop should facilitate mutual information sharing, it is structured to include a relatively large number of participants. It will be important to work closely with the City Focal Point to identify and invite relevant stakeholders to the workshop. It is also crucial to get the approval of the local government and receive support in disseminating the invitations. The City Focal Point could also support the logistical arrangements and preparations for the workshop and could advise on cultural and political customs.

All Task Team members from the World Bank should attend the Launch Workshop. In addition, if possible, a representative from the County Management Unit should open the workshop alongside a leader from the local government. Ideally, this would be the Country Director and the mayor. Depending on the local context and existing cooperation between different stakeholder groups, the following stakeholders should be considered for inclusion at the Launch Workshop:

- Mayor and Mayor's office;
- Technical staff such as departmental directors, urban planners, sectoral managers;
- Civil society (community representatives, NGOs);
- Private sector (banks, private companies, service providers);
- Academia/research;
- Other tiers of government (regional/national); and
- Development organizations/donors active in the city.

Participation by a knowledgeable technical staff and city leadership is essential to the success of this qualitative, interview-based diagnostic. If key stakeholders are not able to attend the Workshop, the Task Team should make a strong effort to meet with them at a later time. All Task Team members should be prepared to provide a short overview of the CityStrength Diagnostic process during one-on-one meetings.

Multi-City Context. In a multi-city context, the list of invitees will be much larger. Ideally, all mayors will be invited along with sectoral focal points who can participate in sectoral-level discussions.

Depending on the local context, there may be other tiers of government and agencies that need to attend such as heads of regions or provinces as well as focal points of national agencies that oversee urban development and/or disaster risk management activities. If it is logistically challenging to convene a large number of people at one time in one place, there could be regional workshops in which the Task Team travels and engages with multiple cities. Cities could be grouped according to proximity to the workshop's host city. In the case of Ethiopia, given the large size of the country and the number of cities included in the diagnostic, three regional workshops were conducted with three to four cities participating in each. Given that the federal government wanted to be involved in all the discussions, there were focal points from multiple ministries who joined all three workshops. This showed commitment from the government to the diagnostic and was an added incentive for participation from the cities. In order to take advantage of the limited time of having the stakeholders together, it is crucial for the Pre-Diagnostic Review to be as robust as possible. And it is just as important to have fully briefed the city representatives on the process and expected outcomes before attending the workshop so that time can be used efficiently.

Metropolitan Context. In a metropolitan area, the close proximity of participating municipalities will allow for many stakeholders to join the Launch Workshop. Similar to the application of CityStrength Diagnostic in a multi-city context, it is crucial for the Pre-Diagnostic Review to be as complete as possible and the Task Team fully briefed. In the Greater Accra Region, for example, it helped significantly to have a steering committee in place because there was representation from different ministries and city agencies. This facilitated the flow of knowledge into the different municipalities that make up the Region.

Prepare Workshop Materials

Preparation for the Launch Workshop is largely done in parallel with the Pre-Diagnostic Review. Specifically, the Briefing Note is the key input to the World Bank's presentations, the draft list of invitees, the preliminary list of shocks and stresses, and content for group activities. Figure 13 outlines the basic sections of the Launch Workshop and can serve as a guide for the materials that will need to be prepared.

There are several presentations for which standard content has been prepared, including the *Overview of Workshop, Overview of Urban Resilience,* and *the Introduction to the CityStrength Diagnostic*. Examples used in these base presentations should be customized to the local context with case studies that may resonate better with participants. A template presentation is also available for *Overview of the Pre-Diagnostic Findings* segment of the workshop; however, this will require significant customization based on the content of the Briefing Note.

A group exercise on the topic of perceived shocks and stresses is recommended, the objective of which is to identify those that are a priority for inclusion in the diagnostic. It is also an opportunity for diverse stakeholders to exchange views on risks that could inhibit the city from achieving its goals.

Resource 2 provides guidance on organizing and facilitating the group exercise.

Conduct the Workshop

The Launch Workshop is a one- to two-day event that is designed to engage city stakeholders and World Bank specialists in a dialogue related to urban resilience. The facility selected for the workshop should be large enough to accommodate 50-80 participants with multiple round tables for group exercises and discussion.

It is crucial to understand the cultural context of the city while designing the workshop agenda, including facilitation of discussions, timing of the workshop (i.e., start time in the morning, lunch break etc.), and finding the right balance between plenary presentations and breakout group activities. In all cases, ample time should be provided for discussion between presentations so as to promote the participation of all stakeholders.

Figure 13: Workshop Modules

MODULE	COMPONENT	PRESENTER(S)	OBJECTIVE
Welcome & Introduction	Welcome	Country Director/ Program Leader and Mayor or other senior official	• Explain the broader context of workshop • Clarify the objectives of workshop • Demonstrate the commitment of city leadership
	Overview of Workshop	Task Team Leader and City Focal Point	
Identifying City Achievements, Plans and Goals	Overview of City Plans and Development Goals	City Official	• Share relevant city plans and projects • Discuss and confirm the city's long-term goals
Understanding the CityStrength Diagnostic	Overview of Urban Resilience	Task Team Leader or CityStrength Coordinator	• Explain the concept of urban resilience • Highlight the benefits of enhancing urban resilience for the city • Explain the CityStrength Diagnostic process
	Introduction to the CityStrength Diagnostic	Task Team Leader or CityStrength Coordinator	
Confirming the Findings of the Pre-Diagnostic Review	Overview of the Pre-Diagnostic Findings	Task Team Member	• Share and discuss the main findings from existing studies, plans, and interviews with city departments • Share the preliminary list of shocks and stresses identified during Stage 1
Exploring Shocks and Stresses in the City	Facilitated breakout group discussions on perceived shocks and stresses in the city	Task Team	• Share and discuss perceived shocks and stresses in the city that should be included in the diagnostic • Reach consensus on primary shocks and stresses
Next Steps	Conclusions & Planning for Stage 3	Task Team Leader and City Focal Point	• Explain next steps, including field visits and interviews • Clarify the role of city stakeholders throughout the process


ትታዘ ጫማቂ ቤት
0912075110-0910609500

Stage 3: Interviews and Field Visits

The objective of Stage 3 is to collect additional information on the performance of urban systems through interviews with relevant stakeholders and field visits to targeted areas in the city.

Participate in Field Visits

The selection of sites for field visits in the city or cities should be decided jointly by the World Bank and local government staff. The decision should be informed by the shocks and stresses identified, the sectors selected for inclusion in the diagnostic, city development plans, and issues raised during the Launch Workshop. The objective is to gain a shared understanding of risks in the city by visiting locations that could be considered hotspots of vulnerability (existing and projected) and provide a good representation of sectoral challenges and achievements.

Mapping Exercise. The field visit itinerary could be defined through a cross-sectoral group discussion or a mapping exercise (Resource 3). Depending on the number of participants present, the mapping exercise could either be carried out in plenary or breakout group mode. The base maps upon which participants will provide input could be skeletal (i.e., just the road network and major landmarks), fully populated (i.e., all major infrastructure networks), or a satellite image, depending on the availability and quality of digitized maps in the city. If it is only skeletal, substantial time needs to be allocated to schematically populating the base map using the questions provided in the exercise description. In all cases, for the exercise to be a success, technical staff from relevant local government agencies must participate (Figure 14). In a multi-city context, hotspot mapping for each city is also recommended.

Figure 14: Exercises in Can Tho, Vietnam and Addis Ababa, Ethiopia


Can Tho, Vietnam


Mekelle, Ethiopia

The timing of the field visits will depend on the local context, including the distance between sites, the number of people participating, and the scheduling of interviews and focus groups. For the Can Tho implementation, for example, the field visit included all Task Team members as well as staff from a Project Management Unit, convened for a duration of approximately 4 hours, and took place the day following the Launch Workshop. However, in Addis Ababa, the Task Team conducted the field visits in two groups to accommodate the simultaneous scheduling of interviews with stakeholders. In addition, the two groups planned distinct itineraries due to the distance between sites and traffic congestion. It was determined that this would be the most efficient approach given the local context. In both cases, there were topics that arose during interviews with local stakeholders that motivated World Bank specialists to conduct additional visits to specific locations.

In addition to gaining a shared understanding of the city, the field visits are an opportunity to delve into sectoral issues with counterparts in advance of the more formal interviews and focus group meetings. There is often a significant amount of time spent in transit between sites that can be used for discussion. Moreover, it is an opportunity for cross-sectoral learning and awareness building for both the World Bank team and technical staff from the city government.

Multi-City Context. When many cities are involved, there is going to be limited time to conduct site visits. In regional workshops, site visits may only be conducted in a group setting in the city hosting the workshop. The advantage of such an approach is that all the participating cities can join the site visit as well. This allows for knowledge exchange since the cities may share common challenges and the site visit offers space to brainstorm around solutions. The site visits should be integrated into the workshop schedule. Ideally, it will take place after the first day of discussions to have context for the field visit itself, but it should also not disrupt the flow of the conversation. It is also important to consider that mobilizing a large number of people can be challenging. The field visit can include a few sites which illustrate the shocks and stresses experienced by the city. For example, in the case of the Ethiopia, host cities showcased the areas that regularly flood. They also selected informal markets and drainage systems.

Metropolitan Context. In the case of an implementation at the metropolitan level, the Task Team will have more flexibility to conduct the site visits and be accompanied by local stakeholders. However, depending on the amount of site visits that need to be conducted as well as the distances that need to be traveled, more time will need to be allocated to the activity.

Conduct Interviews on Sectoral Issues

While the summary of information in the Briefing Note (Stage 1) and discussions during the Launch Workshop (Stage 2) provide the foundation for understanding the city's development trends and exposure to different shocks and stresses, the Sectoral Guiding Questions provide the framework for the more detailed evaluation of the resilience of individual sectors.

