Module 5:
Supporting Disaster Risk Reduction and Climate Change Adaptation at the Local Level through VLRs

Enhanced VLR Guidance Portal

for Supporting Green, Sustainable and Resilient Recovery & Transitions at the Local Level

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DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

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Who is this guide for?

- Officials of local governments & organizations who are in the process of preparing a Voluntary Local Review (or considering it)
- UN or other experts who are assisting local governments & organizations in the preparation of a VLR

What will and won't you find in this module?

- You will learn how to enhance VLRs to support disaster risk reduction and climate change adaptation at the local level, informed by existing guidance from across the UN system and its partners

- This is not a detailed guide on how to prepare a VLR

Implementing partners and authors

The implementing partners and authors of the Guidance Portal for Enhanced VLRs are:

- the United Nations Department for Economic and Social Affairs (UNDESA),
- in cooperation with the United Nations Human Settlements Programme (UN-Habitat),
- the United Nations Economic Commission for Europe (UN-ECE), and
- the World Organization of United Cities and Local Governments (UCLG).

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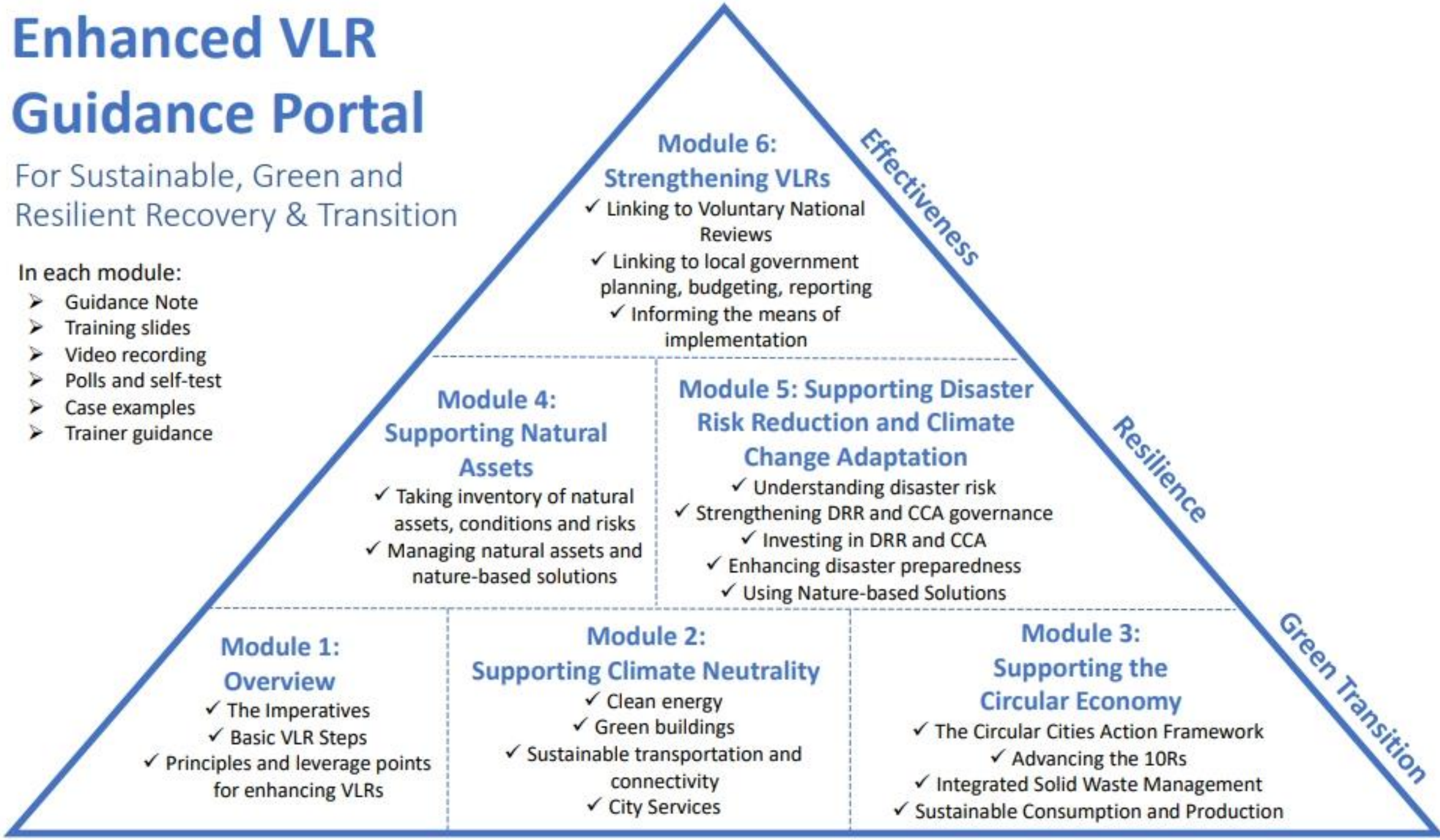
For Sustainable, Green and Resilient Recovery & Transition

In each module:

- Guidance Note
- Training slides
- Video recording
- Polls and self-test
- Case examples
- Trainer guidance



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For Sustainable, Green, and Resilient Recovery & Transitions

In each module:

- Guidance Note
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- Polls and self-test
- Good practice examples
- Trainer/Facilitator guidance

Module 5:
Supporting Disaster Risk Reduction and Climate Change Adaptation

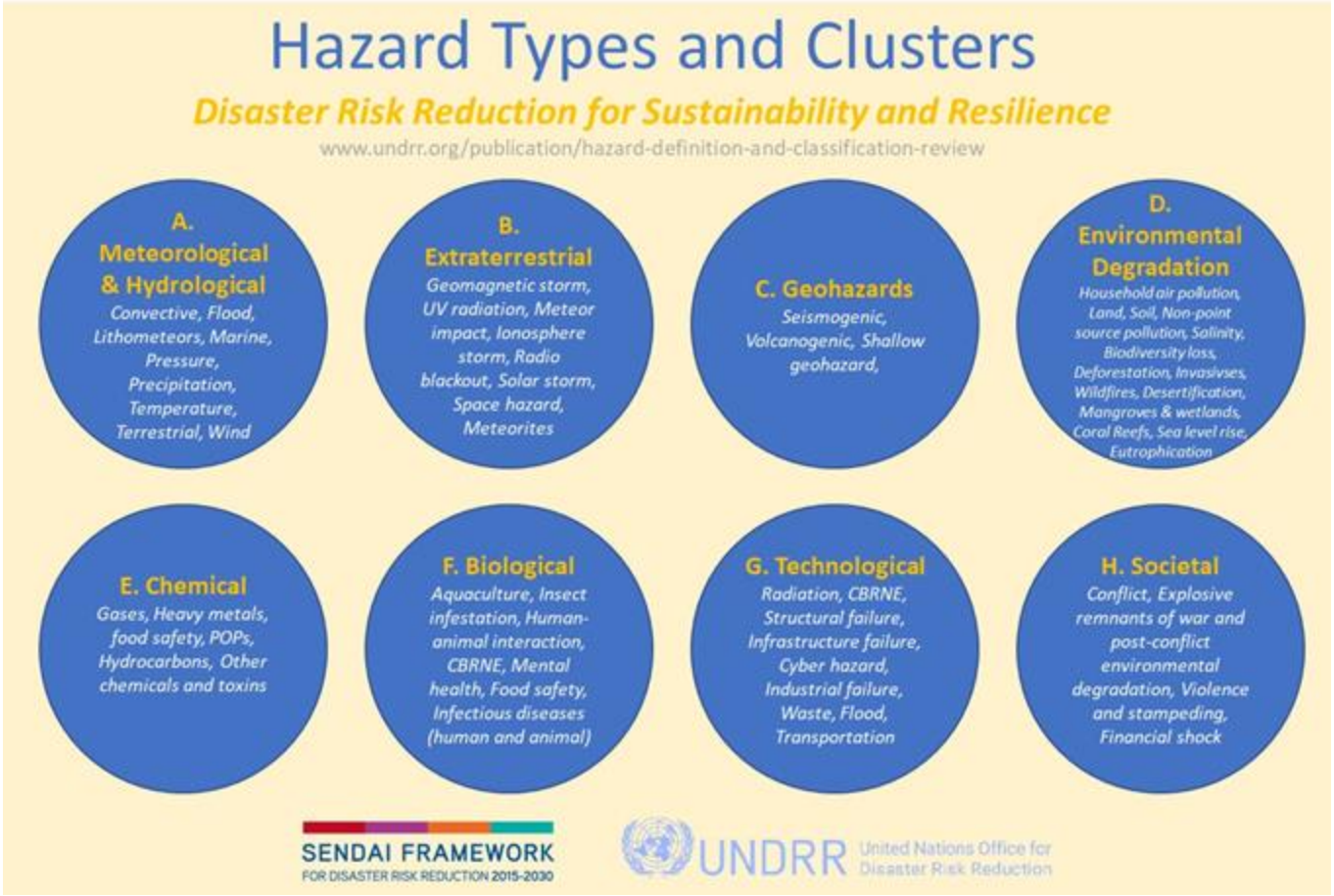
- ✓ Understanding disaster risk
- ✓ Strengthening DRR and CCA governance
- ✓ Investing in DRR and CCA
- ✓ Enhancing disaster preparedness
- ✓ Using city services

