

MULTILEVEL CLIMATE ACTION: THE PATH TO 1.5 DEGREES



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CONTENTS

- Setting the scene: climate action is time-sensitive 4
- Cities, towns and regions in action 8
- Aligning with the 1.5-degree target 10
- Hazard mapping: managing the impacts of climate change 12
- Advancing sustainable development through a climate lens 14
- The Cities and Regions Talanoa Dialogues for multilevel action 15
- Integrated MRV: why and how it works 16
- Recommendations 19

SETTING THE SCENE: CLIMATE ACTION IS TIME-SENSITIVE

ACCORDING TO THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), UNLESS GLOBAL GREENHOUSE GAS (GHG) EMISSIONS ARE CUT BY 45 PERCENT BY 2030 AS COMPARED TO 2010 LEVELS, AND HIT NET ZERO EMISSIONS BY MID-CENTURY, WE COULD SEE A 1.5-DEGREE CELSIUS GLOBAL WARMING SCENARIO SET IN AS EARLY AS 2030. AS IT STANDS, WE WILL GO FAR BEYOND THAT: EVEN IF ACHIEVED, CURRENT NATIONAL COMMITMENTS PUT US ON A PATH TOWARDS A 3-DEGREE TEMPERATURE RISE BY 2100.¹

The *IPCC Special Report on Global Warming of 1.5 °C*, released in October 2018, is unequivocal on a few key fronts: first, human activities have used up nearly all of the global carbon budget, and second, current national climate action plans—known as Nationally Determined Contributions (NDCs)—are not nearly ambitious enough to limit global warming to 1.5 degrees Celsius². The IPCC Special Report also projects substantial climate-related impacts will occur even if we do limit global warming to 1.5 or 2 degrees.

What needs to be done is clear: quickly ratchet up emissions reductions to align with a 1.5-degree warming scenario, while dedicating much needed time and attention to adapt to current, and projected, climate change impacts. **How** this can be done is also clear. Achieving the 1.5-degree target requires the right combination of capacities, financial resources and data, supported by a strong enabling environment to boost action.

¹ IPCC, “Headline Statements” in Special Report on Global Warming of 1.5 Degrees Headline Statements (IPCC, 2018), C1.

² IPCC, Special Report on Global Warming of 1.5 Degrees, (IPCC, 2018), Chapter 1.1.3.



City of Bonn, Germany.

TO CREATE AN ENABLING ENVIRONMENT FOR CLIMATE ACTION ALIGNED WITH 1.5 DEGREES, MULTILEVEL GOVERNMENTAL COLLABORATION AND DATA-SHARING NEEDS TO BE A KEY PART OF CLIMATE PLANNING IN EVERY COUNTRY.

In other words, local, regional and national governments need to be well aligned and coordinated, both vertically and horizontally to connect corresponding levels of government. This includes two-way, free-flow of data, information and knowledge across levels. It also requires co-designed, evidence-based national policies that enable local climate action.

Data from the carbonn Climate Registry (cCR), provided by 1,060 subnational governments in 89 countries, demonstrates the insights that subnational climate data offers. This includes where subnational governments stand on mitigation targets, as well as the specific hazards and risks they face.

Even in a **1.5-degree warming scenario**, the projected impacts are significant: up to 15 percent of the global population could be exposed to severe heat and up to 69 million to flooding. In a 2-degree scenario, we can expect incidents of **extreme heat** to be more than **2.5 times** more frequent, sea levels to rise by more than half a meter and further species loss to at least double.³ Cities contribute up to **70 percent** of global energy-related emissions and face significant climate hazards, making them a central part of global efforts to address climate challenge.

³ Levin, K., Half a Degree and a World Apart: The Difference in Climate Impacts Between 1.5°C and 2°C of Warming (WRI blog, 2018) www.wri.org/blog/

SUBNATIONAL DATA SHEDS LIGHT ON WHERE NATIONAL GOVERNMENTS CAN SCALE UP AND STRENGTHEN CLIMATE ACTION COUNTRY-WIDE AND RAISE THE BAR ON NATIONAL COMMITMENTS AHEAD OF 2020.

When drilling down into subnational commitments, it becomes clear that although few subnational governments have as yet set commitments that align with the 1.5-degree target, far more have made commitments more ambitious than their respective NDC. Additionally, a few subnational governments are outperforming expectations and are on track to stay within the per capita emissions allowance of the 1.5-target although this is not necessarily reflected in their local target.

CCR DATA PROVIDES A GRANULAR PICTURE OF HOW CLIMATE HAZARDS MANIFEST AT THE SUBNATIONAL LEVEL.

Through the cCR, subnational governments can report on the specific climate-related hazards they experience, such as such as drought, heat waves and rain storms, as well as the assets, systems and services most affected by these hazards. This granular picture should inform National Adaptation Plans (NAPs) and NDCs.

SUBNATIONAL REPORTING SHOWS HOW CLIMATE ACTION SUPPORTS BROADER SUSTAINABLE DEVELOPMENT OBJECTIVES.

