MODULE 5 GUIDANCE NOTE: SUPPORTING LOCAL RISK REDUCTION THROUGH VLRS

What are disaster risk reduction (DRR) and climate adaptation (CCA) and why are they important?

Disaster risk reduction (DRR) and climate change adaptation (CCA) are two parts of the same whole. The scope of DRR is comprehensive, covering a broad risk landscape of eight hazard clusters including meteorological and hydrologic (e.g. hurricanes); extra-terrestrial (e.g. meteors and solar flares); geohazards (e.g. earthquakes and volcanoes); environmental (e.g. biodiversity loss, salinization); chemical (via acute or long-term exposure); biological (e.g. zoonotic pathogens); technological (existing and new); and societal (e.g. financial shock, civil unrest).

Importantly, "cities concentrate millions of people into locations that can be highly vulnerable to disaster and the impacts of climate change" (UNDP and UNEP, 2021). Earthquakes and pandemics are two hazards that can pose significant risk to urban settings given high population densities and migrants arriving in cities from rural areas are particularly likely to end up in exposed and poorly serviced urban areas (UNDP and UNEP, 2021). Air pollution is another hazard that has a significant impact on cities and a major environmental cause of death worldwide. But risks such as these can be reduced through planning and design, In the context of air pollution, it is estimated that compliance with World Health Organization (WHO) guidelines would save more than 52,000 lives per year in Europe and reducing air pollution to the lowest levels could save 205,000 lives per year" (UNDP and UNEP, 2021).

HAZARD TYPES AND CLUSTERS
Disaster Risk Reduction for Sustainability and Resilience

Meteorological & Hydrological

Convective, flood, lithometeors, marine, pressure, precipitation, temperature, terrestrial, wind

Extraterrestrial

Geomagnetic storm, UV radiation, meteor impact, ionosphere storm, radio blackout, solar storm, space hazard, meteorites

Environmental Degradation

Household air pollution, land, soil, non-point source pollution, salinity, biodiversity loss, deforestation, wildfires, desertification, mangroves & wetlands, coral reefs, sea level rise

Geohazards

Seismogenic, volcanogenic, shallow geohazard

Biological

Aquaculture, insect infestation, Human animal interaction, CBRNE, mental health, food safety, infectious diseases (human and animal)

Chemical

Gases, heavy metals, food safety, POPs, hydrocarbons, other chemicals and toxins

Technological

Radiation, CBRNE, structural failure, infrastructure failure, cyber hazard, industrial failure, waste, flood, transportation

Societal

Conflict, explosive remnants of war and post-conflict environmental degradation, violence and stampeding, financial shock

Climate change adaptation (CCA) focuses on a subset of the broader multi-hazard risk landscape, dealing with the physical risks posed by changes in climate (i.e., flooding, wildfires, drought, extreme wind, etc.) as well as indirect transitional risks such as changes in public policy to reduce greenhouse gas emissions (i.e., carbon prices and taxes) or demographic changes owing to climate migration. The 2021 report on Smart, Sustainable and Resilient Cities published by UNDP and UNEP summarizes the dire situation:

> *Disasters in the form of storms, landslides and floods are growing challenges for city authorities, national governments and urban residents alike, damaging infrastructure and disrupting city life. Intense rainfall events put huge strain on urban storm wastewater systems, particularly where large parts of cities have been rendered impermeable by road and building construction. Rising sea levels are increasing the exposure of coastal cities to storm surges. By 2050, 90 percent of coastal cities will be hit by sea level rise. Meanwhile, droughts, which are expected to become more frequent as climate change progresses, put huge pressure on the water systems on which cities depend. In 2018 Cape Town narrowly escaped Day Zero, the day it would effectively run out of water, only as a result of its citizens enduring months of severe restrictions on the use of water. (UNDP and UNEP, 2021)*

How can local governments help support DRR and CCA at the local level?

Local governments can help reduce disaster risks and adapt to climate change by implementing the four priorities of the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015), including:

- **Priority 1**: Understanding disaster risk;
- **Priority 2**: Strengthening disaster risk governance to manage disaster risks;
- **Priority 3**: Investing in disaster risk reduction for resilience; and
- **Priority 4**: Enhancing disaster preparedness for effective response and "build back better" in recover, rehabilitation, and reconstruction.

As well, in its training program module on the *Fundamentals of Resilient Governance & Development*, the United Cities and Local Government (UCLG) provides the following practical context for cities to support disaster risk reduction and resilience (UCLG, 2020):

> *The COVID-19 pandemic has highlighted the importance of taking efficient preventive and risk mitigating measures and building systemic resilience in our cities and territories.*