What is Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) and why are these important?

Disaster risk reduction (DRR) and climate change adaptation (CCA) are two parts of the same whole.

- Cities concentrate millions of people into locations that can be highly vulnerable to disaster and the impacts of climate change.
- Earthquakes and pandemics pose significant risk to urban settings given high population densities.
- Migrants arriving in cities from rural areas are particularly likely to end up in exposed and poorly serviced urban areas.
- Air pollution has significant impact on cities and is a major environmental cause of death worldwide.

Source: UNDP and UNEP (2021)

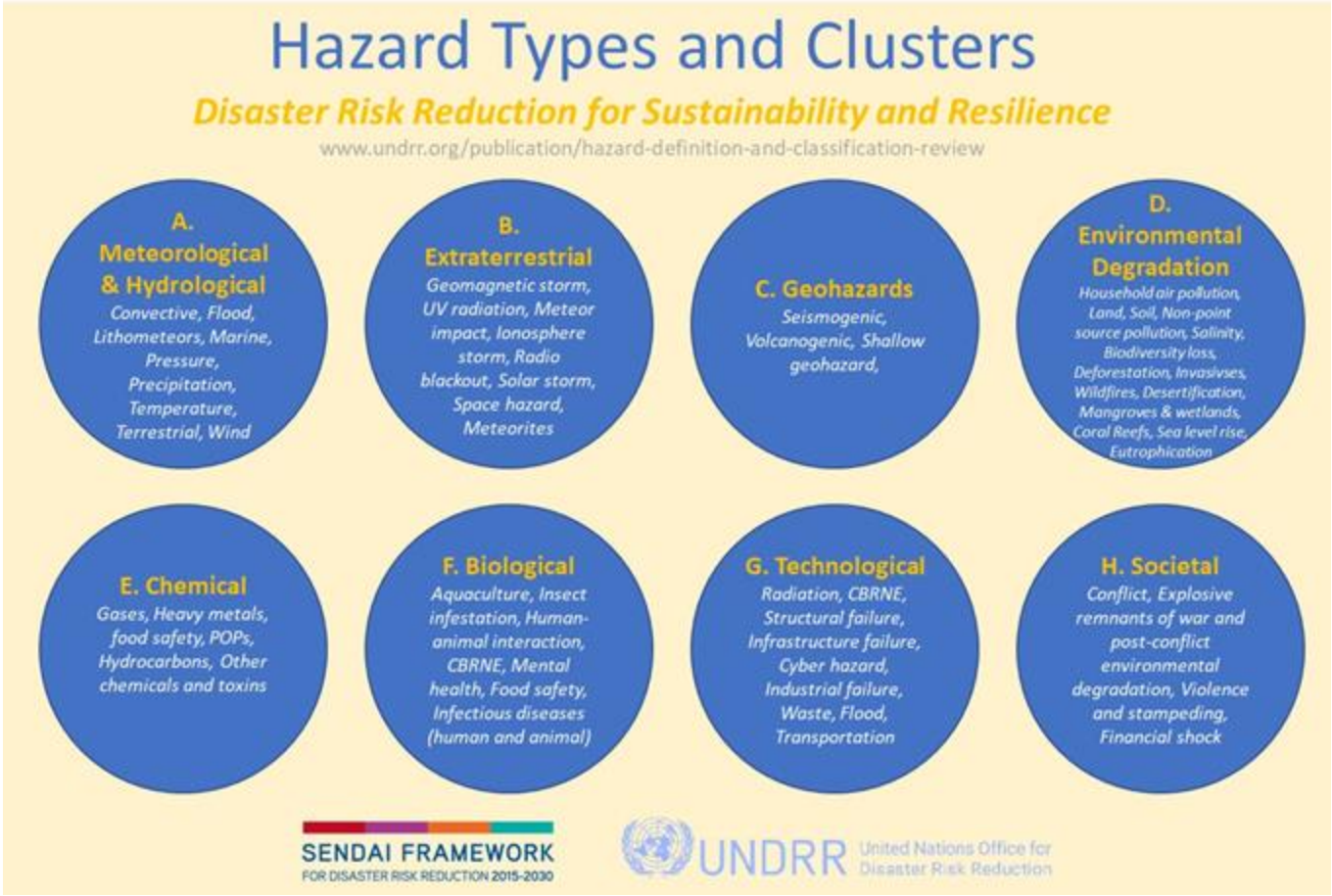


What is DRR and CCA and why are these important?

Climate change adaptation (CCA) focuses on hazards that are exacerbated or caused by climate change.

- Disasters in the form of storms, landslides and floods are growing challenges for city authorities, damaging infrastructure and disrupting city life.
- Intense rainfall events put huge strain on urban storm wastewater systems.
- Rising sea levels are increasing the exposure of coastal cities to storm surges.
- Meanwhile, droughts, which are expected to become more frequent as climate change progresses, put huge pressure on the water systems on which cities depend.

