

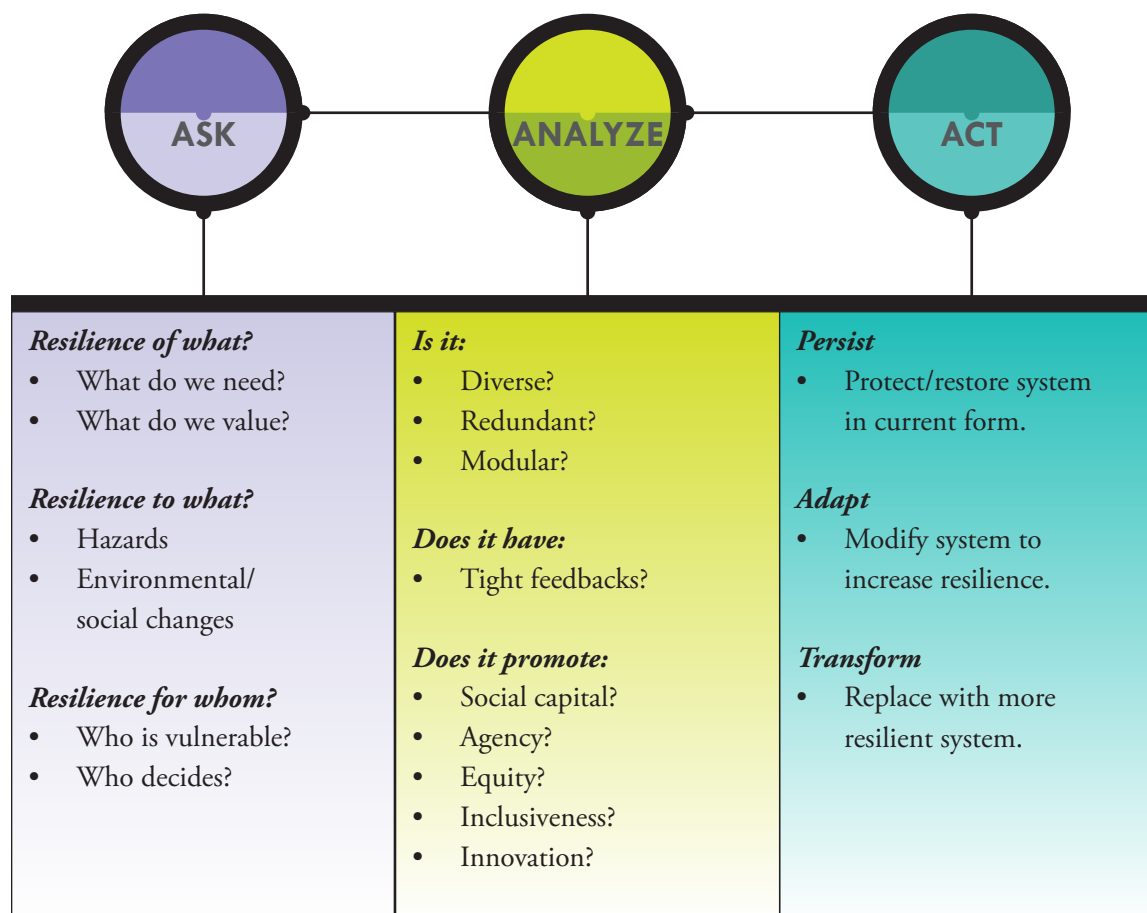
# URBAN RESILIENCE

## A DRAFT INTEGRATED FRAMEWORK

RESILIENCE IS THE CAPACITY OF A COMMUNITY TO ANTICIPATE, PLAN FOR, AND MITIGATE THE DANGERS—and seize the opportunities—associated with environmental and social change.

The process of building resilience is not value-neutral; decisions about what to protect and strengthen reflect deeply entrenched values and power structures. Therefore, true resilience begins with a searching inventory of the systems that comprise cities, and of their capacity to meet human needs sustainably and equitably.

