CLIMATE RESILIENCE FRAMEWORK

CLIMATE RESILIENCE FRAMEWORK:
RESILIENCE FRAMEWORK: TRAINING MATERIALS
FRAMEWORK

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CLIMATE RESILIENCE FRAMEWORK: TRAINING MATERIALS

Series 1: Establishing Resilience Principles

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The Training Materials Consist of:
- Participant Guides
- Activities
- Supporting Materials: case studies, working papers, tools, and resource links

Series 1: Establishing Resilience Principles introduces the Climate Resilience Framework and shared learning dialogue process, and gets lead partners started in the climate resilience planning process.

Series 2: Understanding Vulnerability systematically walks lead partners through the steps involved in conceptualizing, designing, and implementing initial vulnerability and climate risk study.

Series 3: Building Resilience describes the steps required to identify, priorititize, implement and evaluate actions designed to build climate resilience and provides focused materials on key topics.

ISET-INTERNATIONAL'S MISSION

To catalyze transformative change toward a more resilient and equitable future. Through research, training, and implementation activities we improve understanding and elevate the level of dialog and practice as society responds to natural resource, environmental, and social challenges. We serve as a framework for equal collaboration among individuals and organizations in the North and South.

For a downloadable PDF, please visit: training.i-s-e-t.org

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WHAT IS THE CLIMATE RESILIENCE FRAMEWORK: TRAINING MATERIALS?

The CRF:TM is a set of tools designed to be utilized by a leadership team to help communities and partner organization assess and strengthen their climate resilience.

OUR APPROACH

The materials provide a roadmap for gathering a team, assessing your vulnerability to climate change, and identifying key actions to take to building resilience in your community. We believe that what matters most in a sustainable process is establishing good working relationships with key stakeholders and decision-makers, and employing the appropriate data to inform your communities decisions.

EFFECTIVE USE OF THESE MATERIALS

The CRF:TM is intended to be delivered in a workshop format by a trained facilitator. Additional support for facilitators and trainers is available. If you would like to conduct a training based on these materials and require assistance or support please contact training@i-s-e-t.org

WHERE TO FIND MORE INFORMATION

Training.i-s-e-t.org

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Overview

The Climate Resilience Framework is a conceptual framework for simplifying and analyzing complex relationships between people, systems, institutions, and climate change. The framework helps clarify factors that must be included in the diagnosis of climate vulnerability; it structures the systematic analysis of vulnerability in ways that clearly identify entry points for response; and it supports strategic planning to build climate resilience.

The framework has been synthesized from a wide range of related fields, including ecology, engineering, disaster risk reduction, complex systems theory and planning with the goal of prompting new and practical ways of thinking about the challenge of adaptation to climate change.

ISET-International's approach to teaching trainers and communities to use this framework at the community, or city level is delivered in three series in the Climate Resilience Framework: Training Materials (CRF:TM), described below.

The training materials assume stakeholders have no prior experience—that climate change is a new concept—and begins by building the capacity to understand and address climate change from the ground up. The CRF:TM are intentionally iterative, support and rely on collaboration, and require personal and group reflection and the creative engagement of everyone involved.

Series 1: Establishing Resilience Principles

Series 1 is designed to get the lead partners in a local climate resilience planning process started. Participants are first introduced to the conceptual framework behind ISET-International's engagement approach, the Climate Resilience Framework, and to the key tool used for engagement, the Shared Learning Dialogue. Following this introduction, participants are led through identifying resilience planning goals, reviewing existing policies, identifying the stakeholders needed to support and engage in

the climate resilience building process and from this group assembling a "climate working group", and assembling core data. These initial steps are the foundation for Series 2, and Series 3.

Series 2: Understanding Vulnerability and Risk

Series 2 systematically walks the newly formed climate working group through some of the steps involved in conceptualizing, compiling, analyzing and utilizing an initial city-wide vulnerability and climate risk study. This series is designed for a community and/or working group with little previous experience conducting climate vulnerability and risk assessments. However, communities that have conducted vulnerability and risk assessments previously will find that this series contains tips that help re-evaluate previously collected data in a more systematic manner, allowing clear identification of gaps.

Series 3: Building Resilience

The concluding module series, Series 3, reviews the steps required to:

> **Identify Actions:** how to take the information generated in the vulnerability assessment and use it to develop initial actions to address identified vulnerabilities;

Prioritize Actions: introduces a variety of tools that can be used to assess the potential for proposed actions to address identified vulnerabilities under possible future conditions;

Design Your Resilience Strategy: how to develop a broad, local level guidance document (a Climate Resilience Strategy) that provides the context, evidence and analysis justifying actions to strengthen resilience to climate change, and identifies high priority resilience actions that can be linked and coordinated with other local initiatives;

Implement Actions: begin implementation of priority actions; and

Monitor Results: why you need to develop resilience indicators to monitor whether the activities and actions being taken to "build resilience" are succeeding.

The Series 3 materials do not address all of these steps in detail. For some steps, there are many tools already available —for example, for evaluating, ranking and prioritizing implementation actions. For other steps, such as implementation, tools are highly context dependent. The materials included in Series 3 are those that ISET has developed to supplement materials available elsewhere. They are designed to fill gaps and/or address topics in unique ways. You will need to determine whether they are useful for your city's resilience process.

The Climate Resilience Framework
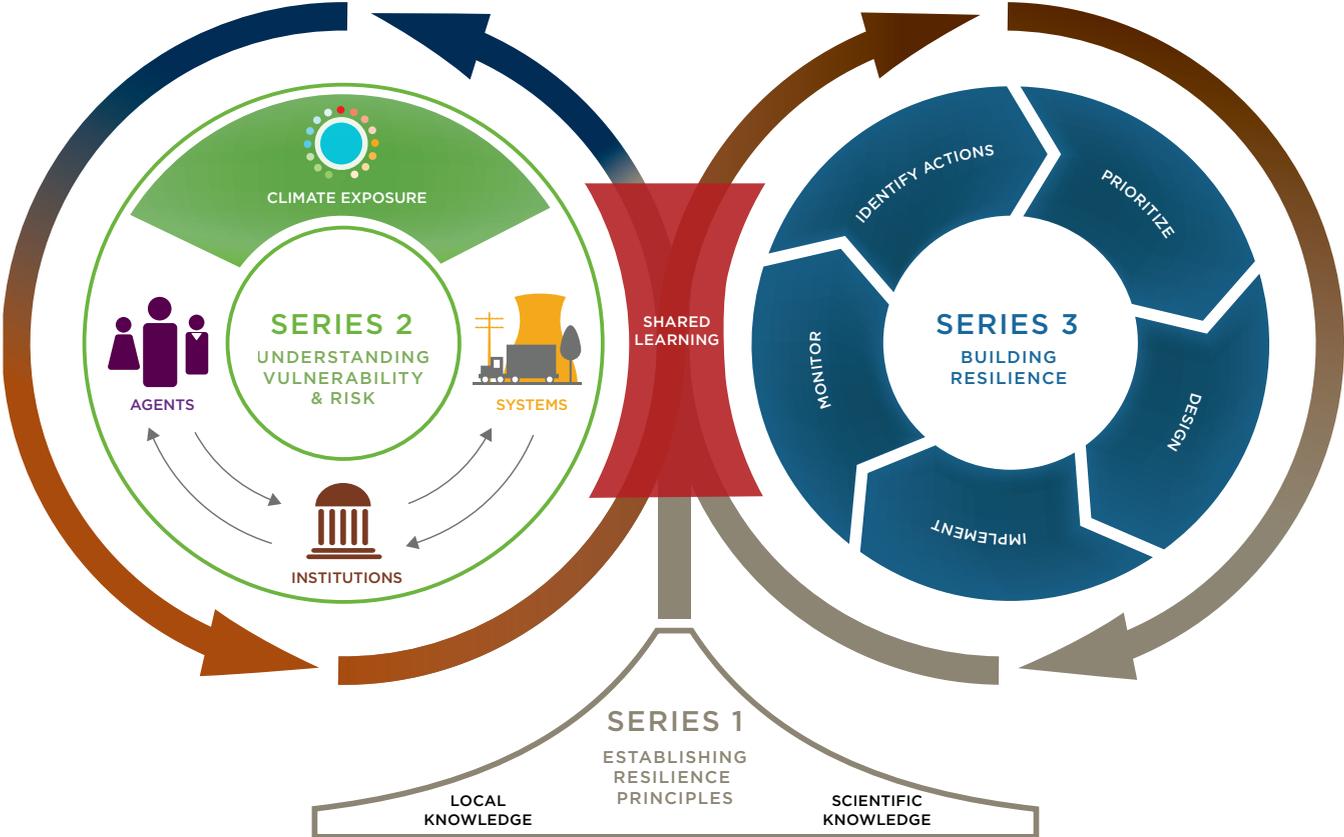
CLIMATE EXPOSURE

SERIES 2
UNDERSTANDING
VULNERABILITY
& RISK

AGENTS

SYSTEMS

INSTITUTIONS

SHARED
LEARNING

IDENTIFY ACTIONS

PRIORITIZE

SERIES 3
BUILDING
RESILIENCE

MONITOR

DESIGN

IMPLEMENT

SERIES 1
ESTABLISHING
RESILIENCE
PRINCIPLES

LOCAL
KNOWLEDGE

SCIENTIFIC
KNOWLEDGE

About the Authors

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Dr. MacClune received a PhD in Earth Sciences from the University of Colorado where she studied glacial hydrology and did field work in Greenland and Antarctica. Prior to her work with ISET-International Karen was a groundwater hydrologist at S.S. Popodopolous & Associates where she worked with multiple and diverse stakeholders in addressing water resource issues in the Southwestern US. With ISET-International Karen has extended her stakeholder outreach, leading the development the Climate Resilience Framework: Training Materials.

SARAH OPITZ-STAPLETON, CONSULTANT

Dr. Sarah Opitz-Stapleton is a Senior associate Scientist with ISET-International and independent research scientist. Her work lies at the intersection of generating and appropriately communicating climate, vulnerability, and risk information for various disaster risk reduction and urban climate resilience initiatives, and decision-making contexts. Dr. Opitz-Stapleton's work spans community-level to provincial-level assessments in Asia, Latin America, and the Caribbean.

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Ms. Kari Hansen Tyler is an instructional designer and researcher. She specializes in the design of educational experiences that engage analysis of complex systems in support of creative problem solving. She received a Masters Degree in Adult Education and Community Development from the Ontario Institute for Studies in Education (OISE) and the University of Toronto. Her research has explored holistic learning in an intercultural context, with a focus on a First Nations culturally integrated curriculum.

Acknowledgements

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Series 1 Contents

1.0.0

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Contents of Set

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GETTING STARTED

About Resilience

The Climate Resilience Framework (CRF), developed by ISET and Arup, focuses on resilience as a goal that is not merely responsive to predicted climate impacts, but that also fosters proactive and systemic approaches to preparing for unexpected and indirect effects of global change (Moench, Tyler, Lage 2011). These concepts are further discussed in Catalyzing Urban Climate Resilience, which is free for download at www.i-s-e-t.org/publications.

Our Approach

These materials have been intentionally designed with a handful of key features in order to support a process of resilience planning. To be effective in a resilience planning process everyone involved must first develop an understanding of what resilience is, and how resilience can be experienced in your own community. In addition, as the process unfolds we suggest that the facilitator and city team intentionally foster working relationships. To support this working and learning environment, we have designed these materials around key concepts that support resilience: iteration, support and reliance on collaboration, personal and group reflection, and the creative engagement of all parties involved.

The Key Characteristics of Our Approach are Iteration, Collaboration, Reflexive and Creative Engagement

ITERATION
The concept of iteration is important to the whole process of resilience planning. Characteristics of resilient systems include; flexibility, substitutability, diversity, redundancy, modularity and safe failure (Moench, Tyler, Lage 2011). These elements of resilience are also important to the learning process.

The Training Materials are designed to pull together and build on the knowledge and expertise that is already present in this group of participants and in the wider community. When we introduce new knowledge we want to do so in a way that allows for real engagement and the opportunity to own and integrate the ideas, and that allows the concept taught to be adapted to fit local reality. To do this successfully requires, amongst other things, repetition and revision. This allows the time and opportunity to look at familiar issues in different ways. Because we value resilient learning experiences we invest time and creativity into the shared learning experience. This also means that the learning process is open, inclusive and mutual; people in leadership have to be as willing (or more) to learn, adapt and grow.

COLLABORATION

A key learning from the ACCCRN experience is that the ability to coordinate and communicate across organizations as well as recognizing the value of diverse perspectives and input is more valuable to the resilience planning process than technical expertise. The design of these workshops takes this into account and supports collaboration skill development by; primarily focusing on collaborative and group work (rather than individual learning), being inclusive of different learning styles & engagement preferences as well as offering the opportunity and the time for critical thinking, creativity

and active listening so that different and diverse perspectives can be brought forth. However, collaboration cannot be accomplished by reading words on paper alone, so the while the design of these materials creates a space for developing collaborative skills, what makes the actual difference to skill development is the commitment you and your working group bring to this approach.

