



# Boosting subnational climate action

through new climate governance

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Individual profiles of the reporting jurisdictions are available at [www.carbonn.org/data](http://www.carbonn.org/data)

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# Linking national and subnational climate reporting is key for climate governance

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The carbonn Climate Registry (cCR) is a global reporting platform for cities, towns and regions committing to climate action. The cCR promotes transparency, accountability and credibility of local and subnational publicly reported data. It is managed by the carbonn Center, hosted by ICLEI World Secretariat in Bonn, Germany.

This report is a snapshot of the targets, performance inventories, action plans and actions from one of the most widely used subnational climate action reporting systems in the world. It shows the type of information available at the subnational level and how this information can be coordinated with national level climate plans and commitments.

## What we need

The Paris Climate Agreement sets a clear global goal: To keep the global temperature rise well below two degrees Celsius above pre-industrial levels. This requires that nations track, report and progressively increase climate commitments over time.

**Under the Paris Agreement, nations are expected to** submit targets every five years, and **increase their level of ambition** with each submission. This is critical to closing the gap between current Nationally Determined Contributions (NDCs) and the emissions reductions needed to achieve global goals.

Nations will assess their progress in 2018 as part of the Facilitative Dialogue, using that assessment to inform the process of reviewing and resubmitting pledges in 2020 designed to raise national and global ambitions.

For this process to be effective, it is critical that national governments are equipped with robust data. **National governments need an accurate and up-to-date picture of climate action and climate risks at the subnational level.**

At present, national and subnational governments often use parallel, disconnected climate action and reporting systems. This means that in many cases, subnational climate commitments, actions and risk assessments are not factored into national planning. This disconnect makes it difficult for nations to plan and set targets that reflect a real country-wide picture.

To address this, **national, local and other subnational governments need to work together to track performance and implement effective, coordinated climate action**, with the aim to progressively raise local, national and global ambitions.

\*Adopted in 2015, the Paris Climate Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) that brings nations together towards a common goal to tackle climate change and adapt to its effects.



We need a new model of climate governance that links all levels of government in shaping and implementing climate action. This system of multilevel governance coordinates and integrates governmental planning, policy, implementation and reporting across different levels of government.

Here it is important to consider both the vertical and horizontal dimensions of climate governance. This means finding ways to not only vertically link national to subnational and local entities but also create horizontal linkages that connect ministries and sectoral departments as well as local governments to their peers.

A key part of effective multilevel governance also involves tracking developments, namely by using **Measurement, Reporting and Verification (MRV) systems** that integrate climate action and reporting at and across all levels.

We call this **integrated MRV**. Integrated MRV means that national and subnational governments work together, coordinating reporting methodologies and sharing data to build a holistic picture of mitigation and adaptation efforts at all levels. This allows for better analysis of current opportunities and challenges, and can help governments define critical action areas.

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**"The cCR is an effective system for integrated climate reporting that can help advance global climate action. With over 1,000 reporting cities, towns and regions, it contains a wealth of information that can assist national governments in tracking subnational climate action and incorporating these efforts into national planning."**

Gino Van Begin  
Secretary General of ICLEI - Local Governments for Sustainability

# How ICLEI supports integrated MRV



## Advocacy

In its role as focal point for the Local Governments and Municipal Authorities constituency at the UNFCCC, ICLEI is advocating greater involvement of local and regional governments in national climate plans.

## Integrated reporting platform

The carbonn Climate Registry is an integrated reporting platform designed to integrate data from local and other subnational reporting entities.

## Research and good practices

ICLEI supports research and the development of case studies to highlight good practices among local and other subnational governments.

## Technical assistance

ICLEI works with all levels of government to encourage coordination and collaboration, providing policy guidance and technical assistance.

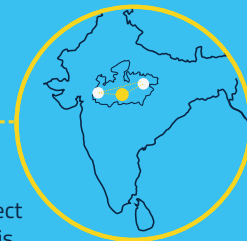
## Recognition

The carbonn Climate Registry is a reporting platform that recognizes new entities and places them within a family tree with cities and local governments nested into regions or subnational states, which are subsequently organized under the national umbrella.



## Connection

Each reporting entity can connect with its "family members" and is notified when new entities register within the family tree. This national family tree builds an organized, interconnected team and a holistic picture of climate change mitigation and adaptation efforts within a region, a country and globally.



## Comparison

Different reporting entities and levels of government can now see their own performance and those of their family members as it relates to the whole. Higher levels of government can identify the strengths and weaknesses of subjacent reporting entities and give assistance or support accordingly.



## Coordinated action planning and implementation

Integrated MRV provides a holistic and accurate profile of reported emissions and climate change adaptation developments. This enables more effective and coordinated action planning and implementation. Based on the profile created by the national family tree, national climate action plans can be tailored to address key emissions sources and coordinated adaptation action through vertically linked actions and targets.



Integrated MRV strengthens tracking, analysis and planning of mitigation and adaptation efforts. Here are the **key benefits**:

### **Integrated MRV can help raise national and global ambitions.**

Through integrated reporting, national governments can see and scale up efforts in sectors where local and other subnational governments are advancing strongly, incorporating subnational commitments and actions into national targets. It also gives national governments a sense of where opportunities and gaps lie in local and subnational action, informing them as to where further capacity and support are necessary. Ultimately, in either case, this positions national governments to increase their commitments.