The Guiding Questions were developed based on a review of 40 relevant tools, frameworks, and methodologies, resulting in a database of over 600 possible questions or indicators (Figure 15). This was then filtered, revised, and amended. Some modules were developed from scratch specifically for the CityStrength Diagnostic. CityStrength is a qualitative assessment; as such, the Guiding Questions are intended to support seasoned technical experts in a dialogue with local stakeholders. They are not intended to be used as a checklist or tool for a desk-based study. Depending on the specific city context, some questions may not be relevant or additional questions may need to be added. The augmentation of the questions will depend on the judgment of the World Bank specialist.

Each set of Guiding Questions is organized by topics specific to the sector and includes a description of why the question is relevant to evaluating urban resilience. The Task Team members are provided with a worksheet template to facilitate the collection of information to respond to the questions. The responses provided in the worksheet are used as an input to the Prioritization Session (Stage 4) as well as the publication produced after implementation to capture the findings of the diagnostic in the city.

Some of the Guiding Questions can be addressed with information garnered from the Pre-Diagnostic Review (Stage 1) and the Launch Workshop (Stage 2), but the majority of the responses will come from or be confirmed by the one-on-one interviews, focus groups discussions, and field visits during this stage of the diagnostic. As such, scheduling meetings with relevant officials, technical staff, civil society organizations, and other stakeholders is critical; and each World Bank specialist should be pro-active in communicating to the Task Team Leader and/or local support the list of people with whom he or she would like to meet. It is preferable to meet with local officials and technical staff in their offices where they have all the materials readily available that may be useful for the diagnostic.

In addition to one-one-one interviews between World Bank and counterpart staff on a specific sector, it is recommended that the Task Team organizes group interviews or focus group discussions that include 2-3 local government departments and 2-3 World Bank sector specialists. This format can support cross-sectoral discussion and may initiate cross-departmental understanding and collaboration in the local government. For example, in the Can Tho implementation, a series of group interviews were conducted using a café style format in which 4 discussion tables were happening concurrently and rotated in 45-minute intervals.

Multi-City Context. In a multi-city context, it can be challenging to conduct in-depth interviews during the main CityStrength mission given the limited time and the multiple cities involved in the diagnostic. During the Launch Workshop in Ethiopia and Greater Accra, there were group discussions where sectoral specialists from different cities came together. The discussions were facilitated by the Guiding Questions in the Sectoral Modules, leading to the extraction of key data. This was a great opportunity for cities to learn from one another. Many cities share common challenges but have different approaches to addressing them.

Metropolitan Context. Modifications in a metropolitan context will depend on the number of municipalities involved in the diagnostic. If there are several municipalities, it will also be challenging to carry out one-on-one interviews, so it will be crucial to obtain as much information as possible during the Launch Workshop. If needed, World Bank specialists can decide to have targeted interviews in municipalities that are most exposed to shocks and stresses or those that lead to more widespread impact when affected.

Figure 15: Summary of Sectoral Guiding Questions

MODULE TOPIC	# OF GUIDING QUESTIONS
Building Regulations	Forthcoming
Community & Social Protection	21
Cultural Heritage	Forthcoming
Disaster Risk Management	18
Education	12
Energy	26
Environment	14
Food Systems	Forthcoming
Health	13
Informational & Communications Technology	17
Local Economy	12
Logistics & Supply Chains	14
Municipal Finance	18
Solid Waste Management	18
Stormwater and Flood Plain Management	Forthcoming
Transport	18
Urban Development	22
Water & Sanitation	15
TOTAL	238

Organizing the field visits and interviews can be a difficult task, involving travel planning, frequent communication with multiple stakeholders, finding and working with interpreters, and last-minute rescheduling. If possible, administrative support should be requested from the Country Office to centralize these tasks with someone who is familiar with the city and stakeholders and fluent in the local language.


KHU CÔNG NGHIỆP HƯNG PHÚ 2
HUNG PHU 2 INDUSTRIAL ZONE


SINESS CENTER
INTERNET
SOFTWARE
MOBILE

Stage 4: Prioritization

The objective of Stage 4 is to prioritize actions and investments to enhance resilience in the city. This is done using multiple "lenses" to qualitatively identify measures that the participating specialists recommend as the most important for the city leaders to consider. If there is a request for support from the World Bank, it is important to keep in mind that some or all of the recommended actions and investments should be operational in nature.

Assess Resilience through Multiple Lenses

The prioritization process uses four lenses to facilitate the analysis of the sectoral findings and to support the identification of priority actions and investments that would enhance the overall resilience of the city. *Actions* are soft measures such as capacity building, institutional strengthening, or regulatory improvements, while *investments* are hard measures such as construction of infrastructure or establishment of a subsidy system.

The lenses are first used by the technical specialists to create the short-list of recommendations related to their respective sectors. They are used *sequentially* as the diagnostic process progresses; starting with Lens 1 and ending with Lens 4. As such, the worksheet for Lens 4 asks each technical specialist to list recommendations for the sector and then rate how well the recommendation aligns with local goals and objectives.

When the technical specialists meet together for the Prioritization Session, they come prepared with the completed worksheets related to each of the four lenses. At this point, the lenses are used *iteratively* to look more holistically at the city's level of resilience to define shocks and stresses and to define priority actions and investments that will have the most benefit in terms of enhancing resilience while also move forward important development initiatives.

It is recommended that the Task Team uses all lenses described below to arrive at final recommendations. They have been designed to ensure that multiple aspects of city-wide resilience are taken into consideration. However, there is flexibility in terms of how the lenses are discussed during the Prioritization Session. It is important to note that the lenses are a discussion tool. They are not a recipe for identifying actions and investments; Task Team and local expertise is an integral part of the process.

Lens 1 – Shock and Stress Assessment

The objective of Lens 1 is to help understand the potential impact of significant shocks and stresses in the city, and particularly which people and assets are directly in danger. The rationale is that people and assets under imminent threat should be considered a high priority for investment or other actions.

In Lens 1, the technical specialists apply the list of shocks and stresses that emerged from the Pre-Diagnostic Review (Stage 1) and Launch Workshop (Stage 2) to the specific sector that is being evaluated. Shocks are assessed using a traditional risk assessment process in which risk is considered as a factor of *likelihood* and *intensity* of the shock, the sector's level of *exposure* to the shock, and any underlying vulnerabilities exacerbating the impact (e.g., social or physical fragilities). It is difficult however to apply a traditional risk assessment process to stresses because they are often ongoing, making consideration of likelihood unnecessary. In addition, other aspects such as trends (whether the situation is improving or deteriorating) need to be considered. Therefore, the worksheet for Lens 1 is composed of two parts the first is focused on shocks and the second on stresses. Upon completion of the Lens 1 worksheets, it is expected that the technical specialist will have identified specific communities, socio-economic groups, and/or assets that are at high risk and hence should be considered a priority for action in the sector.

Lens 2 – Dependencies and Interdependencies

The objective of Lens 2 is to improve understanding of dependencies and interdependencies within urban services and systems that can cause cascading disruption or failure, or compound existing vulnerabilities. Interdependencies have become a growing phenomenon across infrastructure sectors since they are not only a point of potential vulnerability but may also compound existing vulnerabilities and carry these vulnerabilities across multiple infrastructure sectors. For example, failure in the electricity system can have cascading impacts on multiple sectors by bringing electric-powered equipment to a halt, including groundwater pumping stations, overhead transportation lines, and communications cell towers.

The worksheets for Lens 2 ask sector experts to consider the following in their assessment:

a. Whether their sector might be under additional pressure if another sector were to be disrupted (horizontal assessment); and
b. Whether other sectors might be under additional pressure if their sector were to be disrupted (vertical assessment).

When all the sector experts have completed this exercise, a full outlook of city sector interdependencies will exist. An interdependency matrix (Resource 8) will be prepared by the Task Team Leader for discussion and confirmation during the Prioritization Session. Once sector relationships are better understood, the sector experts can go back to Lens 1, exploring major sector vulnerabilities (to shocks and stresses) and potential implications to the wider urban system.

Lens 3 – Holistic Resilience

The objective of Lens 3 is to bring together the information from the sector evaluations and think holistically (rather than sectorally) about the city's resilience in order to identify critical gaps or areas of weakness. The qualities of resilience are used to facilitate the cross-sectoral discussion and evaluation of priority actions and investments that will enhance overall resilience of the city.

Technical specialists are asked to rate how well their sector reflects each of the qualities of resilience—*robust, redundant, reflective, coordinated, and inclusive*—and provide a justification for the rating (Resource 6). This is a qualitative rating based on the specialist's experience and information collected as part of the diagnostic. The Task Team Leader collates these ratings into a matrix for discussion during the Prioritization Session. The matrix will provide a cross-sectoral snapshot of how the city is performing in relation to the five qualities of resilience. For example, it could reveal that the city rates quite well in terms of robustness across most sectors (i.e., infrastructure is well-conceived, constructed, and managed) but is weak in terms of coordination (i.e., knowledge is not shared, planning is not collaborative and strategic, and decision-making is not based on investments that are mutually supportive toward a common outcome). It is the discussion that takes place around the score, rather than the score itself, that will catalyze the conversation among specialists and enable critical reflection leading to the ultimate set of recommendations made by the Task Team to the city leadership.

Lens 4 – Alignment with Local Goals

The objective of Lens 4 is to help align the recommended actions and investments with local goals and objectives in addition to World Bank operations. Inclusion of this lens in the diagnostic is important for multiple reasons, including scarcity of local and World Bank resources, stakeholder ownership and support, and long-term sustainability of resilience efforts. The lens reflects the assertion that resilience is not an end state but rather an attribute that better enables a city to achieve its development goals. Making sure that the outputs are aligned with local goals and feasible World Bank operations offers an opportunity to integrate recommendations into existing local World Bank efforts even if a standalone follow-up activity is not the immediate next step.

