CLIMATE RESILIENCE FRAMEWORK

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A

Adaptation. taking action to minimize the impact of, take advantage or, or cope with changes in climate that are occurring or are expected to occur; the ability to change strategy to respond to changes, or expected changes, in conditions.

Adaptation measures. specific actions taken in a specific place at a specific point in time to minimize the impact of changes in climate that are currently occurring or are expected to occur. For example, improving storm-resistant housing construction standards to minimize typhoon damage in areas where typhoons are expected to intensify.

Adaptive capacity. the ability of a system to adjust to changes in climate change (including climate change, climate variability and climate extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. This involves the ability of individuals, households, communities and cities to shift strategies, make choices and respond to opportunities in order to manage both direct and indirect climate impacts. This is influenced by social, economic, physical, environmental and human factors at multiple levels. This includes access to resources such as technology, education, financial assets, and infrastructure; social marginalization and networks; human agency and attitudes; and environmental functioning. Equally important are appropriate institutional and governance mechanisms

Agents (URF). individuals, households, communities, the private sector, businesses, and government entities – they are human beings functioning either alone or in groups. Agents, unlike systems, are capable of deliberation, independent analysis, voluntary interaction, and strategic choice in the face of new information. This makes agent behavior more difficult to predict than system behavior. Agent deliberation, analysis, interaction and choice will generally, but not always, reflect the agent's location and structure within society (i.e. government entities will likely act very differently from individuals acting on their own behalf), their

preferences, and the opportunities and constraints they perceive.

– **actors in urban systems, including individuals (e.g.,** farmers, consumers), households (as units for consumption, social reproduction, education, and capital accumulation), and private and public sector organizations (government departments or bureaus, private firms, civil society organizations). Agents have identifiable and varied interests and are able to change behavior based on experience and learning.

C

Champion. an individual or small group of individuals that support, advocate for, and promote an event or process. In this work, used to refer to an individual or small group that take ownership of the resilience building process and continue to push it forward in their city in spite of disinterest, opposition, lack of funding, etc.

Climate. A long-term (i.e. years, typically 30 years or more) averaging of weather conditions for an area, which accounts for the average variability in conditions but also includes observed extremes.

Climatologist. a person that studies climate; a climatologist will be familiar with climate change and climate change modeling and may be a resource for obtaining climate model data or information.

Climate change. shifts to the historical climate that result in weather conditions that are unexpected or new, such as generally warmer nighttime temperatures during the cold season, hotter or longer hot spells in the summer, shifts in the timing of the wet season, or changes in the frequency of intense rainfall events. Climate change can also result in extreme conditions that exceed those historically observed, i.e. heat waves that exceed anything previously on record, droughts of longer duration or earlier onset than previously experienced, etc.

Climate impact. how a particular climate hazard event affects a particular system. A **climate impact** is only partially a result of the climate event itself; the majority of the impact is the vulnerability of the system affected by the climate event. For example, high precipitation events only have a large and problematic impact in areas with poor drainage.

Climate risk. the likelihood of a climate hazard event and it's consequences to a particular system as a result of that system's vulnerability. For example, for a city built on a slope, several meters above sea level and with good drainage, though the city may experience large storms and heavy precipitations events regularly, their climate risk from flooding is likely very low as floods very rarely occur.

Coping capacity. see Adaptive capacity

D

Direct impact. whether a particular climate event harms or benefits a system solely because it occurs in the vicinity of that system. For example, a community that experiences a flood, with floodwaters entering community buildings and disrupting daily life, is experiencing a direct impact. See **Indirect impact** for companion definition.

Disaster. the occurrence of an extreme hazard event that impacts on vulnerable communities, causing substantial damage, disruption and possible casualties, and leaving the affected communities unable to function normally without outside assistance.

Disaster Risk Reduction. trying to lessen the impact of potential disasters through advance planning. For example, building safe-houses where communities hit by flooding can temporarily stay until floodwaters receed.

Double counting. when doing a quantitative vulnerability or risk assessment, using an indicator in more than one place, so, for example, including the social vulnerability of a particular community under both economic and community indicators, effectively accounting for one event in two places.