### **Integrated MRV can help nations more accurately track performance and monitor climate risks.**

An effectively integrated reporting system gives national governments information about the situation on the ground. With parallel reporting systems, nations, local and other subnational governments report their performance independently without coordination. This can lead to confusion where mitigation efforts of one entity are counted twice or not taken into account at all. Additionally, in parallel systems, local climate risks are often not taken into account in national adaptation plans. With access to integrated local reporting, national governments can better understand mitigation challenges and opportunities as well as the climate risks and hazards faced by diverse communities across the country.

### **Integrated MRV enables more effective climate action planning, coordination and implementation.**

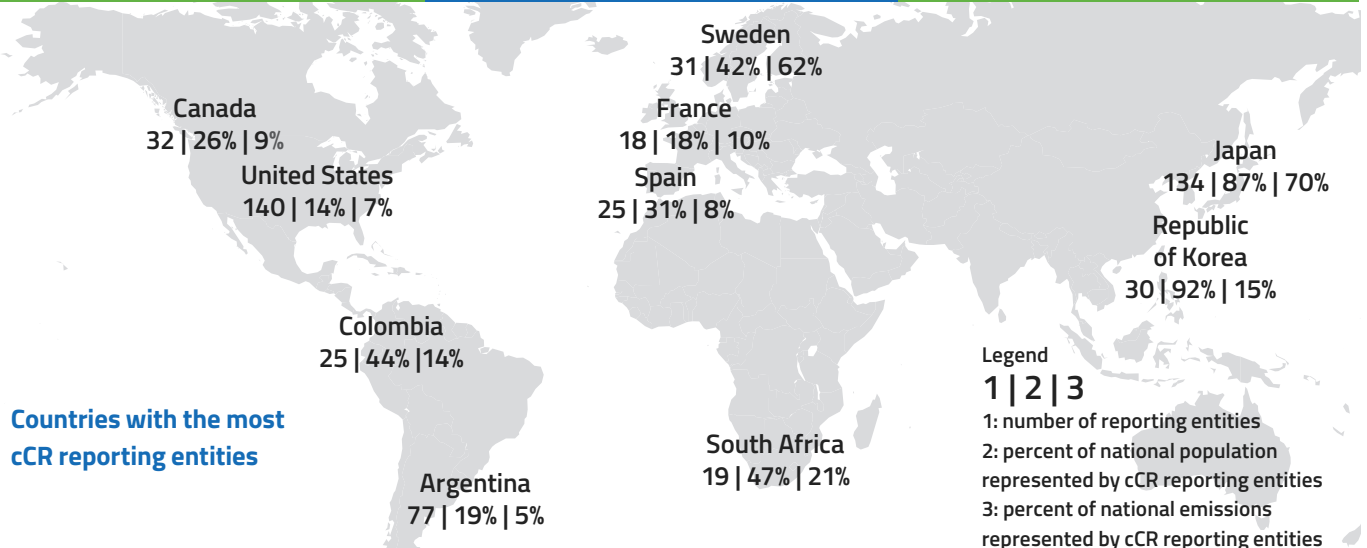
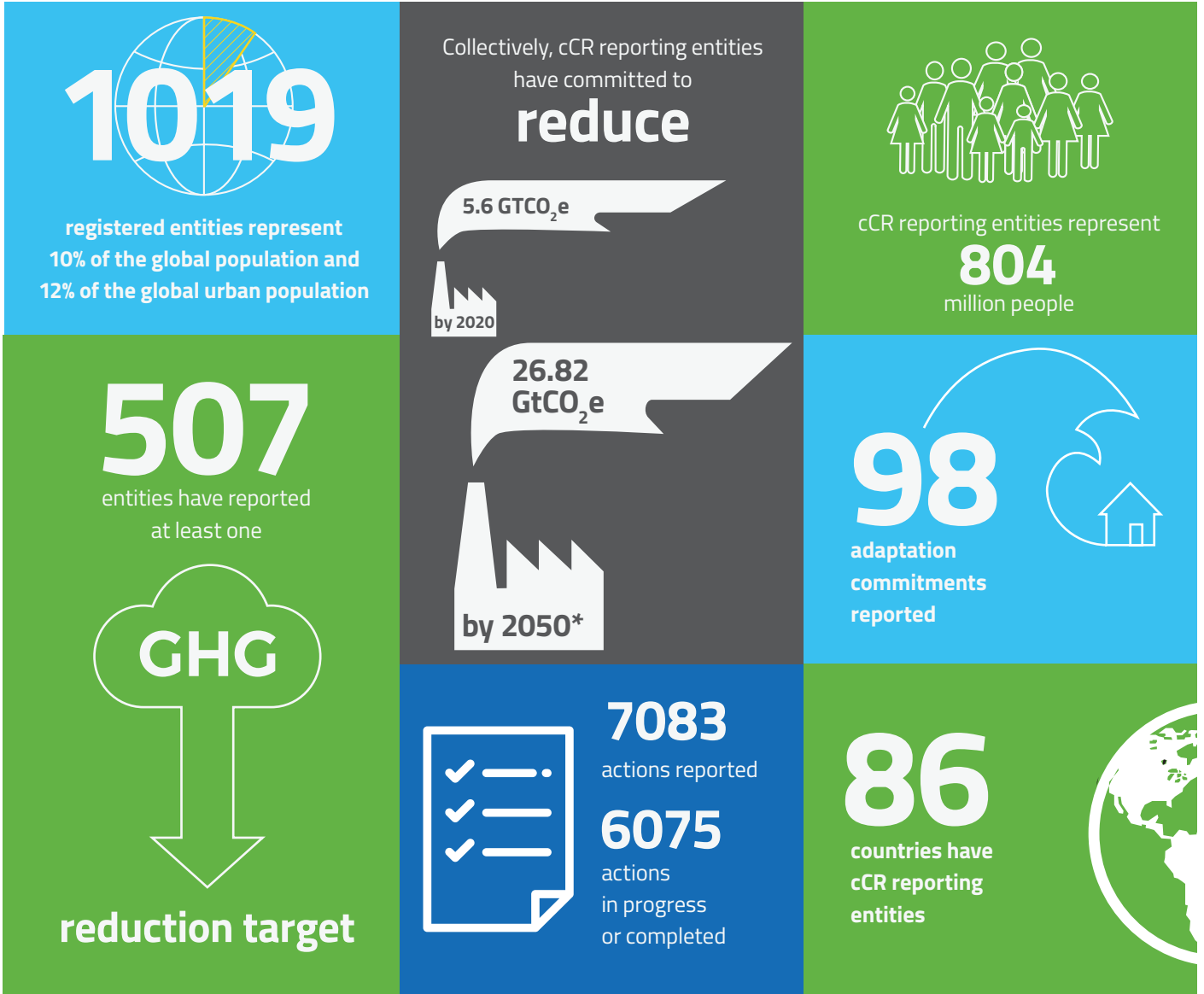
Integrated MRV provides national governments with information on what methods local and other subnational governments are using to plan and implement climate action. It also provides insight into which of those actions are completed and what roadblocks might impede effective implementation. Integrated MRV, as a key component of multilevel governance, can enable national and subnational governments to coordinate their efforts, and work together towards more effective and impactful climate action.