Source: UNDP and UNEP (2021)



Policy Context

SDG Target 11.5

By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

SDG Target 11.b

By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

SDG Target 13.1

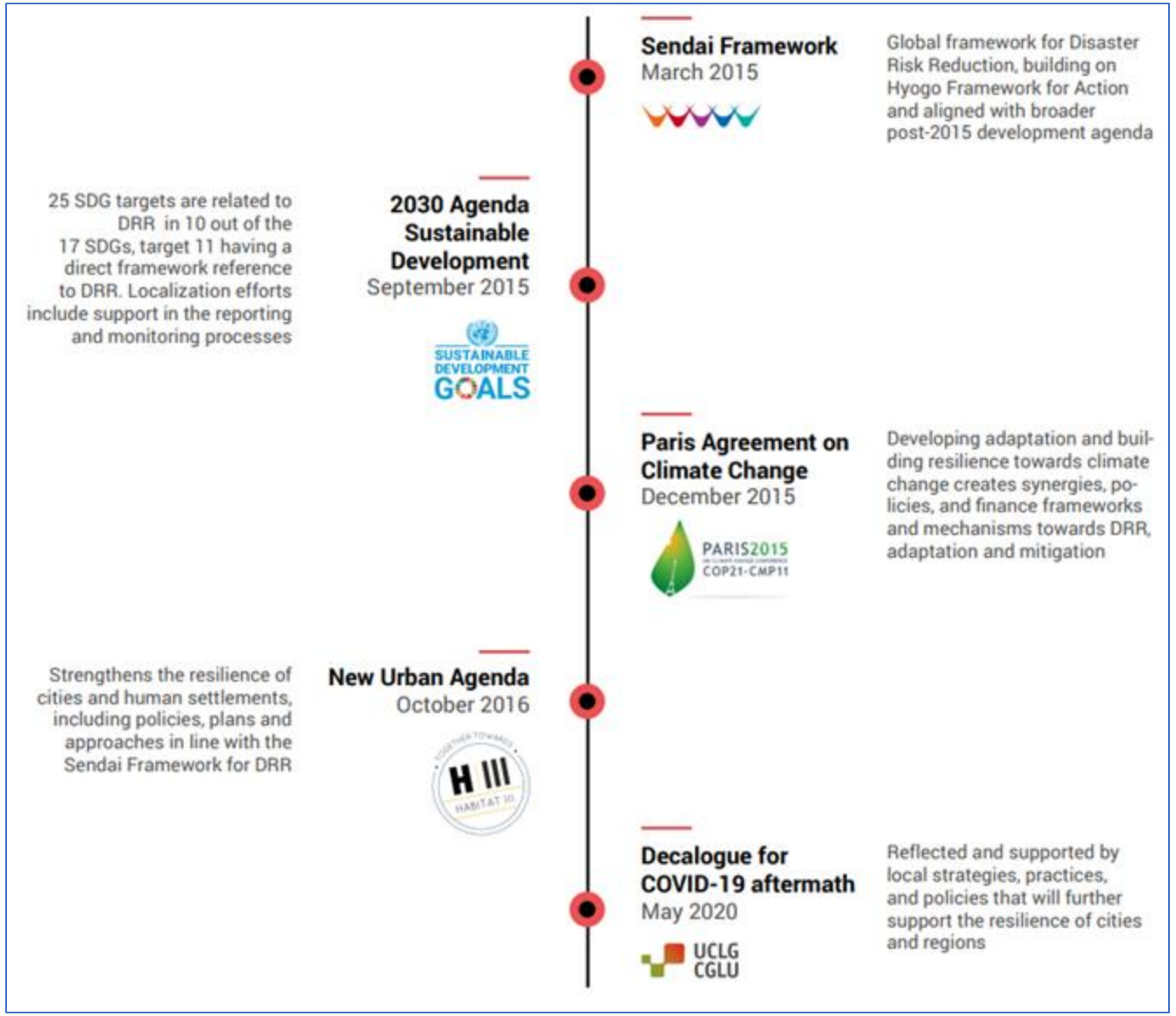
Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

SDG Target 13.3

Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Policy Context

- The COVID-19 pandemic has highlighted the importance of taking efficient preventive and risk mitigating measures and building systemic resilience in our cities.
- 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
- The Sendai Framework for Disaster Risk Reduction has direct linkages to all the other Global Agendas.



Source: (UCLG, 2020)

How can local governments support DRR and CCA?

The four priorities of the Sendai Framework provide a good framing for how governments can support Disaster Risk Reduction and Climate Change Adaptation

1. Understanding Risk

- ✓ Identify, understand and use current and future risk scenarios
- ✓ Pursue resilient urban development and design

2. Strengthening Governance

- ✓ Organize for disaster resilience
- ✓ Strengthen institutional capacity for resilience
- ✓ Understand and strengthen societal capacity for resilience

3. Investing

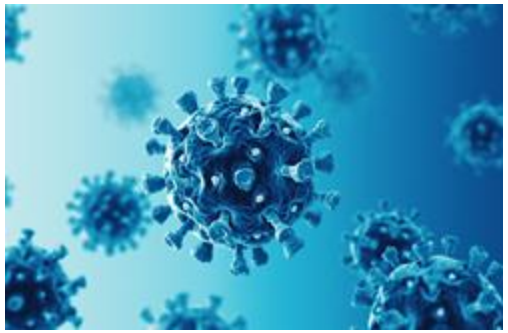
- ✓ Strengthen financial capacity for resilience
- ✓ Pursue resilient urban development and design
- ✓ Safeguard natural assets to enhance protective functions
- ✓ Increase infrastructure resilience

4. Enhancing Preparedness

- ✓ Ensure effective disaster response
- ✓ Expedite recover and build back better

Using city services …

- ✓ For multiple benefits
- ✓ Within cities
- ✓ Around cities
- ✓ Away from cities



Source: based on UNDRR (2018)

How can local governments and organizations use VLRs to support DRR and CCA?

I. Planning & Policy

A. Identify and communicate local success stories of DRR And CCA

B. Assess and identify missed opportunities for supporting DRR And CCA at the local level

C. Make coherent policy recommendations for local governments

II. Budgeting & Finance

A. Assess public budget expenditures allocated to local DRR and CCA

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

1. Understanding Risk

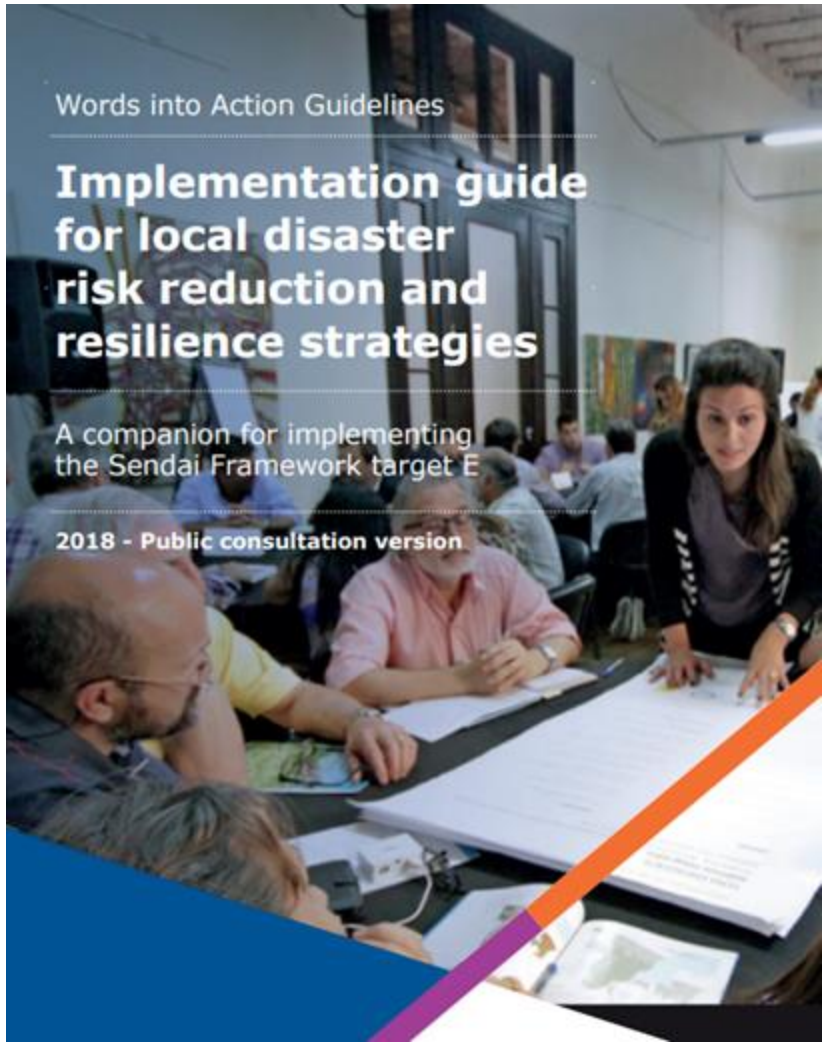
1a. Identify, understand and use current and future risk scenarios