REFLEXIVE

To support the collaborative experience of iterative process a personal process of reflection is essential. This involves questioning ourselves, identifying and challenging our own assumptions, and challenging ourselves to look again for things we might have left out or missed. This is the practice that keeps us open to considering different perspectives. If each of us commits to being willing to challenge ourselves and grow, then our collective potential is exponentially greater!

CREATIVE ENGAGEMENT

Both the new science of complexity theory (or working with complex adaptive systems) and ancient wisdom traditions indicate that action and perception are linked. From these traditions we know that the only way to sustain change in how we live and act in the world is to change our way of being and engaging. We need to awaken our creative thinking. We need to learn to express ourselves differently and engage in the richness of communication not based on language alone. We want this workshop to be fun, to challenge ourselves to think outside of the

box and to build good relationships. Part of how we will do that is to use activities that utilize creative skills or practice engaging our minds in different ways.

Introduction to Series 1

Series 1 is designed to support a local leadership team and partners in starting the Climate Resilience Framework. Set 1.1 introduces the Climate Resilience Framework, a conceptual framework ISET has developed and piloted for engaging cities and working with them over an extended period of time (10–24 months, or more). The Framework begins with the introduction of climate change and resilience concepts, continues through the design and completion of a climate vulnerability assessment and development of a climate resilience strategy, through initial implementation of resilience building actions, and closes with the development of indicators to monitor progress and outcomes of those actions.

Set 1.3 introduces the key engagement tool we use in this work, the Shared Learning Dialogue. Sets 1.4 and 1.5 engage city participants in thinking about the initial steps required to start your resilience planning process. Each of these sets include a short introduction and accompanying activities.

The activities introduced during Series 1 training session, and the bulk of the work outlined herein will need to be completed over the following several months. The details of this follow-up are given in set 1.6, along with a collection of lessons we have learned in piloting this process through the Asian Cities Climate Change Resilience Network (ACCCRN). The amount of time the follow-up takes will be entirely dependent on your city, your stakeholders and own adaptation of this process.

The accompanying Series 1 facilitator notes outline both facilitation recommendations for leading participants through Series 1, as well as suggestions for how to support participants with these follow-up tasks. Completion of Series 1 follow-up tasks will lay a solid foundation for beginning *Series 2: Understanding Vulnerability & Risk*. If portions of the work outlined in Series 1 have already been completed by your community, those particular sets can be omitted. However, we recommend that the resilience team and facilitator review all the sets to support their comprehensive understanding of this process. Each activity is designed to demonstrate different analytical techniques and methods, and engage diverse learning styles.

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☑ **Activity 1.0.1**

Understanding Resilience

Over the course of the next few days, while working through Series 1, we will be engaged in a creative process. To begin a climate change resilience process we have to think about ourselves and our cities in ways that may be quite different from what we're used to.

This activity will be a little bit of a warm up, a fun way to start thinking in new ways.

In subsequent sets, you will gain a more complete understanding of resilience, and how it relates to your city's systems, agents and institutions and how to begin the urban resilience process (Series 1); its vulnerabilities and how to identify potential climate risks (Series 2); and how to identify resilience strategies and actions (Series 3).

IN THIS ACTIVITY YOU WILL:

✓ Use a fun and creative activity to explore what resilience means (for your group)

(Unlike most other activities in this series there are 3 different options to choose from. The facilitation team may have chosen an activity that they think fits the group best; the others are outlined as examples of other approaches to think about.)

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INSTRUCTIONS

Choose one of the following activities to complete with your group.

Storytelling

- Tell or solicit a creation/flood/disaster story of resilience that will likely be familiar to most people present, or has particular meaning to you.

- After telling the story, as a group, reflect on:

  - What characters are resilient? What are the attributes that make them resilient?

  - What role do they have in the story?

  - How is this related to community identity?

  - What can we learn from these characters and the relationship that our community has with them?

Game Show

- Break your group out into teams of 2–4

- **Select a Champion:** The most resilient local animal, plant, or character.

- **10-minutes:** In your group, develop your champion's profile and evidence to support your selection.

- **1–2 minutes:** Select a spokesperson for each champion to present your champion's profile.

- **1-minute:** Players offer rebuttals/discussion points.

- **Vote:** Each group, please vote on your favorite champion. (You may not vote for your own champion.)

- **Discussion:** What can we learn from these characters and the relationship that our community has with them? How does this relate to the resilience planning process?

Drawing

- Find a quiet place to sit.

- Select a creative medium (For example, pencils, markers or other arts supplies).

- Draw an image that represents resilience to you. *It could be any image; a symbol, scene from a story, a plant or animal. Your drawing might even be inspired by a personal memory or family story.*

- When the facilitator calls you back after the established time (~10 minutes) find a partner to have a conversation with.

  - With your partner share what you drew and why. Discuss what attributes of resilience were present in both of your drawings. What was different? Are there things that you would add now that you hadn't thought of before?

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☑ **Activity 1.0.2**

Envisioning Your City's Resilience

To begin a climate change resilience planning process we must first frame the way we think about ourselves and our local communities. Throughout the course of this workshop and the application of the Climate Resilience Planning Framework we will be engaged in a creative process. The following activity provides the building blocks to support your use of the CRF, with a clear vision of your community's potential for resilience—in accordance with the philosophy, "begin with the end in mind".

IN THIS ACTIVITY YOU WILL:

✓ You will take time for silent reflection on your own resilient characteristics;

✓ You will write a personal statement of your resilient characteristics;

✓ You will have a group discussion to envision your city as a resilient city at some point in the future;

✓ Your group will identify the strengths of your city that will support resilience;

✓ Your group will identify challenges that your city will face to transition to a resilient city; and

✓ As a group you will write a statement of your shared resilient characteristics.

INSTRUCTIONS: Part 1: Find quiet place to sit and reflect. In the space provided, please respond to the prompt.

Part 2: Once you have completed each prompt, please fill in each subsequent personal/group statement that captures the key concepts described in your response to each prompt in ~30 words or less.

PROMPT 1: In what ways are you personally resilient?
When dealing with major changes in your life, how do you exercise resilient and adaptive behaviors?
What mechanisms do you use to best maintain your capacity to learn, develop new strategies to evolving challenges,
and remain adaptive, flexible, resourceful, responsive and committed?

PART 2:
I AM RESILIENT BECAUSE... _____

INSTRUCTIONS: As a group, please discuss your response to Prompt 2. We invite you to use the space provided to capture notes on key concepts discussed.

PROMPT 2: How is your community resilient?

Describe the existing strengths of your city that you can build upon for a more resilient future.

PART 2:
OUR COMMUNITY IS RESILIENT BECAUSE…

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THE CLIMATE RESILIENCE FRAMEWORK

Contents of Set

In this set, we first highlight some climate change issues and impacts that are important to consider in urban contexts, and then present an urban resilience framework that your city will use and modify to guide your urban resilience process—from identifying climate change impacts, to the preparation of vulnerability and risk assessments to identification, implementation and monitoring of resilience strategies. In order to develop strategies to strengthen resilience to current and future climate impacts, you must understand the impacts future climate change may have on urban areas. Armed with this knowledge, you must systematically explore both your city's vulnerability and potential risk due to those impacts, and find ways to address those vulnerabilities and risks.

IN THIS SET YOU WILL:

✓ Identify one critical city system, service or function; and

✓ Identify and map the agents and institutions that are connected to that city system, service or function.

Climate Change in Urban Contexts

There is now clear evidence that the use of fossil fuels, deforestation, and changes in land use have led to an increase in greenhouse gases (e.g. carbon, methane, water vapor) in the atmosphere, causing the Earth's temperature to rise. This has already and will continue to result in: changing rainfall patterns; increases in the frequency and magnitude of extreme weather events such as storms, floods and droughts; changes in temperature; and rising sea levels. These events, and associated impacts such as decreasing water availability, changes in agriculture and fisheries, inundation of coastal areas, spread of respiratory, vector and water-borne diseases, and population displacement, will dramatically alter ecosystems and the lives and livelihoods of women, men and children. However, from years of disaster risk reduction work, we have learned that climate hazards happen, but climate disasters are created by human behavior.

Urban, peri-urban, and rural areas are vulnerable to suffering harm from climate hazards in different ways and face different climate risks. Extreme weather events have long contributed to disasters independent of climate change, leading to destruction of infrastructure, loss of lives, and loss of assets. However, the changes and increases in climate hazards brought about by climate change will further stress built infrastructure such as transportation networks, communication and water delivery systems, increase pressure on energy networks, and affect economic sectors such as fisheries and tourism. The actual impacts of any climate change hazard will be exacerbated by how we construct our cities and societies—whether there is inadequate infrastructure and housing, limited access to services, limited urban planning and land use management, and limited preparedness among city populations and emergency services (Sattherthwaite 2007). Urban poor are especially vulnerable to harm if their settlements or livelihoods are in areas exposed to hazards like floods, and if they have limited access to services such as water, energy supply and health, and few assets or safety nets that enable them to manage losses. Rapid urbanization and population increases place additional stresses on urban infrastructure and ecological systems and on the ability of cities to be resilient against climate change hazards.

In urban areas, the severity of impacts is determined by poor urban planning decisions, maladaptive infrastructure, poor land use decisions, ecosystem degradation, social inequities, and lack of economic diversification, lack of coordination among government departments and government accountability, among other factors. For example, buildings, roads, and infrastructure hinder infiltration into soils and obstruct natural drainage channels, increasing, or

sometimes causing flooding. This is often exacerbated by inadequate waste management and drain maintenance, and aggravated by occupation of floodplains, usually by informal settlements or slums but also by development on fill. Even now, in many cities in Asia, moderate storms can produce high flows in rivers or drains that lead to flooding, as witnessed in November 2008 in Hanoi. In urban areas with limited sanitation infrastructure, contamination of urban floodwater with sewage leads to health problems such as diarrheal diseases and typhoid. Flooding and poor drainage can also lead to stagnant water pools, which serve as breeding grounds for mosquitoes that spread malaria, dengue fever and other vector-borne diseases.

Cities are constantly making decisions about the directions in which they will grow, where they will situate key transportation routes and utilities, what areas they will develop for housing and business districts, whether they will develop floodplains, and if so, whether they will protect that development by building on fill or surrounding it with dikes, etc. All of these decisions will result in significant hard infrastructure installation and financial commitments that will last a minimum of 40 years, and in many cases much longer. However, over those 40+ years, climate change is likely to both bring unexpected change and intensify existing hazards in urban areas. How should cities respond to this?

To date, there has been relatively little consideration of what adaptation will be needed in urban areas in low- and middle-income countries, in part because of focus on mitigation efforts, and of adaptation programs on (rural) agriculture, forestry and ecosystems. While there is some overlap, urban areas in low- and middle-income countries face different sets of constraints, capacities and opportunities in responding to the challenges of climate change than cities in high-income countries. This set introduces a framework your city can use to systematically explore potential climate impacts, what factors make your city vulnerable to suffering harm from climate change, and how to build resilience to climate change.

The Climate Resilience Framework

The Climate Resilience Framework (CRF), developed by ISET in collaboration with the International Development Team at ARUP, is an analytical approach to building resilience to climate change in urban areas. The goal of using this structured framework is to help you build your city's resilience and ability to address multiple climate change hazards—be they emerging, indirect, rapid or slow-onset—as well as current hazards, within the economic, political, and population dynamics that characterize your city.