**According to analyses of current national commitments, in 2030, global emissions will be 22 gigatons of CO<sub>2</sub> equivalent (GTCO<sub>2</sub>e) higher than the level needed to stay on track towards the 1.5-degree target and 15 GTCO<sub>2</sub>e higher than the level needed for the 2-degree scenario.\***

\* UNFCCC, 2015. *Synthesis report on the aggregate effect of the intended nationally determined contributions.* (FCCC/CP/2015/7).

# The cCR in action

With **1019** registered entities from **86** countries, representing 804 million inhabitants, the cCR is one of the most widely used reporting platforms in the world for cities, towns and regions, providing a broad scope of data on local and regional climate action.



\*GtCO<sub>2</sub>e = gigatons of carbon dioxide equivalent



# Raising national and global ambitions

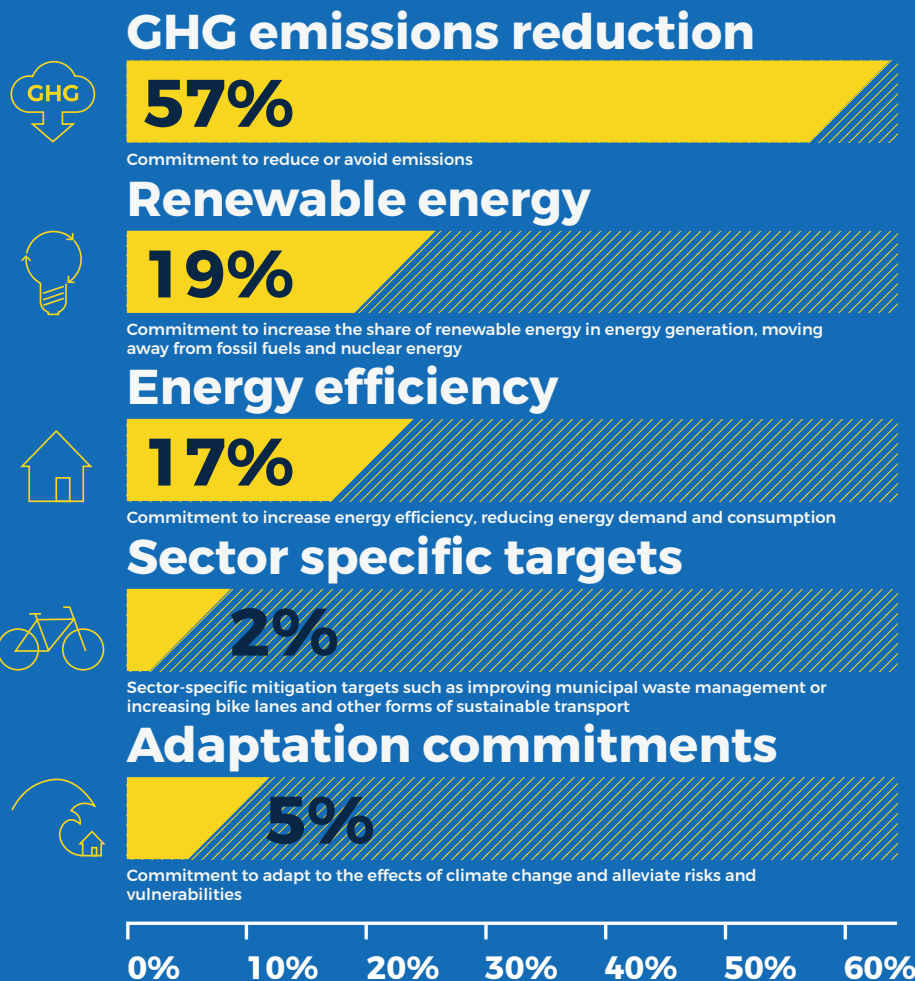
The Paris Agreement was adopted in 2015, and now is the time to implement actions that keep the global temperature rise well below two degrees Celsius, and to advance actions that enable nations and communities to adapt to an already changing global climate.

