

# SUBNATIONAL GOVERNMENTS & REGULATORS & ENFORCEMENT OFFICIALS

Who is this  
pathway for?

This pathway is tailored for subnational governments with legislative and fiscal powers (e.g. regional, state, provincial, or county-level authorities), as well as local and municipal governments, regulatory agencies, and enforcement bodies. It supports public planners, building inspectors, permitting officers, and local

climate adaptation units. It offers a roadmap for institutions tasked with implementing climate resilience strategies at the territorial and urban scale, ensuring safe, adaptive, and sustainable buildings and infrastructure for all communities.

Local and subnational governments are at the frontline of climate impacts. From extreme heat and flooding to wildfires and water scarcity, these risks are deeply place-based, demanding tailored responses rooted in local context. Municipalities and local authorities are often the first responders to crises and are responsible for infrastructure, planning, permitting, and service delivery. Adapted buildings reduce health risks, disruption to services, emergency costs, and community displacement. They also protect critical facilities and foster economic continuity. Subnational governments, with broader regulatory or financial authority, have the power to shape planning frameworks and support the scale-up of local solutions. Together, **these actors bridge national ambitions and community needs**, ensuring adaptation is implemented where it matters most. Their actions unlock resilience for millions. But they face challenges: limited budgets, siloed responsibilities, and lack of technical capacity. The pathway helps navigate these realities with realistic, staged actions and shared responsibilities.

## Lead place-based adaptation while overcoming fragmented mandates and capacity gaps.

While some cities and regions have begun integrating climate risk into planning, most subnational and local governments still rely on reactive, fragmented approaches. In the short term, they must build capacity, assess risks, and integrate adaptation into permitting. Medium term, coordination with utilities, builders, and national governments becomes key. Long term, these actors must govern resilient development systemically—supported by clear mandates, adequate resources, and empowered regulatory tools.

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## Short-Term Actions

| Actions   | Resources & case studies   | KPIs  |
|---|--|---|
| Institutionalize Resilience Competencies within Local Governments | <a href="#">Local Government Climate Adaptation Training</a> by US EPA                     | Number of internal technical workshops or peer learning events organized per year   |
| Empower local authorities to prioritize local needs               | <a href="#">Local Climate Adaptive Living Facility</a> (LoCAL) by UNCDF                    | Number of policy reforms proposed or implemented at municipal level within a subnational authority's jurisdiction to integrate adaptation |
| Map Local Vulnerabilities and Update Risk Management              | <a href="#">Resilient Florida program</a>  | Frequency of updates to local risk maps and inventories (in years)  |
| Incentivize And Strengthen Capacity For Renovation And Retrofit   | <a href="#">Guidelines for Creating Community-Driven Building Retrofit Programs</a> by C40 | Uptake rate (% of eligible projects benefiting from local incentives)   |

## Medium-Term Actions

| Actions  | Resources & case studies   | KPIs   |
|--|--|--|
| Reform Local Urban Planning Frameworks for Resilient Development             | UN-Habitat's <a href="#">International Guidelines on Urban and Territorial Planning</a>            | % of new permits including resilience or sustainability clauses          |
| Build Institutional Capacity for Climate Enforcement and Adaptation Planning | <a href="#">How to make cities more resilient: a handbook for local government leaders</a> (UNDRR) | Decline in violations of zoning, code, or environmental resilience rules |
| Develop Non-Monetary Incentives to Encourage Resilience                      | Chicago <a href="#">Green Roof Grant &amp; Permit Streamlining Programme</a>                       | Number of projects benefiting from non-monetary incentives annually      |

## Long-Term Actions

| Actions   | Resources & case studies  | KPIs  |
|---|---|---|
| Develop Local Adaptation and Climate Risk Management Plans                      | UNDRR <a href="#">Disaster Resilience Scorecard for Cities</a>  | % of municipal budgets allocated to adaptation measures                         |
| Create Collaborative Governance Structures with Civil Society and Local Experts | <a href="#">Help Them Help Themselves: A Toolkit to Facilitate Transformative Community Based Climate Change Adaptation</a> | % of projects including public consultations and number of stakeholders engaged |
| Deliver Targeted Public Awareness and Outreach Campaigns                        | WRI's <a href="#">Locally Led Adaptation</a>  | % of population reached through communication campaigns                         |
| Link Climate Resilience with Urbanization Efforts                               | C40 Cities' <a href="#">Integrating Climate Adaptation toolkit</a>  | Inclusion of climate adaptation criteria in municipal procurement guidelines    |



## Short-term actions

# Institutionalize Resilience Competencies within Local Governments

**Goal:** Ensure subnational governments can design and enforce locally relevant resilience strategies.

**Description:** Invest in training staff on adaptation challenges and solutions, updating local hazard maps and plans, and building territorial engineering expertise. Establish technical partnerships with academia, national agencies, professional bodies, and local tradespeople and experts to provide the know-how needed for resilient planning and enforcement.