The worksheet for Lens 4 asks the technical specialist to list the city's official goals, objectives, or aspirations as stated in government planning documents such as comprehensive plans or 5-year plans. The Task Team could complete this portion of the worksheet after the Launch Workshop (Stage 2), during which the local government is asked to make a formal presentation of the city's goals. The specialists are then asked to list sector-specific goals. These could be gleaned from master plans, investment plans, or stakeholder interviews.

It is within the Lens 4 worksheet that technical specialists are asked to provide their short-list of recommended actions and investments to enhance resilience within the sector. For each recommendation, the specialist must rate how well-aligned it is with the local government's goals and objectives. This process provides an opportunity for reflection: *Are any of the recommendations contrary to the goals? Is there a way to bring the recommendations into better alignment with the goals? Are all the recommendations focused on enhancing resilience?* All these recommendations need to be confirmed by government officials and local stakeholders attending the prioritization session.

Bringing the Lenses Together

Lens 1 and 2, if considered together, help in determining the consequences of the most significant shocks and stresses. They capture both direct (Lens 1) and indirect impacts as a result of interdependencies between sectors and the potential for cascading failures (Lens 2). Alone, however, an individual lens would lean toward a perpetuation of the predict and prevent paradigm that underpins disaster risk reduction and does not account for unknown shocks and stresses or accept that it is not necessarily possible to determine the way in which they will play out.

These lenses are counter-balanced by Lens 3, which recognizes the city as a complex system and integrates future uncertainty. Lens 3 brings together information from the sectoral assessments to identify key gaps or weaknesses that need to be addressed to enhance citywide resilience in a holistic way. The opportunity is to align this with the overall development Goals and Objectives (Lens 4), while ensuring that the most significant risks (or threats) have been considered (Lens 1 and 2).

Prioritize Actions and Investments

Task Team members should submit the completed worksheets for Lens 1-4 prior to the Prioritization Session so that there is ample time for synthesizing the information and populating cross-sectoral matrices in advance.

TIMING

The Prioritization Session takes place after all the one-one-one interviews, group discussions, and field visits are conducted. With the rapid approach, it would be a 3-4 hour session organized for the day prior to the wrap-up session with city leadership. With the incremental approach, it would be a full-day event occurring at least a week before the wrap-up session with city leadership.

PARTICIPANTS AND ROLES

All Task Team members must participate in the Prioritization Session. Sectoral recommendations submitted in writing with the completed worksheets will likely evolve and transform during the session; as such, it is paramount that the experts who contributed to the sectoral work are present to discuss and debate the final set of recommendations.

The team should consider inviting key local representatives to participate in the Prioritization Session. The government should take full ownership of the process assuring that the recommendations are aligned to their priorities and accurately reflect input from local stakeholders. The stakeholders invited to participate in the Prioritization Session will vary according to the context in which the diagnostic is being carried out; but, it could be generally beneficial to have representation from those groups that participated in the diagnostic that might have included national, regional, and local government; civil society; academic institutions; private and non-profit sectors; and development partners.

The CityStrength Coordinator, Task Team Leader, or a professional facilitator will guide the prioritization process. It is important that the facilitator be an unbiased enabler of cross-sectoral dialogue so that all technical specialists and local stakeholders feel that there is a level playing field for sharing ideas and discussing the various sectors.

It is helpful to identify an official note taker prior to commencing the session. The facilitator may use large note pads or white boards to help organize suggestions and concepts, but there should be someone taking detailed notes in addition. This will be helpful in preparing for the wrap-up session with city leadership, drafting of the aide memoire, and the development of the publication of findings.

Conducting the Prioritization Session

With the data collected, the following steps will ultimately lead to a consensus of recommended actions and/or investments.

Step 1: Review and Consensus on Shocks and Stresses

Agree on the top 3 shocks and 3 stresses facing the city.

The Pre-Diagnostic Review (Stage 1) resulted in a list of preliminary shocks and stresses. This list was used during the Launch Workshop (Stage 2) to catalyze discussion among city stakeholders about their perceptions of shocks and stresses in the city, and resulted in a revised list. The participants of the Prioritization Sessions are now asked to evaluate this list based on their sectoral expertise, experience, and information learned and observed during Stage 3. *Has an important shock or stress been omitted? Is a shock or stress being overstated? Is there a shock or stress that should be tentatively*

included on the list, but which requires additional analysis? Finally, if there are more than 3 shocks and 3 stresses facing the city, *is it possible to bundle some of them together?*

Step 2: **Review and Consensus on People or Assets at High Risk**

Identify the specific communities, socio-economic groups, and/or assets that are at high risk in the city.

On a sector-by-sector basis, each technical specialist has identified specific communities, groups, and/or assets that are in direct danger from shocks and stresses. Prior to the Prioritization Session, the facilitator will combine the content provided by each specialist on the Lens 1 worksheets into a table or cards that can be used for clustering on a wall or white board. Each specialist will present their analysis and provide clarification if needed. Are the sectoral findings consistent? Are there specific areas of the city that could be considered hot spots? If the list of key shocks and stresses was revised in Step 1, does it impact the composition of people or assets at high risk?

Step 3: **Review and Consensus on City Goals**

Agree on the primary city and sectoral goals.

Using the worksheet from Lens 4, the group reviews and confirms the city's formal development goals. In most cases, this will have been presented by a city official during the Launch Workshop (Stage 2). Each technical specialist is given the opportunity to share any sector-specific goals that they consider significant for the prioritization process.

Step 4: **Sharing and Clustering of Sectoral Recommendations**

Organize the sectoral recommendations into clusters according to the themes.

This step also utilizes the worksheet from Lens 4. Prior to the session, the Task Team Leader will collect the sectoral recommendations and display them on individual sheets or cards. Each sheet or card should list a specific recommendation and denote from which sector it came and if it is an action or an investment. Each technical specialist is asked to present their sector's recommendations. Once all sectors have been presented, and any questions or clarifications addressed, the group will cluster the recommendations on a wall or white board. Topics around which the recommendations could be clustered include:

- Proposed actions (institutional strengthening, capacity building, data collection, regulatory reforms);
- Proposed investments (new infrastructure, rehabilitation of infrastructure, safety net systems, new programs);
- Measures to address specific shocks or stresses;
- Measures to protect specific communities, groups, or assets; and
- Short-term versus medium-term measures.

At this point, it is not necessary to consolidate or remove specific recommendations. That will happen in Step 7. However, if there is early consensus to consolidate, remove, or revise, the group is free to do so.

Step 5: **Review of the Interdependency Matrix**

Identify key interdependencies among sectors – citywide or in specific geographic locations.

Before the Prioritization Session, the Task Team Leader populates an Interdependency Matrix based on the content of the Lens 2 worksheets submitted by the technical specialists. The matrix is color-coded to indicate in red for those sectors with significant interdependence (i.e., sectors in which damage from a shock or stress would significantly impact another sector), in yellow for the sectors that have moderate interdependence, and in green for the sectors with little or no interdependence. This matrix is distributed to the group for discussion. *Does this full outlook of city sector interdependencies change your diagnosis of the specific communities, socio-economic groups, and/or assets that are at high risk? Does it compel you to revise or augment your sectoral recommendations?*

Step 6: **Review of the Holistic City Resilience Matrix**

Identify critical gaps or areas of weakness in regard to overall city resilience.

Prior to the session, the Task Team Leader populates the Holistic City Resilience Matrix. This matrix is distributed to the group for discussion. *Does the matrix reveal critical gaps or areas of weakness in regard to overall city resilience? Does it compel you to revise or augment your sectoral recommendations?*

Step 7: Revisit the Sectoral Recommendations

Revise and re-cluster recommendations from Step 3, and identify any new overarching recommendations.

In Steps 5 and 6, the technical specialists are invited to revise their sectoral recommendations based on the outcome of the interdependency analysis and holistic look at city resilience. In this step, the group is asked to revisit the conclusion of Step 3 and refine any overarching recommendations based on the insights that emerged from Steps 5 and 6. To make the set of recommendations easily digestible by local stakeholders, it is recommended that the group develop 1 or 2 overarching recommendations followed by up to 5 actions and 5 investments.

Step 8: Calibrate the Recommended Actions and Investments

Review the consolidated list of recommendations for alignment with local goals from Step 3.

In the final step, the group assesses the alignment between the consolidated list of recommendations and local goals from Step 3. Similar to the exercise completed in Lens 4 on a sectoral basis, this juncture offers an opportunity for reflection. *Are any of the recommendations contrary to the goals? Is there a way to bring the recommendations into better alignment with the goals? Are all the recommendations focused on enhancing resilience?* Furthermore, it is important to consider how operational the recommendations are if the government is requesting follow-on support from the World Bank through a loan.

Multi-City Context. In a multi-city context, the official counterpart may be a national ministry rather than a local government. In the case of Ethiopia, for example, it was the Ministry of Urban Development. The ministry may want a set of recommendations that can be applied across cities rather than recommendations for individual cities. In order to get a sense of the priorities that can cut across cities, a preliminary exercise can be carried out during the Launch Workshop. This exercise, which is additional to the sectoral discussions, allows technical staff to come together to discuss their city-level priorities. The result is a list of priorities that follow a bottom-up approach and are used as inputs into the overall prioritization session to come up with a list that can be applied at the national level.

Metropolitan Context. In a metropolitan context, the counterpart may be a national or regional entity. Similar to a multi-city context, there may be a desire for a set of recommendations that can apply across municipalities. The way the prioritization is carried out will also depend on the number of municipalities. As exemplified in the Greater Accra Region, there was an identification of priorities at the municipal level, which was then brought together at a cluster level (with four municipalities

in each cluster). This list of priorities was then used as an input into the final prioritization of recommendations.

Depending on the number of participating cities, the prioritization session may have to include more than one gathering. In the case of Ethiopia, the Task Team returned to the country after a draft publication was prepared to incorporate any additional feedback. This included a workshop with the technical sectoral specialists from the cities, and a second day of presentations to local leadership. In the Greater Accra Region, the Task Team returned to brief the Steering Committee and get more input for the finalization of the report.