However, there is a gap between current Nationally Determined Contributions and the greenhouse gas reductions needed globally to meet this target. By joining together and consolidating their commitments, all levels of government can progressively raise their

commitment to reduce greenhouse gas emissions and adapt to climate change – engaging across many sectors and ensuring there is no double counting of efforts and achievements of all key stakeholders.

Recognizing the diversity of pledges needed to advance climate action, the cCR organizes climate targets and commitments into the following five categories, all relevant to community and or local government operations:

## Categories of climate commitments



# How ambitious are cCR mitigation commitments?

The 1000+ cCR reported entities have cumulatively committed to reducing 5.6 Gt carbon dioxide equivalent (GtCO<sub>2</sub>e) by 2020. This is equal to over 1 billion cars, nearly all of the registered vehicles in the world taken off the road for one year.\*



**5.6 GtCO<sub>2</sub>e**  
**=**  
**over 1 billion cars**  
**taken off the road for one year**

This type of information enables national governments to really see where local and other subnational governments are committed to taking action and where further commitments may help advance national goals.

For instance, if the transport sector is a major contributor to emissions in a given country, but data in the cCR suggests that major cities within that country are not setting transport-related targets, then it sends a signal to the national level that

the local mandate should be better defined, or better coordination is needed to scale up action, and that additional support to local and regional governments may be necessary.

# How integrated MRV can raise ambition

The following scatter plot presents city mitigation commitments in relation to their respective national commitments. In other words, it shows whether local level ambition is higher or lower than the national level. Dots below the diagonal line represent reporting entities with lower mitigation targets than that of their national government. Dots above the diagonal line represent reporting entities with mitigation targets higher than that of their national government. With

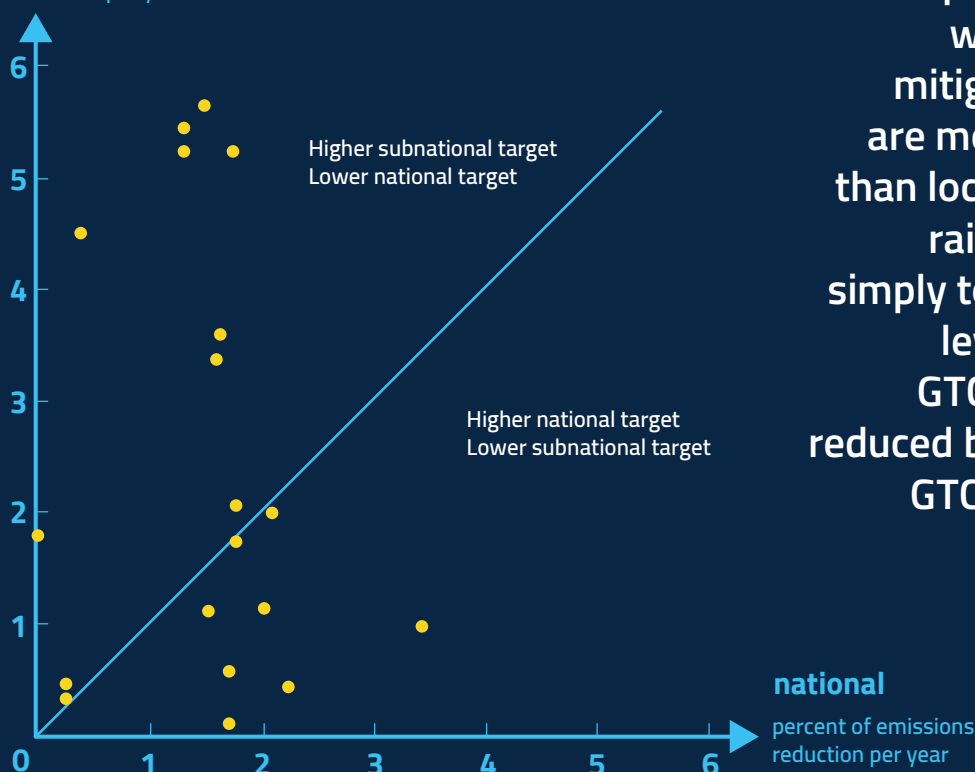
such information, national governments can identify where assistance is needed to raise the level of subnational ambition in order to achieve national mitigation targets. National governments can support local governments below the diagonal line to raise their commitments to meet national standards. Similarly, cities above the diagonal line are setting the standard for national governments. If national governments see subnational entities are setting such

ambitious mitigation targets, then they may already be in a position to raise their national commitments, after factoring in and consolidating these commitments into national climate planning.