Local and regional governments have a direct mandate to serve their communities. When they plan climate action, emissions reduction is not the only outcome in mind. They also look at where and how to improve urban infrastructure and services, and achieve broader development objectives.

cCR data from 2018 shows that subnational governments are taking action to provide their communities with access to sustainable energy, mobility and better air quality. Data reported to the cCR help identify these, and other co-benefits, many of which are directly relevant to achieving the Sustainable Development Goals (SDGs).



TO MOVE AHEAD WITH MULTILEVEL CLIMATE ACTION, WE NEED INTEGRATED DATA AND COORDINATION SYSTEMS AS WELL AS TWO-WAY DIALOGUE.

National governments have an opportunity in front of them: they can review and revise their NDCs to reflect the emissions reductions potential across all levels and sectors, and address real adaptation needs.

With input from subnational governments, along with data-driven insight into the mitigation potential and adaptation needs across the country, national governments will be better positioned to align NDCs with the 1.5-degree target and lay out more targeted adaptation plans.

This requires a multilevel approach to climate action, with political buy-in to set up mechanisms for national-subnational knowledge-sharing, collaboration and policy alignment, as well as reporting mechanisms which create a holistic, granular picture of climate action country-wide.

Multilevel approaches to climate action are taking root worldwide. The Cities and Regions Talanoa Dialogues, launched in early 2018, have kicked off discussions across all levels of government, and a cross-section of climate stakeholders.

Another critical piece of the multilevel action puzzle is integrated Measuring, Reporting and Verification (MRV), enabled through systems, such as the cCR, which allow data to be connected and compared, forming a robust picture of what is happening across different jurisdictions and levels of government. This holistic knowledge and information is critical to climate planning across levels as nations set their sights on 1.5 degrees.

ONLY THROUGH MULTILEVEL GOVERNANCE CAN WE ACHIEVE THE 1.5-DEGREE TARGET

CITIES, TOWNS AND REGIONS IN ACTION

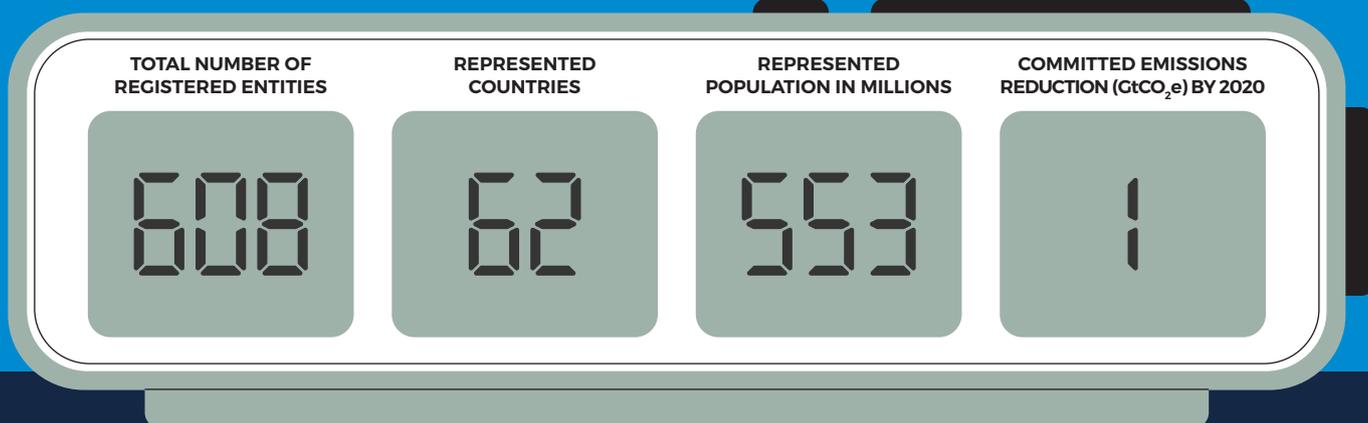
WITH 1,060 REGISTERED LOCAL AND REGIONAL GOVERNMENTS, FROM 89 COUNTRIES, THE CCR IS ONE OF THE MOST WIDELY USED SUBNATIONAL REPORTING PLATFORMS IN THE WORLD.

It provides a diversity of data on local and regional climate action. Entities reporting to the cCR represent 10 percent of the global population and 12 percent of the global urban population.