An effective disaster risk reduction and resilience building strategy can provide significant effects and goes hand to hand with the wellbeing of communities, protection of the environment, local and regional economic development, and quality of life in cities and territories, indicating that the Sendai Framework has direct linkages to all the other Global Agendas (see figure below).
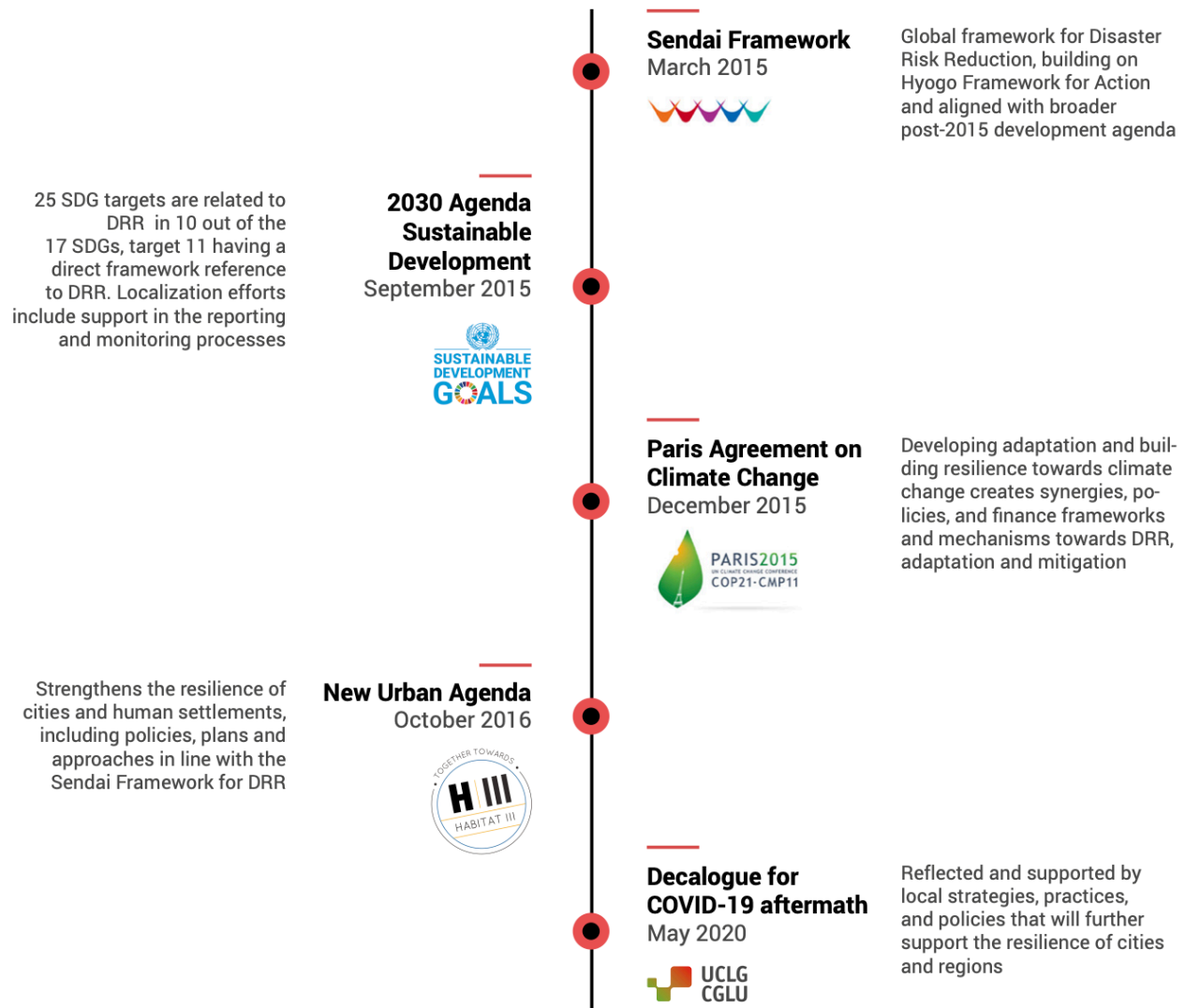
Sendai Framework
March 2015

Global framework for Disaster Risk Reduction, building on Hyogo Framework for Action and aligned with broader post-2015 development agenda

25 SDG targets are related to DRR in 10 out of the 17 SDGs, target 11 having a direct framework reference to DRR. Localization efforts include support in the reporting and monitoring processes

2030 Agenda Sustainable Development
September 2015

Paris Agreement on Climate Change
December 2015

Developing adaptation and building resilience towards climate change creates synergies, policies, and finance frameworks and mechanisms towards DRR, adaptation and mitigation

Strengthens the resilience of cities and human settlements, including policies, plans and approaches in line with the Sendai Framework for DRR

New Urban Agenda
October 2016

Decalogue for COVID-19 aftermath
May 2020

Reflected and supported by local strategies, practices, and policies that will further support the resilience of cities and regions

Fig 5. Linkages of relevant Global Agendas to resilience-based sustainable development

How can a VLR help?

A Voluntary Local Review (VLR) can help a community improve its DRR and CCA efforts by providing information that is relevant for local government planning & policy, budgeting & finance, and reporting & assessment. By doing so, a VLR can serve to help local governments

mainstream DRR and CCA. More insight into how VLRs can help support DRR and CCA at the local level is provided at the end of this document.

A first practical step, as officials preparing a VLR or experts providing assistance, is for you to have a general understanding of all the potential leverage points that local governments can use to support DRR and CCA. The UNDRR's *Implementation Guide for Local Disaster Risk Reduction and Resilience Strategies* provides practical guidance to local governments in implementing the four priorities of the Sendai Framework for Disaster Risk Reduction (UNDRR, 2018). This guidance is summarized herein.

Understanding Disaster Risk: Assessing, Managing, and Monitoring Risks

The process of assessing, managing, and monitoring risks by local governments is essential for enhancing the resilience of communities to disasters, including those caused by and exacerbated by climate change.

Local Leverage Points
Among the leverage points for a local government to enhance its efforts for assessing, managing, and monitoring risks to a range of hazards, including climate change, are the following (UNDRR, 2018):

1. **Identify, understand and use current and future risk scenarios**. For local governments, this means:

   ▪ Have up-to-date information on extensive and intensive risks, small and large-scale disasters, and slow and rapid onset disasters. Understand how they (may) change in relation to development trajectories, demographic trends, urbanization and climate change

   ▪ Understand the timescales over which risks change and impacts occur

   ▪ Have updated information of the main hazards in your region, how they change over time, and how multiple hazards may combine

   ▪ Consolidate up-to-date information about exposure, vulnerability and coping capacities of people, assets and activities. Integrate scientific and lay knowledge (i.e. consider the latest available climate data and scenarios, seismic information, census data, etc. but also participatory mapping, enumerations, perception surveys, etc.)

   ▪ Have updated information of critical infrastructure and services, the potential impacts of hazardous events, and cascading effects

- Develop mechanisms to update data and to generate local disaster risk knowledge, enabling local actors to access and exchange risk-related information

- Make sure that risk information is widely communicated and available to all stakeholders, in easy language and a usable format, so that risk information is factored in all decision-making processes

2. **Pursue resilient urban development and design**. For local governments this means:

- Identify local ecosystems and understand their role in reducing disaster impacts (e.g. slope stabilization, flood protection and enhancement of water quality, reduction of heat island effect, etc.) and their contribution to climate change mitigation (within the city and the surrounding region)

- Have updated information on natural areas and their current and potential uses. Consider multiple information sources

Based on a 2018 survey of 159 local government representatives from Latin America, Asia, Africa, Europe, and Arab states, 52% of local governments had a local DRR strategy in place and 30% were in the process of developing a strategy (Amaratungra et al. 2018). The strategies included actions to enhance disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction, as well as actions that enhance local government´s understanding of disaster risk and strengthen disaster risk governance. In 2022, the global Sendai Framework Monitor of the UN Office for Disaster Risk Reduction reported that 57% of local government have adopted and implemented local disaster risk reduction strategies in line with national strategies, based on responses from the Russia Federation, parts of Eastern Europe, Italy, Philippines, Australia, and Colombia (Sendai Framework Monitor, 2023).