Only through integrated MRV can national governments monitor and coordinate with subnational governments. This is one key element of multilevel governance that allows for more integrated, effective and ambitious climate action.

## local

percent of emissions reduction per year



There are 47 cCR reporting entities where national mitigation targets are more ambitious than local targets. By raising ambition simply to the national level, another 1 GTCO<sub>2</sub>e could be reduced by 2020 and 6 GTCO<sub>2</sub>e by 2050.

# Tracking mitigation performance and monitoring climate risks

National governments can understand the effects of climate change and climate action more clearly when they take subnational reporting into account.

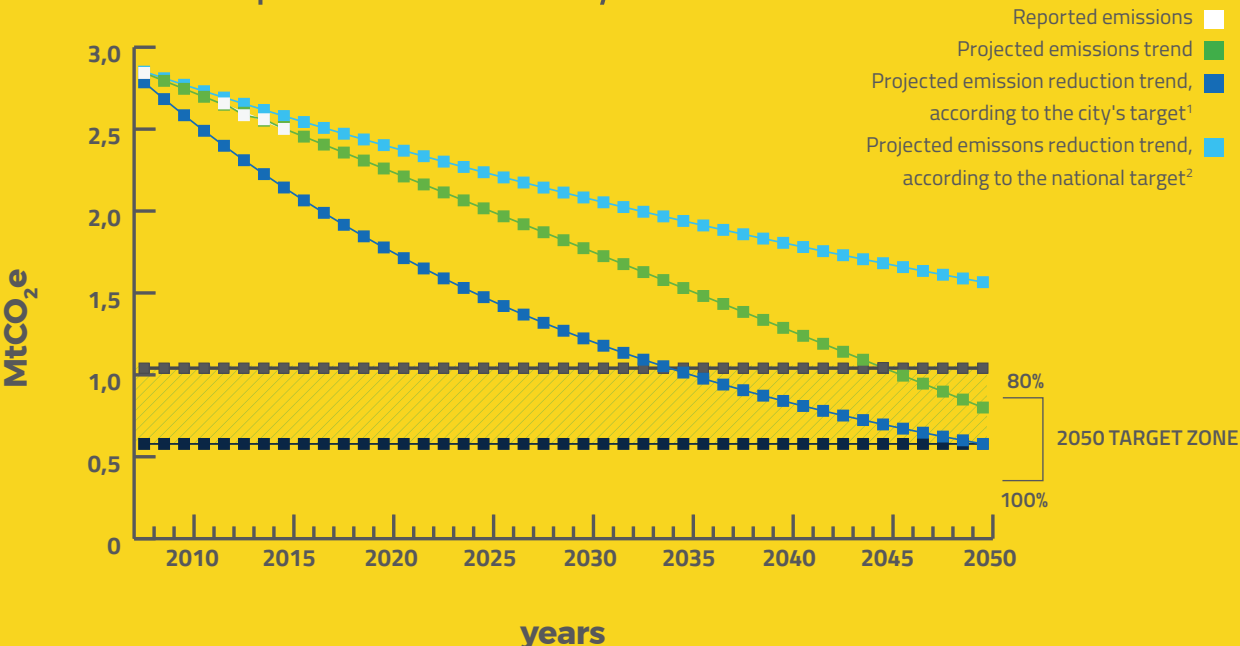
## Mitigation performance tracking

Through the cCR, subnational governments track mitigation efforts through greenhouse gas emissions inventories, and are also able to track their performance over time.

183 cCR reporting entities track mitigation performance over time. For example, the City of Vancouver has reported 5 community emission inventories between 2008 and

2015, enabling the city to track progress.

**Emission trend:**  
Example from the City of Vancouver



In the case of Vancouver, the city target is more ambitious than the national target as can be seen by comparing the dark blue and the light blue projected emissions trend lines. Following the green emissions trend line, even with such an ambitious target, the city is likely to reach its target zone by 2050.

In an integrated MRV system, national governments are able to access emissions trends as shown above for all subnational entities. This helps national governments to identify where

and when targets will or will not be met and shows if subnational entities are on track to meet their own goals and support progress towards achieving national targets. It allows national

governments to predict future emissions patterns for individual entities and support them accordingly.

**Based on current emission trends, just 10 percent of the targets reported to the cCR are likely to be achieved, indicating a need for technical and financial assistance.**

1 The City of Vancouver has committed to reduce its emissions by 80 percent by 2050 compared to 2007 emission level.

2 Canada intends to reduce its greenhouse gas emissions by 30 percent below 2005 levels by 2030.

# Monitoring risks for better adaptation planning

Local and regional governments track climate hazards through risk analyses. Just as tracking mitigation performance through emissions inventories provides insight into key action areas, tracking the occurrence and impact of various climate hazards provides a better understanding of how to approach adaptation efforts to reduce risk and increase resilience.