Downscaling. taking the results from a global model (see Global

Circulation Model for related definition), where the output is applicable over a very large area such as 100 by 100 kilometers, and using either a regional model (RCM) or statistical methods to refine those results to the local topography. Downscaling ultimately produces results on a much smaller scale, perhaps 1 by 1 kilometer, making them far more useful to local decision-makers. This is particularly true in areas with significant topography, complex land-use patterns, or near coasts or other complex water bodies.

E

Early warning system. any system designed, installed and used to provide advance warning of a future danger so that the danger can be prepared for, thereby mitigating or avoiding many of the potential impacts. For example, storm forecasts are used by fisherfolk to identify and return boats to safe harbors before typhoons make landfall; tsunami warning sirens alert residents of potential incoming tsunamis and allow them to move to higher ground; flood early warning systems allow residents in at-risk neighborhoods to move household goods to higher locations and, if the risk is high enough, to evacuate.

Ecosystem. a biological system consisting of all the organisms (animals, plants, bugs, etc.) living in a particular area and all the non-living, physical components of the environment with which those organisms interact, such as air, soil, water and sunlight.

Ecosystem services. resources or benefits obtained from a particular ecosystem. For example, a forest ecosystem bordering a city might provide clean water, air filtering, cooling, recreational opportunities, livelihoods for peoples living on it's edges in the form of using the forest as grazing or range land for animals , collecting fruit, mushrooms and firewood, harvesting lumber, etc.

Emission scenario. also referred to as Climate change scenarios. Each scenario is a set of assumptions or estimates about possible future conditions. Factors such as future population levels, economic activity, the structure of governance, social values, and patterns of technological change are combined and used to develop estimates of greenhouse gas emissions; these emission levels are then used to run Global Circulation Models, producing model results *for that particular emission scenario*.

Equity. In 1996 the US President's Council on Sustainable Development defined Social Equity as "equal opportunity, in a safe and healthy environment." Social Equity is the least defined and least understood element of the triad that is Sustainable Development yet is integral in creating sustainability - balancing economic, environmental and social equity. [Wikipedia]

> Social Equity implies fair access to livelihood, education, and resources; full participation in the political and cultural life of the Community; and self-determination in meeting Fundamental Needs. [also Wikipedia]

Exposure. whether or not a system experiences impacts, either positive or negative, from a particular climate event, such as temperature increases, rainfall variability and change (including extremes), or changes in the frequency or intensity of tropical cyclones and storms. If a system does not experience stresses associated with climate or other change processes, then resilience is not at issue. For example, high elevation inland cities do not directly experience the impacts of sea level rise — they will not themselves experience flooding.

Extreme event. in theory, a climate event that exceeds the 10th and 90th or 5th and 95th probability percentiles. In application, a climate event that exceeds the critical thresholds of the local infrastructure. For example, an extreme flood could, for a given city, be a 100-year flood, an event that, based on historical records, occurs once every 100 years, assuming the city has planned and maintains drainage, dike and floodways to handle water levels up to but not exceeding the 100-year levels. However, if the city has failed to maintain drainage and floodways and the effective capacity can only handle a 1-in-3 year

flood (i.e. 60th percentile), then the 60th percentile, 1-in-3 year flood *and any flood larger than that* will become the effective extreme events.

F

Fail-safe. this is a standard term used in engineering to imply that a given system (building, dike, bridge, drainage system, electrical distribution system, etc.) is designed to withstand projected impacts. In reality, this means that during the design phase, a decision is made about what magnitude of disaster the project should be able to withstand, such as a 100-year flood event – a flood that is projected to only occur, on average, every 100 years. The project is then designed to withstand a flood this large. However, a larger flood may cause the project to fail, for example flood waters overtop the dike. So, "fail-safe" does not mean that a project won't fail, just that it shouldn't fail as long as disaster events aren't bigger than the project is designed for.

Flexibility. the ability of a system to meet service needs under a wide range of climate conditions. Key attributes of a flexible system are that it is spatially distributed and that components of the system are functionally linked but can also substitute for each other should some components fail.