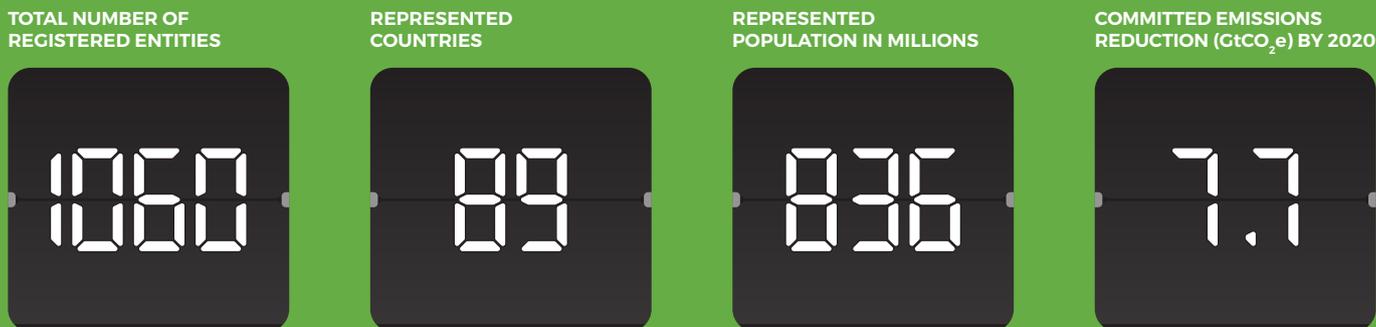
As of 2018, data reported to the cCR shows that local and regional governments are setting increasingly ambitious commitments. Since the Paris Agreement was adopted in 2015, the number of local and regional governments reporting to the cCR has increased from 608 to 1,060 entities, and reported greenhouse gas (GHG) mitigation targets set for 2020 have jumped nearly eight-fold.



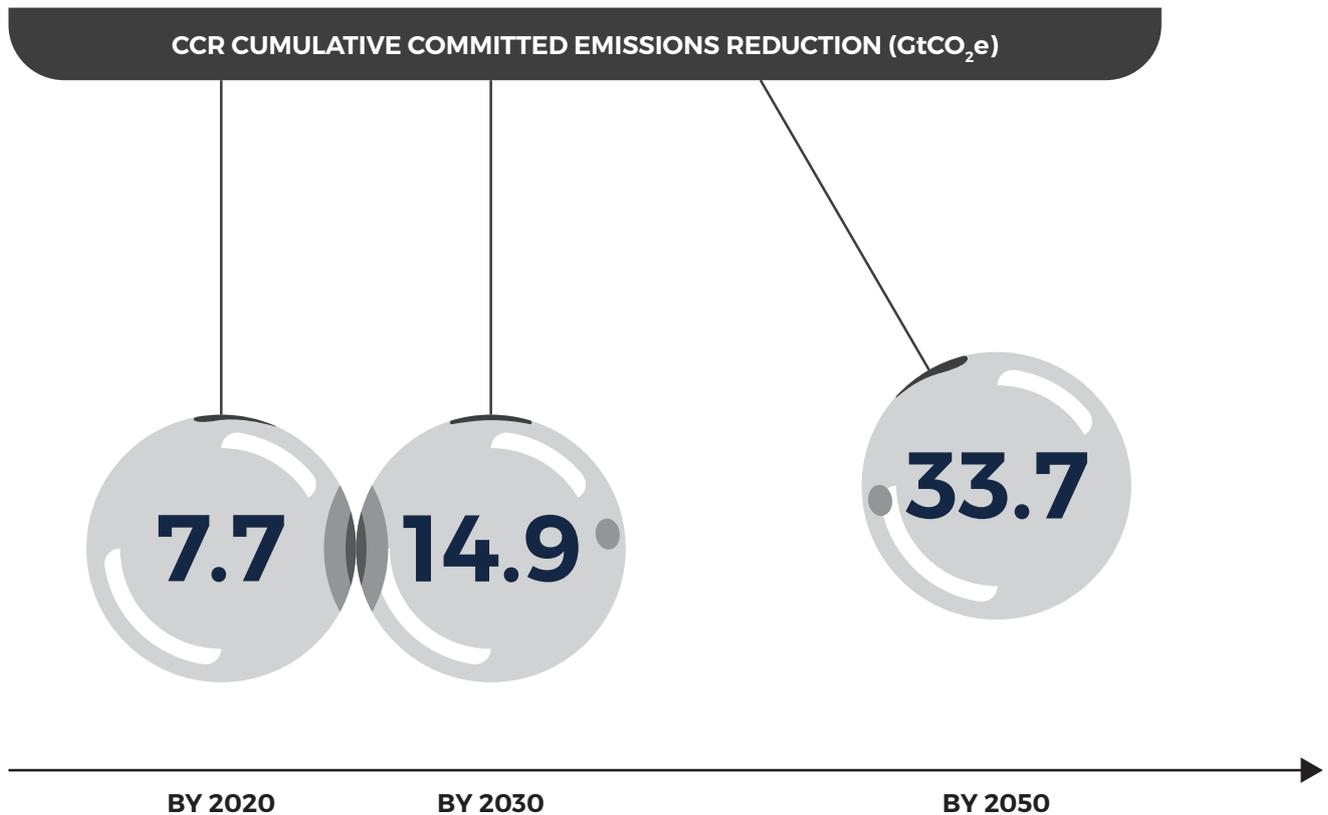
2015



2018



As of today, subnational governments reporting to the cCR have committed to **reduce their emissions** by **7.7 gigatons** of carbon dioxide equivalent (CO₂e) by 2020, increasing this amount to **14.9 gigatons** by 2030 and **33.7 gigatons** by 2050.