218 subnational governments reported to the expanded adaptation section of the cCR over the past year. A majority have completed or are developing a climate risk or vulnerability assessment and an adaptation plan.

The top 6 climate hazards reported to the cCR as being high risk, are **rainstorm, extreme hot days, flash / surface flood, heat wave, drought and vector-borne disease.**

Out of 83 reporting entities, 87 percent expect hazards to increase in intensity and frequency. Most are already experiencing this or will by 2025. Extreme hot days, rain storm, drought, flash / surface flood, heatwave and river flood are the hazards most reported as both increasing in frequency and intensity.

85 percent of reporting entities expect that identified hazards will result in “extremely serious” or “serious” impacts, indicating at least moderate damage to a majority of critical assets and services and loss of life or injuries of a number of people, as well as major economic disruption. **Environmental assets, public health, residential assets, food and agriculture, transport and water supply and sanitation services** are most commonly reported as being affected by climate change impacts.

## Assets and services most affected by climate change



Public health



Food and agriculture



Transport



Water supply and sanitation



Environmental assets



Residential assets

In an integrated system, all levels of government can work together towards more effective and efficient adaptation planning. Many hazards are locally specific and cannot

be addressed by local governments alone. National risk assessments and adaptation plans may be missing critical information on local risks and vulnerabilities. Integrated

MRV fills these information gaps and enables national planning informed by a much more nuanced and clear picture.

# Assessing planning and implementation

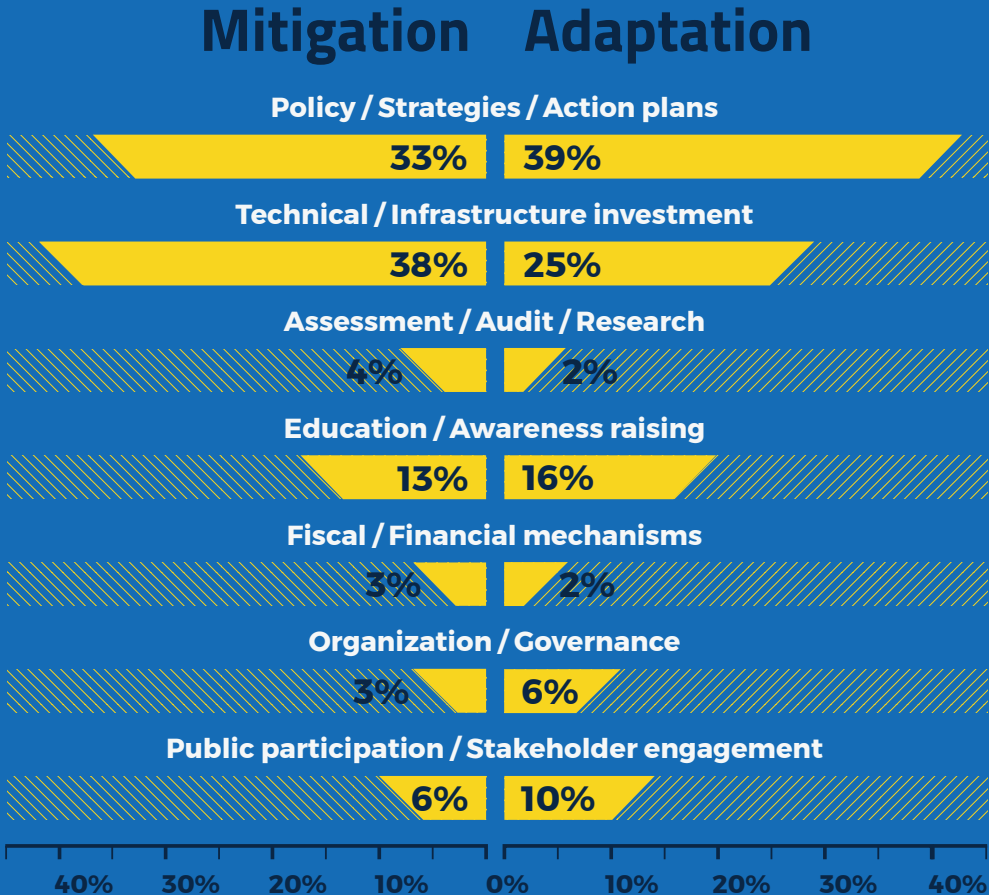
Local and other subnational governments around the world are tackling climate change by defining climate action plans and following through on these plans by implementing concrete actions.

Climate action can take many different forms. It can include soft measures such as establishing policy, strategy, financial mechanisms and educational activities, as well as hard measures in the form of new or updated infrastructure.

Through the cCR, local and other subnational governments report climate action plans – detailed and strategic frameworks for mitigation and adaptation – and their actual actions to track the implementation progress.

## Methods of climate action

This graph shows the methods of climate action most commonly employed by local and other subnational governments in cCR reported actions.





As the diagram to the left indicates, local and other subnational governments tend to use policy and action planning, technical or infrastructure investment, as well as education and awareness raising as the main implementation actions when tackling climate change. These typically are areas where the local and subnational government

have the mandate and/or the power to act, or where they can show leadership and guide the community. The results reported confirm the wide use of these measures.