Forecast. a statement about the "best prediction" for a future event based on experience, knowledge of all the predictions and the credibility of the person making the forecast. For example, a TV weather forecaster might say that there is a 70% chance of rain tomorrow afternoon by 3pm because 70% of the model predictions indicate rain, and a cold front is moving in overnight.

Fragile Systems. systems that are easily disrupted or broken, though their basic functioning may look very stable. For example, a subway system that is dependent solely on the main power grid, with no backup power for when the power goes down, is fragile to power disruptions.

G

General Circulation Model (GCM). a global-scale climate model capable of modeling past climate and used to generate future climate projections based on various different assumptions about development pathways, population, consumption of resources, and fossil fuel burning. About 21 different GCMs are in current use across the globe. Each has been developed by a different research group using slightly different representations of climate physics and slightly different representations of the oceans, atmosphere and land surface. As a result, each GCM produces different results, even if they start from the same starting conditions and experience the same inputs. In using GCM results, this range of outcomes needs to be taken into account, as it is impossible to say, a priori, which results is most likely.

Global warming. the continuing rise in the average temperature of Earth's atmosphere and oceans. There may be a small component of the current global warming that is due to natural variation in global climate. However, the bulk of observed and projected future global warming is caused by increased concentrations of greenhouse gases in the atmosphere, resulting from human activities such as deforestation and burning of fossil fuels.

Governance. "governance" is what *a* "government" does. It includes consistent management, cohesive policies, guidance, processes, and laws and law enforcement.

H

Hazard. a geophysical, atmospheric or hydrological event (e.g. earthquake, landslide, tsunami, windstorm, wave or surge, flood or drought) that has the potential to cause harm or loss.

I

Impact. whether a particular event affects a given system. The impact an event has will be a function of system vulnerability. Impacts can be direct or indirect (see definitions for **Direct impact** and **Indirect impact**).

Indicator. quantifiable parameter used to measure progress toward a goal. Commonly used by an organization to evaluate its success or the success of a particular activity in which it is engaged. Resilience indicators are developed and used in the resilience building process to measure progress toward building city resilience to climate change. For example, the number of health facilities within the city that are trained about climate change.

Indirect impact. whether a particular climate event harms or benefits a system not as a result of things that it does directly to that system, but because it harms or benefits another system that is linked to the system of interest. For example, during a typhoon, a community is not directly flooded but the area from which the community obtains the majority of its food is flooded. Therefore, though the storm did not negatively impact the community at the time it occurred, it has a longer-term, slightly delayed effect due to reduced availability of certain foods and an increase in food prices.

Indigenous knowledge. knowledge and practices used by the local, long-term, or native people in a particular area. For example, knowledge of local wild plants that are edible, or ways to build shelters or homes that are well adapted to local climate hazards.

Infrastructure. physical, man-made structures such as houses, buildings, bridges, dams, dikes, roads, power plants, power lines, etc.

Interdependence. two or more systems each of whose functioning is dependent on the functioning of the other(s).

Institution. the rules, laws, customs, social norms or conventions that constrain human behavior and exchange in social and economic transactions. Institutions are created to reduce uncertainty, to maintain continuity of social patterns and social order, and to stabilize forms of human interaction in more predictable ways. The word "institution" also is sometimes used in everyday speech to refer to organizations structured to focus on a particular purpose (e.g., financial institutions, educational institutions). In this set of training materials, we consider these to be "organizations".

L

Land use. the particular ways in which a given piece of land is being utilized. For example, a particular city land parcel could be designated for urban development, used as a park, farmed, left as a wild or semi-wild ecosystem, etc.

Legitimacy. the popular acceptance of an individual, group or organization as an authority. Without legitimacy, a given entity is unlikely to develop the support, resources and authority to engage in building city-wide climate change resilience

Likelihood. a subjective assignment of possibility to an event for which one has little knowledge and no ability to verify the results. For example, you have the test results of one student's exam and she received a 98%. What are the odds that the median score of the whole class' test results is 75%? Because there is no information about the distribution of that class of students' test scores, the odds of the event being one value and not another cannot be verified.

The key distinction between likelihood and probability is that likelihood can't be verified because it is based on very limited knowledge and is usually used to describe future events not in the realm of common experience. *Possibility* and *subjective probability* are other terms that mean the same as likelihood.