ሀይሉ መልኣኩ
HAILU MELAKU GENERAL ELECTRICAL MATERIALS
Tel.0111 11 56 95/0111 55 52 54
P.o.Box.21781
AFRICA ANDINET NO.1 Pri.& Sec. School

Stage 5: Next Steps

The objective of Stage 5 is to discuss the findings of the diagnostic with local leadership, share recommendations, and agree on follow-up steps.

Prior to sharing the draft recommendations with the counterpart, World Bank Management might want to be briefed. The Task Team Leader should confer with the Country Management Unit early in the diagnostic process to ensure that ample time for briefing is allocated if necessary. The time between the Prioritization Session and the wrap-up meeting with city leadership may be quite short: therefore, the Task Team Leader and Country Management Unit should agree in advance on the timing.

Wrap-up Meeting with City Leadership

Depending on the local context, the wrap-up meeting might be held with a small group of city officials or with the same large set of stakeholders who participated in the Launch Workshop. The format and size will inform the type of materials that need to be prepared in advance. For a small-scale gathering, the Task Team should prepare talking points to distribute in hard copy. For a larger event, it may be more appropriate to prepare a PowerPoint presentation. In Addis Ababa, for example, the wrap-up meeting consisted of the Mayor and the Deputy Mayor; in Can Tho, the wrap-up meeting was organized in a workshop format and included the Chairman, Vice-Chairwoman, all heads of departments, and representatives from select ministries. In the case of multiple cities in Ethiopia and the Greater Accra Region, the wrap-up meetings were with the Ministry of Urban Development and Housing; and the Ministry of Environment, Science, Technology and Innovations, respectively.

An aide memoire should be prepared; it should highlight the main findings of the diagnostic, recommendations for priority actions and investments, and agreed next steps. Importantly, the aide memoire should reflect input and feedback from the wrap-up meetings and underscore any data gaps that could significantly alter the recommendations.

Make the Findings Public

After agreeing on priorities and next steps, the Task Team can prepare a brief publication highlighting the findings of the CityStrength Diagnostic, incorporating direction and feedback from local stakeholders, as well as additional research and verification, as applicable. This could be used by the local government to facilitate communication with a broad set of internal and external stakeholders. Ultimately, the local government decides if a publication should be prepared.

The publication should document and make public the resilience-building priorities agreed with local leadership during the implementation of the diagnostic. To effectively communicate the findings to

a broad audience, it is recommended that the publication be relatively short (maximum 50 pages); rich with graphics such as maps, infographics, and pictures; and use simple, accessible language. In a multi-city or metropolitan context, a longer publication may be needed if the counterpart wants to include city-level assessments. It is also recommended that the publication be translated into the local language and disseminated through local media channels. In Can Tho, for example, the dissemination of the publication was supported by the production of a video highlighting the impact of the city's chronic flooding on residents. The publication, video, and article were made available in Vietnamese. For the dissemination of the findings from the engagement in Ethiopia and the Greater Accra Metropolitan Area, documentaries, animation videos, press releases, feature stories, blogs, and social media efforts were undertaken. Figure 16 provides a suggested content for the publication.

Figure 16: Content of the CityStrength Diagnostic Findings Publication

SECTION	CONTENT
Note to the Reader	Presents the objective of the CityStrength Diagnostic and any relevant background on its implementation in the city such as dates and participants.
Letter from the Mayor	Highlights the rationale for implementing the CityStrength Diagnostic in the city and demonstrates commitment to enhancing urban resilience.
Executive Summary	Provides a summary of the main shocks and stresses facing the city and recommended priority actions and investment
Overview of Urban Resilience	Defines the concept of urban resilience and why it is a critical issue for the city
Overview of the CityStrength Diagnostic	Describes the objective of the CityStrength Diagnostic and its 5 stages.
Description of the city	Provides key socio-economic, geographic, climatic, and service delivery information. Presents the city's goals and objectives for development.
Shocks and Stresses in the City	Describes the main shocks and stresses that could inhibit the city from reaching its development goals.
Findings of the CityStrength Diagnostic	Provides snapshots of each sector included in the diagnostic, including their performance relative to the qualities of resilience, recent support from development partners, and recommendations for improvement.
Recommendations	Presents the recommended actions and investments for enhancing the city's resilience.
Immediate Measures	Presents a sub-set of short-term and/or low-cost resilience enhancing measures that the city can start implementing immediately.
Resources	List all of studies, reports, and plans reviewed as part of the diagnostic.

The Task Team Leader will take the lead in preparing the first draft of the publication based on several inputs, including the final aide memoire, the responses to the Sectoral Guiding Questions, the completed and refined lens worksheets, the notes from the Prioritization Session, and information collected during the Pre-Diagnostic Review. The first draft is circulated to the Task Team; it is the responsibility of all team members to provide comments and revisions to ensure that the publication accurately reflects the diagnostic process and outcomes.

Given that the publication will be a public statement of the World Bank's recommendation for the city, it is recommended that the draft document be put through a peer review process. Once approved, it should be sent to the counterpart for final review and approval.

Set the Path for Future Engagement

The CityStrength Diagnostic is not an end but is a beginning. In parallel to the preparation of the findings publication, the Task Team continues a dialogue with the client city on how the World Bank or other development partners could support the recommended actions and investments. Depending on the nature of the recommendations, follow-up support may be guided by the Task Team Leader or other technical specialists who participated in the diagnostic and include activities such as studies and surveys to fill data gaps, feasibility studies for critical infrastructure or programs, technical assistance, or a financing operation.

This continued dialogue could be done in the context of a dissemination workshop where the publication is officially launched in the presence of high-level officials, diagnostic participants, and the local media. During this stage, the role of the communications specialist is extremely important to help engage with local media to promote the findings and the importance of enhancing urban resilience. Communications tools such as videos and other dissemination materials could be launched at this stage to create momentum around the resilience agenda and shed light on the government's efforts to foster resilience. Gathering leadership for a high-profile event will enable visibility and connections that can lead to the implementation of the recommendations. Local media should also be invited to participate in order to promote urban resilience as widely as possible and encourage leadership to continue supporting the agenda.

Resource 1:
Categorization of Shocks and Stresses

Hazard Group: Natural Key: Shock Stress

HAZARD SUB-GROUP	HAZARD TYPE & EXAMPLE	GUIDING QUESTION	SHOCK/ STRESS
Meteorological	Extreme Temperature (High) Ex: Heat Wave	Has the city suffered fatalities due to heatwave?	
Meteorological	Extreme Temperature (low) Ex: Cold Wave	Has the city suffered fatalities due to extreme winter weather?	
Meteorological	Mid-latitude (Extratropical) Storms Ex: Winterstorms (including snow, blizzards, hail and severe winter weather)	Has the city experienced severe windstorms?	
Meteorological	Mid-latitude (Extratropical) Storms Ex: Tornadoes	Has the city experienced tornedos?	
Meteorological	Mid-latitude (Extratropical) Storms Ex: Sandstorms	Has the city experienced sandstorms?	
Meteorological	Tropical Storms Ex: Cyclines/Hurricanes/ Typhoons	Has the city experienced cyclones/ hurricanes/typhoons?	
Meteorological	Tropical Storms Ex: Coastal/Storm Surges	Has the city experienced coastal/storm surges?	
Meteorological	Tropical Storms Ex: Severe Winds, Severe Rain and Flooding, Landslides	Has the city experienced severe winds, severe rain and flooding, landslides?	
Meteorological	Electrical Storm Ex: Severe Lightning/ thunderstorm; Derecho	Has the city experienced severe lightning/thunderstorm?	
Climatological	Wildfire Ex: Bush/Brush Fire	Has the city or region experienced bush/brush fires?	
Climatological	Wildfire Ex: Forest Fire	Has the city or region experienced forest fires?	

Climatological	Wildfire Ex: Scrub/Grassland Fire	Has the city or region experienced scrub/grassland fires?	
Climatological	Drought Ex: Drought	Has the city experienced drought?	
Climatological	Glacial lake outburst Ex: Glacial lake outburst	Has the city experienced glacial lake outburst?	
Geophysical	Earthquake Ex: Earthquake, ground movement	Is the city located on or near fault lines? Has the city experienced earthquakes? When and at what magnitude?	
Geophysical	Earthquake Ex: Liquefaction	Has the city experienced liquefaction?	
Geophysical	Earthquake Ex: Tsunami	Has the city experienced a tsunami?	
Geophysical	Mass Movement Ex: Avalanche	Is the city situated in a mountainous area with seasonal snow?	
Geophysical	Mass Movement Ex: Debris Flow	Is the city situated on valley floor with surroundings slopes steeper than 25 degrees and consisting of loose sediment, soil, or weathered rock?	
Geophysical	Mass Movement Ex: Mudflow	Is the city situated in a mountainous area with heavy seasonal rains?	
Geophysical	Mass Movement Ex: Landslide	Are any parts of the city's physical structures on slopes situated on unstable ground?	
Geophysical	Mass Movement Ex: Rockfall	Is any of the city's infrastructure or buildings positioned below a slope/cliff?	
Geophysical	Volcano Ex: Lava flows (and crater)	Is the city located in the vicinity of an active volcano?	
Geophysical	Volcano Ex: Pyroclastic flows	Is the city located in the vicinity of an active volcano?	
Geophysical	Volcano Ex: Volcanic explosions–tephra and rock	Is the city located in the vicinity of an active volcano?	
Geophysical	Volcano Ex: Volcanic ash	Is the city located in the vicinity of an active volcano?	