1b. Pursue resilient urban development and design

1a. Identify, understand and use current and future risk scenarios

- ✓ Have up-to-date information on extensive and intensive risks, small and large-scale disasters, and slow and rapid onset disasters.
- ✓ 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
- ✓ 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

Source: (UNDRR, 2018)



1b. Pursue resilient urban development and design

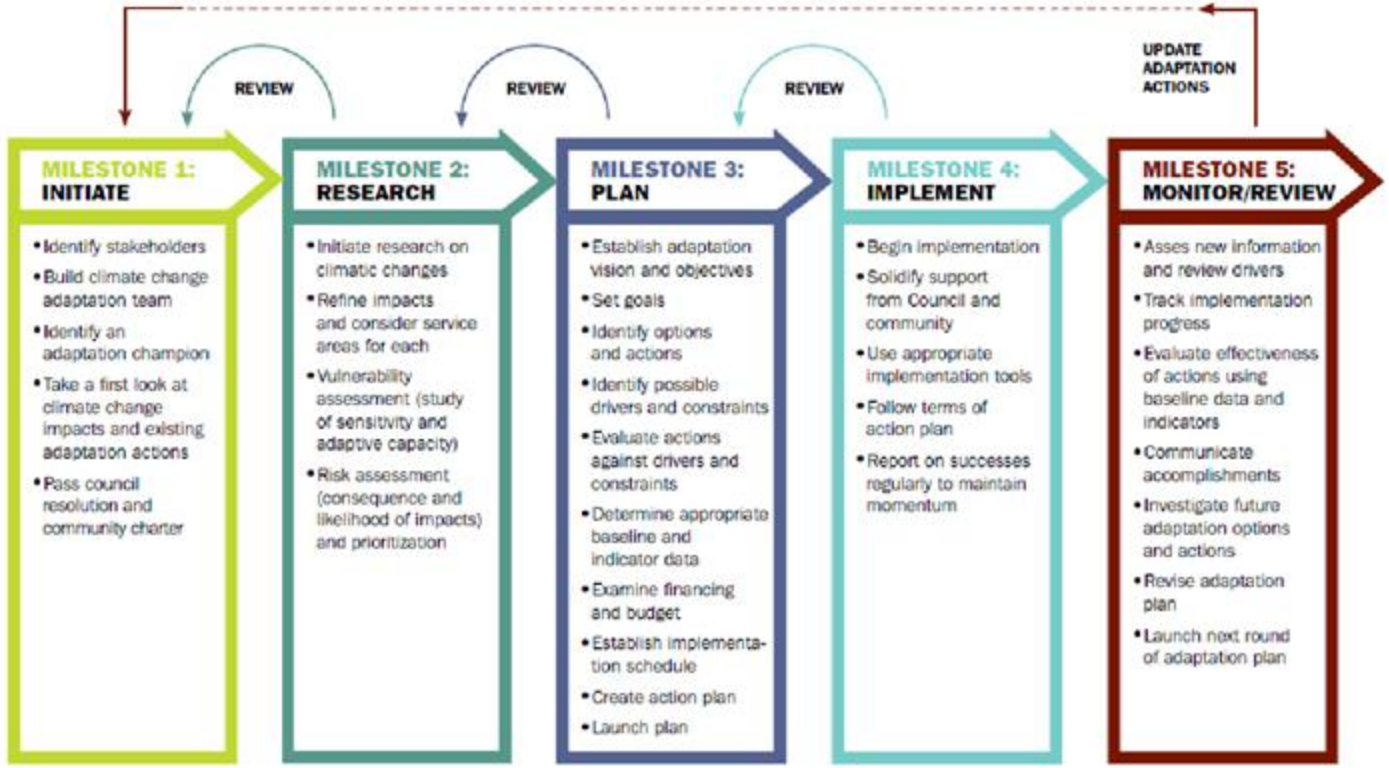
- ✓ Identify local ecosystems / natural assets and understand their role in reducing disaster impacts
  - ✓ e.g. slope stabilization, flood protection and enhancement of water quality, reduction of heat island effect, etc.)
  - ✓ contribution to climate change mitigation (within the city and the surrounding region)
- ✓ Have updated information on natural assets and their current and potential uses

Source: (UNDRR, 2018)

Case Example

Guide and Workbook for Municipal Climate Adaptation, ICLEI Canada

- Communities are preparing a 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.



Sources: https://urban-leds.org/wp-content/uploads/2019/resources/guidance_and_tools/ICLEI_Solutions-Gateway-Sourcebook.pdf

2. Strengthening Governance

2a. Organize for disaster resilience

2b. Strengthen institutional capacity for resilience

2c. Understand and strengthen societal capacity for resilience

Governance for Resilience

- Local governments play a central role in DRR and resilience building
- However, many local governments face challenges and bottlenecks that impede their efforts,
  - 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
- Local governments can develop comprehensive systems-based strategies for DRR and resilience building when armed with an understanding and analysis of the urban systems in which exposure and vulnerabilities occur.

Source: (UCLG, 2020)