These figures paint a picture of broad-scale, growing ambition among local and regional governments, as well as increasing capacity to manage and report climate data. Worldwide, more local and regional governments are respectively committing to the [Global Covenant of Mayors for Climate & Energy \(GCoM\)](#), or the Under2 Coalition, which require them to report climate data. The cCR is an official reporting platform of GCoM and serves various initiatives such as the One Planet City Challenge, which encourages local governments to report ambitious climate action.

To achieve the 1.5-degree target, these trends need to continue. More expansive and robust reporting is needed, as is support to enable subnational governments to use globally accepted reporting standards. With more subnational data, we begin to see a granular picture of where subnational governments are regarding climate change mitigation and adaptation, as a means to inform national policy across all sectors.

[GCoM](#)—an international alliance of more than 9,000 cities and local governments with a shared long-term vision of promoting and supporting voluntary action to combat climate change and move to a low emission, resilient society—has developed new, harmonized standards for subnational climate reporting. This framework is designed to be consistent with national government reporting requirements and the UNFCCC, and adjustable to local circumstances. They build on the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) developed ICLEI, WRI and C40.

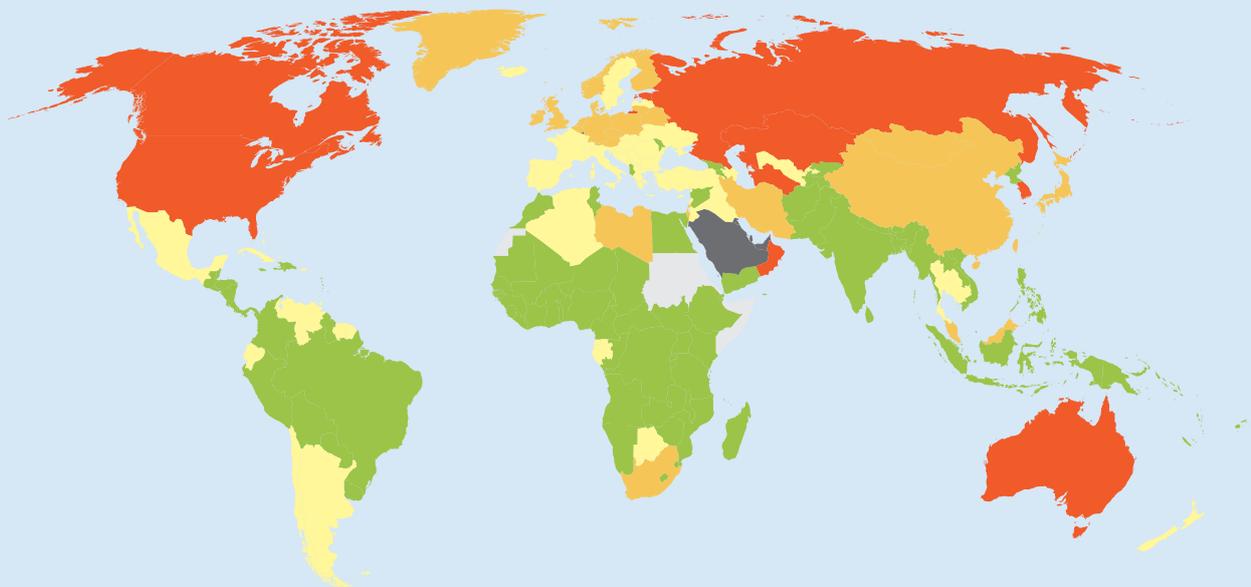
ALIGNING WITH THE 1.5-DEGREE TARGET

IN LIGHT OF THE IPCC SPECIAL REPORT FINDINGS, THE NEXT ROUND OF NDCS TO BE SUBMITTED IN 2020 NEED TO ALIGN WITH THE 1.5-DEGREE TARGET.

What we know right now, according to IPCC analyses, is that if achieved, the sum total of NDC commitments puts us on the path towards a 3-degree global warming scenario by 2100.

Every level of government, every business and every industry, has a role to play in achieving the 1.5-degree target.

According to World Bank data based on 2014 reporting, per capita emissions are currently well above 2.2 tons per person in many countries. The map below shows actual per capita emissions by nation.



The data shows that per capita emissions are not equally spread across the world. Emissions in the Global North are significantly higher than in the Global South. This reflects the state of economic development and access to fossil fuel-intensive energy supplies. In regions such as Africa, parts of Asia and Latin America, per capita emissions are relatively low. However, this trend is likely to change as rapidly growing populations are seeking to have their growing energy needs met. This signals the urgent need for sustainable development pathways that decouple economic growth and nuclear and fossil fuel dependence - and a transition towards renewable energy.

To assess alignment with the 1.5-degree target across subnational governments, we translate the IPCC emissions reductions figure for the 1.5-degree target—to cut global emissions to under 45 percent of the 2010 levels by 2030—into per capita emissions allowances. The global population is expected to reach 8.5 billion by 2030.⁴ Based on this projection, the **calculated per capita emission allowance for the 1.5-degree target is 2.2 metric tons per person per year by 2030.**

When drilling down into subnational commitments, it becomes clear that a few pioneering subnational governments have set commitments that align with the 1.5-degree target and far more have made commitments more ambitious than their respective NDC.