However, some underutilized actions point to areas where additional support or autonomy may help advance subnational action. For instance, regulatory

interventions and fiscal or financial mechanisms are not extensively reported. This does not mean that these actions are less important or attractive, but rather suggests that local and subnational governments could be more readily able and empowered to use them.

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**Policy / strategies / action plans** are comprehensive plans such as low emission development strategies or climate adaptation strategies.

**Technical / infrastructure investments** refer to projects such as the replacement of electric boilers with biomass boilers or creating extensive pedestrian and cycling pathways linked to inter-modal transport hubs.

**Assessment / audit / research actions** involve investigating data and verification of proof to assess climate-related impacts and issues. This could include a sea level rise adaptation study or a survey on energy efficiency in a housing district.

**Education / awareness raising** actions are designed to increase civil society, business and industrial sectors interest in and awareness of climate action through methods such as a walk-to-work week or power-saving campaigns.

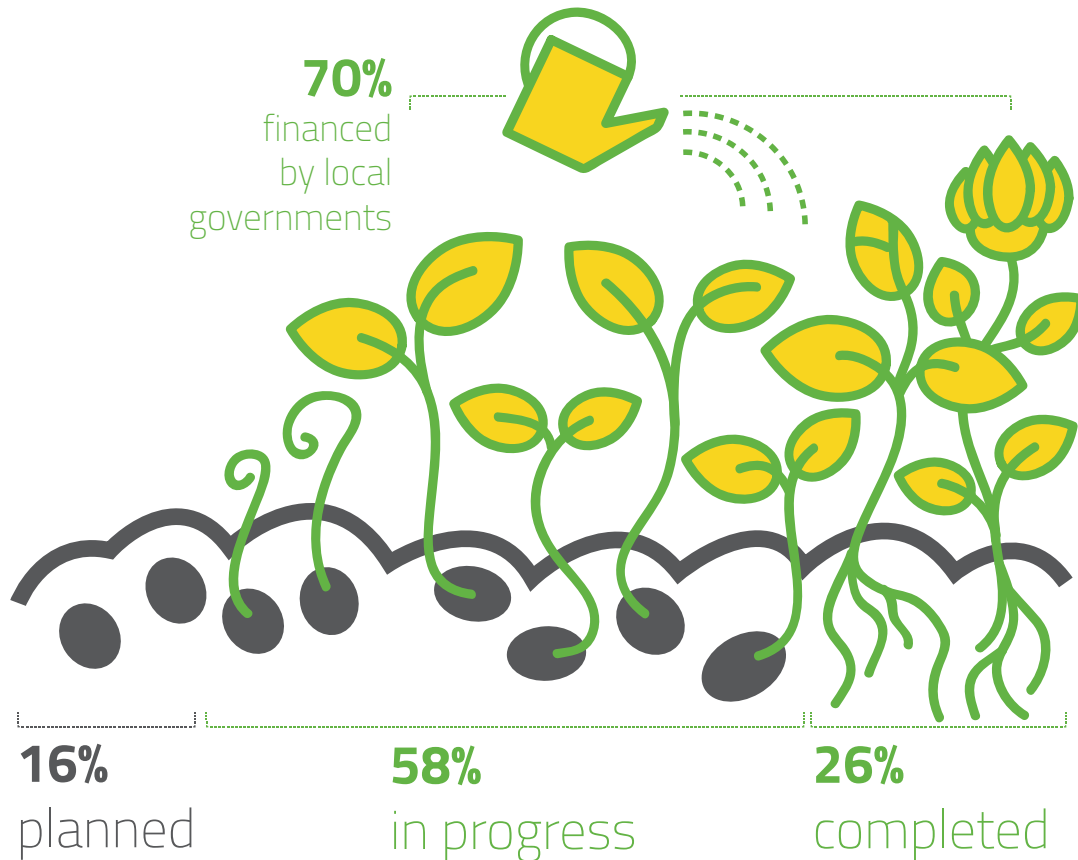
**Fiscal / financial mechanisms** are implemented to secure or enable access to finance, such as municipal cap-and-trade schemes or using green public procurement when purchasing energy efficient office equipment.

**Organizational / governance actions** are process or operational procedures, such as establishing a climate coordination team or restructuring the organogram to ensure key departments are included in climate MRV systems .

**Public participation / stakeholder engagement** actions actively engage citizens and other stakeholders through methods such as public hearings or workshops to secure their buy-in in local climate activities and plans.

**Regulatory actions** include rules or guidelines such as municipal building codes or updating tender regulations to include green public procurement rules.

# cCR actions: Progress and financing



cCR reporting entities are implementing climate action at ground level. The majority of subnational actions are locally financed with reported local contributions totalling USD 266 billion. When local and national governments work together through multilevel governance frameworks, different funding mechanisms can be deployed to support subnational action.