The UNDRR's **Implementation Guide for Local Disaster Risk Reduction and Resilience Strategies** provides practical guidance linking disaster risk management, climate change adaptation and sustainable development principles at the local level (UNDRR, 2018). Specifically, the Guide is a planning tool for integrating a DRR approach into local government, delineating a common vision of the understanding of disaster risk, defining key priorities for the prevention of new risk, reducing existing risk, recovering from disasters, and strengthening economic, social, health, and environmental resilience.

Furthermore, UNDESA and the United Nations Capital Development Fund (UNCDF) issued its handbook for local governments on **Managing Infrastructure Assets for Sustainable Development** in the context of both built and natural infrastructure (UNDESA and UNCDF, 2021). The Handbook emphasizes that understanding risks and how to mitigate risks is a key component of life cycle asset management, because risks are not only financial, given the significant capital cost of most assets, but they are also service related, including critical

infrastructure services such as power, water, and sanitation. Such risks to assets must be assessed and managed on a continual basis.
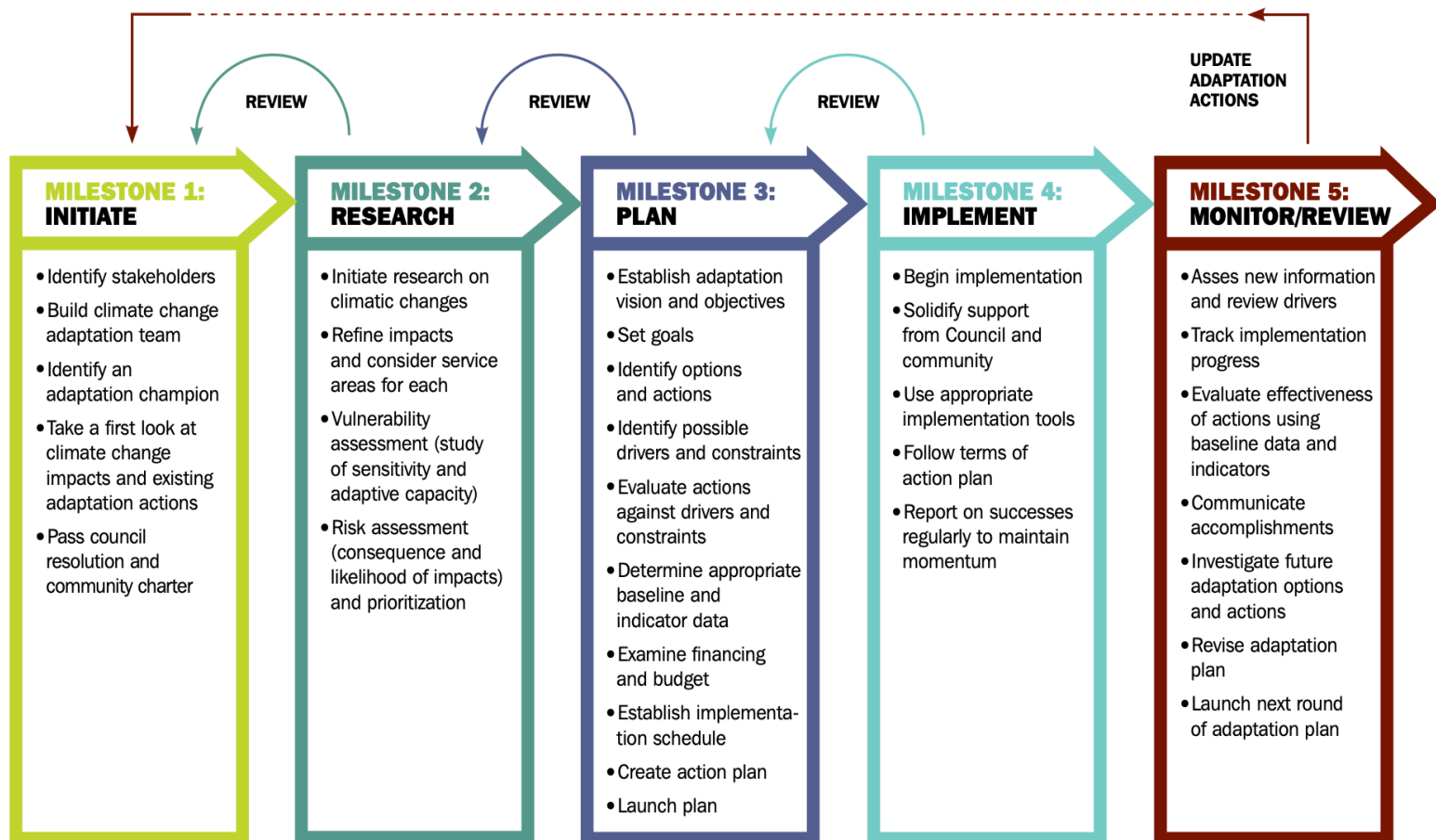
Small and medium-sized enterprises are the bedrock of global, national and local markets and economies, comprising two-thirds of the workforce (UNDRR, 2020). As such, when disasters strike, SMEs "are hit harder, suffer longer and are slower to recover than larger businesses" (UNDRR, 2020). In 2020, the UNDRR published its guide for *Reducing Risk and Building Resilience of SMEs to Disasters,* including insights for how businesses can better apply and combine existing enterprise risk management and business continuity planning processes with a stronger focus on risk prevention, and how to address interdependencies and inequities across value and supply chains.