OUT OF 392 REPORTED COMMUNITY-SCALE MITIGATION TARGETS, 14 ALIGN WITH THE 1.5-DEGREE TARGET AND 184 ARE MORE AMBITIOUS THAN THEIR RESPECTIVE NDC.

Additionally, a few subnational governments are outperforming expectations and are on track to reach the 1.5-target although this is not necessarily reflected in their local target.

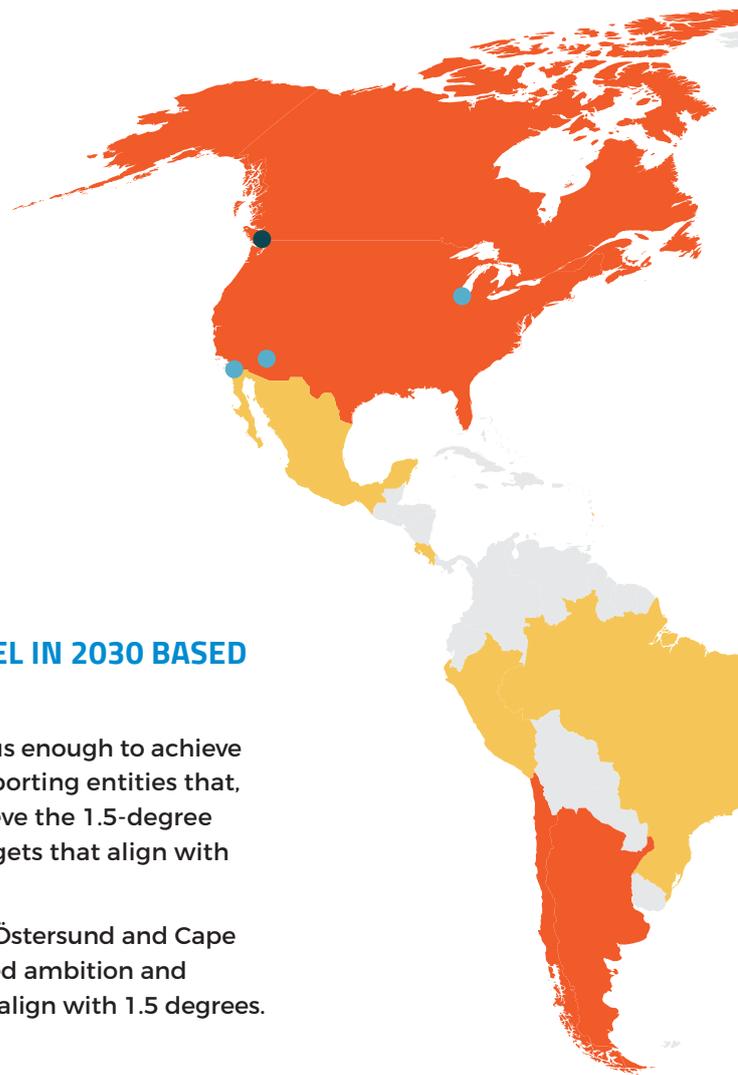
When we examine actual emissions trends based on cCR reporting over time, 22 reporting entities with an established trend—in other words, a trend based on at least three reported community inventories over time—are on track to align with the 1.5-degree target.



Stockholm, Sweden is on track to achieve the 1.5-degree target.

⁴ “UN projects world population to reach 8.5 billion by 2030, driven by growth in developing countries” (UN, 2015) <https://www.un.org/sustainabledevelopment/blog/2015>

ALIGNMENT OF NATIONAL AND SUBNATIONAL TARGETS TO 1.5 DEGREES

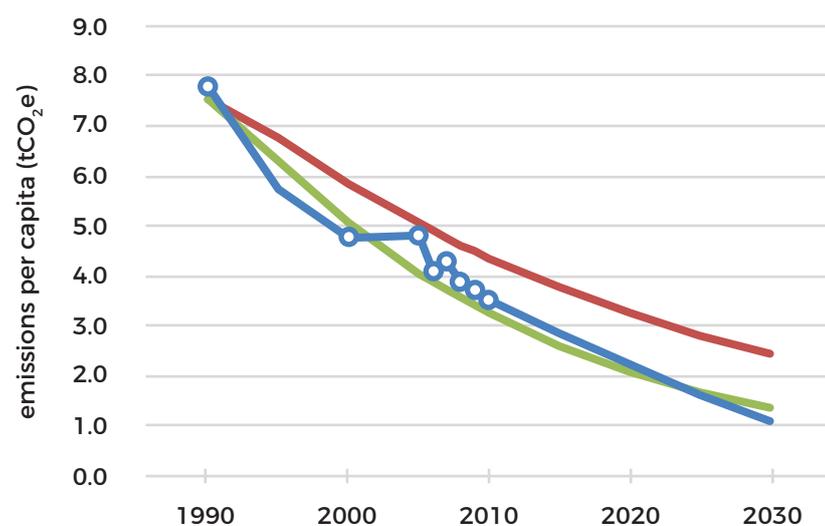


THIS MAP⁶ SHOWS THE PROJECTED EMISSIONS LEVEL IN 2030 BASED ON TARGETS AND TRENDS.