- The paper [SDGs in Global South Cities for Building Resilience to Climate Change](#) offers reflections on urban and building contexts in the Global South. It addresses how adaptation must consider systemic urban, social, institutional constraints.
- [Capacity-building on climate change adaptation](#) (Climate-ADAPT, EEA) explains what capacity-building means for sub-national governments (training, tools, networks). Useful for local/regional authorities creating staff training programmes on adaptation.
- A [practical toolkit for local authorities](#) by Local Partnerships (UK) to run through climate risk, vulnerability and adaptation planning. Helps build local technical capacity, hazard mapping etc.
- [Local Government Climate Adaptation Training](#) by US EPA provides self-guided modules for local governments on adaptation to a range of hazards (heat, flooding, drought). Good for sub-national staff training.
- User-friendly [guide](#) created by the US Federal Emergency Management Agency (FEMA) to help local governments build capacity to create resilient communities.

### INPUT INDICATORS

Measure the resources required to deliver

- % of staff trained on climate adaptation, resilience, or risk management
- Budget allocated annually to resilience training, hazard mapping, and technical partnerships
- Number of partnerships or MoUs with universities, national agencies, or technical institutes

### LEADING INDICATORS

Looks forward at future outcomes and events

- Frequency of hazard map updates (years since last revision)
- Number of internal technical workshops or peer learning events organized per year
- Establishment of a cross-departmental resilience taskforce, focal point or Chief Resilience Officer and number of initiatives undertaken per year

### LAGGING INDICATORS

Looks back at whether the intended result was achieved

- When updated, risk maps and resilience data are integrated into urban plans or permitting systems
- Improvement in building compliance rates for resilience-related codes
- Reduction in damages or disruptions from climate events in municipal reports

Action 1

Resources

KPIs

# Empower local authorities to prioritize local needs

**Goal:** Empower local governments to lead adaptation.

**Description:** Subnational governments grant municipalities the authority to revise planning rules, enforce adaptation standards, and run local initiatives. Local governments demonstrate administrative readiness while engaging with national policymakers to ensure adequate financing and credit eligibility.

Action 2

- One UN Climate Change Learning Partnership (UN CC:Learn) provides a [course on adaptation to climate change for civil servants](#).
- The Brookings Institution's [Rethinking our assumptions and financing tools for community resilience in the face of growing climate risk](#) highlights how financing and networks need to shift for resilience programs to scale and provide examples of locally led funding mechanisms by local authorities
- [Local Climate Adaptive Living Facility \(LoCAL\)](#) by the United Nations Capital Development Fund (UNCDF) is a mechanism designed to assist local governments (especially in Global South) access climate finance, build capacity and implement adaptation. Useful for sub-national authorities seeking finance and local mandate.
- The United Nations Department of Economic and Social Affairs (UNDESA) [Handbook on Effective National to Local Governance for Climate Change Mitigation and Adaptation](#) provides guidance on how national and subnational roles can be aligned and how local governments can be empowered. This can support local authorities negotiating for devolution of power.
- Virginia (U.S.) [community resilience planning](#) helps enabling localities to make the best decisions to design and improve buildings and infrastructure for climate resilience
- A [case study](#) of an Australian community that relocated due to flood risk
- A [case study](#) of an Alaskan (U.S.) village that relocated due to sea level rise and permafrost melt that resulted in more serious hazard conditions
- City of Cape Town (South Africa)'s [resilience strategy](#) includes lobbying the national government for the creation of regional independent power producers (IPPs), and preparing for the likelihood of being able to procure directly from IPPs

**INPUT INDICATORS**

Measure the resources required to deliver

- Existence of a transparent mechanism put into place by subnational governments to help smaller municipalities to access funding from all levels (subnational, national, international)

**LEADING INDICATORS**

Looks forward at future outcomes and events

- Number of policy reforms proposed or implemented at municipal level within a subnational authority's jurisdiction to integrate adaptation
- Number of financing partnerships or co-financed projects with national or international institutions at municipal levels within a subnational authority's jurisdiction
- Establishment of a local resilience or climate finance office

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Increase in number of implemented resilience projects financed through local decision-making
- Share of adaptation initiatives funded through municipal revenues at subnational level (vs. subnational or national revenues)
- Positive performance in national or regional audits on financial and administrative management

## Map Local Vulnerabilities and Update Risk Management

**Goal:** Identify and manage climate-sensitive assets and critical infrastructures within the subnational authority's jurisdiction.