Good practice example:

Guide and Workbook for Municipal Climate Adaptation, ICLEI Canada
While some communities take a multi-hazard approach to their local DRR strategy, including climate change adaptation, some communities opt to also prepare a separate *Local Climate Change Adaptation Plan* to place an emphasis on assessing, managing, and monitoring the physical and transitional impacts of climate change.
Local Governments for Sustainability (ICLEI) in Canada published a ***Guide and Workbook for Municipal Climate Adaptation*** and outline five key milestones for adaptation planning as depicted below, including: (1) Initiate – such as creating the local government team and securing a mandate; (2) Research – such as conducting a climate vulnerability and risk assessment; (3) Plan – including vision, objectives, plan, resilience actions, and financing; (4) Implement; and (5) Monitor/Review – including tracking and communicating progress and revising as needed

MILESTONE 1: INITIATE
- Identify stakeholders
- Build climate change adaptation team
- Identify an adaptation champion
- Take a first look at climate change impacts and existing adaptation actions
- Pass council resolution and community charter

MILESTONE 2: RESEARCH
- Initiate research on climatic changes
- Refine impacts and consider service areas for each
- Vulnerability assessment (study of sensitivity and adaptive capacity)
- Risk assessment (consequence and likelihood of impacts) and prioritization

MILESTONE 3: PLAN
- Establish adaptation vision and objectives
- Set goals
- Identify options and actions
- Identify possible drivers and constraints
- Evaluate actions against drivers and constraints
- Determine appropriate baseline and indicator data
- Examine financing and budget
- Establish implementation schedule
- Create action plan
- Launch plan

MILESTONE 4: IMPLEMENT
- Begin implementation
- Solidify support from Council and community
- Use appropriate implementation tools
- Follow terms of action plan
- Report on successes regularly to maintain momentum

MILESTONE 5: MONITOR/REVIEW
- Asses new information and review drivers
- Track implementation progress
- Evaluate effectiveness of actions using baseline data and indicators
- Communicate accomplishments
- Investigate future adaptation options and actions
- Revise adaptation plan
- Launch next round of adaptation plan

Source: ICLEI Canada

Strengthening Governance for DRR and CCA

In its training program module on the *Fundamentals of Resilient Governance & Development*, United Cities and Local Government (UCLG) emphasize how local and regional governments play a central role in DRR and resilience building, as the main responsible body for the provision of basic services, coordination of daily functions, provision of information and regulation, and as leaders of the recovery and reconstruction process following a disaster (UCLG, 2020). However, it is also noted that many local and regional governments face challenges and bottlenecks that impede their efforts, including "insufficient authorities, inadequate budget allocations to maintain and provide services for all, unclear competences and division of task between spheres of government, and limited technical and knowledge-based capacities and data to understand, prevent, and manage stresses, shocks, and disasters" (UCLG, 2020).

Importantly, local and regional governments can develop comprehensive systems-based strategies for DRR and resilience building when armed with "a better understanding and analysis of the urban systems in which exposure and vulnerabilities occur, the available tools, and the right competences and resources" (UCLG, 2020). Moreover, the strengthening of governance can "support the development of livable communities with balanced ecosystems, better urban planning and design, and active citizen participation and help create a successful platform for urban governance".

Local Leverage Points for Strengthening Governance for DRR and CCA

> *Creating an enabling environment and having an effective disaster risk governance for the coordination of DRR and resilience building activities are key for achieving sustainable, resilient, and inclusive development.*
>
> *A strong governance system is characterized by laws and policies, institution and coordination mechanisms, strong leadership, clear roles and responsibility, resources, monitoring and accountability that is set up across all sectors, all actors, and at all levels. While an enabling institutional environment with authorities and capacities, and clear coordination systems are a must, disaster risk governance also requires broad participation across sectors and institutions. These include different governmental organizations and sectors, private sector, academic and research organizations, and civil society organizations (UCLG, 2020).*

Among the leverage points for a local government to enhance its efforts for strengthening governance to reduce and manage the risks owing to a range of hazards, including climate change, are (UNDRR, 2018):

1. **Organize for disaster resilience**. For local governments, this means:

   ▪ Ensure disaster risk governance is a key component of the city vision and/ or strategic development plan of the city, recognizing the relevance of participatory and inclusive mechanisms for DRR and resilience

   ▪ Discuss and agree on the levels of disaster risk that are acceptable to your city. Revise them over time

   ▪ Establish a single point of coordination (focal point/ government office) which is accepted by all actors and with strong leadership, political support (e.g. from the highest elected level) and resources (human and financial)

   ▪ Ensure that all departments in the local government understand the importance of DRR and resilience and how they relate to their everyday work and to overall city development goals

   ▪ Define clear roles and responsibilities among city government's staff and decision makers, but also between civil society and the private sector so that all stakeholders contribute to DRR and resilience

- Build up alliances and collaboration processes horizontally (across sectors and actors within the city and with neighboring cities) and vertically (across different politico-administrative levels)

- Have a clear operational framework to make collaboration possible

- Approve codes and bylaws and/or revise existing ones to integrate resilience attributes

- Have in place reporting mechanisms for all stakeholders that collect/process/consolidate key information

2. **Strengthen institutional capacity for resilience**. For local governments, this means:

- Identify local capacities among different actors and agree on division of responsibilities. Secure effective communication so everyone knows "who does what"

- Strengthen local capacities to better understand the relevance of integrated responses, linking DRM to climate change and sustainable development

- Develop capacities and local know-how via training activities and knowledge exchange (within your city, with other cities, with the private sector, etc.)
- Develop a portfolio of project proposals that address different issues in your city and which are ready to submit to different funding opportunities

- Share information and knowledge; work towards guaranteeing access and interoperability

3. **Understand and strengthen societal capacity for resilience**. For local governments, this means:

- Work with local actors to take into account their views/opinions on different development alternatives

- Secure mechanisms for participation in planning, implementation and monitoring and evaluation processes

- Support the work of community-based organizations and local NGOs (e.g. from work on housing and water and sanitation to specific emergency response)

- Target different groups and/or sectors such as businesses and industries, schools, professional associations, etc.

Good practice example:

Making Smart Cities Initiative, Campinas, Brazil

Making Smart Cities is the corporate social responsibility initiative of AI Systems Research Ltda (AISR), recognized by the UN and presented at the 3rd UN World Conference on Disaster Risk Reduction (WCDRR) in Sendai, Japan, to make cities more intelligent, resilient and sustainable by supporting the development and implementation of integrated strategies and planning.