M

Maladaptation. activities taken to reduce the risk of climate change impacts that instead of or in parallel with conveying the intended benefit end up creating new problems. For example, the river dikes in Ho Chi Minh City in Vietnam prevent floodwaters in the rivers from entering the city but also prevent the water that accumulates in the city during heavy rain storms from draining out of the city. Another example is the sea dikes in Japan that were overtopped by the tsunami in 2011; because residents were so certain the sea dikes would protect them, they did not evacuate. Indeed, some residents went out to the sea dikes to watch the tsunami come in and were killed.

Meteorology. the study of weather and weather forecasting

Meteorologist. a person who studies weather; and makes weather forecasts; a meteorologist may or may not be familiar with climate change and climate change models.

Mitigation. "Climate change mitigation" is any action taken to reduce climate change impacts by reducing current greenhouse gas emissions or by reducing greenhouse gas emissions that would occur under a "business as usual" scenario. For example, moving from coal-fired power plants to solar energy, reforestation efforts, or off-setting carbon emissions with carbon reduction efforts.

– **"Mitigation" in general is any measure undertaken to minimize the adverse impact of a potential natural hazard event.** Measures can by physical, such as putting in a sea-wall to reduce the impact of coastal storms and reduce the damage by storm-waves, or non-physical such as land-use planning or public education.

Modularity. a system made up of multiple, small parts that can function independently. A modular system is redundant – the system can keep running even if one portion of it, one module, fails.

Multi-hazard approach. a mitigation or adaptation action that is designed to addresses two or more local hazards simultaneously. For example, training and equipping a local disaster response team can provide support in multiple disaster scenarios, including flooding, heat waves, earthquakes, typhoons, etc.

N

No regret approach. Selecting activities that can be taken to reduce climate risk or vulnerability that will work under most or all potential future conditions. For example, installing flood early warning systems is of benefit to communities and cities that experience flooding regardless of whether that flooding gets worse, improves, or stays the same.

No regrets planning. Systematically selecting development pathways that minimize potential damage

O

Organizational capacity. sometimes also referred to as "Institutional Capacity". The capacity of a given organization, e.g. educational institutions, city departments, etc. to understand current factors contributing to city and system vulnerability, to anticipate future climate change risks, and to develop and implement climate resilience strategies and activities

P

Peri-urban. relatively densely inhabited areas, frequently inhabited by migrants or the poor, lying just outside an urban center and therefore outside the sphere of city services. Peri-urban areas, because of their combination of migrant or lower-capacity inhabitants with few external resources, poor housing, possibly no land-tenure rights, and low or non-existent services, tend to be highly vulnerable to climate hazards.

Prediction. a probabilistic statement that something will happen

in the future based on what is known today. The statement of probability – such as 70% chance of rain tomorrow – is a statement of how certain the scientist is the event will occur.

Prioritization. ranking possible activities based on pre-determined, desired outcomes.

Probability. a statement about the odds of whether an event will happen, based on knowledge of the constraints surrounding that event. For example, what are the odds/what is the probability of rolling a 4 on a 6-sided die? Because there is some knowledge about the constraints and past experience about how the event works, there is some certainty about the event and the odds can be verified.

Projection. a statement about the possibility/likelihood of something happening, given both the starting conditions (what is happening today) and a certain set of plausible, but not necessarily probable, future conditions. It is an *if* this happens, *then* this might happen. It is very hard to assign probabilities to projections because projections are conditioned on scenarios of things like population growth or rates of deforestation, which are educated guesses.

R

Redundancy. A redundant system has spare capacity that can accommodate surges in demand, has either multiple pathways and a variety of options for service delivery, or has interacting components composed of similar parts that can replace each other if one, or even many, fail. Redundancy is supported by the presence of buffer stocks within systems that can compensate if flows are disrupted (e.g., local water or food supplies to buffer imports).

Regional Climate Model (RCM). RCMs are basically General Circulation Models (GCMs) run for a smaller, limited area of interest. However, because they deal with smaller scales, they use climate physics appropriate to those smaller scales, and so use different equations than GCMS.