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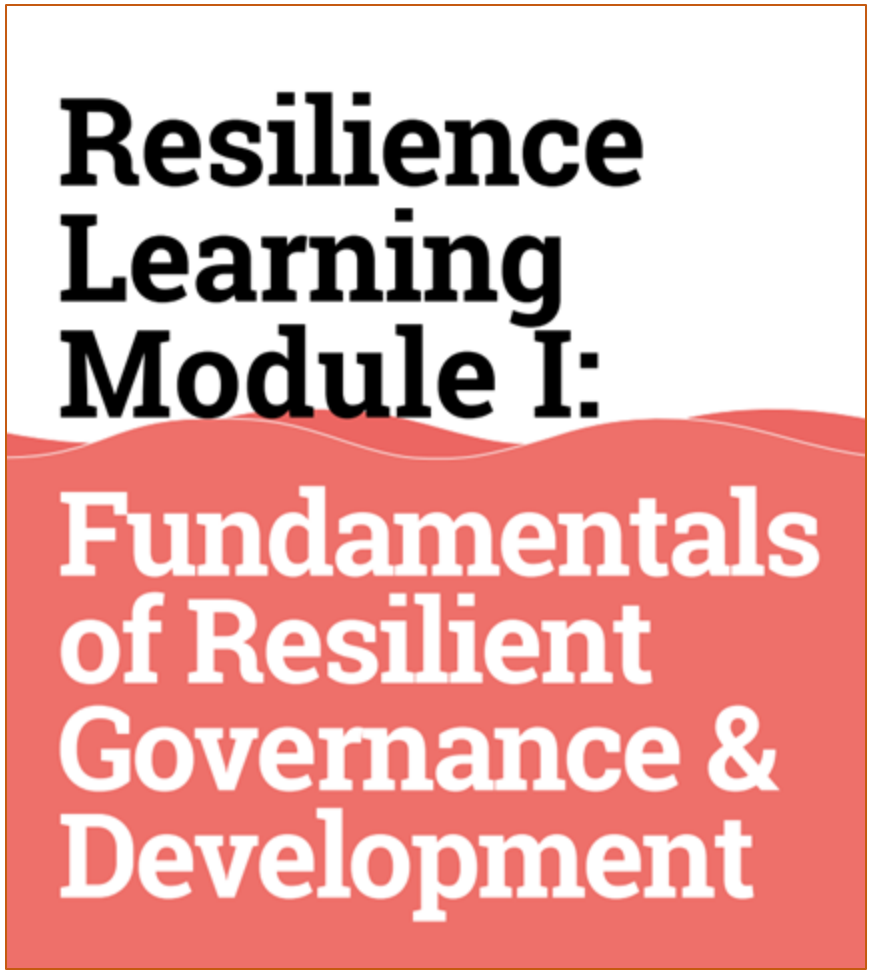
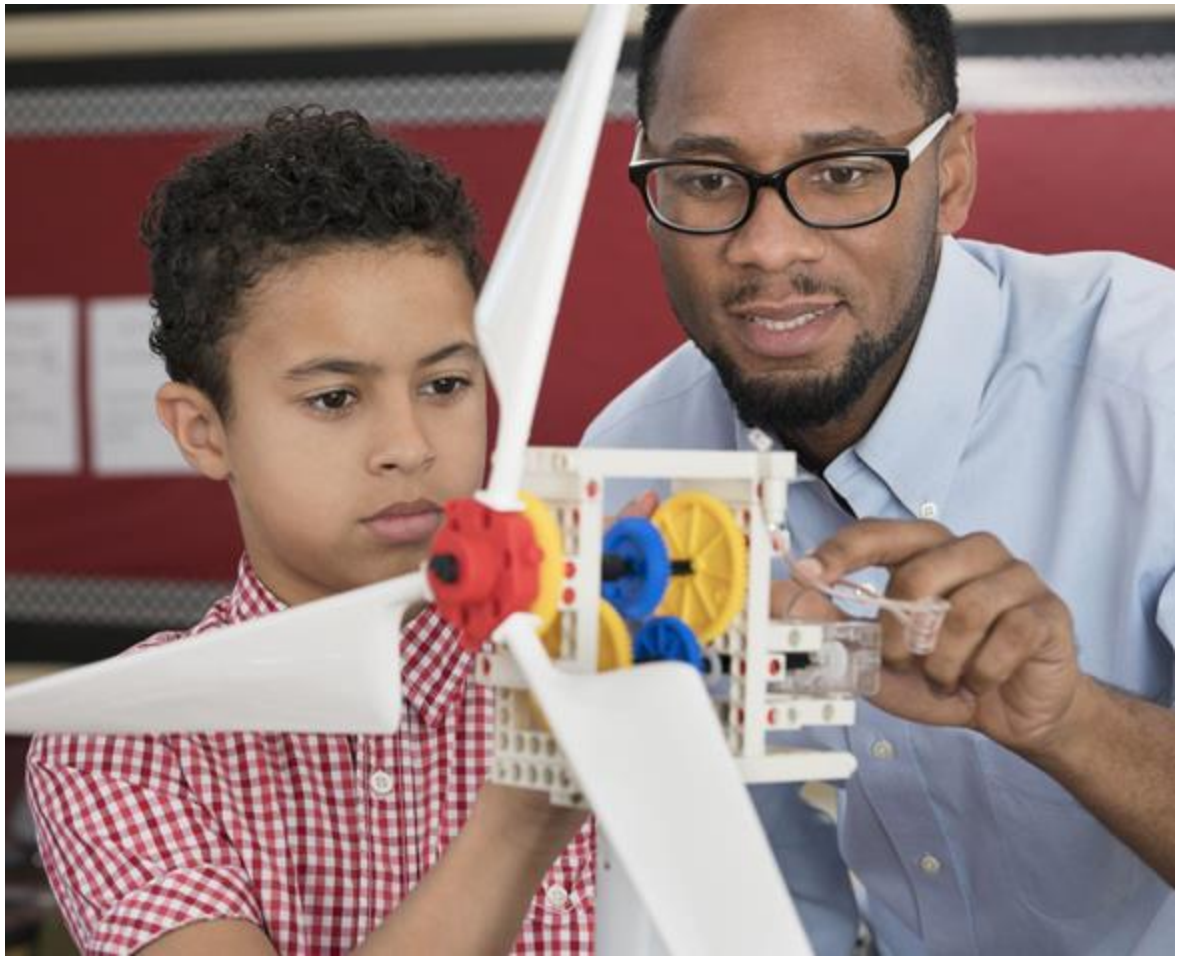


2a. Organize for disaster resilience

- ✓ Ensure disaster risk governance is a key component of the city vision and/ or strategic development plan of the city
- ✓ Discuss and agree on the levels of disaster risk that are acceptable to your city
- ✓ Establish a single point of coordination which is accepted by all actors and with strong leadership, political support and resources
- ✓ 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
- ✓ Build up alliances and collaboration processes horizontally and vertically
- ✓ Have a clear operational framework
- ✓ Approve codes and bylaws and/or revise existing ones to integrate resilience attributes
- ✓ Have in place reporting mechanisms for all stakeholders



Source: (UNDRR, 2018)

2b. Strengthen institutional capacity for resilience

- ✓ Identify local capacities among different actors and agree on division of responsibilities.
- ✓ 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
- ✓ Develop a portfolio of project proposals that address different issues which are ready to submit to different funding opportunities
- ✓ Share information and knowledge

Source: (UNDRR, 2018)

2c. Understand and strengthen societal capacity for resilience

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

Source: (UNDRR, 2018)

Case Example

Making Smart Cities Initiative, Campinas, Brazil

- Making Smart Cities is the corporate social responsibility initiative of AI Systems Research Ltda (AISR)
- 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.

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.

Source: (UNDRR, 2018); https://www.aisr.com.br/

3. Investing

3a. Strengthen financial capacity for resilience

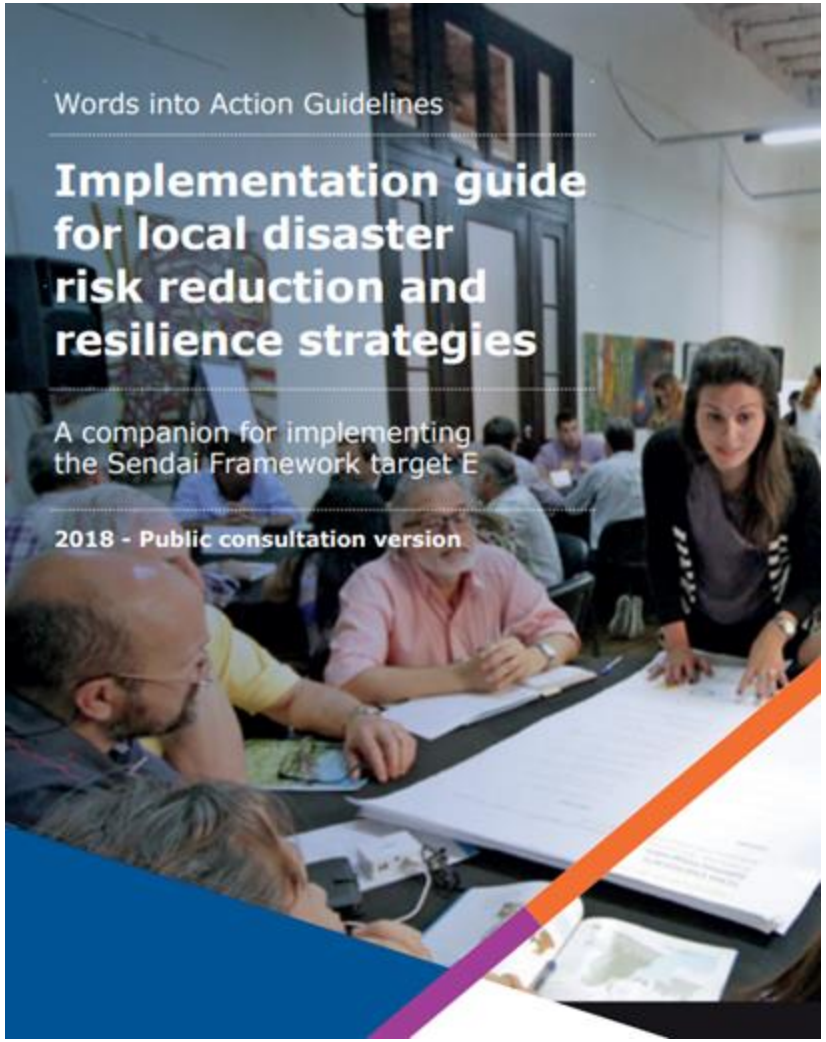
3b. Pursue resilient urban development and design