FIGURE 1.1.1
The Climate Resilience Framework

ISET has used this framework with cities across Asia and Southeast Asia to build local capacity for climate change resilience as part of the Rockefeller funded Asian Cities Climate Change Resilience Network.
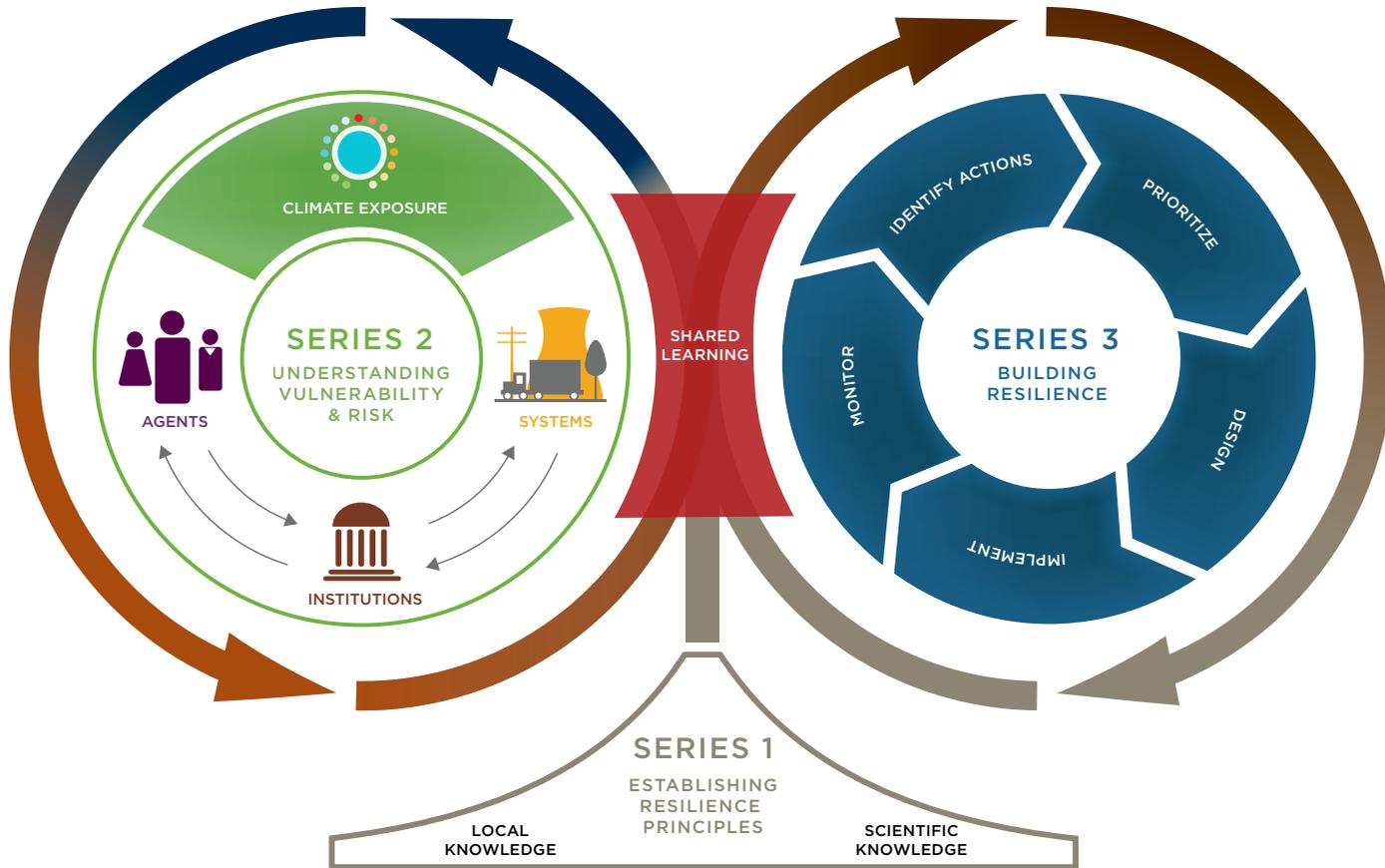
Current approaches to urban climate adaptation have a tendency to focus on technical responses to particular climate hazards via specific projects, such as defensive coastal infrastructure or zoning coastal areas in response to sea level rise.

There are several limitations to this project-specific approach:

- It draws attention away from systemic weaknesses and policy and governance failures that may be acting to enhance or hold in place existing vulnerabilities;

- It fails to tap into the opportunities and strengths inherent in a team of diverse city stakeholders building resilience though multiple efforts over time; and,

- It does not readily address indirect or cumulative effects, nor is it particularly adaptable over different spatial or temporal scales.

The Climate Resilience Framework directly counters these limitations in its approach to climate change in urban areas. The CRF process begins with having you envision what it means to be a resilient city and to define principles that will guide your city's vision and process into the future (entry arrows at bottom of Figure 1.1.1). You will build resilience through identifying existing factors that contribute to your overall city vulnerability and risk (left-hand loop in Figure 1.1.1), and developing strategies that shift existing development and policy processes to address those vulnerabilities and meet future challenges (right-hand loop in Figure 1.1.1). Core to this approach is an assessment of vulnerability and risk that takes into account not just currently vulnerable groups or systems but the reasons for those vulnerabilities, including exposure to climate hazards, low capacity for handling climate shocks, fragile supporting systems, and the governance, social conventions and cultural behavioral norms that act to reduce or exacerbate vulnerabilities and capacity.

KEY ELEMENTS OF THE FRAMEWORK

The key elements of the CRF are urban systems, social agents, and institutions, and, for each, the degree to which it is exposed to climate change hazards. Within the framework, building resilience means:

- Identifying the exposure of city systems and agents to climate hazards;

- Identifying and strengthening fragile systems by strengthening the characteristics that reduce their vulnerability to climate hazards;

- Strengthening the capacities of agents to both access city systems and develop adaptive responses;

- Addressing the institutions that constrain effective responses to system fragility or undermine the ability to build agent capacity.

FIGURE 1.1.2
CORE ELEMENTS OF THE URBAN RESILIENCE FRAMEWORK

These four core elements in the CRF (urban systems, agents, institutions, and exposure) provide distinct lenses through which to consider your urban climate change resilience. Each aligns with specific interests and backgrounds associated with key practitioners and decision makers responsible for planning and keeping your city functioning. As a result, separation of these major components provides a practical basis for engaging with key actors in urban areas about climate resilience. Collectively they provide a holistic view of urban resilience: urban systems relate to what will be managed (infrastructure, ecosystems, etc.); agents relate to who will take action or be affected by actions (e.g., businesses, government organizations, NGOs, communities, etc.); institutions relate to how action is structured or enabled (legal or regulatory frameworks and processes, laws, authority, agreements, customs, etc.); and exposure relates to climatic drivers of change (parameters, magnitudes, locations, with what level of uncertainty).

SYSTEMS in a city include infrastructure, services, and functions (e.g. water supply and wastewater treatment systems, roads, power lines, food distribution, health, education, finance) and ecosystems (e.g. agricultural land, parks, wetlands, fishing grounds). Systems are designed and managed by people, but their performance depends on a multitude of factors that are difficult to manage, including human behavior and institutional context, which often lead to unintended side effects like pollution. Systems are fragile if they are easily disrupted or broken, though their basic functioning may look very stable.

AGENTS are individuals, households, communities, the private sector, businesses, and government entities—they are people functioning either alone or in groups. People, unlike systems, are capable of careful thought, independent analysis, voluntary interaction, and strategic choice in the face of new information. This makes agent behavior more difficult to predict than system behavior. People's thinking, analysis, interaction and choice often reflects the their location and structure within society, their preferences, and the opportunities and constraints they perceive.

INSTITUTIONS are the rules, laws, customs, social norms and conventions that guide, enable, and constrain people's behavior, defining the range of perceived possible responses or actions in a given situation. Institutions are created to reduce uncertainty, to maintain continuity of social patterns and social order, and to make our interactions more stable and predictable.

EXPOSURE is whether or not a system or person is in a location that is prone to particular climate hazard, such as temperature increases, rainfall variability and change, or changes in the frequency or intensity of tropical cyclones and storms. Future exposure can be systematically explored through scenarios that explore potential climate changes in relation to specific systems, specific groups of agents, and specific institutional structures.

VULNERABILITY AND EXPOSURE

Having defined the above key elements, we can now use them to frame urban vulnerability. There are many definitions of climate change vulnerability in current use. Using the CRF definitions of systems, agents, institutions and exposure:

Vulnerability is an underlying condition of people or systems and describes how they might suffer harm due to a particular hazard or shock. It results from the combination of fragile systems and marginalized agents that are exposed to climate change hazards and limited in their ability to adapt by constraining institutions and their interactions with other agents and systems.

The Inter-governmental Panel on Climate Change (IPCC) definition is:

Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

FIGURE 1.1.3
Climate impacts on Fragile Systems & Marginal Agents

Having defined the above key elements, we can now use them to frame vulnerability.
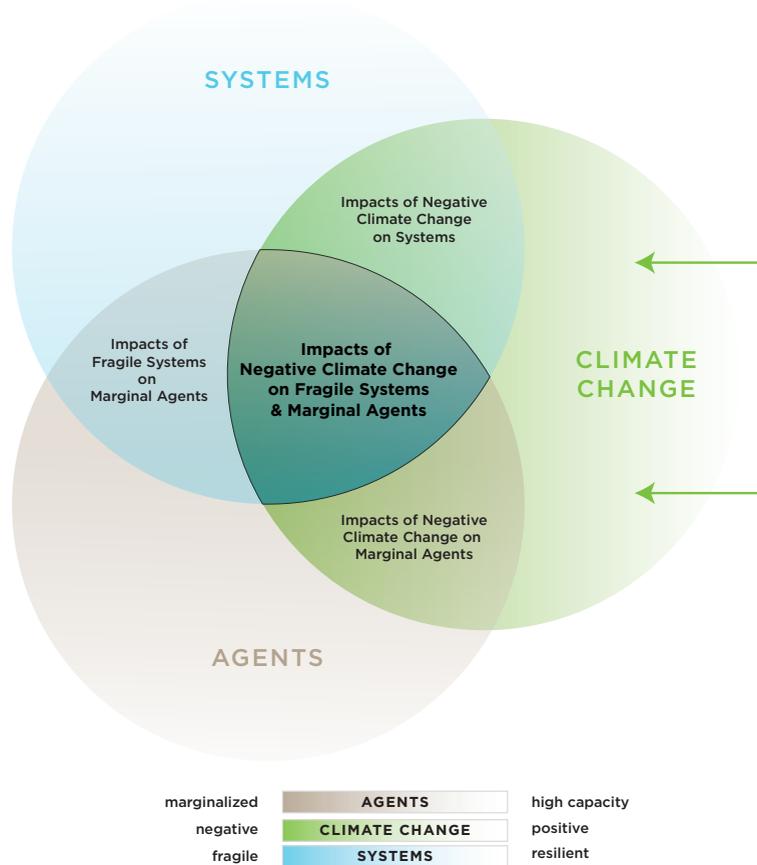
For the purposes of this introductory set of training sets, we find both of these definitions useful for establishing as a broad conceptual foundation, but unnecessarily complex at the beginning stages of resilience building. Consequently, the definition of vulnerability we use here is essentially the same as the CRF definition:

Who and What (👥 AGENTS and 🏭 SYSTEMS)

might suffer harm,because of

What (⊙ EXPOSURE TO HAZARDS), and

Why (🏛 INSTITUTIONS, INTERACTIONS

WITH OTHER AGENTS AND SYSTEMS).

We find that, structured this way, it becomes quite easy to identify vulnerable groups, what they are vulnerable to, and to begin exploring why those vulnerabilities exist and what actions to take to reduce them. This is explored more systematically in Series 2.

RESILIENCE VS. ADAPTATION
The Climate Resilience Framework is designed to emphasize resilience rather than adaptation. Adaptation actions are often described as discrete actions, such as building flood-protection systems or mangrove restoration, with discrete beginnings and ends developed to address specific vulnerabilities or problems. Resilience, on the other hand, is an ongoing process. Resilience recognizes that vulnerability and climate risk are constantly evolving, as our cities—the systems, agents and institutions within—evolve and interact. Because our cities are dynamic, we require a process that can include discrete adaptation actions, but also that allows us to re-evaluate, anticipate and evolve with changing vulnerabilities and risks, and builds our cities' capacities to absorb disturbances while retaining the same basic structures and services.

A resilience approach not only addresses the vulnerability of systems and agents to specific projected climate conditions (e.g., more frequent heat waves, more intense rainfall), it also builds the capacity of cities to respond to surprise and to unexpected outcomes. In addition, it encourages the establishment of institutions that support the development and maintenance of resilient systems and enable the growth of agent capacity. However, though the CRF emphasizes resilience rather than adaptation, it is important to recognize that the two are interlinked. Resilient systems are the stable, yet flexible foundations that people require in order to shift strategies and adapt as conditions change.

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☑ **Activity 1.1.1**

Mapping a City System

In this activity, you are going to map one of your city's systems, services or functions and figure out which agents (organizations, government departments, community groups, etc.) are connected to that system, and which institutions (rules, laws, policies, customs, etc.) influence how that system functions and operates. This activity will help you understand the climate resilience framework a bit better and begin thinking about all the factors that combine to make your city's systems and people vulnerable to climate variability and change. In subsequent sets, you will gain a more complete understanding of your city's systems, agents and institutions and how to begin the urban resilience process (Series 1); its vulnerabilities and how to identify potential climate risks (Series 2); and how to identify resilience strategies and actions (Series 3).

IN THIS ACTIVITY YOU WILL:

✓ Identify one critical city system, service or function.

✓ Identify and map the agents and institutions that are connected to that city system, service or function.

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ACTIVITY 1.1.1: MAPPING A CITY SYSTEM

INSTRUCTIONS:

1. **In the center bubble on the sheet below, or on a flip chart/ white board, write one city system, service, or function.**

2. **Think of all the agents that are involved with that system, service, or function. Who works with, depends upon, or strongly influences that system, service or function? Examples of city systems, services or functions are in the text box on the left.** Write these agents down in the agent bubble on the sheet below that is connected to the system bubble.

3. **Think of the institutions—rules, laws, policies or cultural customs and practices, for example—that govern how that system, service or function is managed, used or operated and which agents are allowed to be involved with that system.** Write the institutions in the institution bubble in the sheet below.

4. **What other systems, services, or functions are connected to the system you chose?** For example, an urban drinking water system needs a water supply system (river, groundwater, lake, etc.) and possibly an electricity supply to treat, pump, or convey the water or a transportation network (private water tankers and roads) to bring the water to urban residents. Write these supporting systems, services, or functions down in the supporting systems bubble on the sheet below.

5. **Looking at this map, are there any other agents or institutions you've forgotten that should be included?** How do the agents influence and decide the institutions that govern how a system is managed or operated?