To that end, those who work to build resilience must first ask what is being made resilient, to what, and for whom. They must analyze the systems that supply a community's needs and reflect its values to determine their resilience in the face of expected and unknown changes. And they must act by protecting, restoring, adapting—and, if necessary, transforming—the systems on which they depend. Moreover, resilience is not an end state; it involves an iterative process of learning and adaptation. Accordingly, the steps outlined here must be frequently revisited as circumstances change.





## RESILIENCE OF WHAT?

### WHAT DO WE NEED?\*

- **Basic needs:** Nutritious food; clean water and air; secure shelter
- **Public health:** Accessible health care; protection from toxins and infectious agents; communities that support healthy lifestyles
- **Economic well-being:** Jobs, livelihoods, and social supports that enable people to achieve a decent quality of life
- **Safety:** Protection from crime, violence, and hazards
- **Mobility:** Freedom of movement; convenient access to employment, housing, health care, education, commerce, and recreation
- **Education:** Schools and other learning opportunities that enable individuals to fulfill their potential and participate fully in society

### WHAT DO WE VALUE?

- **Relationships:** Personal connections to family and community
- **Fairness:** A just society in which opportunity is available to all, and risks are equitably shared
- **Freedom:** The capacity to live the life one chooses
- **Democracy:** Representative decision making and an inclusive political process
- **Beauty:** Aesthetically appealing places to live and work
- **Nature:** Healthy, functioning ecosystems, valued in their own right as well as for the services they provide to human well-being

### WHAT ARE THE SYSTEMS THAT MEET OUR NEEDS—AND REFLECT OUR VALUES —AT SCALES FROM LOCAL TO GLOBAL?

- **Built environment:** Buildings; transit systems; water and sanitation systems; the electrical grid; communications networks
- **Natural environment:** Atmosphere and climate; watersheds and oceans; forests; agriculture and fisheries
- **Institutions:** Governments, legal systems, civil society, the private sector

\*The lists below are not necessarily comprehensive or universal; they are offered in order to model an approach to thinking about urban resilience.

## RESILIENCE TO WHAT?

**WHAT ARE LIKELY CHANGES—SHORT- AND LONG-TERM; POSITIVE, NEGATIVE, AND NEUTRAL—THAT WILL AFFECT EXISTING URBAN SYSTEMS?**

- **Climate change impacts:** Drought; flood; wildfires; sea-level rise; intensified storms; heat waves; changes in distribution of disease vectors; displacement and migration
- **Other natural disasters:** Volcanoes, earthquakes, tsunamis, mudslides
- **Other environmental crises:** Resource depletion; land degradation; pollution/contamination of air, water, or soil; nuclear disasters
- **Demographic changes:** Population gains or losses; migration; changes in age distribution
- **Public health issues:** Epidemics; drug use; changes in health indicators such as infant mortality, obesity, and life expectancy
- **Economic changes:** Rise or collapse of key industries; changes in financial or regulatory systems; changes in wealth distribution
- **Technological changes:** Breakthroughs in energy, communications, or transportation; obsolescence of existing technologies
- **Social changes:** Institutional or political shifts; reform movements, outbreaks of violence, or terrorism; changes in degree of globalization; gentrification/displacement
- **“Black Swans”:** Highly unpredictable, low-probability, high-impact changes

## RESILIENCE FOR WHOM?

Who may be affected by changes, and how can they shape decision making?

### WHO IS VULNERABLE?

- **Biophysical:** Who lives in proximity to potential hazards such as geologic faults, low-elevation coastal zones, or unsafe conditions?
- **Social:** Who is vulnerable due to lack of resources and power; discrimination based on race, class, gender, age, or sexual orientation; frailty/poor health?

### WHO DECIDES?

- **Decision making:** What are relevant decision making processes? How are decisions made at different scales: family, neighborhood, city, region, nation, world—and in a range of sectors: civil society, government, industry?

- **Representation:** Are stakeholders—particularly the most vulnerable—represented in those processes? What are barriers to participation, and how can they be overcome?