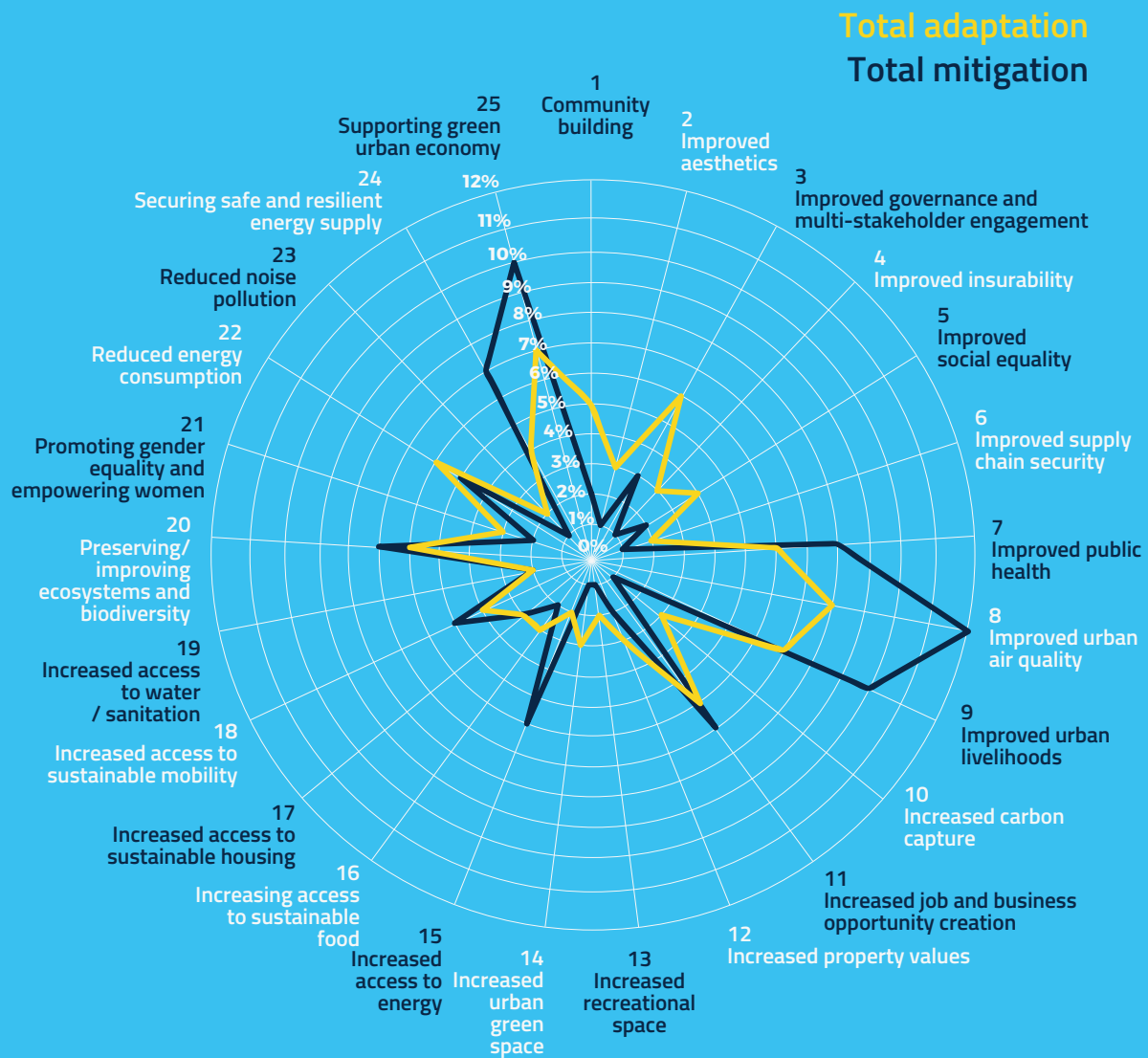
By using integrated MRV systems, all levels of government can plan together to enable subnational governments to increase implementation, utilizing a broader range of

implementation approaches and a broader range of local, national as well as global financing mechanisms. If local and national governments coordinate and plan together, taking a more

holistic national picture into account, budgets can be spent in a more efficient and targeted way, based on data-driven analyses that take into account challenges and opportunities at all levels.



# Co-benefits of climate action



Through effective implementation with support from all levels of government, there are many co-benefits that can be achieved at the subnational level. The co-benefits achieved through

more than 7000 actions or action plans addressing mitigation and adaptation are tracked by the cCR.

These co-benefits link directly to the Sustainable

Development Goals (SDGs) and tracking these allows national governments to assess progress towards on the 2030 Sustainable Development Agenda.

# Moving ahead with integrated systems

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Integrated MRV systems are an important part of building multilevel governance systems. They can help raise subnational, national and global ambitions, help nations more accurately track performance and monitor climate risks and improve country-wide planning and implementation. As national governments look ahead towards the 2018 Facilitative Dialogue where they will take stock of global progress and prepare to resubmit national commitments, integrated reporting

systems like the cCR will be a critical tool for effectively raising their ambitions.

Integrated MRV is, of course, a vital part of multilevel governance, but it is not the only dimension. Policy coordination, two-way dialogues and partnership building among all levels of government are necessary to bring global climate action forward and to push beyond the current level of national climate ambitions.







This report is a snapshot in time.

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