The initiative aims to enable partner cities to significantly maximize the potential of their investments and the reduction of urban risks through the use of analytical and decision-making support tools, provided at no cost, to achieve a culture of proactive risk management in public policies. It integrates, in the process of developing strategies and planning, different UN international agreements (e.g. Sendai Framework for Disaster Risk Reduction 2015-2030; Transforming Our World: the 2030 Agenda for Sustainable Development; Paris Agreement on Climate Change; New Urban Agenda - Habitat III; and Agenda for Humanity - World Humanitarian Summit).

The initiative is structured around three pillars, which aim to support local governments in the following challenges:

1. **Risk management** - Identification, understanding and management of any type of urban risk based on an analytical approach.
2. **Socioeconomic development** - Assessment and reduction of socioeconomic impacts related to urban risks. It also allows analytical management of socio-economic development programs, socio-territorial analysis and community monitoring.
3. **Environmental management** - Assessment and reduction of environmental impacts related to urban risks. It also allows analytical management and monitoring of environmental programs.

In this way, it is possible to improve the resilience not only to natural disasters, but also to any type of urban risks, considering the related social, economic and environmental impacts.

Source: From [UNDRR (2018)](#)

Investing in Disaster Risk Reduction and Climate Change Adaptation

In its *Implementation Guide for Local Disaster Risk Reduction and Resilience Strategies*, the UN Office for Disaster Risk Reduction describes how the availability of financial resources at the local level provides autonomy and room to manoeuvre for context specific approaches and experimentation, adding that international funding opportunities also boost the potential for local action ([UNDRR, 2019](#)).

Relating to international funding sources, the UNDRR further highlights that while the most common sources of financing are typically those focused on large-scale infrastructure and development projects, there is a growing trend for international financing to also support training and raising-awareness among key local actors (UNDRR, 2019). Similarly, while it is acknowledged that these multilateral sources of financing for DRR and CCA are still largely channeled to national states, calls for proposals are opening up to local governments, necessitating the need for local governments to align with international fiduciary principles and standards as well as acquiring project management skills to apply for and manage internationally-funded projects (UNDRR, 2019).

Local Leverage Points for Investing in DRR and CCA

Among the leverage points for a local government to invest in DRR And CCA, are (UNDRR, 2018):

1. **Strengthen financial capacity for resilience**. For local governments, this means:

- Work on financial planning and definition of priorities to ensure that actions to build resilience receive support

- Earmark an annual budget for DRR and resilience – it can be distributed between different offices/sectors

- Develop an inventory of financing mechanisms and potential sources

- Ensure adequate financial support to vulnerable groups (e.g. via social protection, microfinance, etc.)

- Ensure that funds invested in response and recovery also include building back better and pursue sustainable development

2. **Pursue resilient urban development and design**. For local governments this means:

- Approve codes and by-laws and/or revise existing ones to integrate resilience attributes into building codes and spatial planning, aiming to prevent the creation of new risk and reduce existing risk

3. **Safeguard natural buffers to enhance ecosystems'** (i.e., natural assets and nature-based solutions) **protective functions.** For local governments, this means:

- Ensure appropriate legislation to safeguard ecosystems and their protective functions, including funding schemes for multiple uses and collaborative conservation

- Develop programs to ensure all citizens understand the protective role of ecosystems (among other services)

- Consider green and blue infrastructure or nature-based solutions to enhance local resilience

- Work in collaboration with neighboring cities and broader administrative levels (e.g. region or basin) to safeguard ecosystems and their protective functions

4. **Increase infrastructure resilience**. For local governments, this means:

- Assess if current infrastructure is adequately designed, built and maintained to respond to current and future risk scenarios

- Prioritize areas for investment in existing and new infrastructure

- Have guidelines for risk-sensitive development of future infrastructure

- Have processes in place to ensure operability of critical infrastructure in the event of acute shocks or stresses. Have spare capacity (e.g. redundancy) to cope with a combination of risks

- Ensure that service providers understand disaster risk and the role of infrastructure in reducing current and future risks

In relation to the sources and instruments of financing for DRR and CCA, UNDRR (2023) undertook a practical review of options in the Asia and Pacific region. The review illustrated a wide variety of financing sources and instruments, including public, private, and international sources, as well a suite of conventional public and private instruments and Islamic financing instruments. These are summarized below, and in the figure below.

- *Public Financing.* The instruments of public financing from national and sub-national governments include own source revenues (i.e., taxes, tariffs, land-value capture, crowdfunding), grants and transfers (targeted at DRR, CCA or SDGs), debt financing through bonds, concessional loans, public credit guarantees, and through equity financing and public-private partnerships (UNDRR, 2023).

- *Private Financing.* While financing of DRR from the private sector is still only a fraction of its total potential, the forward-looking potential is significant. For example, foreign direct investment (FDI) flows in 2021 to SDG sectors across developing Asia totalled $17.8 billion, but were only 11% of total investment announcements (UNCTAD, 2022).

- *Islamic Financing.* Islamic finance is one of the fastest growing elements of global finance with total assets now worth USD 3.06 trillion (IFSI, 2022) and offers a range of

potential instruments for supporting DRR, including Islamic Banking assets, Sukuk issuances (i.e., similar to a bond), Islamic funds assets, Takafuk (insurance), as well as giving instruments such as zakat and waqf (UNDRR, 2023).

DRR-relevant **SDG targets**	• Adjacent financing for SDG targets that reduces hazards, exposure, and vulnerability, and that enhances disaster prevention, preparedness, and resilience
Climate change adaptation	• Adjacent financing for adaptation that reduces hazards, exposure, and vulnerability, and that enhances disaster prevention, preparedness, and resilience
Multi-hazard disaster risk reduction (DRR)	• Financing that: reduces hazards and/or exposure and vulnerability to hazards, enhances prevention, preparedness, and resilience, and that supports structural and non-structural measures