Geophysical	Volcano Ex: Volcanic gases	Is the city located in the vicinity of an active volcano?	
Geophysical	Volcano Ex: Lahar	Is the city located in the vicinity of an active volcano?	
Hydrological	Flood Ex: Flash Flood	Has the city experienced flash flooding?	
Hydrological	Flood Ex: Ice Jam Flood	Are part of the city located near rivers that freeze over winter?	
Hydrological	Flood Ex: Fluvial Flood	Are parts of the city located in river floodplains?	
Hydrological	Flood Ex: Groundwater Flood	Is the city located on a shallow water table or lluvial deposits?	
Hydrological	Flood Ex: Pluvial Flood	Has the city experienced flash rainwater flood or extreme precipitation?	
Hydrological	Flood Ex: Coastal Flood	Is the city located along a coast?	
Hydrological	Wave Action Ex: Rogue Wave, Selche	Has the city experienced rouge wave, seiche?	
Biological (Health)	Human Diseases Ex: Epidemic and Pandemic Bacterial Infectious Diseases (e.g. Pan Flu)	Have occurrences of bacterial infections (e.g., bone and joint, staphylococcus, pneumonia, tuberculosis etc.) increased rapidly in the last 3-5 years?	
Biological (Health)	Human Diseases Ex: Epidemic and Pandemic Parasitic/fungal Infectious Diseases	Have occurrences of parasitic infections (e.g., hookworm) increased rapidly in the last 3-5 years?	
Biological (Health)	Human Diseases Ex: Epidemic and Pandemic Viral Infectious Diseases	Have occurrences of viral infections (e.g., HIV, hepatitis, rabies etc.) increased rapidly in the last 3-5 years?	
Biological (Health)	Animal Disease Ex: Zoonotic	Have occurrences of zoonotic infectious diseases increased rapidly in the last 3-5 years?	
Biological (Health)	Animal Disease Ex: Non-zoonotic	Have occurrences of non-zoonotic diseases increased rapidly in the last 3-5 years?	

Biological (Health)	Animal Disease Ex: Insect Infestation	Have occurrences of insect infestation increased rapidly in the last 3-5 years?	
Extra-terrestrial	Space Weather Ex: Energy and Telecommunications Blackout	Does the city frequently suffer from power outages/ surges and/or telecommunications blackout?	

Hazard Group: Human

HAZARD SUB-GROUP	HAZARD TYPE & EXAMPLE	GUIDING QUESTION	SHOCK/ STRESS
Political	Social Crisis Ex: Energy Crisis, Oil/Fuel Shortage	Is the city dependent on imported energy supply?	
Political	Social Crisis Ex: Civil Liberties and Democracy	Do citizens have freedom of expression in politics, religion etc.? Does the city government communicate effectively with citizens?	
Political	Malicious Attacks Ex: Terrorist Attacks	Are there antagonisms in the society that could spark terrorist attacks? Are there international (political) antagonisms that could cause terrorism in the city?	
Political	Malicious Attacks Ex: Terrorist Attacks on Infrastructure	Does the city hold infrastructure of critical national importance? Has the city ever experienced an attack on its infrastructure?	
Political	Malicious Attacks Ex: Terrorist attacks on people - Chemical, Biological, Radioactive (CBR)	Are there antagonisms in the society that could spark terrorist attacks? Does the city have large and unprotected chemical\radioactive substance reserves?	
Political	Malicious Attacks Ex: Terrorist attacks on people - Massacre	Has the city experienced isolated violent attacks on crowds of people?	
Political	Political Ex: Weak rule of law	Do the city enforce regulations and laws?	
Political	Political Ex: War	Is there history of organized, country-wide violence? Is the city located in a country/region with political instability?	

Political	Political Ex: Political Conflict	Has the city experience anti-government protests?	
Political	Political Ex: Corruption	Is there a significant amount of corruption at the city level and/ or recurrent media allegations of corruption?	
Political	Political Ex: Poor Government Communication/Silos	Is the government's communication structure integrated across departments, emergency units and levels of leadership?	
Political	Political Ex: Poor Government Planning, land-use and Densification	Is city strategy and investment undertaken holistically? Are parts of the city connected, with access to essential services? Is land-use planning undertaken logically and holistically?	
Political	Governance Infrastructure Breakdown Ex: Governing System Breakdown	Are public employees unionized or have a history of participating in strikes?	
Political	Governance Infrastructure Breakdown Ex: Emergency Service Breakdown	Is there a history of communication or coordination problems between police, fire department, and emergency medical services?	
Political	Governance Infrastructure Breakdown Ex: Public Safety Service Breakdown	Is the city or regions police force institutionally sound and adequately funded?	
Socioeconomic	Social Crisis Ex: Housing Crisis	Is there a high housing deficit in the city? Have housing prices been rising sharply or volatile during the last decade?	
Socioeconomic	Social Crisis Ex: Food Crisis (including Famine)	Is the city overly dependent on one source of food supply?	
Socioeconomic	Social Crisis Ex: Congestion	Does the city have the services and service capacity to meet its current and predicted population?	
Socioeconomic	Social Crisis Ex: Social Conflict	Is there a history of social tensions in the city?	
Socioeconomic	Social Crisis Ex: Poverty and Inequality	Are the city's poverty and inequality levels higher than the national average?	

Socioeconomic	Social Crisis Ex: Crime	Is the city's crime rate higher than the national average?	
Socioeconomic	Social Crisis Ex: Drug-use	Has the city experienced a rapid increase in substance abuse cases in the last 3-5 years?	
Socioeconomic	Social Crisis Ex: Interpersonal Violence	Has the city experienced a rapid increase in interpersonal violence in the last 3-5 years?	
Socioeconomic	Social Crisis Ex: Suicide	Has the city experienced a rapid increase in suicide cases in the last 3-5 years?	
Socioeconomic	Economic Ex: Rapid population growth/ decline	Has the city experienced a rapid increase/decline in population in the last 3-5 years?	
Socioeconomic	Economic Ex: Business Discontinuity	Are a large number of businesses or industries dependent on geographically concentrated utilities? Are private sector activities highly concentrated in one area of the city?	
Socioeconomic	Economic Ex: Excessive Unemployment	Does the city or region suffer from high unemployment? Has this changed considerably in the last 3-5 years?	
Socioeconomic	Cultural Crisis Ex: Destruction of Cultural Heritages	Does the city have a large amount of cultural heritage assets? Has city's cultural heritage ever suffered from deliberate damage/destruction?	
Socioeconomic	Socio-economic Infrastructure Breakdown Ex: Major Industrial Accident	Does the city have industrial uses? Are industrial facilities properly maintained?	
Socioeconomic	Socio-economic Infrastructure Breakdown Ex: Health Care Service Breakdown	Are health facilities in the city in poor condition or extended beyond service capacity? Are health care providers unionized or likely to strike?	
Socioeconomic	Socio-economic Infrastructure Breakdown Ex: Education Service Breakdown	Are education facilities in the city in poor condition or extended beyond service capacity? Are there sufficient educators in the city?	
Socioeconomic	Socio-economic Infrastructure Breakdown Ex: Financial System Breakdown	Do most city residents use the formal banking system?	

Environmental	Social Crisis Ex: Water Crisis	Is the city located in a water-constrained region? Is there a water supply deficit in the city or region? Is a high proportion of city residents dependent on non-piped water suppliers?	
Environmental	Environmental Destruction Ex: Destruction of Natural Environment	Does the city suffer from rapid environmental degradation caused by uncontrolled growth and pollution?	
Technological	Industrial Accident Ex: Chemical Spill	Does the city have industry that uses large quantities of chemicals?	
Technological	Industrial Accident Ex: Collapse	Does the city have building codes specific to industrial uses? Are they enforced?	
Technological	Industrial Accident Ex: Explosion	Does the city have industry with explosive materials (e.g., grain dust, aerosol cans etc.)?	
Technological	Industrial Accident Ex: Gas Leak	Does the city have landfills, incinerators and aging pipes that carry hazardous gases?	
Technological	Industrial Accident Ex: Oil Spill	Are there oil refineries or other such industrial uses in the vicinity of the city?	
Technological	Industrial Accident Ex: Poisoning	Does the city have industry that produces large quantities of toxic products/waste?	
Technological	Industrial Accident Ex: Radiation	Are there nuclear plans/nuclear fueled industries in the vicinity of the city?	
Technological	Non-industrial Accident Ex: Building Collapse	Are building standards enforced?	
Technological	Non-industrial Accident Ex: Infrastructure Collapse	Does the city have an asset management system for large scale infrastructure?	
Technological	Non-industrial Accident Ex: Explosion	Does the city have a natural gas distribution network? Are furnace or boiler systems a common heating mechanism in residential, commercial, or civic building?	

Technological	Non-industrial Accident Ex: Fire	Does the city have building construction practices that are sensitive to fire (e.g., uncommon use of fire resistant materials)? Is firewall insulation a common construction practice in the city? Does the city have overcrowded residential areas?	
Technological	Non-industrial Accident Ex: Transport Accident	Are traffic safety laws and regulations commonly complied with in the city?	
Technological	Basic Infrastructure Breakdown Ex: Water Infrastructure Breakdown	Does the city regularly perform maintenance of sewage pipes, dams, pumping stations, water treatment facilities etc.?	
Technological	Basic Infrastructure Breakdown Ex: Energy Infrastructure Breakdown	Does the city frequently suffer from power outages or surges? Does the city regularly perform maintenance of sub-stations, transmission systems etc.?	
Technological	Basic Infrastructure Breakdown Ex: Solid Waste Management System Breakdown	Does the city have a functional waste collection and disposal system?	
Technological	Basic Infrastructure Breakdown Ex: Communication Infrastructure Breakdown	Are the city's postal services, telecommunication networks, television, and radio station transmission centers at risk of disruption?	
Technological	Basic Infrastructure Breakdown Ex: Transport Breakdown	Is the city regularly maintaining its transit system, trains, buses etc.?	
Technological	Basic Infrastructure Breakdown Ex: Transport Service	Is there affordable public transport connecting all parts of the city?	
Technological	Socio-economic Infrastructure Breakdown Ex: Cyber Security	Is the city heavily reliant on ICT infrastructure?	
Technological	Socio-economic Infrastructure Breakdown Ex: Business Logistics System Breakdown	Are primary industries or sectors dependent on port or air logistics?	