3c. Safeguard natural assets to enhance protective functions

3d. Increase infrastructure resilience

3a. Strengthen financial capacity for resilience

- ✓ 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



Source: (UNDRR, 2018)

3b. Pursue resilient urban development and design

- ✓ 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

Source: (UNDRR, 2018)

3c. Safeguard natural assets to enhance protective functions

- ✓ 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 city services 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

Source: (UNDRR, 2018)

3d. Increase infrastructure resilience

- ✓ 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

Source: (UNDRR, 2018)

Financing Sources and Instruments for DRR And CCA

- 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.
- 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.
- Necessitates that local governments align with international fiduciary principles and standards as well as acquiring project management skills to apply for and manage internationally-funded projects.

Source: (UNDRR, 2019)

Financing Sources and Instruments for DRR and CCA

There exist 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.

	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 (2023)

Case Example

Finance from 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"

Source: (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.

Source: World Bank, 2018

4. Enhancing Preparedness

4a. Ensure effective disaster response

4b. Expedite recover and build back better

Terms and Definitions

- ***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).

4a. Ensure effective disaster response

- ✓ 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

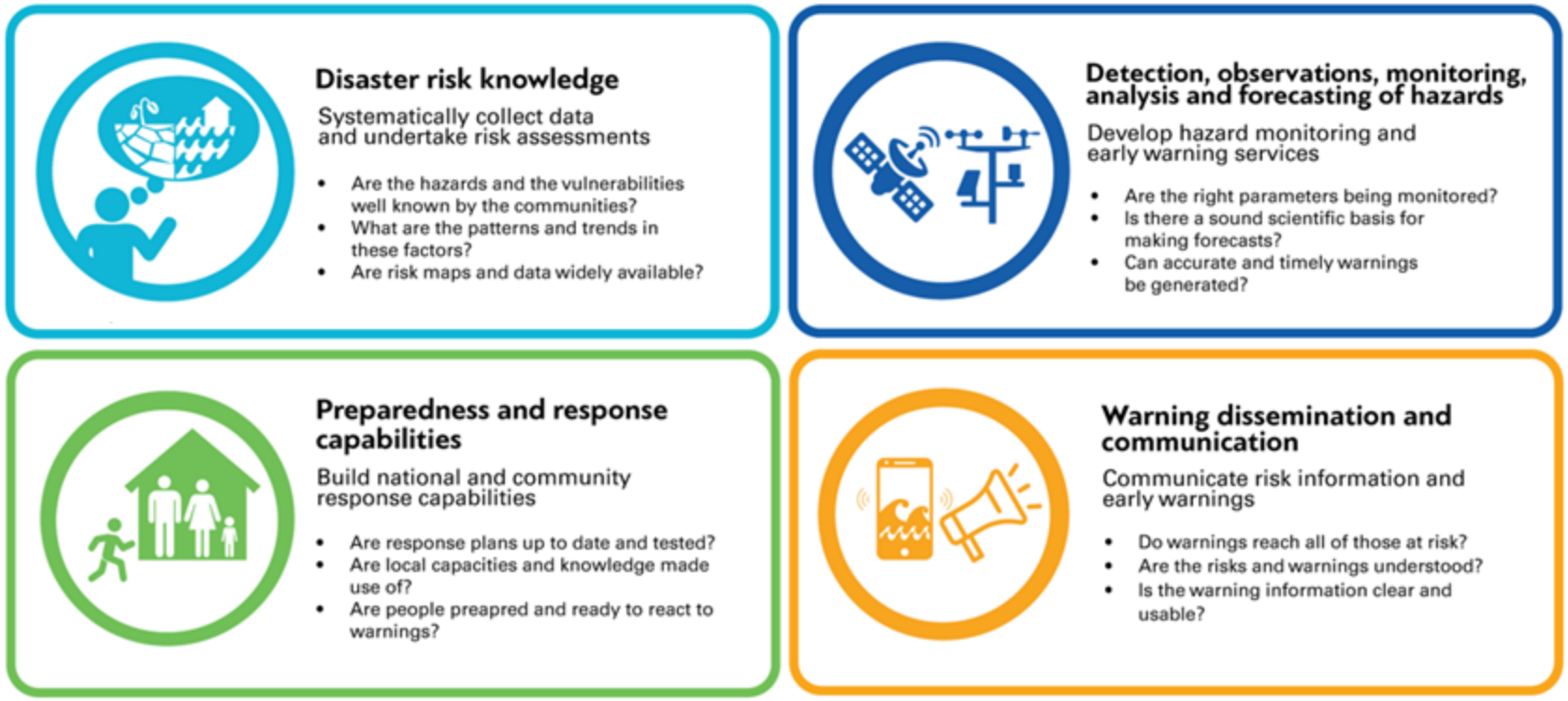
Source: (UNDRR, 2018)

Early Warning Systems for All

Early warning systems play a crucial role in helping communities prepare for and respond to disasters.

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.

Pillars of a Multi-hazard Early Warning System (MHEWS)



Source: (WMO, 2022)

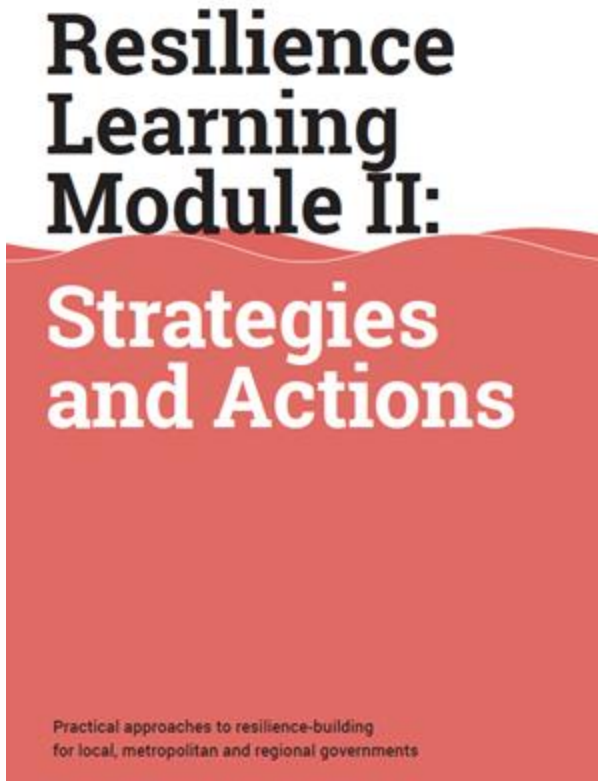
4b. Expedite recovery and build back better

- ✓ 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

Source: (UNDRR, 2018)

Build Back Better

- Effective recovery and **building back better** necessitate institutional and financial aspects as well as physical planning and citizen participation.
- The concept of "building back better" must be reinforced by local government for recovery and reconstruction before a disaster occurs.
- Requires that local governments:
    1. build back "**stronger**" to ensure socio-economic and environmental infrastructure are more resilient to future impacts;
    2. build back "**faster**" to pre-plan the what, how and when and reduce financial uncertainty and improvisation; and
    3. build back "**more inclusively**" to ensure no one is left behind.