**Description:** Subnational governments should systematically map vulnerabilities across their territory, including critical infrastructure such as substations in flood-prone areas, water supply systems, transportation hubs, and public facilities. Based on this mapping, they must revise emergency protocols, load-shedding priorities, and recovery plans to reflect evolving climate risks. This ensures that local authorities can anticipate disruptions, minimize cascading failures, and protect vulnerable populations during climate-exacerbated events.

To achieve this, subnational authorities will need to invest in risk mapping and integration of operational data from utility companies for instance, and to pilot downscaling climate data and probabilistic risk scenarios with research and national bodies. By combining localized assessments with technical data, municipalities can make risk management more targeted, credible, and actionable.

- This [article](#) in the magazine of the National Council of Structural Engineers Associations describes how local governments map vulnerabilities (existing building stock, hazard exposure) and then enforce retrofit/upgrade programmes
- [Resilient Florida](#) program conducts an annual statewide assessment of risk levels related to heavy rain/winds and sea level rise for municipalities/localities across the state and issues grants to local jurisdictions for adaptation projects
- The International Code Council (ICC) has resources for regions with wildfire and bushfire risk, including a model [Wildland-Urban Interface Code](#), to apply to localized areas that face a heightened threat.
- US Federal Emergency Management Agency (FEMA) [resource](#) for local flood mapping for subnational governments and local jurisdictions to use for assessing and mitigating flood risk
- [Case studies](#) of local jurisdictions that have improved resilience to flooding by accessing FEMA’s Community Rating System
- [Climate Risk & Vulnerability Assessment in Informal Settlements](#) (Land, 2024). While focused on informal settlements in the Global South, this paper published in Land, offers important lessons on hazard exposure and vulnerability assessment in contexts with limited data.
- [Global Resiliency Dialogue](#) organized by code and research organizations in Canada, Australia, New Zealand and the U.S. to provide guidance on incorporating future focused risks in design requirements. Developed the Global Resiliency Guidelines.

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Existence of a completed local vulnerability and infrastructure risk assessment

**LEADING INDICATORS**

Looks forward at future outcomes and events

- Ratio of vulnerabilities identified to vulnerabilities addressed through mandatory resilience regulations
- Frequency of updates to local risk maps and inventories (in years)

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Number of climate-related service disruptions recorded annually

KPIs

## Incentivize And Strengthen Capacity For Renovation And Retrofit

**Goal:** Scale up renovation and retrofitting to improve the resilience of existing building stock.

**Description:** Subnational governments should develop programs that both enhance local renovation capacity and lower financial barriers to retrofits. This involves training local construction actors in resilience-focused renovation techniques, supporting supply chains for adaptive materials, and integrating resilience criteria into building permits and inspections.

To make retrofits financially feasible, local authorities should partner with national governments, banks, and utilities to

offer subsidies, rebates, low-interest loans, or tax incentives. Building owners and managers, in turn, must apply for these programs and integrate resilience upgrades into planned renovations.

By combining capacity-building with targeted financial incentives, subnational governments can accelerate the adaptation of vulnerable assets, reduce future damages, and create local economic opportunities in the construction sector.

Action 4

- The Brookings Institution’s [Rethinking our assumptions and financing tools for community resilience in the face of growing climate risk](#) highlights how financing and networks need to shift for resilience programs to scale
- The [Guidelines for Creating Community-Driven Building Retrofit Programs](#) by C40 Cities directly addresses how local governments can develop retrofit programmes, build local capacity, and provide incentives for renovation.

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Number of local subsidy or loan programs for adaptation retrofits

**LEADING INDICATORS**

Looks forward at future outcomes and events

- Uptake rate (% of eligible projects benefiting from local incentives)

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Reduction in post-disaster recovery costs and downtime

KPIs

## Medium-term actions

### Reform Local Urban Planning Frameworks for Resilient Development

**Goal:** Adapt zoning codes, land-use planning regulations, and local rules (including building codes - if adopted locally - and HOA bylaws) to promote climate-resilient construction and land development.