EXAMPLES OF CITY SYSTEMS, SERVICES OR FUNCTIONS:

Urban planning

Land use decisions

Water and sanitation

Solid waste disposal and recycling

Electricity

Transportation and communication infrastructure

Social services

Health monitoring and regulation

Environmental monitoring and permitting

Disaster planning and response including hazard mapping

Business and economic development including trade

Ports or harbors

Tourism

Security

Coastal ecosystems

Watersheds

Forest ecosystems

Food supply and agriculture

Mapping a City System

(Use the space below to complete Activity 1.1.1)
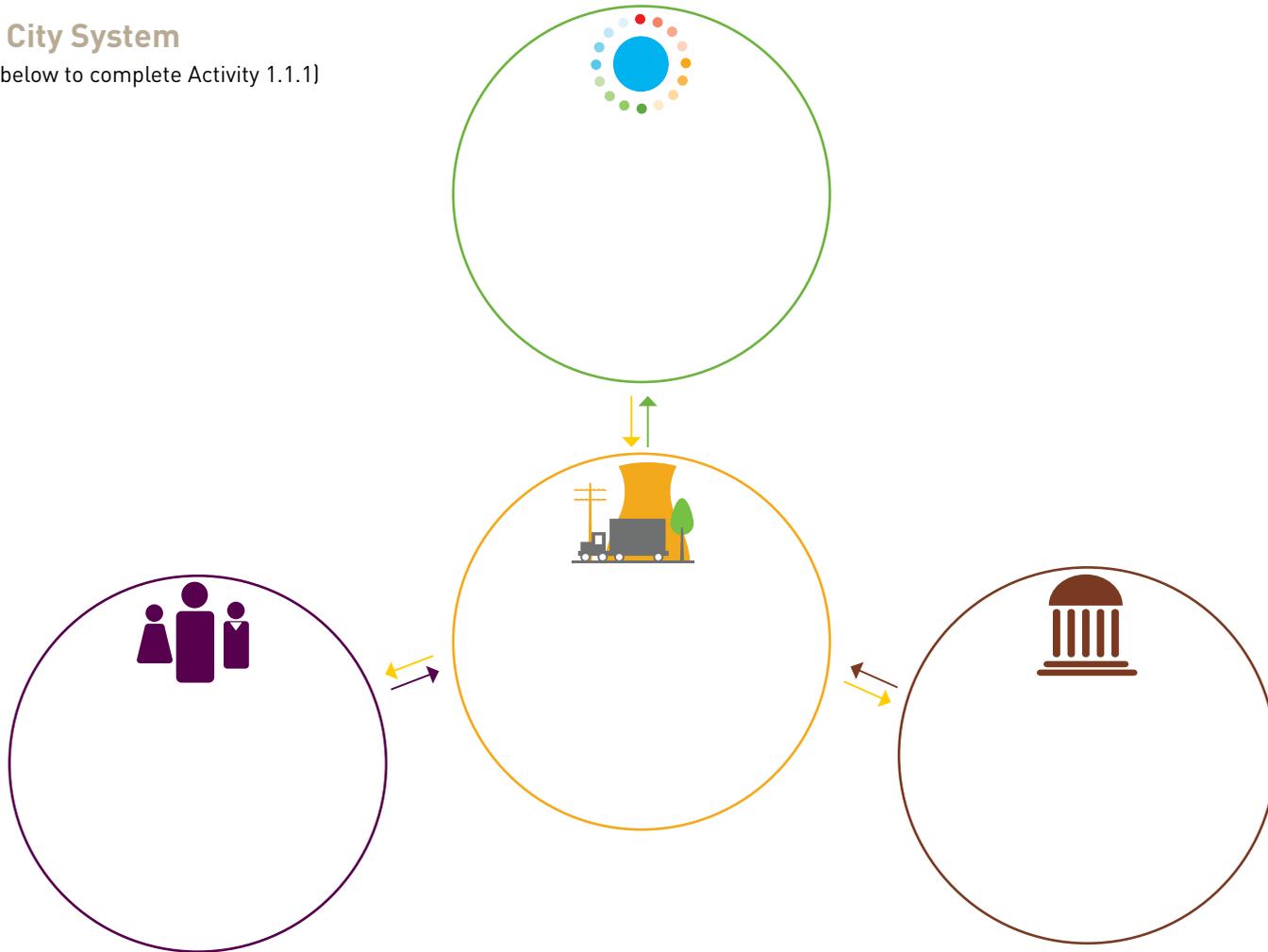
1.2.0

IDENTIFYING KEY AGENTS THROUGH ORGANIZATIONAL REVIEW

CLIMATE RESILIENCE FRAMEWORK
ISET-INTERNATIONAL

Contents of Set

In this set, you will learn how to identify who should be involved in your city's climate resilience process by thinking through these categories:

- Who should be part of the working group who will conduct analyses of your city's vulnerabilities and future climate risks, and identify and prioritize resilience strategies.

- Who—which organizations, government agencies, or community groups—currently provide key services, like waste management, and functions to your city.

- Who—like the mayor or the city council—is likely to actually be in charge of developing and implementing into policy and practice the various resilience strategies the working group identifies.

- Who is likely to be impacted negatively by climate variability and change—like particularly poor populations or various business sectors—and therefore needs to be involved in the resilience process.

IN THIS SET YOU WILL:

- ✓ Identify key city services and functions.

- ✓ Identify the agents—the government agencies, community groups, or individuals—that currently provide or maintain such services and functions for the city as a whole or for particular areas of your city.

- ✓ Figure out the power relationships between these agents and organizations to know who has the most influence over how services or functions are provided, and how decisions are made in your city.

Overview

Climate change will directly impact many of your city's functions and services and the people living and working in your city. Climate change will also indirectly impact your city. By thinking about your city's functions and services, you can begin to identify who should be involved in the analysis and who is likely to be involved in implementation of strategies over the next several years due to existing organizational power relationships and policy priorities. You will also begin to identify the agents that provide providing critical services or function and gain some sense of how well they are able to do so through this exercise. It might also be that in particular informal communities that no-one actually provides a key service to that community, and that each household individually must fend for itself in accessing a particular service or function like drinking water. These communities or business sectors are often vulnerable to current climate hazards and are likely to be negatively impacted by climate change in the future. This knowledge is a critical component of your vulnerability assessments. You will learn more about vulnerability assessments and assessing the direct and indirect impacts of climate change on your city in the sets associated with Series 2: Understanding Vulnerability and Risk. It is also important knowledge for building your city's resilience, especially in knowing who to involve at which steps of the processes, and who might help or hinder the process.

Conducting an organizational review allows you to identify key agents in each category and to figure out the power relationships between them. Once you have identified key agents through this set, you can begin contacting them and engage with them. It could be that there will be overlap between people in all categories. Ideally, you want your city's various government agencies and service-providing organizations involved in all steps of the resilience process to ensure that all city policies and practices actually incorporate climate resilience.

There is no 'correct' way to conduct an organizational review; it can be used for multiple purposes in your resilience planning efforts and will likely need to be repeated as you learn more about your city's vulnerabilities, risks, and development visions. As indicated at the beginning of this set, the individuals and organizations involved in conducting your vulnerability and risk assessment might not be the same stakeholders who will prioritize resilience strategies or implement them into your city's policies. Certain populations, community groups, or business organizations might not be involved in the working group that conducts the analysis, but should be involved in the resilience process through SLDs (Set 1.3) or other stakeholder engagement endeavors to inform the overall resilience process. You will have

to decide, based on what you know about your city's governing organizations, policies and priorities, who should be involved in which stages of your urban resilience process.

This set does not tell you how you should organize and set-up the working group(s) who will analyze your city's climate vulnerability and risk or who will implement them. The appropriate group formation is up to you, based on what you learn/know about your city's governance structure (through this organizational review set) and policy (through the policy review Set 1.5). We provide you with a few suggestions and things to think about from this set and Set 1.5's outcomes that can be used when you form these groups. This set also does not tell you how you should involve people in your city's resilience process. You will have to figure out how to engage and involve various individuals, organizations, and government agencies, and at which stages, as you develop your resilience process. There is no single 'correct' way to involve people, and it may take some time to figure out and develop working relationships, terms of reference, or memorandums of understanding.

Organization Review Matrix

Climate change will directly and indirectly impact many of your city's functions and services and the people living and working in your city. By thinking about your city's functions and services, you can begin to identify who should be involved in the analysis and who is likely to be involved in implementation of strategies over the next several years due to existing organizational power relationships and policy priorities. You will also begin to identify the agents that provide critical services or function and gain some sense of how well they are able to do so through this activity. How well services or functions are being provided or maintained is one element of your city's vulnerability, or susceptibility to suffering harm from any kind of hazard or crisis, not just climate. Knowledge about agents and organizations key to your city is a critical component of your vulnerability assessments. You will learn more about vulnerability assessments and assessing the direct and indirect impacts of climate change on your city in the sets associated with Series 2: Assessing Vulnerability & Risk.

IN THIS ACTIVITY YOU WILL:

✓ Identify key city services and functions

✓ Identify the agents—government agencies, community groups, or individuals—that currently provide or maintain such services and functions for the city as a whole or for particular areas of your city.

INSTRUCTIONS: An example organization matrix is provided on the next page to help get you started. A blank organization matrix is available on the following page for you to fill in. You can also develop your matrix on a flip chart or white board for more room, to add extra columns and rows, etc.

1. **Begin by identifying some critical city functions or services.** Write these city functions or services in the left-most columns, like in the example matrix. This list does not have to include everything now, and you can certainly expand it at a later time. List some of the functions or services—not all of these might not be applicable in your context or some important functions might be missing from the list of examples shown to the right.

2. **Identify by name the organization(s) in charge of making decisions about and/or providing the particular service or ensuring that a service, like electricity generation and distribution, actually happens.** It may be that one organization is in charge of making decisions and policies about a particular service or function; and that another organization is in charge of implementing and managing the service or function. Fill in the names of the organizations in the row corresponding to the particular city service or function.

3. It is equally important to note that community groups, NGOs, religious groups, or private businesses might be providing some of these services to slum areas or other areas of the city. These organizations, which aren't part of the city government, can play critical roles in providing city services and emergency response when the city government doesn't have the resources or the ability to do so. They also might have a better sense of health, livelihood or education conditions for particular populations in the city than government agencies. **Fill in the names of the organizations in the row corresponding to the particular city service or function.**

4. **Identify the scale at which each organization operates or is in charge of—is it community-based, ward-level, district, the whole city, or provincial?** Label the scale below the organization. Identify the mandate of each organization—what service they provide or their management role. Label the mandate below the scale.

EXAMPLES OF CITY FUNCTIONS OR SERVICES

Education

Community groups, neighborhood associations

Recreation

Urban planning

Land use decisions

Water and sanitation

Solid waste disposal and recycling

Electricity

Transportation and communication infrastructure

Social services

Health monitoring and regulation

Environmental monitoring and permitting

Disaster planning and response, including hazard mapping

Business and economic development, including trade

Ports or harbors

Tourism

Security

Function / Service	ORGANIZATION REVIEW MATRIX (EXAMPLE)		
Drinking Water	**BOULDER UTILITIES DIVISION** **Scale:** Provides water citywide & to some neighboring communities via agreement. **Mandate:** Operates and manages the water infrastructure, including water storage.	**CITY OF BOULDER** Owns Boulder Water Utility Owns the water infrastructure Owns the water rights to water supply for city.	**ENVIRONMENTAL PROTECTION AGENCY** **Scale:** National government agency. **Mandate:** National drinking water quality standards. Local standards can be more strict, but not less strict.
Land Use Planning	**DEPT. OF COMMUNITY PLANNING & SUSTAINABILITY** **Scale:** Boulder city limits **Mandate:** Building permits, land use planning, urban development, environmental protection & enforcement, climate mitigation	**DEPT. OF OPEN SPACE & MOUNTAIN PARKS** **Scale:** Boulder city limits **Mandate:** Identifying & designating land as open space, environmental protection & enforcement	**LAND USE DEPARTMENT** **Scale:** Unincorporated Boulder County **Mandate:** Land use planning & zoning, building permits, forest health & wildfire protection planning
Emergency Response	**OFFICE OF EMERGENCY MANAGEMENT** **Scale:** City and county of Boulder **Mandate:** Countywide disaster planning, response, and recovery. Coordinates all agencies in DRR	**COLORADO DIVISION OF EMERGENCY MANAGEMENT** **Scale:** State-wide **Mandate:** comprehensive planning for state, supporting local emergency managers	**THE SALVATION ARMY EMERGENCY MANAGEMENT DIVISION** **Scale:** citywide and throughout U.S. **Mandate:** Religious organization providing disaster relief—food, housing, money, etc. to disaster victims
Health Monitoring & Response	**BOULDER COUNTY PUBLIC HEALTH** **Scale:** City and county of Boulder **Mandate:** Disease monitoring and prevention, air pollution, water quality, food safety, etc.	**BOULDER COMMUNITY HOSPITAL** **Scale:** Citywide and surrounding communities **Mandate:** Providing health care services as a community-owned, non-profit hospital	**SALUD FAMILY HEALTH CENTERS** **Scale:** Citywide and surrounding communities **Mandate:** Non-profit community group providing health care services for poor and migrant populations who can't afford BCH.