Source: (UCLG, n.d.)

Case 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.

NYC Emergency Management

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

Using city services …

- ✓ For multiple benefits
- ✓ Within cities
- ✓ Around cities
- ✓ Away from cities

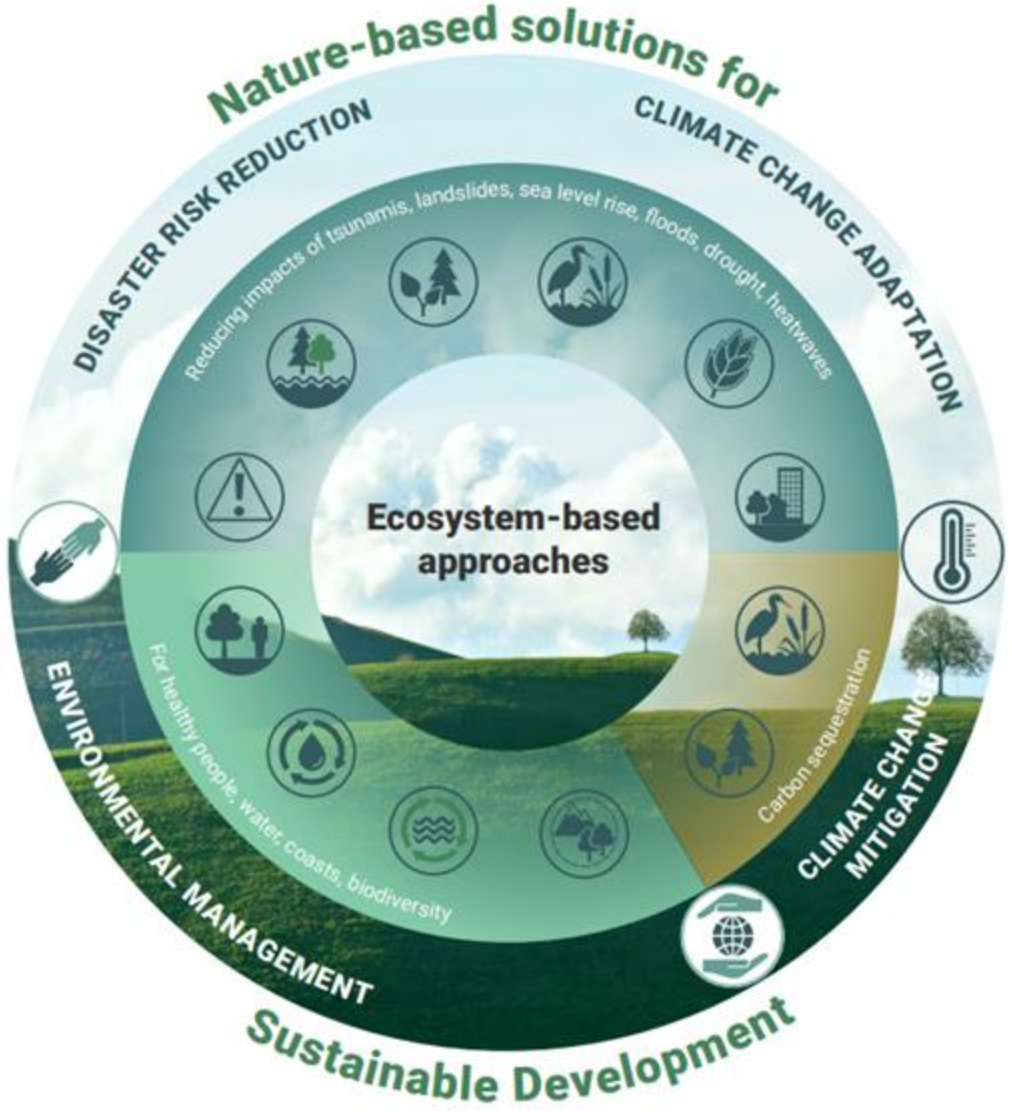
For multiple benefits

- **city services**, including natural assets and natural infrastructure, can serve as an effective complement and even a substitute for traditional built infrastructure *(OECD, 2018)*
- Well-implemented city services offer multiple benefits to communities, including (UNDP and UNEP, 2021):

  ✓ resilience and avoided losses related to floods, extreme heat, and storm surges, among others;

  ✓ economic benefits, via jobs, cheaper infrastructure, business productivity, tourism and recreation, and increased food/water supply;

  ✓ social and environmental benefits, including cleaner air and water, increased habitat for pollinators, increased property value, and reduced exposure to extreme heat.



Source: UNDRR (2021)

Within cities

- city services 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

Around cities

- city services can form part of city-region interlinkages related to watershed management, recreational spaces, wildfire management, reduction and capture of CO2, sand and dust storm reduction measures

Away from cities

- city services can be applied to the procurement of goods and infrastructure as well as built environment decisions that influence urban supply chains

Source: (UNDP and UNEP, 2021)