	Public Financing	Private Financing	International Development Financing
Support to DRR Governance, Assessment, and Review	• Governance & Strategy / Assessment & Analysis / Review & Tracking		
Finance Instruments	• **Own-source Revenues:** Taxes, tariffs, land-value capture, crowdfunding • **Grants & Transfers** • **Debt financing:** Bonds, concessional loans, public credit guarantee schemes • **Equity financing and Public-Private Partnerships:** Co-investment, blended finance, aggregation, securitization	• **Debt financing:** Bonds, sustainable funds, exchange-traded funds • **Equity financing:** Foreign direct investment, equity funds, • **Insurance:** Products, services, impact investment • **Philanthropy** • **Financial technologies and Inclusion**	• **Debt financing:** contingent disaster financing, deferred drawdown options, development policy financing, bonds (green, resilience, and SDG) • **Grants and funds** • **Insurance and Re-insurance** • **Public-Private Partnerships**
Islamic Finance Instruments	• Islamic Banking / Sukuk / Islamic Funds / Takaful / Zakat and Waqf		

Source: UNDRR

Good practice example:

Land-value Capture, India

Land value capture is a source of public revenue that is being used to fund development projects across Asia and Pacific. The Asia Development Bank emphasizes that land value capture "offers the opportunity to strategically direct development to less disaster-prone areas, share costs for disaster-mitigating infrastructure, and provide incentives for others to invest in

disaster risk-reducing measures" ([ADB, 2020](#)). It is further described that land value capture can be achieved through six different mechanisms, including: (i) the strategic sale or lease of public land; (ii) development charges to investors; (iii) the sale of development rights or density credits; (iv) land pooling or readjustment; (v) betterment levies; and (vi) tax increment financing ([ADB, 2020](#)).

Betterment Levies in Pune, India

- **Instrument**: An additional tax/special rate levied to property owners within a specifically defined geographic area, which is regarded as the main concentration of beneficiaries of respective publicly funded infrastructure upgrades

- **Purpose**: The Local Municipal Corporation in Pune is considering complex improvements on the banks of three rivers flowing through the municipality (building embankments for flood protection, sewage treatment, desilting, landscaping, and enhancing connectivity between the banks).

- **Value capture component**: Recovery of municipal costs through charging flood premiums on top of construction permitting fees. Changes in town planning codes proposed to allow development in the 25 year flood zones on condition of recovering a flood premium from developers.

Leveraging Public Assets in Ahmedabad, India

- **Instrument**: Disposition of publicly owned assets to a private developer whereby value is realized either directly (e.g. sale proceeds) or through creation of future development value or socioeconomic benefit

- **Purpose**: Aims to provide the city of Ahmedabad with an improved and accessible waterfront along the Sabarmati River, reduce erosion and exposure of the city to flood risk, upgrade sewers, and rehabilitate and resettle slums.

- **Value capture component**: Cash for recovery of capital expenditure and operating costs comes from sales of reclaimed and serviced land for commercial development. Completion of major infrastructural components have already led to increased land values, thus reducing the amount of land that needs to be transacted for servicing the loans.

Source: ([UNDRR, 2023](#))

Enhancing Preparedness, Response and Recovery for Disasters

Preparedness is about taking actions before a disaster occurs to minimize the potential impacts of a hazard that could not be fully mitigated in advance (UCLG, n.d.). Preparedness requires knowledge and capacities to effectively anticipate, respond to, and recover from, the impacts of a likely disaster, and should be informed by a sound analysis of disaster risks and linkages with early warning systems, including contingency and business continuity planning (UN, 2016).

Disaster **response** involves action taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (UN, 2016). **Recovery** on the other hand, is about restoring or improving livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster affected community or society, aligning with the principles of sustainable development and "build back better," to avoid or reduce future disaster risk (UN, 2016).

Local Leverage Points for Preparedness, Response, and Recovery
Among the leverage points for a local government to enhance preparedness, are (UNDRR, 2018):

1. **Ensure effective disaster response**. For local governments, this means:

- Have emergency plans/protocols in place with clearly defined roles and responsibilities for all local actors. Establish coordination mechanisms and assign resources where needed.

- Validate emergency plans/protocols with all local actors

- Communicate emergency plans/protocols and test them periodically (e.g. design regular drills according to type of emergency and sector)

- Have early warning systems (EWS) broadcasted to all citizens for effective and quick response

- Ensure availability of equipment and supplies

- Assess and evaluate response capacity to continuously improve it

1. **Expedite recovery and build back better**. For local governments, this means:

- Have a local strategy for post-disaster recovery, rehabilitation and reconstruction

- Appoint a coordinating office for recovery and define roles and responsibilities for different actors/sectors

- Earmark financial resources for recovery

- Promote insurance coverage and other risk transfer mechanisms. Generate incentives for households, businesses, industries, etc. to purchase and/or embrace them

- Consider new and/or changing risks when building back

- Derive lessons from recovery processes to further build resilience

Early warning systems play a crucial role in helping communities prepare for and respond to disasters. An early warning system is defined as "an integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events" (WMO, 2022). In response to a call by the UN Secretary-General to ensure that every person on Earth is protected by early warning systems within five years, the UN's *Executive Action Plan on Early Warnings All* was issued in 2022 to advance disaster knowledge and enhance capacity to detect hazards, close observation gaps, advance global forecast data processing systems, and disseminate and communicate warnings (WMO, 2022). The Executive Action Plan provides a useful set of diagnostics to assess the state of a government's multi-hazard early warning system (MHEWS), and this is depicted below.

Disaster risk knowledge

Systematically collect data and undertake risk assessments

- Are the hazards and the vulnerabilities well known by the communities?
- What are the patterns and trends in these factors?
- Are risk maps and data widely available?

Detection, observations, monitoring, analysis and forecasting of hazards

Develop hazard monitoring and early warning services

- Are the right parameters being monitored?
- Is there a sound scientific basis for making forecasts?
- Can accurate and timely warnings be generated?

Preparedness and response capabilities

Build national and community response capabilities

- Are response plans up to date and tested?
- Are local capacities and knowledge made use of?
- Are people preapred and ready to react to warnings?

Warning dissemination and communication

Communicate risk information and early warnings

- Do warnings reach all of those at risk?
- Are the risks and warnings understood?
- Is the warning information clear and usable?

A crucial and often overlooked aspect of effective preparedness, response and recovery is the "importance of human and social capacities to access and make use of resources and services, adapt, collaborate, express themselves, and participate in decision-making" (UCLG, n.d.). In fact, **social capital** can be a basis for physical transformation and generation for preparedness, response, and recovery (UCLG, n.d.). More specifically, in the context of disaster response, ensuring that public policies don't undermine existing social capital within a community, and creating forums that enable social networking and the sharing of good practices, as well as removing barriers to self-organization, all strengthen the ability of stakeholders to respond to disasters in a variety of innovative ways (Swanson and Bhadwal, 2009).