**Description:** Local governments play a pivotal role in shaping urban form. Reforming urban planning and zoning regulations to limit development in risky areas and integrate resilience (e.g. allowing for elevated structures, green buffers, water retention areas) is essential. This includes reviewing and modernizing building codes, density rules, and design guidelines to reflect updated climate risk assessments. Doing so enables developers and homeowners to build or retrofit in ways that reduce long-term exposure and vulnerability.

- While focused on recovery, American Planning Association (APA)’s [Planning for Post-Disaster Recovery: Next Generation](#) includes how planning codes and zoning should anticipate future hazard risks, which local authorities can adapt. It also comes with multiple briefing papers on specific topics.
- UN-Habitat’s [International Guidelines on Urban and Territorial Planning](#), though old (2015), is still the reference document, available in multiple languages.
- [Chapter 10](#) of UN Habitat’s [World Cities Report 2022](#) is dedicated to Building Resilience for Sustainable Urban Futures and offers guidance to local governments on how to integrate climate resilience into zoning, land-use plans and design guidelines.
- [Urban Heat Island Mitigation Strategies](#) is Institut national de santé publique du Québec’s comprehensive review of existing measures and reports on certain studies that have tested their efficacy in terms of cooling.
- This [research paper](#) (Urban Climate, 2025) reviews planning and design solutions to reduce heat stress in urban contexts.
- A [case study](#) of the City of Durban (South Africa) demonstrates how a local government in the Global South revised land-use planning to incorporate flood risk, sea-level rise and informal settlement upgrades.
- The Netherlands’ [Room for the River](#) initiative shows how national, regional and municipal governments work together to manage river floods and adapt wide territories to future climate risks through local action.
- [City-To-City Learning for Urban Resilience: The Case of Water Squares in Rotterdam and Mexico City](#) (Water, 2019) presents an analysis of how policy relevant knowledge on the notion of ‘Water Squares’ is exchanged between Rotterdam and Mexico City

Action 1

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Local planning or zoning documents updated to include climate resilience criteria
- Frequency of updates to land use and building code requirements.

**LEADING INDICATORS**

Looks forward at future outcomes and events

- % of new permits including resilience or sustainability clauses

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Decrease in exposure of new construction to high-risk zones

KPIs

## Build Institutional Capacity for Climate Enforcement and Adaptation Planning

**Goal:** Equip municipalities with the authority, technical expertise, and staffing to ensure compliance with resilience standards and effectively plan for climate risks.

**Description:** Many local governments lack the institutional structures and/or enforcement capacity necessary to implement, monitor, and uphold climate adaptation measures. Building this capacity involves not just creating new departments or teams, but also training civil servants, inspectors, and enforcement officers (including building and urban police) on climate-related risks and resilience codes, and securing permanent funding. It also includes empowering local governments to investigate urban planning violations, ensuring that adaptation measures are respected.

- Developed by UNDRR, this [handbook](#) provides local government leaders with a structured framework for reducing risks and showcases successful tools and practices used across cities globally.
- ICLEI Local Governments for Sustainability's Governance & Institutional [Toolkit for Climate Resilient Urban Development](#) focuses on structural capacity, financing, staffing, enforcement mechanisms
- Case study of the [City of Melbourne](#), and the [Greater Melbourne Regional Climate Change Adaptation Strategy](#) (Australia): example where the local authority built internal capacity, established monitoring teams and adapted enforcement systems for resilience.
- This [learning paper](#) on institutional capacity for climate resilience explores how to strengthen institutions' ability to understand and address the development impacts of climate change. Drawing on practical lessons from the Action on Climate Today (ACT) programme, it introduces a capabilities framework to guide efforts aiming to mainstream adaptation across diverse contexts.
- This US EPA [article](#) provides answers to commonly perceived barriers to Green Infrastructures

Action 2

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Number of inspectors or enforcement officials trained in resilience standards

**LEADING INDICATORS**

Looks forward at future outcomes and events

- % of construction projects audited for compliance with resilience codes

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Decline in violations of zoning, code, or environmental resilience rules

KPIs

# Develop Non-Monetary Incentives to Encourage Resilience

**Goal:** Use regulatory and administrative levers such as expedited permitting, to promote climate-resilient building and renovation practices.

**Description:** Where budgets are limited, non-financial levers can be powerful. Local authorities can incentivize resilient construction by streamlining permits for adaptive design, offering zoning variances for green roofs or flood mitigation, or recognizing resilient projects through local labeling programs. These mechanisms create low-cost incentives and reduce barriers for stakeholders who want to invest in resilience.