RCM are generally run for continental-scale areas, typically 5000km x 5000km, and produce results at a resolution of 25 or 50km. In contrast, a GCM produces results at a scale of 3.75˚ by 2.5˚, i.e. entire small countries can fall within one grid cell. For the practical planning of water resources, flood defenses etc., countries require information on a much more local scale than GCMs are able to provide, which is why RCMs were developed.

To use an RCM, results from a GCM are used to determine the very large-scale effects of changing greenhouse gas concentrations, volcanic eruptions etc. on global climate. The climate (temperature, wind etc.) calculated by the GCM is used as input at the edges of the RCM. Consequently, RCM outputs are subject to all the same uncertainty as GCM results.

Resilience. The ability of a system to tolerate disturbance without collapsing into a qualitatively different state. A resilient system can absorb disturbances, change or adjust, and then re-organize and still have the same basic structure and ways of functioning. It includes the ability to learn from the disturbance. A resilient system can experience external shocks, recover, and continue to function. If a system begins to lose resilience, the size of a shock from which it can recover gets smaller and smaller. For example, a reservoir may provide flood protection for a community when initially built, but if it is allowed to silt up rapidly, it's storage capacity decreases until it can no longer hold enough floodwater and during large floods water must be released down the river, flooding the town. In this case the basic function, flood protection, is no longer operative.

Resilience Indicator. an objective, preferably quantifiable measure of how resilient a group, community or system is.

Risk. the likelihood that particular consequences might happen based the vulnerability of a system and as a result of the likelihood of particular hazards. Thus, risk is a description and/or measurement

of possible outcomes as a result of the vulnerability of a system. For example, a community may be vulnerable to flooding, but if improvements in drainage make it highly unlikely that a flood will occur, then the communities flood *risk* is very low.

Risk Assessment. a systematic assessment of the various climate risks to which a city or community is subject.

S

Safe-failure. the ability of a structure of system to absorb sudden shocks (including those that exceed design thresholds) or the cumulative effects of slow-onset stress in ways that avoid catastrophic failure. Safe failure also refers to the "soft interdependence" of a system, where, if network structures interlink in ways that support each other, failures in one structure or linkage are unlikely to result in cascading impacts across other systems.

Scenario. an educated guess about possible future conditions or stories based on research. The greenhouse gas (GHG) emissions used in climate models are scenarios of potential future levels of GHGs, based on other scenarios of population growth, economic growth, technology and land use. The GHG scenarios are concerned with long-term trends, not short-term fluctuations.

Sea Level Rise. the gradual increase in average sea level due to increased melting of land-based ice (e.g. the Greenland and Antarctic ice caps) and the thermal expansion of sea water due to global warming.

Season. A short-term (monthly or several months) averaging of weather conditions for an area, which are distinct from weather conditions at other times of the year. i.e. monsoon season

Sector. for this work, a particular branch of city functioning. For example, housing, water, energy, disaster response, urban planning, city finance, etc.

Sensitivity. the degree to which a system is affected, either adversely or beneficially, by climate-related stimuli

Slow-onset event. an event that builds slowly over a relatively long period of time, long enough that changes on a daily, seasonal or even annual basis may be basically unnoticeable. For example, the change in average temperatures due to climate change is a slow-onset event. Over the course of the next 30 or 50 years average temperatures are projected to rise 2 degrees C or more. However, on an annual basis this may be unnoticeable, except as increased summer heat stress, small reductions in winter heating bills, small reductions in crop yield, increased heat wave mortality in aquaculture, etc. Because the impact of slow-onset events are hard to see because the changes from year to year are small, they can easily be overlooked in planning. However, overall impact can exceed that of short-term disasters.

System. in the urban setting systems include both infrastructure (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). Urban systems are designed and managed through deliberate human intervention, 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 (e.g. pollution, congestion).

System approach. working with a given problem from the perspective of the various systems engaged or incorporated into the problem and what is needed to assure or improve functionality of those systems. This means looking at systems holistically, including the other systems, agents, or institutions on which the selected system is dependent if it is to function well. For example, for electricity generation, the electricity system is dependent on: transportation of fuel; water for cooling, steam generation, washing of solar panels, etc.; pricing, which may be dependent on national policies and laws; the city distribution network; and customer demand, which is heavily influenced by culture, convention, and weather. A systems approach

would consider all these elements when analyzing city power systems.