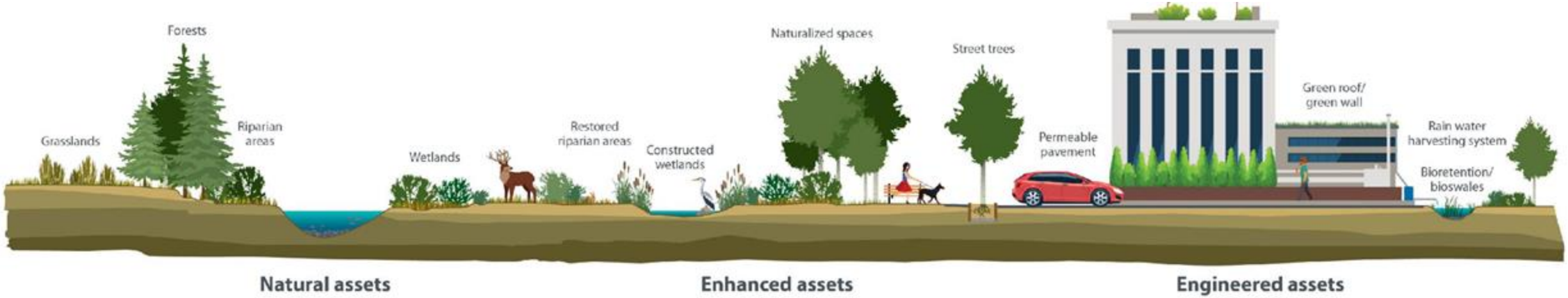
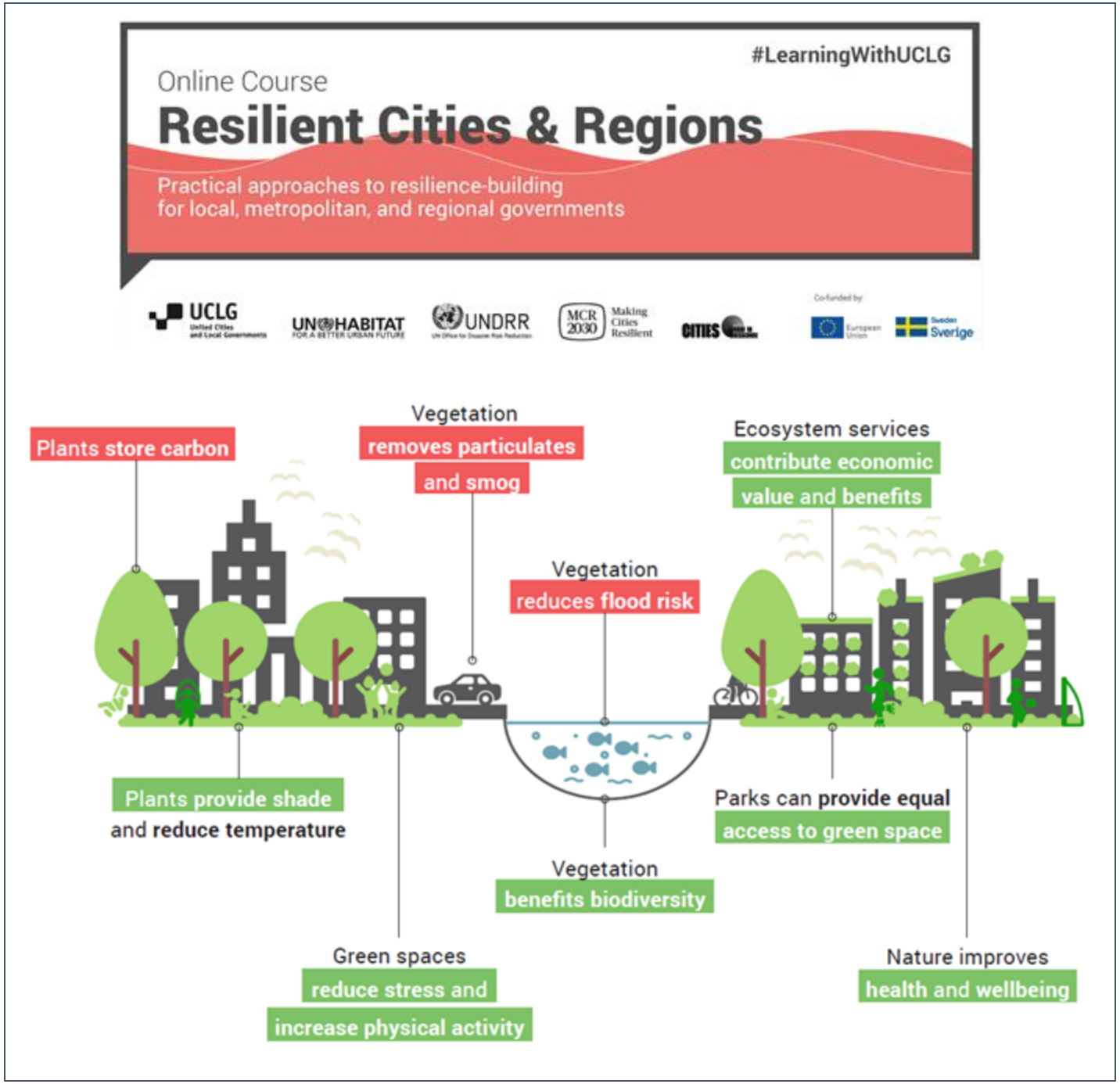


Image source: City of Calgary

Fostering regional and ecological resilience

- Ecosystems and their services not only support cities' day-to-day functions, but they can also reduce risks from hazards and the effects of climate change.
- Innovative design and planning strategies including ecosystem protection and restoration, the use of green and blue infrastructure, and changes in urban morphology, can reduce the risk from various hazards such as heat waves, floods, or landslides.



https://learningwith.uclg.org/p/resilient-cities-regions

Case Example

Sponge Cities in China

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)

How can local governments and organizations support DRR and CCA through VLRs?

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Review: How can local governments support DRR and CCA?

Four Priorities of the Sendai Framework for Disaster Risk Reduction

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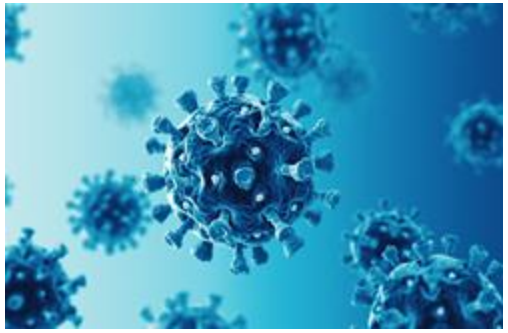
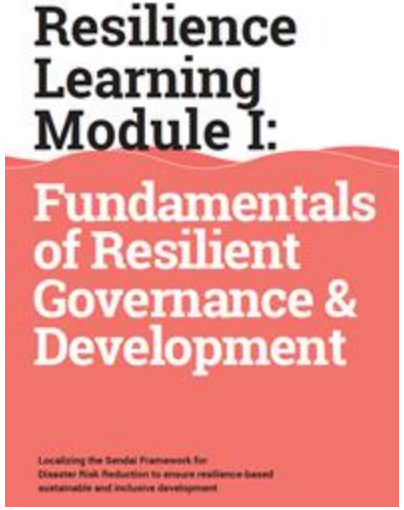
- ✓ Around cities
- ✓ Away from cities



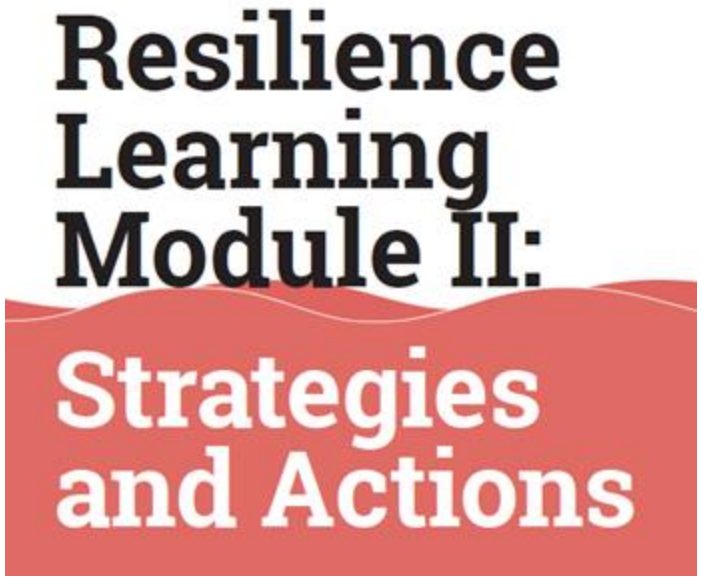
Source: based on

For formal training on these and other topics, visit the UCLG learning website:

https://learningwith.uclg.org/p/resilient-cities-regions



- **Chapter 1:** Localing the Sendai Framework to Achieve Resilient Cities and Territories
- **Chapter 2:** Fundamentals of Resilience Building for DRR and LRGs
- **Chapter 3:** Fostering an Enabling Environment through LRG Associations



- **Chapter 1:** Recognizing the context
- **Chapter 2:** Enhancing Social Resilience
- **Chapter 3:** Managing Resilient Urban Development
- **Chapter 4:** Fostering Regional and Ecological Resilience
- **Chapter 5:** Effective Response, Recovery and Build Back Better