Function / Service	ORGANIZATION REVIEW MATRIX		
	_____ Scale: Mandate:	_____ Scale: Mandate:	_____ Scale: Mandate:
	_____ Scale: Mandate:	_____ Scale: Mandate:	_____ Scale: Mandate:
	_____ Scale: Mandate:	_____ Scale: Mandate:	_____ Scale: Mandate:
	_____ Scale: Mandate:	_____ Scale: Mandate:	_____ Scale: Mandate:

Function / Service	ORGANIZATION REVIEW MATRIX		
	_____ Scale: Mandate:	_____ Scale: Mandate:	_____ Scale: Mandate:
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CLIMATE RESILIENCE FRAMEWORK
ISET-INTERNATIONAL

✓ **Activity 1.2.2**

Power Relationships

In this activity, you will use Chapati diagrams to explore the power relationships between the organizations you identified in Activity 1.2.1. The name of the Chapati diagram (also called Venn Diagram) comes from the shape of wheat flatbread common throughout many parts of Asia and East Africa, which are referred to as chapati in Hindi. Chapati diagrams are useful ways of visualizing which are the most powerful or important in making policies and laws or the provision and maintenance of particular city services or functions. Knowing who are the most powerful organizations, government agencies, community groups, etc. is important for a number of reasons:

- Because these agents are so powerful, they currently dominate your city's decision-making processes and need to be involved in some way in the resilience process, otherwise they might become barriers to building resilience.

IN THIS ACTIVITY YOU WILL:

✓ Figure out the power relationships between the organizations identified in Activity 1.2.1 to know who has the most influence over how services or functions are provided, and how decisions are made in your city.

- It helps you identify agents that are politically or socially weaker, such as informal community groups in a slum area, who provide critical services or functions in your city, but do not have formal legal or political recognition. While these agents might be weaker, they are very important to the functioning of your city. Part of building your city's resilience should involve engaging with weaker groups, seeking to build their capacity and recognition, which will in turn strengthen their ability to provide the services and functions they already provide.

- It helps you identify potential sources of conflict and power struggles between agents. If you know that certain government agencies or community groups, for example, have differences in opinion, it is easier for you to devise strategies for dealing with conflict between the groups. You will need multiple players to work together to build your city's resilience, and they won't always be in agreement. If you are aware of potential sources of conflict beforehand, it is easier to facilitate dialogue between groups and smooth difficulties.

INSTRUCTIONS: In the space provided (p.12 of this handout), create your diagram, or recreate the diagram on a white board or flip chart. An example of a Venn/ Chapati Diagram is provided on the following page.

1. Pick one city service or function. If you have enough time, you can repeat this exercise for another city service or function.

2. Using the agents and organizations identified in Activity 1.2.1, discuss with your colleagues which you think are the most powerful or most influential in relation to that city service or function.

3. Once you have reached an initial consensus, rank each agents and organization and assign each organization a power status circle using the guide below. Write the name of the organization in the circle of the corresponding power size.

4. Arrange the shapes to show the relationships between each of the organizations. One possible suggestion is to arrange the organizations according to the following categories:

   • Whether they make the laws or policies regarding the city service or function

• Whether they own the resource rights or infrastructure connected to the service or function, such as the water rights or electricity grid

• Whether they just manage and operate the infrastructure or service, but do not own the infrastructure or have the ability to make policies.

Use colors to differentiate the organizations according to their categories.

Draw connecting lines between your shapes to create a sociogram. The lines are a way of representing which organizations are linked together and influence each other's work.

Arrange the shapes to reflect the organizational power structure you think exists around a particular city service or function. There is no 'correct' way to arrange the organizations. It is also common for your perceptions of organizational structures within your city to change as you move through various steps of the resilience process. The same applies to the lines you might draw between organizations to see who is connected.

Weakest

Weak

Strong

Strongest
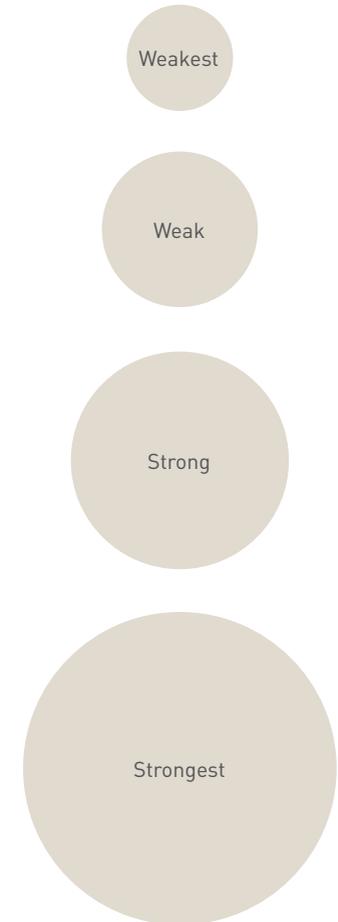
Chapati Diagram Example
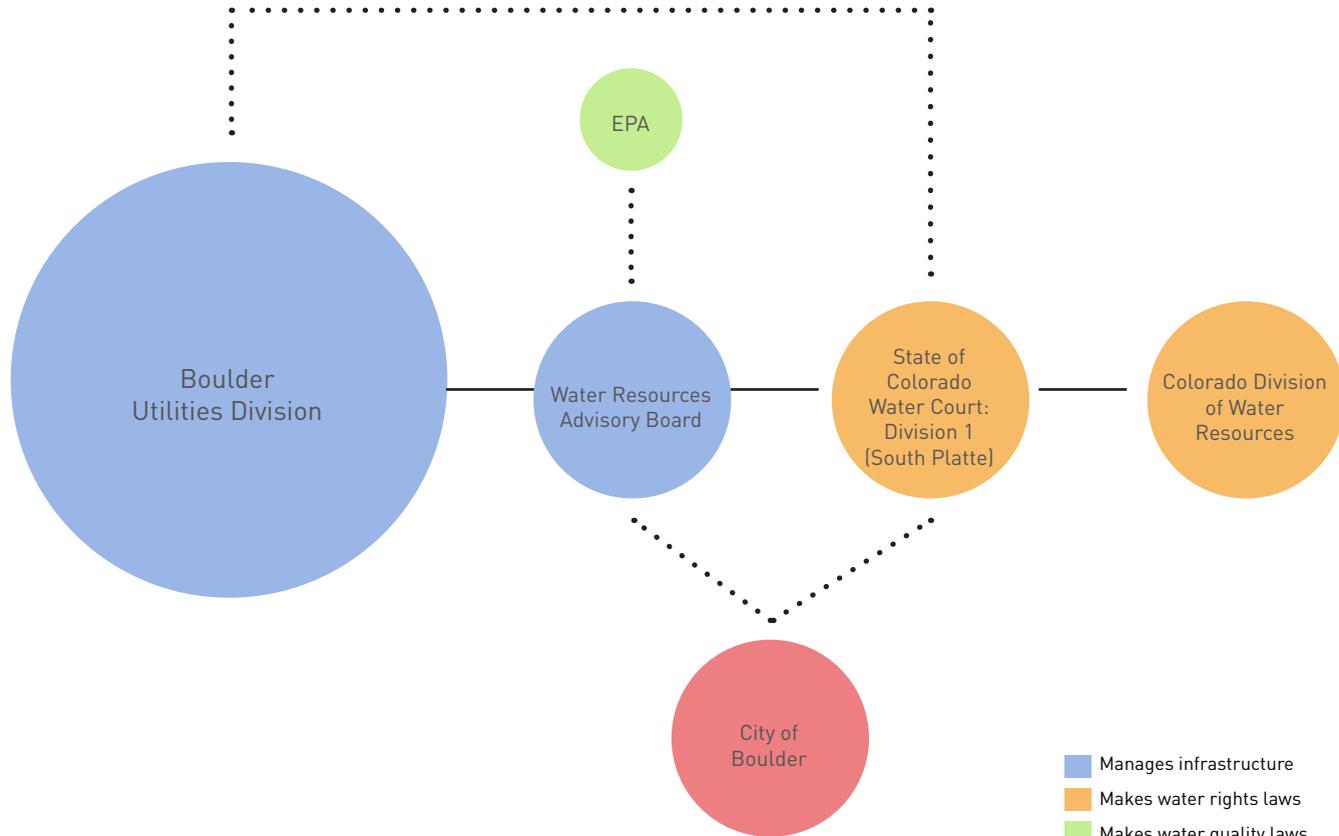
EPA

Boulder Utilities Division

Water Resources Advisory Board

State of Colorado Water Court: Division 1 (South Platte)

Colorado Division of Water Resources

City of Boulder

■ Manages infrastructure
■ Makes water rights laws
■ Makes water quality laws
■ Owns infrastructure & water rights

—— Direct Relationship
• • • • Indirect Relationship

Chapati Diagram

INSTRUCTIONS: Please use the space below to complete your Chapati Diagram.

1.3.0

THE SHARED LEARNING DIALOGUE PROCESS

SERIES 1
Establishing Resilience Principles

CLIMATE RESILIENCE FRAMEWORK
ISET-INTERNATIONAL

Contents of Set

1.3.0: Guide
1.3.1: Activity

In this set, you will be introduced to Shared Learning Dialogues (SLDs) as tools for helping you to bring together diverse sets of agents from your city to understand potential climate change impacts for your city and create and effect a process that builds your city's resilience. SLDs are iterative, transparent group discussions with agents such as—local community actors, government agencies, and non-governmental organizations, community groups or universities—designed to bring together outside perspectives and local knowledge on climate and the development challenges your city faces.

In Set 1.2, you identified potential agents that are important to your city resilience process—those who will make decisions and those who will be impacted by such decisions. In this Set, you will learn about SLDs as tools for engaging with the stakeholders you identified in Set 1.2. You will also learn how you can use SLDs to facilitate and keep the resilience process going in your city.

IN THIS SET YOU WILL:

✓ Answer a series of questions to get you thinking about how to structure and use SLDs in your planning process.

✓ Think of key features that should be included in your first SLD.

✓ Think of key features that should be included in any subsequent SLDs that your city will hold.

Overview

Generating effective responses to the consequences of climate change requires understanding both the emerging scientific knowledge as well as the range of local factors that influence climate change's effects on individuals, communities, and urban systems, including ecosystems. For many people and organizations, the scientific research and modeling are often difficult to access and interpret to the local context. Conversely, localized information, knowledge, and experience are regularly unavailable to climate change scientists at national or international levels. ISET uses a shared learning dialogue (SLD) process, drawing on experiences and techniques from participatory action research, to help diverse sets of stakeholders bridge these scientific to local knowledge gaps.

The purpose of an SLD is to bridge the division between what scientists know about climate change and what a variety of stakeholders from your city know about the hazards your city faces, as well as your city's capacities and challenges for handling current and future climate hazards, variability, and change. SLDs provide your city stakeholders with a working understanding of climate change issues in a setting that allows them to utilize diverse knowledge and skills to generate effective local responses. SLDs are informed by specific information compiled or generated to support the

engagement, including climate science and model results, vulnerability and risk assessments, and possibly in-depth studies undertaken to address information gaps. Through this process, local partners and relevant stakeholders increase their understanding of climate change in general and how it will impact and affect the city, particularly for vulnerable groups and areas.

The SLD process is not simply a series of meetings. An SLD is a semi-structured and carefully facilitated series of interactions that include opportunities for all stakeholders to participate and interact—through a structured meeting, workshop, or focus group discussions. This can prove challenging, and potentially frustrating, for organizers and participants alike. Depending on how they are designed, SLDs can challenge conventional power dynamics, contradict existing and seemingly well-established practices, and give rise to interaction between actors that feel foreign and uncomfortable to their expectations. Yet, changing these power relationships are critical to building resilience to multiple shocks beyond just climate change. The structure and composition of an SLD process is highly adaptable. The facilitator can choose to use any number of tools and techniques to meet the needs of the organizers and adjust to the social context while still generating discussion and interaction. Advanced organization of an SLD is required in order to best include and integrate the global and local

KEY ATTRIBUTES OF SHARED LEARNING PROCESSES

Size, composition, format, and structure of an SLD vary depending on the context, objectives, and strategic decisions you are trying to make during the course of your resilience process. However, all shared learning processes have the following key attributes, described below.

Information sharing is multi-directional: Local stakeholders representing disparate sectors, scales, or perspectives should learn from each other. Local stakeholders should learn from international knowledge presented by external experts; and external experts should learn from local stakeholders.

The process involves diverse stakeholders in an open manner: Participants from diverse groups, interests and responsibilities can contribute their views and experiences without prejudice.

The process is iterative and ongoing: Participants have time to absorb and think about the information and perspectives of different, both during the SLD and between SLDs, and work towards the development of specific mechanisms for responding to climate change risks. A single SLD will never be enough for shared learning or developing common goals. The process takes time and multiple SLDs.