Enhancing the **resilience of informal settlements** is an important part of realizing just transitions and leaving no one behind. Participatory in-situ upgrading, comprehensive and integrated upgrading, and participatory relocation, are approaches that can be used by local governments to enhance resilience of communities to disasters (UCLG, n.d.). The case of Surabaya, Indonesia, is a good example of this. In 1969, the local government initiated the Kampung Improvement Program for informal settlements that numbered houses and installation of septic tanks, sturdier roof structures, and traffic management improvements that helped strengthen community resilience and creative solutions as well as enhancing the linkages between community members and local government (UCLG, n.d.).

Effective recovery and **building back better** necessitate institutional and financial aspects as well as physical planning and citizen participation (UCLG, n.d.). Moreover, the concept of "building back better" must be reinforced by local governments for recovery and reconstruction before a disaster occurs. This includes enhancing shelter and housing policies to build resilience and holistic planning framework for housing reconstruction and urban settlement to generate spatial solutions to future challenges (UCLG, n.d.). Importantly, building back better requires that local governments: build back "stronger" to ensure socio-economic and environmental infrastructure are more resilient to future impacts; build back "faster" to pre-plan the what, how and when and reduce financial uncertainty and improvisation; and build back "more inclusively" to ensure no one is left behind.

Good practice example:

The "Get Prepared: Ready New York" Initiative
As a way to engage the citizens of New York City in emergency planning, the local government implemented its "Get Prepared: Ready New York" initiative. This educational campaign encouraged preparedness planning for residents through 11 multilingual publications, numerous public service announcements, multimedia advertising, extensive web content, a speaker's bureau, a reprinting program, corporate partnerships, and continuous community outreach.

Preparedness tips include how to make a readiness plan and gather supplies, as well as where to get information and understanding when and how to evacuate or shelter in place as directed by public authorities.

Source: ([ICLEI Canada, 2019](#)) and ([New York City, n.d.](#))

Using Natural Assets and Nature-based Solutions for DRR and CCA

> *Recovery after COVID-19 offers an opportunity to recalibrate the relationship between cities and nature. Unprecedented fiscal stimulus programmes are being designed and implemented in an effort to help the world economy rebound. Much of this is being directed at major infrastructure programmes, decisions around which will shape the trajectory of sustainability in cities for decades. Economic responses to the COVID-19 pandemic that embrace the notion of "building back better"– could provide jobs and generate economic growth in ways that protect and restore the natural environment, address climate change, promote the energy transition and provide dignified livelihoods to shape a more inclusive society. Doing so could help urban areas adapt to climate change and support biodiversity, and also reduce pollution and other emissions, while improving the well-being of urban dwellers.* ([UNDP and UNEP, 2021](#)).

The UN Office for Disaster Risk Reduction highlights that five of the most likely global risks, as identified by the World Economic Forum, are environmental, including extreme weather, biodiversity loss, climate action failure, natural hazards, and human-made environmental disasters ([UNDR, 2021](#)). Furthermore, nature-based solutions are cited as having the potential to enhance resilience to all of these risks simultaneously by reducing the impacts of tsunamis, landslides, sea level rise, drought, and heatwaves, as well as sequestering carbon to bolster climate action and reducing environmental degradation and biodiversity loss (see the figure below).
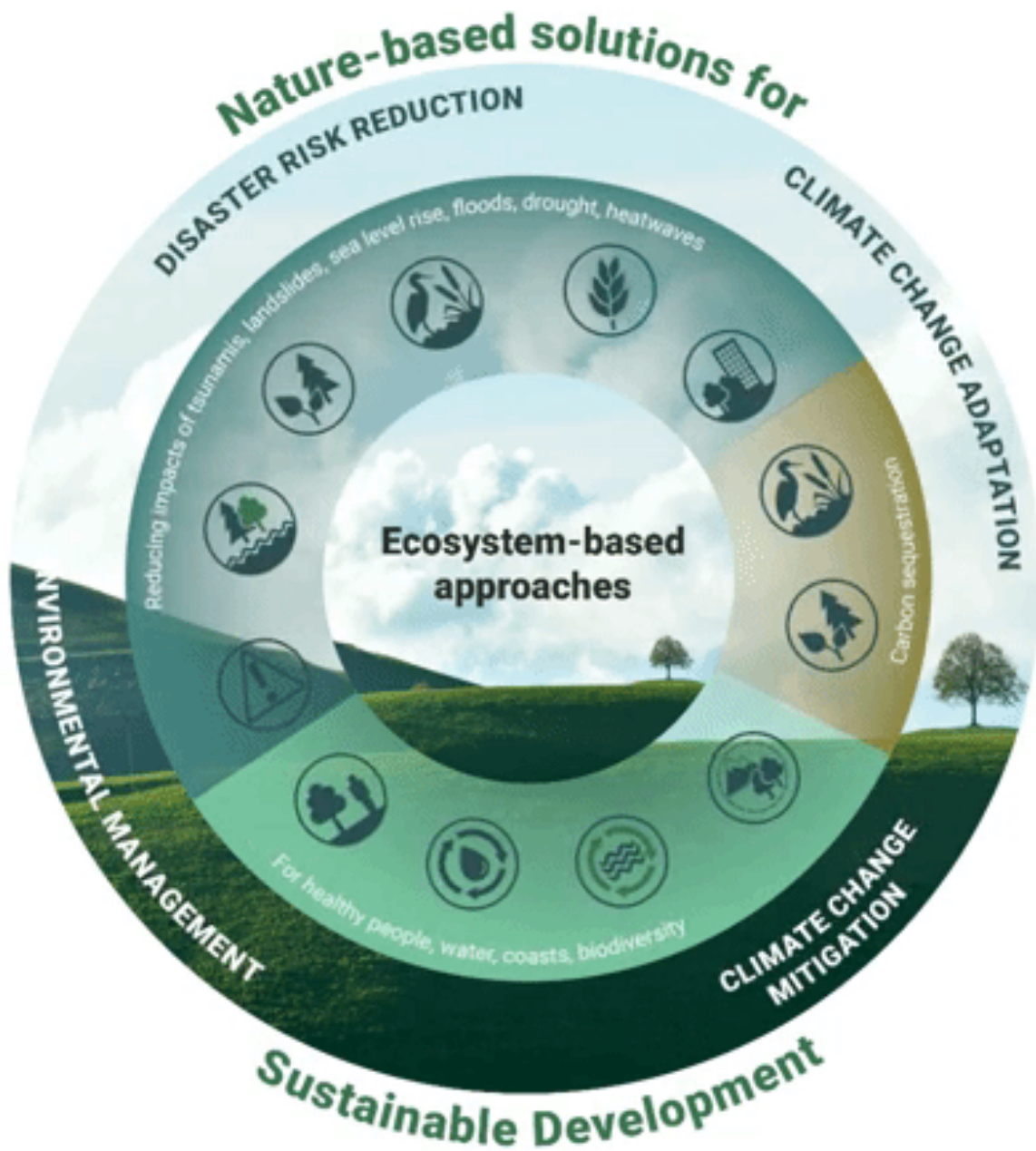
Source: UNDRR