Countries in green signify nations that have set NDCs ambitious enough to achieve the 1.5-degree goal. Light blue dots represent subnational reporting entities that, based on their current emissions trends, are on track to achieve the 1.5-degree target by 2030, and dark blue dots represent subnational targets that align with 1.5 degrees.

These data suggest that while some pioneering cities such as Östersund and Cape Town are leading the way, more can be done through increased ambition and increased reporting to support climate action at all levels and align with 1.5 degrees.

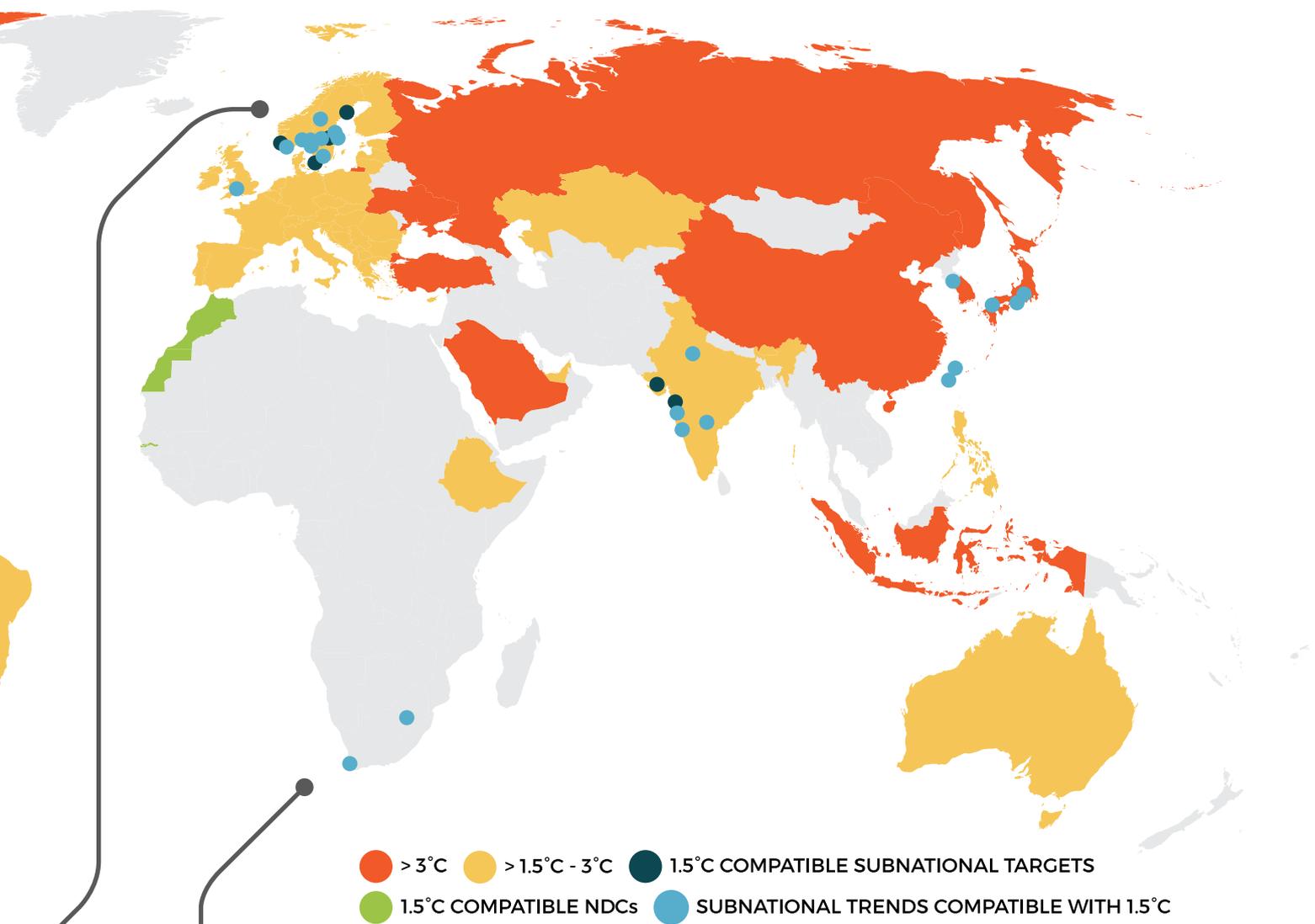
ÖSTERSUND (SWEDEN) EMISSIONS TRENDS AND TARGETS 1990-2030