***Assess the resilience of existing urban systems. Is the system:***

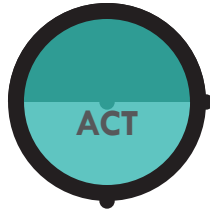
- ***Diverse?*** An urban system with many different components will have a wide range of responses to change and is therefore unlikely to fail all at once. For example, a city with a diverse economic base is less vulnerable to economic upheaval than one that relies on a single industry. In governance and decision making, a collaborative process that incorporates a variety of actors and perspectives is likely to produce better outcomes.
- ***Redundant?*** Similarly, a resilient city has multiple ways to perform basic functions, so that the failure of any one component does not cause the entire system to crash. A multimodal transportation system that includes a variety of public transit options as well as opportunities for walking and bicycling will weather disruptions better than a system that relies wholly on automobiles.
- ***Modular?*** Modular systems in which individual units retain some self-sufficiency when disconnected from larger networks will fare better in times of change. For example, people living in a city with a robust local food culture (nearby farms, a farmers' market) will be less likely to go hungry if there is a disruption in national or global supply chains. Modularity allows a system to manage its connectivity to larger regions and the world; it is a way to reinstate “firebreaks” that have been lost in a hyper-connected, globalized economy.

***Does it have:***

- ***Tight feedbacks?*** A resilient system has tight feedbacks, allowing it to quickly detect changes in its constituent parts and respond appropriately. Tight feedbacks enable swift responses to changing conditions. If a reservoir is low, for example, water conservation measures may be put in place. But, in today's globalized economy, consumers may be thousands of miles away from the source of resources on which they depend—so feedback loops go slack. Inequality also weakens feedbacks, as affluent communities routinely outsource production and pollution to poorer ones.

***Does it promote:***

- ***Social capital?*** For an individual, social capital is about relationships with family, friends, and colleagues. In communities, social capital can be measured by levels of trust, the cohesion of social networks, and the quality of leadership. Resilient cities build social capital with neighborhoods and public spaces that encourage interaction and through participatory, inclusive governance.
- ***Agency?*** Resilient people have a sense of control over their destiny; resilient cities fully engage their citizens in decision making. Fundamentally, agency is about power, personal and political. Strategies to build agency include: community organizing; education (including participatory action learning); public health and safety initiatives; and civic engagement.
- ***Equity?*** Equity means that opportunities—and risks—are equally shared. It is a building block of social cohesion—the sense that “we’re all in it together” that enables communities to cooperate in times of disaster. And equity improves performance on a broad range of human development indicators that form the bedrock of individual and community resilience.
- ***Inclusiveness?*** Inclusive social institutions—economic, political, and cultural—can strengthen resilience at every level, by increasing social capital, agency, and equity. In an inclusive society, power and opportunity are shared broadly, not concentrated in the hands of a few. Inclusive governance has practical benefits: for example, it tightens feedback loops so that problems are more readily detected and it expands the depth and diversity of knowledge available for problem solving.
- ***Innovation?*** A resilient system generates novel responses while learning and adapting to changing conditions. In nature, this is accomplished by evolution. In human society, it requires innovation—the ability and willingness to try new things. The capacity to innovate derives from many of the qualities just described. A diverse system generates more novelty than a monoculture; in social systems, innovation often comes from the margins. An inclusive society is better able to engage the agency and creativity of all of its citizens. And tight feedbacks provide timely and accurate information about changing conditions, which is essential for appropriate innovation.



Armed with an understanding of what we want to make resilient and of the resilience or vulnerability of existing systems, the next step is to act:

- ***Persist:*** Protect (or restore) the existing system in its current/pre-existing form (restore wetlands; reinforce bridges; rebuild after disaster).
- ***Adapt:*** Modify the system to increase resilience, using the above criteria as a guide (decentralize food and energy systems; adapt buildings and infrastructure to rising sea levels; build social capital through inclusive governance).
- ***Transform:*** Replace the existing system with one that is more resilient (shift from fossil fuels to renewable energy; replace authoritarian governance with inclusive decision making processes; build economic alternatives such as worker-owned cooperatives).



For more information please contact:  
[resilience@islandpress.org](mailto:resilience@islandpress.org)