The process crosses scales, communities, and organizational and disciplinary boundaries: Shared learning dialogues bring together local, regional, national and global scientific perspectives and seek to overcome knowledge systems divides typical of sectors. The dialogues will occur at multiple levels where engagement is necessary to catalyze effective action.

Shared learning assembles groups reflecting different socio-economic, gender, geographic and cultural groupings: Because patterns of vulnerability often differ between such groupings, the goal is to ensure, as far as possible, that shared learning processes capture different marginalized groups (caste, religion, age, gender, physical mobility) and access to evaluate the equitability of proposed actions.

!! Keep this tip with you as you begin your SLD as a helpful reminder

knowledge needed to further the planning process. You will also want to use a skilled facilitator that is familiar with local issues, power structures, and sensitivities.

Early meetings can be intensive discussions used to develop baseline appreciation for the need of the dialogue process, some measure of trust and respect among the various actors, and a common understanding of the issue being addressed. Later iterations may focus on incorporating cooperatively generated information, such as assessments of local vulnerability and risk, into the pool of common knowledge. Later SLDs may also aim to create further opportunities to understand the complexities and nuances of how global trends such as climate change and urbanization will interact in nonlinear ways to affect local response opportunities and priorities. The spacing of the SLD gatherings is also flexible—the need to balance the resilience process momentum together with the time needed to absorb new information, appreciate new relationships among actors and institutions, and generate meaningful new knowledge inputs into the dialogue all influence the spacing of the meetings. Finally, because iteration in the SLD process is central to the sequential development of understanding, a core group of regular participants is required, although not all participants need attend every gathering. New participants should also be welcomed for their fresh perspectives and contributions, especially as your city's resilience process evolves and

expands. SLDs should be held in places, like schools or community centers, which minimize participants' discomfort and social inequality.

Planning a Shared Learning Dialogue

In structuring and choosing methods for a Shared Learning Dialogue, you should consider:

Objectives: A Shared Learning Dialogue is designed to bring together local and global expertise. However, for each SLD, you need to decide what your objectives are for that specific SLD and how you will facilitate the SLD to cover your objectives. Some objectives might be:

- Provision of knowledge inputs for decision-making, strategic planning processes or interventions design;

- Building common understanding of vulnerabilities among stakeholders;

- Capacity building of partners or local organizations;

- Building shared vision among local stakeholders;

- Engaging interest, support, and local ownership for planning processes or interventions among stakeholders;

- Awareness raising and provision of public information;

- Building a knowledge basis from which a specific study or research project can be launched.

These objectives are in no way mutually exclusive, and in fact may strongly support each other. They are likely to change or evolve during the process, and planners should be prepared to be flexible as new needs or priorities are identified.

Once identified, the objectives should guide the design of the overall process. Important considerations include:

Responsibility for Planning and Decision-Making: Shared Learning Dialogues require consistent review and decisions on next steps. One individual or group may initiate the process and plans, but they may find it valuable for this role to include other stakeholders as the process moves forward. This can be an important aspect of promoting a locally driven and broadly managed implementation.

Composition of stakeholders and material: Based on project objectives and scale, you should consider:

- What stakeholders need to be included;

- What kinds of power or social inequalities might exist between different stakeholders, and how you will mitigate such inequalities during an SLD so that all

may share knowledge and learn from each other.

- While you may invite stakeholders based on objectives and strategic considerations, composition will also reflect self-selection of stakeholders into the process. You may need to devise methods of engaging stakeholders who are not initially interested in the topic or interactions. *The organizations, government departments, and individuals you identified in 1.2 should be stakeholders included in your SLDs.* As time progresses and the resilience process grows, you will find that you need to include other stakeholders in subsequent SLDs.

Participants may vary from SLD to SLD depending on what the SLD topic is. For example, an SLD might be held mid-way through the vulnerability and risk assessments to review initial findings and fine-tune the focus of the subsequent analysis. An SLD of this sort might include a couple of city departments and NGOs involved in livelihoods and housing, but might not include water and power utilities, the governors' office, and city finance office, though these players would all be desirable at a larger SLD which reviewed the final vulnerability and risk assessment results.

Mechanism(s) for leadership and decision making:
Importantly, you need to consider how (i.e. through whom or what) knowledge will be shared in the process. In ISET

experience, one or more facilitators or a "core group" of stakeholders have acted as the repository of knowledge responsible for collecting and passing information between different stakeholders. While other stakeholders may attend only a handful of meetings, the facilitator or core group participants should participate in all stakeholder interactions. The nodal facilitators or core group may ultimately be responsible for taking action and/or assisting other groups to take action, in which case their involvement is also important for capacity building. When appropriate, large multi-stakeholders meetings provide a mechanism through which stakeholders can communicate and share multi-directionally.

Style of engagement: Different objectives will require different types of engagement, and there may need to be multiple styles of engaging stakeholders within a single process. For instance, certain government officials may only be willing or available to meet one-on-one with a facilitator. Marginalized communities and especially women may be less able to voice their opinions in large group setting verbally or with a male facilitator. Experiences from Participatory Rural Assessments (PRA) provide many insights into the best ways to promote shared learning with poor or marginalized groups. While small focus group sessions are important, large multi-stakeholder gatherings offer advantages in terms of promoting transparency and fostering new partnerships and understandings if unequal power dynamics are deliberately minimized through meeting structure and skilled facilitation.

Timeframe: The time needed to conduct a shared learning process depends on the objectives, scale, and context. Shared learning processes in a large city, for instance, may take more time than a process in a rural community in which systems are less complex. Capacity building for a specific group of stakeholders, on the other hand, may require a multi-year investment of time. You should not underestimate the amount of time required for the process. Rather, you should build in flexibility with the understanding that building relationships, and incorporating new findings and objectives may demand more time. In principle, the shared learning process should not end with the official project, but should initiate an ongoing and lasting dialogue between stakeholders.

Iteration is a key aspect of the Shared Learning Dialogue, but the type of iteration, with whom, and how frequently should be a strategic decision of the core working group in consultation with the facilitator. During this initial resilience process, you will want to hold 3 or 4 SLDs.

None of these design considerations—objectives, scale, composition, style of engagement, mechanism for knowledge sharing, and timeline—are static. Objectives are likely to change, and may therefore require additional stakeholder involvement, new participants, types of meetings and engagements, or a larger scale or longer time. The facilitator

may also change in certain cases if deemed strategically desirable (for instance, hand-over of the project leadership from external organization to local group).

⊗ Tools for Engaging Participants

Within Shared Learning Dialogue meetings, you can use a variety of tools to stimulate discussion and knowledge exchange. These include:

Facilitated breakout discussion groups, usually with a prescribed set of questions depending on the specific context—for instance, "What are the most vulnerable groups or districts in the city?" "Do you agree or disagree with the studies presented?"

Matrices within breakout sessions to help participants identify vulnerable populations, areas (see exercises for example of vulnerability matrix).

Ranking exercises: During breakout sessions, groups are asked to provide rankings, for instance to prioritize vulnerable areas/groups, projects or proposed activities based on criteria provided by facilitators.

Note cards: Participants are encouraged to write

comments and questions on note cards, as a means of providing feedback when time is limited and/or to engage participants who are less comfortable presenting their views publicly.

Scenario development can be used at various stages of the process as a visioning exercise or to inform resilience planning. For example, facilitators present and request participant input for envisioning three future climate and development scenarios describing "Business as Usual", "No Holds Barred Development," and "Sustainable 'Green' Growth."

The "Tools" section of our website (TRAINING.I-S-E-T.ORG) provides more tools—as well as their descriptions and example exercises—that you can use in your SLDs. Many of the exercises embedded within the sets themselves, can also be used in SLDs. While you do some of these exercises, feel free to note what exercises you like and to modify them for your context.

SUCCESSFUL SLDS REQUIRE

Careful, thoughtful preparation and planning. A variety of formats, methods, and sequencing are possible for SLDs. Advance planning should review the project objectives, the stakeholders needed to address those objectives, the capacity and knowledge of those stakeholders, the desired SLD outcomes, and take into account cultural and other constraints.

Skilled facilitators with strong understanding of the local context.

A substantial time commitment—a minimum of several months to several years, depending on the project scale and the degree to which stakeholders differ initially in their level of understanding and openness to new knowledge. The wider the initial divides, the more time that will probably be required. Substantial time allocations are also essential to ensure that process leaders and facilitators are able to reach the full spectrum of stakeholders, absorb and contextualize new concepts, conduct sufficiently rigorous research, and incorporate new knowledge into planning processes.

Iteration. Multiple iterative sessions allow for sequential growth in understanding and typically lead to increased levels of comfort and more meaningful dialogue among participants.

The presence of a core group of stakeholders with a willingness to maintain an open-minded attitude and a willingness to both share and listen to the ideas of others.

!! Keep this tip with you as you begin your SLD as a helpful reminder

CLIMATE
**RESILIENCE
FRAMEWORK**
ISET-INTERNATIONAL

Planning the First Shared Learning Dialogue

☑ **Activity 1.3.1**

A Shared Learning Dialogue is intended to bring together local perspectives and observations on current climate hazards, socio-economic and environmental conditions, and existing adaptive capacities with scientific knowledge and perspectives on climate change projections and impacts. SLDs are iterative dialogues between diverse sets of stakeholders. The goals and objectives, and what you discuss during an SLD, will change as relationships and trust are built between stakeholders. The question in this activity will help you plan your first SLD, and can be used to guide the planning of subsequent SLDs.

IN THIS ACTIVITY YOU WILL:

✓ Answer a series of questions that will help you design the first SLD for your city. You will use what you have learned about the Climate Resilience Framework from Set 1.1 and the list of important stakeholders you identified in Set 1.2 to help you set-up SLD 1.

TRAINING.I-S-E-T.ORG

TIPS FOR A SUCCESSFUL SLD,
AND WAYS TO BETTER INVOLVE WOMEN

!!

Manage Expectations Carefully	Pay Attention to Team Composition	Group Size is Important for Discussion	Get More Women in the Room	Raise Issues of Women as Priority
Let participants know how you intend to engage with them and how far they will be able to influence the policy, decision, procedure, etc.	Women sometimes are more comfortable talking to other women. The team conducting the discussion should consider having female members who can lead group discussion.	Face-to-face discussion may be difficult in groups larger than about 10–12 people. This may limit the structure of the smaller groups and the overall size of the workshop.	Make workshops more accessible and convenient for women by, for instance, providing transportation access to and from meeting venue, choosing a time of the day convenient for women, etc.	Active intervention may be required to identify issues that are important to women and to make sure they are given equal agenda time.

!! Keep this tip with you as you begin your SLD as a helpful reminder

INSTRUCTIONS: In the space provided, please answer the following questions.

SLD Participants

In Set 1.2 activities, you identified agents—from community groups, government departments, non-governmental organizations, universities, and religious organizations, for example—that should be included in your city's resilience process. Who should you invite to participate in SLD1? Why should you include them?

_____

_____

_____

_____

_____

_____

_____

Who was not identified in Set 1.2, that you think should be included in SLD 1? Why should you include them?

_____

_____

_____

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_____

_____

Which of the potential SLD attendees are part of a minority group or socially marginalized? How will you make sure that they are able to participate fully and equally in SLD 1?

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_____

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_____

How many participants, in total, do you think you will have at the SLD?

_____

_____

_____

_____

_____

_____

Meeting Venue

Where should you hold SLD 1 to encourage marginalized groups to participate? Is there a neutral location, such as a school or a community center, where you can hold the SLD?

_____

_____

_____

_____

_____

_____

_____

How large does the meeting space need to be to accommodate all the participants?

_____

_____

_____

_____

_____

_____

_____

How should the meeting space be arranged to ensure that all participants are comfortable and feel able to participate? How should you arrange seating to make sure that no representative from a particular stakeholder group is marginalized during the meeting?

_____

_____

_____

_____

_____

_____

_____

_____

What kind of equipment might you need to facilitate the meeting? A list of potential equipment is provided below to help get you started, but you don't have to use any of the suggested equipment as it might not be appropriate to your meeting context. Feel free to add to this list: Flip charts, large pieces of paper, white boards and sticky notes, colored markers, pens, pencils, electricity, a laptop computer, and a projector

_____

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_____

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_____

Goals of SLD 1

In the first SLD, you should introduce all participants to the concepts of climate hazards, climate variability and change and explore with them how these things might impact your city. What other topics might you want to cover in SLD 1?

_____

_____

_____

_____

_____

_____

_____

_____

What sort of outside information do you need to introduce these various scientific concepts and the other topics you identified as being important to include in SLD 1? Who are the initial sources of this information—such as national experts, international experts, scientists from the universities, local or regional NGOs?

_____

_____

_____

_____

_____

_____

_____

What sort of local information, experience and knowledge about impacts and challenges that your city faces should be included in the SLD? Who could present this information?

_____

_____

_____

_____

_____

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_____

Are there any high-risk issues requiring special attention at this stage?

_____

_____

_____

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_____

Are there vulnerable groups in the area that are particularly sensitive?

_____

_____

_____

_____

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_____

Identify issues that are important to women, that will primarily or disproportionately affect women, or that require women's input to understand fully. Are there adaptation actions that are primarily or solely initiated by women?