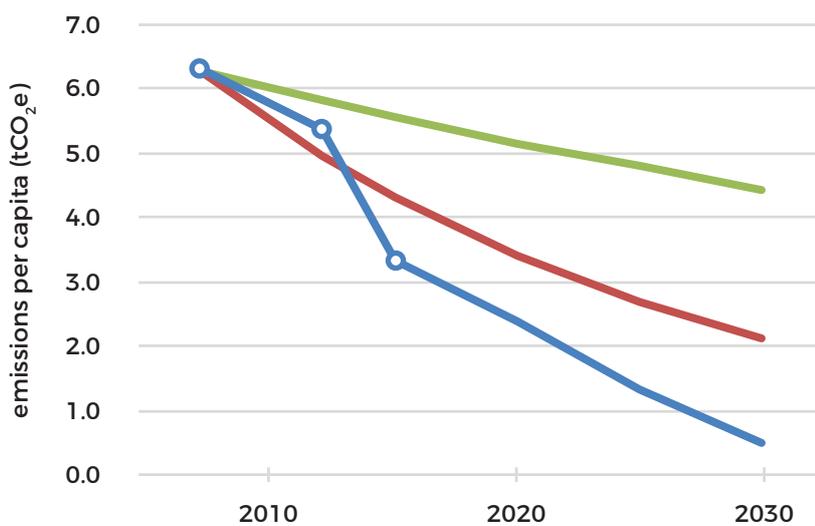
Östersund Municipality, Sweden has a population of 49,806 and a target of 100 percent GHG emissions reduction by 2030 compared to 2010 levels. According to this target the city will reduce 5,541,610 tons of CO₂e by 2030. **Östersund is on track to achieve its target and stay within the per capita emissions allowance of the 1.5-degree target.**

■ Projected per capita emissions by trend
 ■ Projected emissions according to local target
 ■ Projected emissions according to NDC
 ○ Reported emissions