Resource 2:

Launch Workshop Group Exercise Description

The objective of the exercise is to give workshop participants the opportunity to discuss the findings of the Pre-Diagnostic Review, including the preliminary list of primary shocks and stresses in a small group format.

DESCRIPTION

The participants will break into four diverse groups. If there are multiple participants from the same city department or organization, they are asked to join separate tables. Each group will have a facilitator and a note taker to capture the discussion.

The first task of the group facilitator is to appoint a group rapporteur who will summarize the key outcomes of the group discussion at the end of the exercise. Ideally, the rapporteur should not be a member of the Task Team.

Three hand-outs are provided to the participants: (1) a summary of the Pre-Diagnostic Review findings; (2) a sheet that defines shocks and stresses; and (3) a worksheet for placing each identified shock within a matrix of *impact* versus *frequency*.

STEPS

01 | **Hand-out 1: Discuss the findings of the Pre-Diagnostic Review** (15 min.)

- Do you disagree with the findings?
- Is there any crucial information that is missing?

02 | **Hand-outs 2 and 3: Discuss priority shocks and stresses** (30 minutes)

- Do you agree with the shocks and stresses identified in the Pre-Diagnostic Review?
- Are there any shocks and stresses that are missing?
- Are there specific groups in the city that are more impacted by these shocks and stresses than the general public?
- How would you rate each shock in terms of *impact* and *frequency*?

03 | **Report back** (5 minutes per group)

Each group reports back on the main conclusions of their discussions. Participants from other groups are given the opportunity to ask clarifying questions.

04 | **Synthesis**

The facilitator guides the participants toward a board consensus on the shocks and stresses facing the city, and summarizes any disputed content from the Pre-Diagnostic Review that requires follow-up analysis by the Task Team.

Resource 3:

Mapping Exercise Description

The **objective** of the group exercise is to better understand the spatial implications of shocks and stresses in the city and to identify vulnerability hotspots. The exercise will help identify priority locations for Task Team site visits.

DESCRIPTION

A facilitator will support the discussions and guide participants through the exercise. The exercise will be carried out using a poster-size administrative map of the city. If up-to-date physical baseline maps are available, these can be used to quicken the pace of the exercise. However, it is important to review the location of major infrastructure or systems to ensure that participants have a shared understanding. The Task Team should take photos of the completed maps when the exercise is complete.

01 | **Create the socio-economic and physical baseline (30 min.)**
Indicate on the map (using markers/arrow stickers/post-its):

a. Infrastructure

- **Where are the power utilities located?**
- **Where are the major public transport hubs located?**
- **Where in the city are communication assets located?**
- **Where does the water supply originate?**
- **Where does waste treatment take place?**
- **What parts of the city are connected to the sewerage system?**
- **Where is the stormwater drainage infrastructure?**
- **Where is the coastal protection infrastructure, if applicable?**

b. Land Use

- Where are the green spaces of the city located?

- Where in the city does agriculture take place?
- Where are the major commercial centers?
- Where is the city expanding outside formal administrative boundaries?
- Where are the major rivers, lakes or other waterways?

c. Socio-economic

- Where do the poorest people live?
- Where do the wealthiest people live?
- What parts of the city are the most densely populated?
- What part of the city is impacted the most by crime?
- Where are the economic drivers of the city located?

02 | **Discuss trends (20 min.)**

Indicate on the map (using markers/arrow stickers/post-its):

- Where has recent urban growth taken place?
- Which areas are densifying?
- Where is urban development expected to occur over the next 5-10 years?
- Where are the industrial and commercial growth occurring?
- What demographic shifts are taking place and how will they impact the spatial vulnerability of the city?

03 | **Identify the hotspots (30 min.)**

Indicate on the map (using markers/arrow stickers/post-its):

a. Shocks and Stresses

- [Prepare questions based on the shocks and stresses identified in Pre-diagnostic Review. Amend the list based on the outcome of discussions during the Launch Workshop.]
- What parts of the city are most impacted by [shock]?
- What parts of the city are most vulnerable to [stress]?
- How have communities and businesses coped with these events in the past?

b. Hotspots:

- What areas in the city present multi-layered vulnerabilities and could therefore be identified as hotspots (in terms of spatial sensitivity and exposure to the identified shocks and stresses and the resulting implications for the socio-economic and physical aspects of the city)?
- Which are the priority hotspots?
- Will these hotspots become even more vulnerable in the future?

04 | **Identify sites for the CityStrength field visits (20 min.)**
Based on the completed map, as well as outcomes of the Launch Workshop, which locations should the Task Team visit?

Resource 4:
Prioritization Lens 1

PART A - SHOCK ASSESSMENT

Shocks – What are the primary shocks that could affect the city? Where appropriate, specify the area(s) that could be affected.

SHOCK	INTENSITY	FREQUENCY	LOCATIONS AFFECTED	**RELATED SHOCKS** (at the same time or in succession – e.g. Earthquake-Tsunami)
Example: Coastal Flooding	*High*	*4 of the last 5 years brought major flooding*	*Whole of the Bay area*	
1.				
2.				
3.				

Exposure – **<u>For your sector</u>**, what might the shock affect? Outline the people, functions or assets that could be disrupted.

SHOCK	HUMAN/SOCIO-ECONOMIC (people, communities or social functions which might be disrupted)	PHYSICAL ASSETS (assets within your sector which may be exposed)
Example: Coastal Flooding	*10,000 residents live in the bay area who rely on the water company for main supply*	*The water treatment works are situated within the bay area as well as the desalination plant - the desalination plant was closed for 7 days after last years' flooding*
1.		
2.		
3.		

Vulnerability – For assets identified as exposed to the shock, please identify whether any exhibit particular strengths or weaknesses – Why? (For example, this could be due to a lack of planning and preparedness or physical weakness of an asset.)

SHOCK	HUMAN (any exposed people, communities or functions particularly vulnerable and why)	PHYSICAL ASSETS – are any of the identified assets particularly vulnerable?
Example: Coastal Flooding	*Emergency plans in place & city awareness campaigns with Bay area focus (when water may be unsafe & what to do). Helpline for outages.*	*The treatment works have flood barriers, pumping systems and diversion channels - never been impacted. The desalination plant flood barriers failed last year.*
1.		
2.		
3.		

Direct Consequences and Actions – **In relation to your sector:** Do any of the risks described above constitute an immediate threat to people or assets in the city? Describe potential scenarios below with recommended mitigation measures.

PART B - STRESS ASSESSMENT

Stresses – What main stresses currently affect the city? Who do they affect? Are they getting better or worse?

STRESS	LOCATIONS AFFECTED	CURRENT SITUATION	PROJECTION
Example: Water access / scarcity	*Poorer communities in South Bay informal settlement*	*Lack of secure access for over 5,000 people*	*Improving as more public connection infrastructure is completed (25% red. last 5 years)*
1.			
2.			
3.			

Sector Impact – How does this stress impact upon the operation of your sector?

STRESS	DIRECT	INDIRECT
Example: Water access / scarcity	*This is directly related to the water sector. There is requirement to address this*	
1.		
2.		
3.		

Compound Risk – Consider which shocks identified in Part A might compound this stress upon your sector (and vice versa).

STRESS	SHOCKS	IMPACT OF SHOCKS ON STRESS / IMPACTS OF STRESS ON SHOCKS
Example: Water access / scarcity	*Coast flooding, seismic activity*	*There may be short-term water loss after these shocks. If water is already scarce, relief may be impacted*
1.		
2.		
3.		

Actions –Are there any actions **<u>your sector needs to undertake</u>** in order to reduce direct or potential indirect impacts?

TO ADDRESS IMMEDIATE STRESS	TO ADDRESS POTENTIAL STRESS / SHOCK COMPOUND ISSUES

Resource 5:
Prioritization Lens 2

PART A - IMPACT FROM OTHER SECTORS

If any other urban sector were to be damaged or impacted by a shock or stress, how might this impact your sector? Review horizontally. Leave blank if no impact. When completed, highlight areas of significant impact in red.

SECTOR	Communities and Social Protection	Disaster Risk Management	Education	Energy	Environment	Health
SECTOR DESCRIPTION	Equal and fair access to basic services; Social cohesion; Awareness; Support for vulnerable groups	Preparation; Response mechanism; Disaster prevention infrastructure	Complete coverage (offered to all citizens); Continuous operation of education facilities	Secure supply of power; Continuity of services in the event of disruption	Environmental protection; Stability of the urban ecosystem	Emergency health relief; and Basic health services provided to the entire population
IMPACT FOR YOUR SECTOR						

SECTOR	ICT	Local Economy	Logistics and Supply Chains	Municipal Finance	Solid Waste Management	Transport
SECTOR DESCRIPTION	Helps guide economic growth; Ensures ICT public service delivery / accessibility	Local economy is diverse and youth unemployment is low	Efficient movement of goods -continuous and profitable operation	Withstands shocks to revenues or unforeseen municipal costs	Collection, disposal and treatment, especially of hazardous waste	Transport access for all population groups; Continuity in the event of disruption
IMPACT FOR YOUR SECTOR						

SECTOR	Urban Development	Water and Sanitation	Cultural Heritage	Stormwater and Flood Plain Management	Building Regulations	Food Systems
SECTOR DESCRIPTION	Physical and socio-economic planning processes; Long-term approach to urban growth	Water and sanitation services are accessible to all segments of the population				
IMPACT FOR YOUR SECTOR						

PART B – IMPACTS FROM YOUR SECTOR

If your sector were to be damaged or impacted by a shock or stress, how might this impact the other sectors? Review vertically. Leave blank if no impact. When completed, highlight areas of significant impact in red.