T

Threshhold. key levels at which, if the levels are exceeded the system will fail. Threshholds can be hard or soft. For example, the number of hospital beds in a city is a soft threshold; as hospital admittance increasingly exceeds the available number of beds it becomes increasingly difficult, but not impossible, to provide adequate medical care to those admitted. A hard threshold, however, results in immediate system failure. For example, when a dike is overtopped by floodwater, areas behind the dike are flooded, potentially quite rapidly and to significant depth.

Timelines. the length of time over which an activity has an impact. For example, the "timeline" for development and construction of a road might be 2 years. The "timeline" for the lifetime of that road in use and without repair might be 10 years.

Tipping point. A climate tipping point is a point when global climate changes from one stable state to another stable state, similar to a full water glass tipping over. A small bump to a glass may make it rock and then return to upright. A harder bump may force it into a new state, lying on its side with the water spilled on the table. The switch between ice ages, when large ice masses covered most of the northern hemisphere above 40 degrees latitude, and current climate is one known climate tipping point. It is unclear whether global warming could force global climate past other, different tipping points into stable climate regime not previously experienced.

U

Uncertainty. with respect to climate, the inability to say exactly how climate will change in a particular year in the future for a particular location (or even the planet).

Urban. an area of high-density population supported by long-term infrastructure and services, and drawing on resources outside its boundaries to support services and livelihoods within it's boundaries. The boundaries of an "urban" area may be different depending on the context. An "urban" area can be a subsection of a "city", or encompass an area extending well beyond designated "city" boundaries depending on how boundaries are defined.

Urban Climate Change Resilience Strategy (UCCRS). a city document that systematically looks at city vulnerability as a function of climate and urbanization both now and for various possible future scenarios and proposed actions that can be taken to minimize those vulnerabilities both now and in the future.

Urban Footprint. the area over which an urban area has an impact. This includes not just the urban area itself but the surrounding areas from which it draws resources. For example, the city's watershed is part of its urban footprint. In the modern world of international trade, most cities have a very large urban footprint which is different for different resources (i.e. food, water, trade partners, raw materials, etc.)

V

Variability. how much a climate parameter, like daily rainfall or monthly high temperature, is greater than or less than the long-term average.

Vector-borne disease. a disease that is spread by a particular transmitting element. For example dengue and malaria which are spread by mosquitoes; sleeping sickness carried by tse-tse flies; swine flu spread by birds, Rocky-Mountain spotted fever spread by ticks.

Vulnerability. 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 variation to which a system is **exposed**, its **sensitivity**, and its **adaptive capacity.**

Vulnerable Community. a community that is exposed to hazards, is negatively impacted by those hazards when they occur, potentially very severely impacted, and has low capacity to recover or rebuild once impacted.

Vulnerability Assessment. a systematic assessment of the exposure and sensitivity of your city's human, natural, and physical infrastructure to existing hazards, taking into account the variability and potential future changes in those hazards, and your city's capacity to adapt to that exposure, sensitivity, variability and change.

Vulnerability Indicator. a quantifiable parameter used to measure vulnerability and changes in vulnerability over time of a group, community, area, sector, etc. For example, the percentage of rendered uninhabitable by storms each year in a particular community would allow you to track, over time, increase or decrease in storm-related housing security for that community.

W

Weather. The day-to-day precipitation, temperature, wind and atmospheric pressure conditions for an area.

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The 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, compiling, analyzing and utilizing an initial vulnerability and climate risk study.

Series 3: Building Resilience teaches the steps required to identify, prioritititize, implement and evaluate actions designed to build climate resilience.

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ISET-INTERNATIONAL'S MISSION

The Institute for Social and Environmental Transition-International catalyzes transformative changes toward a more resilient and equitable future. Through research, training and implementation activities, we improve understanding and elevate the level of dialogue 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.

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 from The Rockefeller Foundation, USAID and The American Red Cross.

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We invite you to visit the Climate Resilience Framework:
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