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_____
_____
_____
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_____

Are there issues that are likely to be controversial or disputed? How can these be introduced or managed in a non-confrontational way?

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_____

How will you introduce the concepts of urban resilience to the participants?

_____
_____

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_____

What do you expect as results from this SLD?

_____

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_____

Meeting Format

What formats will you use during the first SLD—such as small group discussions, plenaries, or one-on-one discussions?

_____

_____

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_____

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_____

_____

What kinds of activities will you use to engage participants and introduce concepts—such as brainstorming, community mapping exercises, Chapati diagrams, etc.?

_____

_____

_____

_____

_____

_____

1.4.0

IDENTIFYING RESILIENCE PRINCIPLES

CLIMATE RESILIENCE FRAMEWORK
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Contents of Set

Before beginning work on vulnerability and risk assessments or thinking about urban resilience, it is often useful to take a step back and examine your city's short- and long-term goals for adapting to climate change. Thinking about these goals will help you develop a process for evaluating the current situation in your city, developing plausible scenarios of what your city might face in the future, and whether your goals can actually respond to both current and future challenges. In this set, we present defining principles for resilience actions derived from existing practice and examples of criteria questions that can be used to evaluate whether planned activities adhere to those defining principles. You will use this information to begin framing your own resilience principles that you will use to guide your resilience planning process.

IN THIS SET YOU WILL:

✓ Identify resilience principles and criteria used in previous social, environmental, or disaster risk reduction efforts in your city.

✓ Develop an initial set of resilience principles and criteria that you think will be important to guiding the urban climate change resilience planning process your city is about to undertake.

Overview

Because climate change resilience initiatives are new, we don't have long-term evidence as to whether our research processes are investigating the right questions and whether the interventions we are developing will protect us and support better environmental, social and climate conditions in the future. Much of the research and experience that we have to date comes from the natural hazards, environmental protection, and sustainable development fields. As a result, there are no standard, universally accepted, hard rules for what climate resilience interventions or policies should do. We know a lot more about what we should NOT do—such as building in floodplains or destroying critical coastal wetlands that provide storm surge protection—than exactly how to prepare our cities for climate change. This raises an important point—climate change is not the only challenge our cities will face in the future. Our cities face multiple challenges related to population growth, providing services, food, infrastructure and a good quality of life and place of business for those living and working in the city, managing budgetary constraints, conflicting policies from national or provincial governments, and so on. To build truly resilient cities that are able to handle multiple challenges, not just climate change, we need to develop resilience principles and processes that take a systematic approach to handling these multiple, dynamic and uncertainties.

Though planning and implementing climate change resilience activities may be new and their success uncertain, it is relatively easy to identify broad areas in which an action should be responsive, and easier yet to identify what it should not do. This allows us to develop general guiding principles for resilience actions that address multiple future challenges your city might face beyond just climate change.

Resilience processes, interventions, plans and policies SHOULD:

- Help a particular group, city services, ecosystem or urban area to adapt to and beneficially shape processes of social, environmental and climate change. This can and should include activities that reduce your city's consumption of energy, water, food, etc. and its contribution of greenhouse gas emissions and pollution.

- Help prepare for and mitigate the impacts or outcomes of not only short-term shocks (extreme events like floods or landslides), but ALSO long-term, gradual changes and increases in climate variability (e.g. longer droughts, more regular and intense heat waves, more variable weather during planing and harvest periods, etc.). Long-term, slow changes and

increased variability may not grab our attention as easily as specific hazard events that cause massive damage, but over time they can cause even greater damage and be even harder to recover from because we don't notice that things are happening until it is difficult to change course.

- Take a multi-hazard approach. If your city is located in an earthquake-prone area, or has infrastructure like a nuclear power plant or chemical manufacturing plant that could lead to a technological hazard, you need to ensure that all policies, plans, and interventions account for both these hazards and climate hazards.

Climate resilience processes, interventions, plans and policies SHOULD NOT:

- Make social, environmental or climate conditions worse or create new problems.

- Commit to a course of action that is hard to correct later on if it turns out to have been a bad idea, or if conditions change.

Developing Your Resilience Criteria

Determining whether proposed actions, plans, or policies meet these resilience principles can be examined on the basis of four governing criteria— *Legitimacy, Equity, Efficiency and Effectiveness*. For each of these criteria we can pose questions that help us evaluate whether our actions adhere to the resilience principles:

LEGITIMACY
Do people believe in, support and provide the resources and authority necessary to enact the policy or action? Who is responsible for implementation?

EQUITY
Who or what is being helped by the policy or action? What are the potential impacts—both positive and negative—for society, the environment or climate?

EFFICIENCY
Does the policy or action fit within budget, planning timelines and policy priorities? Is the technical capacity to carry out the project readily available?

EFFECTIVENESS
Can the policy or action do what it says it will do to reduce vulnerability and risk and build resilience? Can the

effectiveness of the policy or action be readily monitored? Does it acknowledge critical thresholds? Can it respond flexibly to unanticipated changes or impacts? Can the policy or action be reversed with minimal negative impacts if it turns out to have been a poor choice?

Your resilience criteria and criteria questions may be different from the ones we have provided as examples. What is important is that they be developed with the intent to truly explore whether a given action is feasible, well designed both conceptually and physically, whether it will achieve the benefits intended, whether it will reach the intended audience, and whether it will truly avoid doing further harm in the process.

**CLIMATE
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☑ **Activity 1.4.1**

Past Resilience Principles and Criteria

In this activity, you will reflect upon past or current initiatives or policies in your city related to landuse and infrastructure development, environmental planning, or disaster risk reduction. These are not the only policies areas that you can choose for this activity—we chose these areas because your city's ability to build resilience to multiple challenges can be measured most directly through how well your city has managed in these areas. As you reflect on past or current initiatives, think about what lessons you can apply from these experiences toward the resilience process your city is about to undertake.

IN THIS ACTIVITY YOU WILL:

✓ Identify any resilience principles and criteria that were used in previous social, environmental, or disaster risk reduction efforts in your city.

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INSTRUCTIONS: In the space provided, answer these questions about your city's plans or policies (for example, landuse or infrastructure development, environmental planning, or disaster risk reduction plans or policies). Begin first by choosing two plans for policies to focus on. Extra space is provided at the end of this worksheet for additional writing.

Plan/Policy 1: _____

What principles were used to develop this plan or policy?

How does the plan or policy meet the resilience criteria?

Legitimacy:

Equity:

How does this policy or plan meet the resilience principles listed in this Introduction?

Effectiveness:

Efficiency:

Plan/Policy 2: _____

What principles were used to develop this plan or policy?

How does the plan or policy meet the resilience criteria?

Legitimacy:

Equity:

Effectiveness:

How does this policy or plan meet the resilience principles listed in this Introduction?

Efficiency:

1.4.2

CLIMATE RESILIENCE FRAMEWORK ISET-INTERNATIONAL

☑ **Activity 1.4.2**

Developing Resilience Principles and Criteria

In Activity 1.4.1, you reflected on the principles and criteria that might have informed or influenced one of your city's past or current plans or policies related to landuse or infrastructure development, environmental planning, or disaster risk reduction. In this activity, you will develop an initial set of resilience principles and criteria that will help guide your city's resilience planning process now and in the future.

IN THIS ACTIVITY YOU WILL:

✓ Develop an initial set of resilience principles and criteria that you think will be important to guiding the urban climate change resilience planning process your city is about to undertake.

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In the space provided, brainstorm or vision what principles and criteria you think are important to the resilience process.

What resilience principles should guide your city's resilience process?

_____

_____

_____

_____

_____

_____

What resilience criteria will you use to ensure you are meeting your resilience principles?

Legitimacy: _____

_____

_____

Equity: _____

_____

_____

How do your suggested principles match the principles listed in this introduction?

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_____

Effectiveness: _____

_____

_____

Efficiency:_____

_____

_____

1.5.0

CLIMATE
RESILIENCE
FRAMEWORK
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Contents of Set

POLICY REVIEW

As you begin to adapt and apply the Climate Resilience Framework to your research guide your research on your city's vulnerability and climate risks, and identifying your policy and intervention options, it is often useful to do a scoping exercise to review the current situation in your city. As part of this scoping exercise, you will conduct a review of the policies, laws, and rules that might either support or hinder your city's climate resilience efforts.

IN THIS SET YOU WILL:

✓ Review existing policies that could relate to your city's climate resilience efforts;

✓ Identify the interaction and communication mechanisms between agencies at various governmental levels—national, provincial/state, city, and district/community/local levels;

✓ Identify which agencies are in charge of implementing and enforcing those polices at each level;

✓ Identify conflicts between policies or between implementing and enforcing agencies at different scales;

✓ Identify who is currently benefiting or being harmed by those policies;

✓ Identify the metrics that are currently used to determine whether a particular policy is effective or not.

Overview

Laws, rules, and policies issued by the national government, provincial and regional governments, and your city's government will all affect the options and courses of action your city can take to build resilience. Institutions such as these—related to areas like land use, building codes, environmental protection, or disaster risk reduction and response, among others—are critical components impacting your city's current functioning. They will also guide or constrain your city's resilience options now and in the future. For instance, suppose the national building code requires that buildings within flood zones must have foundations elevation 0.15–0.35m above street level, but no higher. Yet in your city flooding regularly exceeds 0.5m and climate change is likely to increase flood depths. In this case, it does not make sense to follow the national building codes. Instead, your city might have to find some way of getting permission to enact building codes better adapted to local conditions.

This policy exercise is designed to help you start to identify existing policies, laws, and rules that influence the core functions and services of your city and the surrounding peri-urban areas. Such rules also affect the ability of your citizens to adapt and be resilient against multiple stressors, not just climate change. It is NOT a full policy review. It is only meant to help you start thinking about how you might undertake a

full policy review. In Series 2: Understanding Vulnerability & Risk, you learn more about incorporating the results of your policy review into your vulnerability assessment.

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Policy Review

☑ **Activity 1.5.1**

This policy exercise is designed to help you start to identify existing policies, laws, and rules that influence the core functions and services of your city and the surrounding peri-urban areas. Such rules affect the ability of your citizens to adapt and be resilient against multiple stressors, not just climate change.

IN THIS ACTIVITY YOU WILL:

✓ Review existing policies that could relate to your city's climate resilience efforts;

✓ Identify the interaction between policies instituted at various governmental levels (e.g. national, provincial/state, city, and district/community/local levels);

✓ Identify which agencies are in charge of implementing and enforcing those polices at each level;

✓ Identify the communication mechanisms between each implementing and enforcing agency;

✓ Identify conflicts between policies or between implementing and enforcing agencies at different scales;

✓ Identify who is currently benefiting or being harmed by those policies; and

✓ Identify the metrics that are currently used to determine whether a particular policy is effective or not.

INSTRUCTIONS: For this exercise, you will begin filling out the blank matrix provided on the next pages. We have included a completed row as an example. The matrix is designed in the following way:

1. The six categories listed vertically on the left side of the matrix provide broad guidance on how to categorize relevant national, provincial/state, and city policies, laws, and rules. If you think there should be additional

categories, please add additional rows. One policy might be cross-listed under several categories, which is an important finding!

2. The categories listed horizontally across the top of the matrix help you to describe the policy's potential role in your city's current vulnerability and how it might be integrated into future resilience initiatives or how it might obstruct such initiatives. If you think there should be additional categories, please add additional columns.

ACTIVITY 1.5.1: POLICY REVIEW								
	Policy	Administrative Scale	National Agency(s) Responsible	Municipal Agency Responsible	Coordination Mechanisms	Who/ What Benefits	Conflicts w/ Other Policy	Metrics of Effectiveness
Hazards and Disasters	Policy XXX -Storm resistant building standards	National level down to parroquias	Ministry of the Environment (MoE)	Planning and Construction Department (PCD)	None for the moment. The MoE issues the policy and expects all lower level agencies to implement and enforce it. There is no communication from the PCD back to the MoE.	Residents and businesses in storm risk areas might be better protected and have fewer asset losses	Does not easily support poverty reduction policies because poor residents can't afford to build homes according to the code	Number of storm resistant buildings that survive a storm with minimal damage and the loss claims of building inhabitants as compared to non-storm resistant buildings

ACTIVITY 1.5.1: POLICY REVIEW							
	Policy	Administrative Scale	National Agency(s) Responsible	Municipal Agency Responsible	Coordination Mechanisms	Who/ What Benefits	Conflicts w/ Other Policy	Metrics of Effectiveness
Hazards and Disasters								
Environmental Protection								

ACTIVITY 1.5.1: POLICY REVIEW							
	Policy	Administrative Scale	National Agency(s) Responsible	Municipal Agency Responsible	Coordination Mechanisms	Who/ What Benefits	Conflicts w/ Other Policy	Metrics of Effectiveness
Energy								
Climate Change								

ACTIVITY 1.5.1: POLICY REVIEW							
	Policy	Administrative Scale	National Agency(s) Responsible	Municipal Agency Responsible	Coordination Mechanisms	Who/ What Benefits	Conflicts w/ Other Policy	Metrics of Effectiveness
Water								
Poverty Reduction								

ACTIVITY 1.5.1: POLICY REVIEW							
Policy	Administrative Scale	National Agency(s) Responsible	Municipal Agency Responsible	Coordination Mechanisms	Who/ What Benefits	Conflicts w/ Other Policy	Metrics of Effectiveness
Transportation							
Other:							

1.6.0

CLIMATE RESILIENCE FRAMEWORK
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Contents of Set

1.6.0: Guide
1.6.1: Activity 1

REVIEW AND NEXT STEPS

The Series 1 Training Materials that you just completed are a refined version of the tools and exercises developed for the Asian Cities Climate Change Resilience Network (ACCCRN), based on the experiences of the ACCCRN cities and national facilitating partners. In our work with the ACCCRN cities, ISET observed a number of common activities and lessons in the resilience process that we believe are highly valuable for cities new to the process to consider carefully before they begin. These five lessons can save significant time and effort throughout the whole process if you consider them at the beginning of your process and before you move onto doing vulnerability and risk assessments (Series 2).