SECTOR	SECTOR DESCRIPTION	IMPACT OF YOUR SECTOR DISRUPTION ON THE OTHER SECTORS
Communities and Social Protection	Equal and fair access to basic services; Social cohesion, Awareness; Support for vulnerable groups	
Disaster Risk Management	Preparation; Response mechanism; Disaster prevention infrastructure	
Education	Complete coverage (offered to all citizens); Continuous operation of education facilities	
Energy	Secure supply of power; Continuity of services in the event of disruption	
Environment	Environmental protection; Stability of the urban ecosystem	
Health	Emergency health relief; and Basic health services provided to the entire population	
ICT	Helps guide economic growth; Ensures ICT public service delivery / accessibility	
Local Economy	Local economy is diverse and youth unemployment is low	
Logistics and Supply Chains	Efficient movement of goods -continuous and profitable operation	

Municipal Finance	Withstands shocks to revenues or unforeseen municipal costs	
Solid Waste Management	Collection, disposal and treatment, especially of hazardous waste	
Transport	Transport access for all population groups; Continuity in the event of disruption	
Urban Development	Physical and socio-economic planning processes; Long-term approach to urban growth	
Water and Sanitation	Water and sanitation services are accessible to all segments of the population	

Resource 6:
Prioritization Lens 3

QUALITIES OF RESILIENCE

- Complete the worksheet from the perspective of the sector you are covering in the CityStrength Diagnostic.
- Use the completed Guiding Questions to rate how well your sector exhibits each of the characteristics of resilience using the following scale: 5 = the sector fully exhibits this characteristic; 3 = the sector partially exhibits this characteristic; or 1 = the sector does not exhibit this characteristic at all or only in a minor way.
- Provide a short justification for the rating.

RESILIENCE CHARACTERISTIC	RATING	BRIEF JUSTIFICATION FOR RATING
Robust Robust systems include well-conceived, constructed and managed physical assets, so that they can withstand the impacts of hazard events without significant damage or loss of function. Robust design anticipates potential failures in systems, making provision to ensure failure is predictable, safe, and not disproportionate to the cause. Overreliance on a single asset, cascading failure and design thresholds that might lead to catastrophic collapse if exceeded are actively avoided. An important aspect of robustness is proper operations and maintenance to ensure that systems are functioning properly.		
Redundant A redundant network or system has a belt and braces approach which includes spare capacity or back-up to accommodate disruption, extreme pressures or surges in demand. Providing diverse ways of achieving a given need or fulfilling a particular function is a means to achieving a redundant system. If one service channel gets disrupted, another can be used.		

RESILIENCE CHARACTERISTIC	RATING	BRIEF JUSTIFICATION FOR RATING
Coordinated Coordination between city systems and agencies means that knowledge is shared, planning is collaborative and strategic, and decision-making is based on investments that are mutually supportive towards a common outcome. Exchange of information between systems enables them to function collectively and respond rapidly through feedback loops occurring throughout the city.		
Reflective Resilient urban systems examine, learn, and evolve based on their past experiences and new information, modifying standards or norms based on emerging evidence rather than seeking permanent solutions based on the status quo. As a result, people and institutions examine and systematically learn from their past experiences, and leverage this learning to inform future decision-making.		
Inclusive Being inclusive recognizes that risk is perceived differently by different stakeholders and that shocks and stresses affect the most vulnerable the most. An inclusive approach contributes to a sense of shared ownership or joint vision to build a resilient city. This can be achieved through consultation and engagement with a wide range of stakeholders, including the most vulnerable groups, to ensure that systems are more resilient by considering a wider range of vulnerabilities, risk management capacities, and localized information. Equity in access to infrastructure and services underpins social cohesion and opportunity.		

RESOURCE 7:
PRIORITIZATION LENS 4

City-level Goals and Objective

What are the city's official goals, objectives, or aspirations as stated in government planning documents (e.g., comprehensive plans, 5-year plans, etc.)?

City Goals:

Sectoral Goals and Objectives

What are the official goals, objectives, or aspirations as stated in sectoral planning documents (e.g., master plans, etc.)?

Sector Specific Goals:

Alignment between Proposals and the City's Goals

Try not to exceed a total of 5 recommended actions or investments.
What are your recommended actions and investments for the sector? How do they relate to the city's goals and objectives? How do they relate to sectoral goals and objectives?

Action or Investment	Description	Relationship to Goals and Objectives 1 = not aligned 3 = somewhat aligned 5 = fully aligned
1.		
2.		
3.		
4.		
5.		

RESOURCE 8:
INTERDEPENDENCY MATRIX

	Community and Social Protection	Disaster Risk Management	Education	Energy	Environment	Health
Community and Social Protection						
Disaster Risk Management						
Education						
Energy						
Environment						
Health						
ICT						
Local Economy						
Logistics and Supply Chains						
Municipal Finance						
Solid Waste Management						
Transport						
Urban Development						
Water and Sanitation						

The Interdependency Matrix is populated using the completed worksheet from Lens 2. The table should be edited to omit the sectors not included in the implementation of the diagnostic in a specific city. Sectors with significant interdependencies are highlighted in red. Sectors with moderate interdependencies are highlights in yellow. And, sectors with no interdependencies are left blank.

ICT	Local Economy	Logistics and Supply Chains	Municipal Finance	Solid Waste Management	Transport	Urban Development	Water and Sanitation

RESOURCE 9:
HOLISTIC RESILIENCE MATRIX

The Holistic Resilience Matrix – Option 1 is populated using the completed worksheet from Lens 3 – Option 1. The table should be edited to omit the sectors not included in the implementation of the diagnostic in a specific city. Rating scale: 5 = the sector fully exhibits this quality; 3 = the sector partially exhibits this quality; or 1 = the sector does not exhibit this quality.

	Robust	Redundant
Community and Social Protection		
Disaster Risk Management		
Education		
Energy		
Environment		
Health		
ICT		
Local Economy		
Logistics and Supply Chains		
Municipal Finance		
Solid Waste Management		
Transport		
Urban Development		
Water and Sanitation		

Reflective	Coordinated	Inclusive

REFERENCES

Alcamo, Joseph. 2003. Ecosystems and human well-being: A framework for assessment. Washington, DC: Island Press.

Arup, RPA, and Siemens. 2012. Toolkit for Resilient Cities. London.

Asian Development Bank. 2013. Increasing climate change resilience of urban water infrastructure: Based on a case study from Wuhan City, People's Republic of China. Manila: Asian Development Bank.

Baker, Judy. 2012. Climate Change, Disaster Risk, and the Urban Poor: Cities Building Resilience for a Changing World. Washington, DC: World Bank.

Benson, Charlotte and Edward J. Clay. 2004. Understanding the economic and financial impacts of natural disasters. Washington, DC: World Bank.

Bertelsmann Stiftung. 2013. Cohesion Radar Measuring Common Ground: An international Comparison of Social Cohesion.

Bhamra, Ran, Samir Daniab and Kevin Burnarda. 2011. Resilience: The concept, a literature review and future directions. International Journal of Production Research, 5375-5393.

Blanco, Edgar. 2014. Urban Freight and Port Cities, World Bank Concept Note. Unpublished.

Brugmann, Jeb. 2012. Financing the Resilient City. Environment and Urbanization vol. 24 no. 1 215-232.

Brundtland Commission (World Commission on Environment and Development). 1987. Our Common Future. Oxford: Oxford University Press.

CARRI (Community and Regional Resilience Institute). 2013. Definitions of Community Resilience: An Analysis. Oak Ridge, TN: CARRI.

Center for the Protection of National Infrastructure. 2006. Telecommunications Resilience Good Practice Guide, Version 4.

City of New York. 2013. A Stronger, More Resilient New York.

Comfort, L. K., A. Boin, and C. C, Demchak. 2010. Resilience: Exploring the Concept and Its Meanings, in Designing Resilience - Preparing for Extreme Events. Pittsburg: University of Pittsburgh Press.

DfID. 2005. Disaster Risk Reduction, a Development Concern. London: DfID.

DfID. 2011. Defining Disaster Resilience: A DfID Approach Paper. London: DfID.

Dobbs, Richard. 2011. Urban World: Mapping the Economic Power of Cities. New York: McKinsey Global Institute.

Durand-Lasserve, Alain. 2006, March 1. "Informal Settlements and the Millennium Development Goals: Global Policy Debates on Property Ownership and Security of Tenure." Global Urban Development Magazine.

Elliott, D., Swartz, E. and Herbane, B. 1999. Just waiting for the next big bang: business continuity planning in the UK finance sector. Journal of Applied Management Studies, 8 (1), pp. 43-60. (1999)

Environmental Services Association UK. 2014. Reducing Fire Risks at Waste Management Sites. Draft fire control guidance.

FAO. 2014. Nutrition and Resilience: Strengthening the links between resilience and nutrition in food and agriculture. Rome: FAO.

Farvacque-Vitkovic, Catherine and Mihaly Kopanyi. 2014. Municipal Finances: A Handbook for Local Governments. Washington, DC: World Bank.

Freckleton, Derek, et al. 2012. Evaluation of Transportation Network Resiliency with Consideration for Disaster Magnitude. Presented at Transportation Research Board Meeting.

GFDRR. 2009a. Guidance Notes on Safer School Construction. Washington, DC: GFDRR.

GFDRR. 2009b. Guidance Note for Integration of Disaster Risk Reduction in World Bank Health Sector Projects. Washington, DC: GFDRR.

Graham, Stephen. 2010. Disrupted Cities: When Infrastructure Fails. New York: Routledge.

Hallegatte, Stephane, Colin Green, Robert Nicholls, and Jan Corfee-Morlot. 2013. Future Flood Losses in Major Coastal Cities. Nature Climate Change 3.9: 802-06. Nature Publishing Group, 18 Aug. 2013.

Hallegatte, Stephane. Resilience in Cities: WDR Framework and Implementation Challenges. PowerPoint presentation. SDN Forum 2013: Paving the Path Toward Resilience in Cities. Washington, DC. 28 February 2013.

Ibish, Hussein. 2012. Was the Arab Spring Worth It? Foreign Policy Magazine. 18 June, 2012.