- UNDRR’s [Handbook for Local Government Leaders](#) equips local authorities with a clear roadmap for reducing climate and disaster risks, drawing on real-world examples and practical tools already applied in cities around the world.
- These US EPA’s [guidelines](#) show how local authorities use administrative tools and regulatory levers to promote resilient practices. These can be adapted for resilience in building retrofits and new builds.
- Case study: [Chicago Green Roof Grant & Permit Streamlining Programme](#). A concrete example of non-financial incentive (streamlined permits + recognition) to promote resilient building features (green roofs) which local governments can replicate.
- The City of Cape Town (South Africa)’s [Resilience Strategy](#) emphasizes enabling zoning regulations that support the creation of informal activity hubs to allow not only survival activities but also stable enterprises and to recover quickly from disruptions

## INPUT INDICATORS

Measure the resources required to deliver

- Existence of municipal guidance or framework for resilience incentives (e.g., expedited permitting, zoning variances)
- Number of staff trained to assess climate-resilient projects for permitting
- Number of local partnerships established with developers, chambers of commerce, or builders’ associations

## LEADING INDICATORS

Looks forward at future outcomes and events

- Number of projects benefiting from non-monetary incentives annually
- Average permit approval time reduction for adaptive projects
- Number of public awareness or labeling campaigns promoting resilience-friendly construction

## LAGGING INDICATORS

Looks back at whether the intended result was achieved

- Increase in share of building permits granted for resilience-integrated projects
- Reduction in average reconstruction or retrofit costs after climate events
- Positive feedback from developers or citizens on transparency and predictability of the permitting process

Action 3

Resources

KPIs

## Long-term actions

# Develop Local Adaptation and Climate Risk Management Plans

**Goal:** Formalize comprehensive local strategies that integrate climate resilience into planning and budgetary processes.

**Description:** Once institutional capacity, enabling regulations, and technical knowledge are in place, municipalities and regions should create formal adaptation and climate risk management plans. These plans should align with national adaptation plans and decarbonation goals, local urban planning documents, zoning regulations, and budget cycles, ensuring resilience is not treated as an add-on but as a core

element of territorial development.

Plans should set clear objectives across housing, infrastructure, and public services, while providing pathways for collaboration with private actors, utilities, and communities. They must be regularly updated to reflect new scientific data, hazard assessments, changing conditions, and lessons from implementation.

- U.S. National Institute of Standards and Technology (NIST) [Community Resilience Planning Guide](#)
- The [Climate-Proof Integrated Urban Planning Toolbox](#), initially developed by UKCIP and refined by Local Partnerships is a comprehensive guide and tool for local authorities on how to develop adaptation strategies, use risk assessment, and update plans.
- [Urban climate adaptation and mitigation action plans: A critical review](#) provides insights into how local governments are developing adaptation and mitigation planning frameworks and how they align with buildings and infrastructure.
- [Climate Risk & Vulnerability Assessment in Informal Settlements](#) (Land, 2024): while focused on informal

settlements in the Global South, this paper published in Land, offers important lessons on hazard exposure and vulnerability assessment in contexts with limited data.

- UNDRR [Disaster Resilience Scorecard for Cities](#) provides an assessment that allows local governments to assess their disaster resilience, structuring around UNDRR's [Ten Essentials for Making Cities Resilient](#). It also helps to monitor and review progress and challenges in the implementation of the [Sendai Framework for Disaster Risk Reduction: 2015-2030](#) and supports the baseline analysis for preparation of the disaster risk reduction and resilience strategies

### INPUT INDICATORS

Measure the resources required to deliver

- Formal adaptation and risk management plans adopted by council

### LEADING INDICATORS

Looks forward at future outcomes and events

- % of municipal budgets allocated to adaptation measures

### LAGGING INDICATORS

Looks back at whether the intended result was achieved

- Improved local resilience or climate preparedness index

# Create Collaborative Governance Structures with Civil Society and Local Experts

**Goal:** Establish participatory processes involving citizens, civil society, local professionals, and engineers to co-design adaptation priorities.