IN THIS SET YOU WILL:

✓ Briefly review the steps you completed in Sets 1.1 through 1.5; and

✓ Think about the steps you will need to take in the next few months, based on the five lessons presented in this set, before beginning your vulnerability and risk assessments.

Lessons Learned from the ACCCRN City Engagement

LESSON 1	LESSON 2	LESSON 3	LESSON 4	LESSON 5
Form City Working Groups	Engagement And Participation Are Critical	Flexible Timeline	Work In Your Language	Secure Buy-In

ACCCRN
Asian Cities Climate Change Resilience Network

Asian Cities Climate Change Resilience Network (ACCCRN) is a network of ten cities in India, Indonesia, Thailand and Vietnam, experimenting with a range of activities that will collectively improve the ability of the cities to withstand, to prepare for, and to recover from current and future impacts of climate change that are difficult to predict. ACCCRN represents a unique initiative to develop, test and demonstrate practical strategies for responding to the impacts of climate change on urban areas.

FOR MORE INFORMATION: WWW.ACCCRN.ORG

INDIA
Gorakhpur
Indore
Surat

THAILAND
Chiang Rai
Hat Yai

VIETNAM
Da Nang
Quy Nhon
Can Tho

INDONESIA
Bandar Lampung
Semarang

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Lesson 1: Form City Working Groups

A working group needs to be identified that will coordinate or conduct vulnerability and risk assessments, identify and prioritize resilience activities and policies, ensure such things are implemented, and manage the day-to-day activities associated with resilience processes. The members of the working group need to be decided by your city. The most effective working group members for resilience planning are not necessarily those with technical skills, but rather people and agencies who have the authority and capacities to coordinate technical expertise. This group should include organizations, groups, and communities who will be directly and clearly affected by climate change.

In Set 1.2 (Agent Identification), you identified different organizations, individuals, and groups that might be important to your resilience process. Generically, from Set 1.2, we discussed why you might want to include:

- Staff from various government departments,

- Researchers from universities and institutes,

- Members of community and religious groups,

- Members from various businesses or economic sectors,

- Members of under-represented and minority communities, and

- Non-governmental organizations.

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Each of the ACCCRN cities formed a "core group" that acted as a repository of information and capacity, and led or coordinated the vulnerability assessments and integration across sectors. In India, where broad, multi-stakeholder SLDs were not used, city advisory committees were formed. These committees were vital to grounding the process, testing and validating lessons from the vulnerability assessmentsv and pilot studies, and providing local data inputs. In Indonesia and Vietnam, city working groups were formed. These teams functioned as the lead planners and researchers. Though not technical agencies, the Department of Foreign Affairs (Da Nang, Vietnam) and BAPPEDA (Semarang, Indonesia) were highly successful in fostering collaboration, integrating priorities of diverse stakeholders, and laying the strategic groundwork to influence city planning and policy processes.

Lesson 2: Engagement and Participation are Critical

You will have to engage with multiple stakeholders—community and religious groups, private businesses, service and health care providers, and non-governmental organizations, among others—beyond those involved in the city working group to ensure a successful resilience process. Not everyone you identified as important to the resilience process in Set 1.2 will participate in the city working group. However, they should be involved in some manner in the resilience process because they have important information, experience, and capacities to share. In engaging with groups who will be directly impacted by climate change using a variety of techniques, such as holding meetings, conducting interviews, workshops, shared learning dialogues (Set 1.3), focus group discussions, and community visits.

Consistent participation of the members of the working group is critical to a successful resilience process. Your working group will not be able to effectively coordinate the process or conduct the necessary research unless the same people attend all working group meetings and are involved at all steps of the process. Ensuring the participation of working group members—especially if they are government staff—might require special arrangements with government leaders to secure local staff time.

© Ken MacClune

In ACCCRN, each of the cities used the shared learning dialogue process, introduced in Set 1.3. The SLD process facilitated engagement between diverse stakeholders and created opportunities for shared learning between them. Local partners reported that the SLD process proved innovative and helpful as a platform for learning and planning. In Vietnam, the experience of convening scientific and local knowledge in the same forum was new for most participants and led to significant gains in understanding and consensus on actions. In Indonesia, the SLDs provided the first occasion for local government to work directly with local NGOs, and helped create opportunities for their ongoing engagement in local planning processes.

In ACCCRN, it proved impractical for local staff involved on the working groups to take on the effort required to lead and "own" the resilience planning process on a part-time basis. ACCCRN working group members found that the process was a full-time job and got permission to work only on the process.

Lesson 3: Flexible Timeline

Resilience processes require a flexible timeline:

- To absorb new information and feedback;

- To reflect on existing information and re-evaluate what you think you already know;

- To build trust and collaboration between members of your city working group, and larger sets of stakeholders;

- To deal with unexpected challenges and delays;

- For studies to be rigorously completed and examined; and

- For you to rethink how your city plans for the future.

Allow for sufficient time to work through all the steps in the resilience process that we introduce in these sets. Taking time—to foster relationships, build understanding, complete analyses, integrate information, apply learnings, and track impacts—is critical to a successful outcome and to building relationships with key stakeholders throughout and beyond the initial engagement.

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Condensed timeframes in ACCCRN created considerable tension and confusion. The ACCCRN program allowed only 12-18 months from the introduction of climate change information to each of the cities to the production of local resilience plans. In all four countries, this created a tight timeline in which city working groups felt rushed and unable to fully assess their vulnerabilities and resilience options. In Indonesia and Thailand, where the timeframe was shortest, haste contributed to early analytical errors in the climate data. In Indonesia, the vulnerability assessment had to be re-worked. In both countries, a logical sequencing of analysis in the planning process could not be maintained and sequential steps had to be undertaken in parallel. This resulted in weaker analysis, less opportunity for review and absorption of concepts, and reduced local control and ownership by forcing partners to rely more on external support.

Lesson 4: Work in Your Language

It is important to communicate and work in your language, and this requires that time be built in for translation of complex new terminology and agreeing on definitions. Translation is a special example of the time required to introduce new concepts and practices to local practitioners. It takes time to develop the capacity of translators for this technical work. As part of this set, we provide lexicons of common terms you might encounter—such as adaptation, resilience, and vulnerability—in English and Vietnamese. If your are not working in one of the provided languages, development of a clear lexicon for the language you are operating in will be necessary, either as part of your preliminary resilience process activities, or on-going as common definitions for these terms are worked out in your language by the working group and facilitator. However, even if working in the language of one of the provided lexicons, you should allow time to discuss, explore and refine the definitions given for the various terms. These terms are complex, and sometimes only subtly different. You want to make sure that everyone in your city working group has a shared understanding of the terms and is using the same language throughout the resilience process. You spent some time in Set 1.4 (Principles) and will spend time in Set 2.1 (Vulnerability and Risk Definitions) discussing definitions and concepts and developing language that makes sense to you.

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The ACCCRN project introduced new concepts and terminology to local partners who had very limited exposure to these issues before. The city working group members were not national level experts but local NGOs, practitioners, businessmen and bureaucrats. Many of the terms and concepts had to be clarified first even in English. Compounding this challenge further, many of these terms—resilience, redundancy, and strategic planning, for instance—did not have good analogues in the local language.

Lesson 5: Secure Buy-in

Securing the support of senior city leadership is a major advantage; it can help to ensure participation of other key players and increases the likelihood that results will be integrated into decision-making. Ultimately, it will be necessary for departments from your city government to become key stakeholders that are willing and able to integrate climate change priorities into their activities. However, experience also indicates that it can be risky to rely on a few key figures that may leave office or change positions because of elections. Involving multiple government staff in the working group ensures gaining a wider base of knowledge and their support reduces the risks of changing leadership.

Ownership of the process and results is enhanced by authorship. The resilience strategies and adaptation actions your city working group identifies and proposes as part of this process are more likely to be implemented by the city government or relevant organizations if they are involved in all phases of the resilience process. If individuals from various government departments and other key stakeholder groups—like community or business organizations—are involved in your city working group, and drive the resilience process, it is more likely that your city will adopt and implement what the working group recommends.

© GEAG

The City Steering Committees in Vietnam developed their cities' resilience plans and drove the resilience process. The working groups in these cities were responsible for analysis, drafts and revision of the city Climate Resilience Strategies,, with their members most intimately familiar with the informational inputs and analysis. In India, the City Advisory Committee (Indore and Surat) and City Steering Committee (Gorakhpur) contributed to generation of insights from sector studies and approved the strategies, with TARU and GEAG, national facilitating partners, responsible for drafting, analysis and revisions. In Thailand and Indonesia, the national facilitating partners prepared the resilience strategies with varying degrees of local input. In all cities, the process of drafting the resilience strategies engaged key decision makers and representatives of multiple agencies not only in understanding city vulnerabilities, but in helping to define and prioritize activities for implementation. In this way, those who drafted or contributed to the resilience strategies were also the owners, users, and part of the intended audience.

Review Series 1 and Next Steps

CLIMATE
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☑ **Activity 1.6.1**

The exercises in this activity will help you review the agents you identified as important to your city resilience process, the data you have begun collecting, and other planning activities you began in the previous sets of Series 1: Getting Started. You will also begin thinking about your next steps over the next few months as you form your city working group, plan for your first SLD, and begin thinking about how you will structure your vulnerability and risk assessments.

IN THIS ACTIVITY YOU WILL:

✓ Briefly review the steps you just completed in Sets 1.1–1.5; and

✓ Think about the steps you will need to take in the next few months, based on the five lessons presented in this set, before beginning your vulnerability and risk assessments.

INSTRUCTIONS: In Set 1.2 (Agent Identification), you spent some time identifying different organizations, individuals, and groups that might be important to your resilience process. Write down the names of individuals from the organizations and groups you identified in Set 1.2 that you think belong on your city working group.

Potential City Working Group Member	Who Belongs on Working Group	Potential Role in Working Group

INSTRUCTIONS: In the space provided, please answer the following questions.

Which individuals, groups, or organizations that you identified in Set 1.2 will not play a role in your city working group?

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What techniques will you use to engage with these other stakeholders and ensure that their experience, knowledge and observations can inform your city's resilience process?

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INSTRUCTIONS: On the timeline of the next six months, mark when you think the following activities of your resilience process will occur:

- Engagement of individuals who might form working group
- Formation of city working group
- SLD1: Introduction to Climate Change and introduction to the resilience process
- Series 2 training on Vulnerability & Risk Assessments

Which of these activities do you think might take a little more effort to complete? Mark them with a star on the timeline.

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6

Where do you have some flexibility in allowing for greater time for these activities?

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What is your backup plan if you are not able to complete some of the activities in the next six months?

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INSTRUCTIONS: Below are a series of terms that have been introduced in Series 1 or will be introduced in Series 2. These are terms that you are likely to use repeatedly in the process of building climate resilience. Next to each of the words below, write down the word or phrase in your language that you use for each term. Do you have more than one word/phrase in your language that you use?

Vulnerability
_____

Adaptation
_____

Resilience
_____

Climate Change
_____

Climate Variability
_____

Weather
_____

Climate
_____

Season
_____

INSTRUCTIONS: In the space provided, please answer the following questions.

Do you have elections or a change in city government leadership
in the next 6 months? __Yes __No

Have you contacted the mayor or city leadership office yet to ensure their
support in the resilience process? __Yes __No

How will you ensure that members of the working group have the full support
of their department or organization leadership to participate fully in the
working group?

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The Climate Resilience Framework is an analytical, systems-based approach to building resilience to climate change. The goal of this structured framework is to build networked resilience that is capable of addressing emerging, indirect and slow-onset climate impacts and hazards.

ISET-International is using this framework with cities across Asia to build local capacity for climate change resilience with funding provided by the Rockefeller Foundation as part of the Asian Cities Climate Change Resilience Network (ACCCRN), USAID as part of the Mekong-Building Climate Resilient Asian Cities (M-BRACE) program, the Climate & Development Knowledge Network and the American Red Cross.

CLIMATE RESILIENCE FRAMEWORK
ISET-INTERNATIONAL

We invite you to visit the
Climate Resilience Framework: Training Materials online: **TRAINING.I-S-E-T.ORG**

Contact us: Training@I-S-E-T.org