City Service solutions, including natural assets and natural infrastructure, can serve as an effective complement and even a substitute for traditional built infrastructure; and in the context of climate-resilient infrastructure, nature-based solutions can "deliver equivalent service to traditional approaches while also generating co-benefits such as amenity value, biodiversity conservation, and climate change mitigation" (OECD, 2018).

Local Leverage Points for Managing Natural Assets and Infrastructure
Nature-based solutions are important for enhancing resilience and delivering multiple benefits in urban areas. For instance ([UNDP and UNEP, 2021](#)):

- **Multiple benefits**. Well-implemented nature-based solutions offer multiple benefits to communities, including: (i) resilience and avoided losses related to floods, extreme heat, and storm surges, among others; (ii) economic benefits, via jobs, cheaper infrastructure, business productivity, tourism and recreation, and increased food/water supply; (iii) social and environmental benefits, including cleaner air and water, increased habitat for pollinators, increased property value, and reduced exposure to extreme heat.

- **Resilience within cities**. Nature-based solutions can provide natural shading and reduce urban heat island effects and cooling needs, manage run-off water, improve health and well-being by reducing air pollution, and offer recreational spaces;

- **Resilience around cities**. Nature-based solutions can form part of city-region interlinkages related to watershed management, recreational spaces, wildfire management, reduction and capture of CO_2, sand and dust storm reduction measures; and

- **Resilience away from cities**. Nature-based solutions can be applied to the procurement of goods and infrastructure as well as built environment decisions that influence urban supply chains.

Good practice example:

Sponge Cities in China
After decades of rapid urbanization, overexploitation and pollution, many urban areas in China face serious water shortages interspersed with periodic floods that are made worse by the climate crisis. Between 2007 and 2016, water-related issues led to estimated losses of more than $36 billion every year.

In 2014 the Chinese government introduced the idea of 'sponge cities' to address urban flooding by increasing rainwater permeability in vulnerable cities. Sponge cities are a context-specific urban approach to integrated water resource management that use grey-green infrastructure like waterways and greenways, green roofs, porous design and water-saving approaches to control urban flooding, limit water pollution, recycle rainwater and reinstate degraded environments.

The government chose 30 cities as pilots. The goal is to retain as much water as possible during the wet season by limiting erosion and slowing run-off so that it is absorbed into the surrounding soils and drainage systems and available to meet needs when droughts hit.

Source: ([UNDP and UNEP, 2021](#))

Source: [Euronews](#)

Tips for Supporting DRR and CCA through Strengthened VLRs

As an official of a local government or organization tasked with preparing a Voluntary Local Review (VLR), or as an expert assigned to assist a local official prepare a VLR, being aware of all the potential ways in which a community can support DRR and CCA is the first and most important step in supporting local recovery and transitions that are green, sustainable, and resilient.

Your next steps are to find practical ways to use the content and process of a VLR to support local government planning, budgeting and reporting, and the means of local implementation, as well as to inform your country's Voluntary National Review (VNR) when it is submitted and presented to the United Nations High-level Political Forum. In this regard, below is a listing of the top strategies to use to enhance your VLR to support DRR and CCA at the local level.

1. Informing local government and the means of implementation:
    I. Planning & Policy
        A. Identify and communicate local success stories of DRR And CCA in your community
        B. Assess and identify missed local leverage points for supporting DRR and CCA
        C. Make coherent policy recommendations to the local government to address gaps
    II. Budgeting & Finance
        A. Assess public budget expenditures allocated to DRR and CCA and report key gaps
        B. Make coherent recommendations for addressing expenditure gaps, including all potential financing sources and instruments
        C. Identify and communicate local success stories in financing DRR and CCA
    III. Reporting & Assessment
        A. Provide data and stories relevant to key performance indicators (KPIs) reported by local government, including by asset managers
        B. Identify KPI gaps and make recommendations for additional indicators for local government to use

2. Informing your country's Voluntary National Review (VNR):
    I.
    II. *Content*
- Align the structure of your VLR with that of your country's VNR, to the extent possible
- Include success stories, barriers to implementation, and lessons learned towards supporting DRR and CCA
- Include recommendations for how national governments can support local efforts toward DRR and CCA
- Highlight innovative local sources and instruments of finance for DRR and CCA
- Promote utilization of local data and provide disaggregated data, aligned with indicators reported in the VNR, to the degree possible
    II.
    III. *Process*
- Time your VLR with the preparation cycle of the VNR
- Inform your intent to prepare a VLR to the national government's VNR staff
- Ask VNR preparers at the national level to review and comment on your VLR

- Volunteer to provide local content and indicators to ensure the VNR captures local efforts toward DRR And CCA
- Volunteer to be part of the VNR presenter's panel at the UN High-level Political Forum.

Additional Information and Training on Local Risk Reduction and Resilience

United Cities and Local Governments (UCLG) partnered with the United Nations and other organizations to provide communities with online learning opportunities on practical approaches to resilience building for local, metropolitan, and regional governments. The training course can be accessed at: https://learningwith.uclg.org/p/resilient-cities-regions and covers two resilience learning modules: Module I on the Fundamentals of Resilient Governance; and Module II on Strategies and Actions for community resilience aligned with the SDGs.