Inter-American Development Bank. 2012. Emerging and Sustainable Cities Initiative Methodological Guide, First Edition. Washington, D.C: World Bank.

Inter-American Development Bank. 2014. Emerging and Sustainable Cities Initiative Methodological Guide, Second Edition. Washington, D.C: World Bank.

International Institute for Environment and Development (IIED). 2011. Environmental Mainstreaming Diagnostic.

International Telecommunication Union. 2014. Resilient pathways: The adaptation of the ICT sector to climate change.

Islamic Republic of Pakistan. 2011. 2011 Pakistan Floods: Preliminary Damage and Needs Assessment. With technical support from the Asian Development Bank and World Bank. Washington, DC: GFDRR

Jha, Abhas Kumar, Robin Bloch, and Jessica Lamond. 2012. Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century. Washington, D.C.: World Bank.

Jha, Abhas Kumar, Todd W. Miner, and Zuzana Stanton-Geddes. 2013. Building Urban Resilience: Principles, Tools, and Practice. Washington, D.C.: World Bank.

Kaganova, Olga. 2011. Guidebook on Capital Investment Planning for Local Governments. Washington, DC: World Bank.

Kelly, Tim and Carlo Maria Rossotto. 2012. Broadband Strategies Handbook. Washington, DC: World Bank.

Kopp, Andreas and Rachel Block. 2013. Turning the right corner ensuring development through a low carbon transport sector. Washington, DC: World Bank.

Krishna, Anirudh and Geoff Prewitt. 2002. How are Civil Society Organizations Important for Development?, in a. Krishna, C. Wiesen, G. Prewitt and B. Sobhan, Changing Policy and Practice from Below: Community Experiences in Poverty Reduction. Durham, NC: Duke University Press.

Massachusetts Institute of Technology Center for Transportation and Logistics. 2008. Development of a State Wide Freight System Resiliency Plan.

Nagurney, Anna. 2011. Building Resilience into Fragile Transportation Networks in an Era of Increasing Disasters. Presented at Transportation Research Board Meeting.

Norris, Pippa. 2008. The Role of the Free Press in Promoting Democratization, Good Governance and Human Development, in Section 2 of Media Matters: Perspectives on Advancing Governance and Development, ed. M. Harvey, Global Forum for Media Development, Internews Europe, pp.66-75

OECD, 2014. Fragile States 2014 Domestic Revenue Mobilisation in Fragile States. Paris: OECD.

Ove Arup & Partners International Limited. 2014. City Resilience Framework. London.

Polackova, Hana. 1999. Contingent Government Liabilities: A Hidden Fiscal Risk. Finance & Development: A quarterly magazine of the IMF. Washington, DC: International Monetary Fund.

Prasad, Neeraj. 2009. Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters. Washington, DC: World Bank.

Republic of Kenya. 2012. Kenya Post-Disaster Needs Assessment 2008-2011 Drought. With technical support from the European Union, United Nations, and World Bank. Washington, DC: GFDRR

Rodrigue, Jean-Paul and Claude Comtois. 2013. The geography of transport systems. 3rd Edition. London: Routledge.

Rumbaitis del Rio, Cristina, and Rosie Sjögren. 2014. Scaling up Urban Climate Change Resilience: Challenges and Opportunities for Catalytic Donor Collaboration. Meeting document. Bellagio: Rockefeller Foundation.

Sayers, Paul, et al. 2013. Flood Risk Management: A Strategic Approach. Paris, UNESCO.

Shah, Fatima, and Federica Ranghieri. 2011. A workbook on planning for urban resilience in the face of disasters adapting experiences from Vietnam cities to other cities. Washington, D.C.: World Bank.

Sheffi, Yossi and James B. Rice Jr. 2005. A supply chain view of the resilient enterprise. MIT Sloan Management Review.

Sitathan, Tony. 2003. Singapore's economy: SARS gloom and doom. Asia Times Online, 23 May 2003.

State University of New Jersey. 2013. Combining Community Resiliency and Energy Efficiency Retrofits: The Rutgers Center for Green Building with the Energy Efficient Buildings Hub.

Sudmeier-Rieux, Karen and Neville Ash. 2009. Environmental Guidance Note for Disaster Risk Reduction: Healthy Ecosystems for Human Security, Revised Edition. Gland, Switzerland: IUCN

Swiss Reinsurance Company. 2013. Mind the Risk: A global ranking of cities under threat from natural disasters. Zurich, Switzerland: Swiss Reinsurance Company.

Ta, Chilan, Anne V. Goodchild, and Kelly Pitera. 2009. Structuring a Definition of Resilience for the Freight Transportation System. Transportation Research Record: Journal of the Transportation Research Board.

UNEP. 2013. Health and Safety Guidelines for Waste Pickers in South Sudan.

UN Habitat. 2013. State of the World's Cities 2012/2013: Prosperity of Cities. United Nations Human Settlements Programme. Nairobi: UN Habitat.

UN Habitat. 2013. City Resilience Profiling Tool (CRPT) 'Lite'. Sample Version, November 2013. Unpublished.

UNICEF. 2006. State of the World's Children 2007. New York, NY: UNICEF.

UNISDR. 2005. Hyogo Framework for 2005-2015: Building the Resilience of Nations and Communities to Disasters. Geneva: UNISDR.

UNISDR. 2008. Linking Disaster Risk Reduction and Poverty Reduction. Geneva: UNISDR.

UNISDR. 2009. Terminology on Disaster Risk Reduction. Geneva: UNISDR.

UNISDR. 2011. A practical guide to Local HFA: Local Self-Assessment of Progress in Disaster Risk Reduction First Cycle (2011-2013). Geneva: UNISDR.

UNISDR. 2013. Global Assessment Report on Disaster Risk Reduction 2013. Geneva: UNISDR.

UNISDR. 2013. Heritage and Resilience: Issues and Opportunities for Reducing Disaster Risks. Geneva: UNISDR.

UNISDR. 2014. Disaster Resilience Scorecard for Cities. Developed by IBM and AECOM.

URBACT. 2010. Cities and the Economic Crisis: A survey on the impact of the economic crisis and the responses of URBACT II cities. European Programme for Sustainable Urban Development.

USAID. 2014. USAID Fact Sheet on Typhoon Haiyan/Yolanda in Philippines. Issued April 21, 2014. Accessed online.

US Environmental Protection Agency. 2013. Incident Waste Decision Support Tool (I-WASTE) v. 6.3. Research Triangle Park, NC: U.S. Environmental Protection Agency Office of Research and Development National Homeland Security Research Center Decontamination and Consequence Management Division.

Victoria Transport Policy Institute. 2014. Evaluating Transportation Resilience.

Wolman, Harold. 2014. Economic Shocks and Urban Resilience Background Note. Prepared for the Resilient Cities Program at the World Bank. Unpublished.

Wolman, Harold. 2014. Questions on Economic Resilience for the CityStrength Diagnostic. Prepared for the Resilient Cities Program at the World Bank. Unpublished.

World Bank. 2008. World Development Report 2009: Reshaping Economic Geography. Washington, DC: World Bank.

World Bank. 2009a. Systems of Cities: Harnessing Urbanization for Growth and Poverty Alleviation. Washington, DC: World Bank.

World Bank. 2009b. Metodología para Evaluaciones Rápidas y Planes de Acción para la Administración Pública a nivel de Gobiernos Subnacionales. Washington, DC: World Bank

World Bank. 2010a. Natural Hazards, Unnatural Disasters: the economics of effective prevention. Washington, DC: World Bank.

World Bank. 2010b. Cities and Climate Change an Urgent Agenda. Washington, D.C.: World Bank.

World Bank. 2010c. Hands-on Energy Adaptation Toolkit. Washington, DC: World Bank.

World Bank. 2010d. Mainstreaming Adaptation to Climate Change in Agriculture and Natural Resources Management Projects. Washington, DC: World Bank.

World Bank. 2010e. Making Transport Climate Resilient: Country Report Ethiopia. Washington, DC: World Bank.

World Bank. 2011a. World Development Report 2011: Conflict, Security and Development. Washington, D.C: World Bank.

World Bank. 2011b. Crime and Violence in Central America: A Development Challenge. Washington, D.C.: World Bank.

World Bank. 2011c. Resilient Cities: Multi-hazard City Risk Index Methodology Report. Washington, D.C.: World Bank.

World Bank. 2011d. Social Resilience and Climate Change Operational Toolkit. Washington, DC: World Bank.

World Bank. 2011e. Guide to Climate Change Adaptation in Cities. Washington, DC: World Bank.

World Bank. 2012a. Urban Risk Assessments: An Approach for Understanding Disaster and Climate Risk in Cities. Washington, DC: World Bank.

World Bank. 2012b. Information and Communication Technology (ICT) for greater development impact: World Bank Group strategy for ICT. Washington, DC: World Bank.

World Bank. 2013a. World Development Report 2014: Risk and Opportunity: Managing Risk for Development. Washington, DC: World Bank.

World Bank. 2013b. Building Resilience to Disaster and Climate Change through Social Protection. Washington, DC: World Bank.

World Bank. 2014a. Climate and Disaster Resilience - The Role for Community-Driven Development. Washington, DC: World Bank.

World Bank. 2014b. Open Data for Resilience Field Guide. Washington, DC: World Bank

World Bank. 2014c. Municipal Finance Self-Assessment.

World Business Council for Sustainable Development. 2014. Building a Resilient Power Sector.

World Economic Forum. 2013. Global Risk Report 2013. Geneva: World Economic Forum.

World Health Organization. Climate Change Adaptation to Protect Human Health Program. Accessed at http://www.who.int/globalchange/projects/adaptation/en/.

Zolli, Andrew. 2012. Learning to Bounce Back. The New York Times. 2 Nov 2012.

The World Bank Group
1818 H Street NW
Washington, DC 20433
USA
www.worldbank.org/urban