**Description:** Inclusive governance strengthens legitimacy and ensures that local adaptation solutions reflect lived experiences. Territorial engineering teams can serve as conveners and facilitators. Communities are not just beneficiaries of adaptation policies: they are gatekeepers of local knowledge and critical actors in ensuring accountability. Their ongoing participation enables real-time feedback on policy implementation, early identification of challenges, and

culturally grounded validation of proposed solutions. When empowered through transparent governance structures, community members and civil society organizations can monitor progress, challenge inefficiencies, and hold institutions accountable for equitable and effective delivery of adaptation interventions. This strengthens not only outcomes but also public trust in the adaptation process.

Action 1

Resources

KPIs

Action 2

- The [Help Them Help Themselves toolkit](#) focuses on participatory and co-creation methods for adaptation, enabling local governments to engage civil society & local experts in governance of adaptation.
- This United Nations Department of Economic and Social Affairs (UNDESA) [Handbook on Effective National to Local Governance for Climate Change Mitigation & Adaptation](#) provides a governance framework for vertical and horizontal integration of adaptation policy.

Helpful for sub-national governments establishing local adaptation governance with civil society input.

- The [Cities and Towns Urban Adaptation Support Tool](#) of the European Environment Agency (EEA) offers local authorities frameworks and case-studies for adaptation planning and inclusive governance; useful for participatory governance structures.

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Number of public-private partnerships (PPPs) and community adaptation projects initiated

**LEADING INDICATORS**

Looks forward at future outcomes and events

- % of local adaptation projects co-funded by non-public actors
- % of projects including public consultations and number of stakeholders engaged

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Improvement in neighborhood-level adaptive infrastructure coverage

KPIs

## Deliver Targeted Public Awareness and Outreach Campaigns

**Goal:** Build social acceptance and active participation in local adaptation measures.

**Description:** Subnational governments should roll out targeted outreach campaigns that inform citizens about local climate risks (e.g., flood-prone zones, heat islands, drought conditions) and promote adaptive behaviors such as water conservation, vegetation management, or emergency preparedness. Campaigns should use schools, neighborhood associations, and local media to reach diverse audiences, and emphasize household- and community-level

resilience actions that complement municipal measures. By making risks tangible and showing clear pathways for action, these campaigns foster public engagement and support for local adaptation initiatives. Well-informed citizens are more likely to comply with new regulations, apply for retrofit incentives, and actively participate in collective adaptation efforts.

Action 3

- [International Day for Building Safety](#), a global initiative to highlight the importance of building safety and the steps different actors can take to achieve it.
- C40 Cities' [Integrating Climate Adaptation toolkit](#) contains modules for engaging stakeholders, public workshops and translating hazard data for local audiences. (available in multiple languages)
- WRI's [Locally Led Adaptation](#) page contains multiple resources around the topic (e.g. a [Principles to Practice](#)

paper, a technical paper [Can the Global Goal on Adaptation Be Locally Led?](#), etc.). While focused on broader adaptation, they highlight inclusion, outreach and community-based engagement.

- The [Climate Adaptation in Cities](#) resources of the European Commission offers examples of city-level outreach, awareness-raising and public engagement on urban adaptation initiatives.

Resources

**INPUT INDICATORS**

Measure the resources required to deliver

- Number of awareness campaigns and public events held per year

**LEADING INDICATORS**

Looks forward at future outcomes and events

- % of population reached through communication campaigns

**LAGGING INDICATORS**

Looks back at whether the intended result was achieved

- Increase in citizen participation in resilience or emergency planning programs

KPIs

# Link Climate Resilience with Urbanization Efforts

**Goal:** Incorporate climate adaptation measures into urban planning processes, ensuring that new developments and infrastructure projects consider urban resilience in the face of climate change.

**Description:** As urban areas grow, it is critical to embed resilience into the fabric of urbanization strategies to safeguard against climate risks such as flooding, heatwaves, and other extreme weather events and help assure the community remains vibrant and can recover quickly

- C40 Cities' [Integrating Climate Adaptation toolkit](#) directly supports linking adaptation with urban development/urbanisation strategies by integrating resilience into urban planning and land-use.
- UNDESA : [Governance and institutional frameworks](#) outlined support ensuring adaptation is embedded in urbanisation and local planning processes rather than treated as an add-on.

## INPUT INDICATORS

Measure the resources required to deliver

- Inclusion of climate adaptation criteria in municipal procurement guidelines

## LEADING INDICATORS

Looks forward at future outcomes and events

- % of public projects evaluated using resilience criteria

## LAGGING INDICATORS

Looks back at whether the intended result was achieved

- Reduction in lifecycle costs and risk exposure of public infrastructure

Action 4

Resources

KPIs