⁵ NDC compatibility assessments sourced from Climate Action Tracker



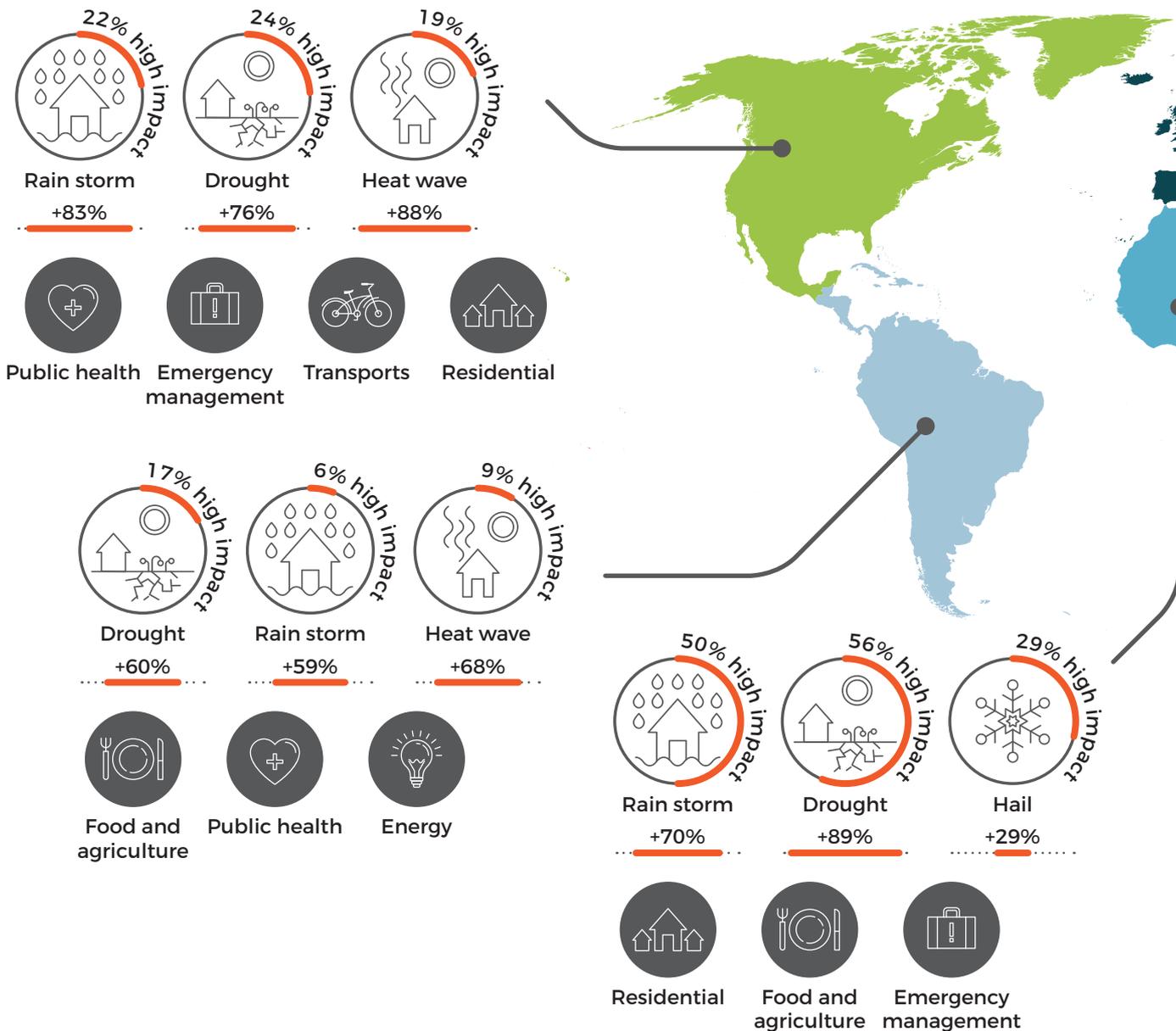
CAPE TOWN (SOUTH AFRICA) EMISSIONS TRENDS AND TARGETS 2007-2030



Cape Town Metropolitan Municipality, South Africa has a population of 4,012,441 and a target of 100 percent GHG emission reduction by 2030 compared to 2010 levels. According to this target the city would reduce 77,344,170 tons of CO₂e by 2030. Based on reported inventories, Cape Town is on track to stay within the per capita emissions allowance of the 1.5-degree target.

- Projected per capita emissions by trend
- Projected emissions according to local target
- Projected emissions according to NDC
- Reported emissions

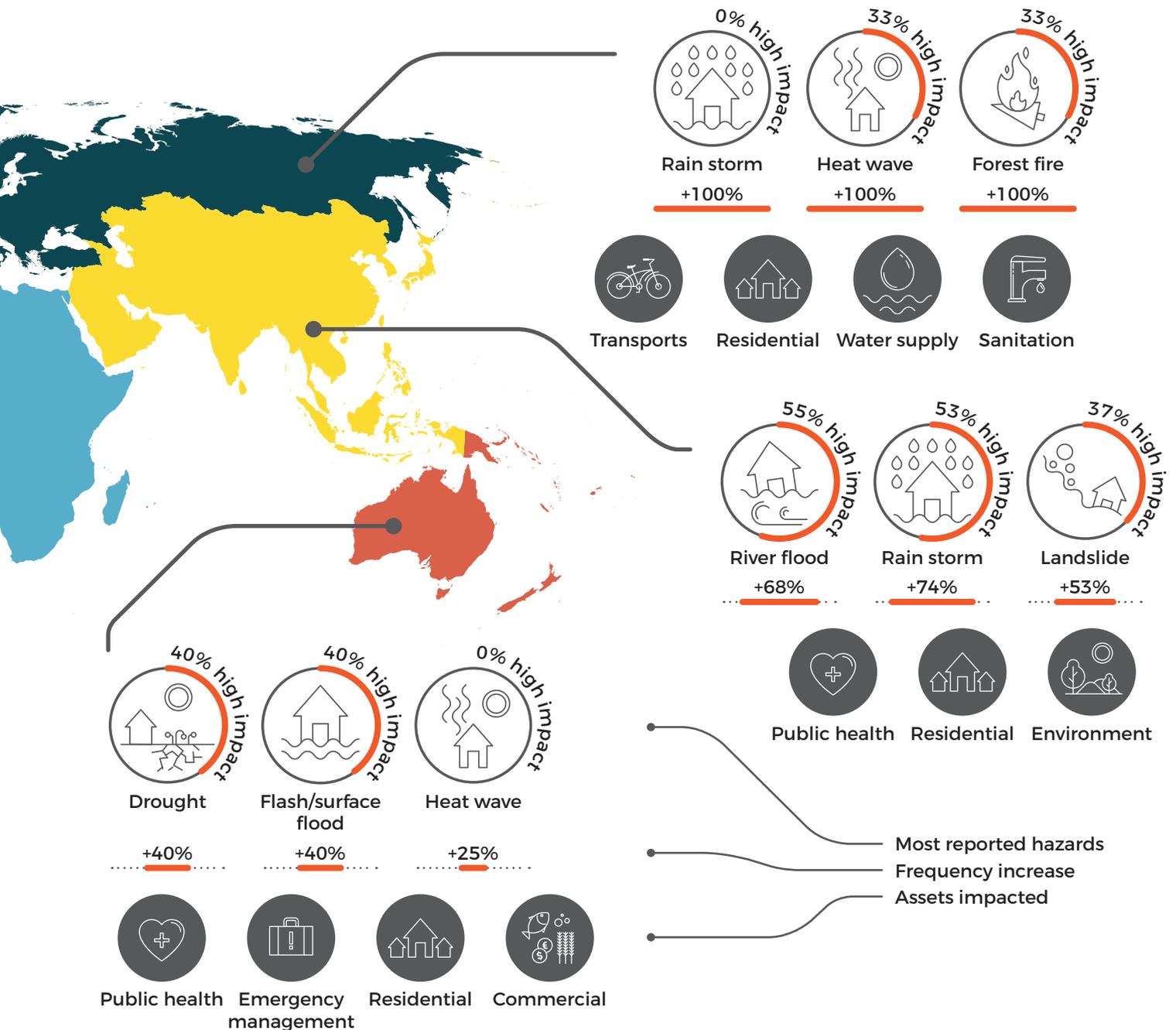
HAZARD MAPPING: MANAGING THE IMPACTS OF CLIMATE CHANGE



This map shows the three most commonly reported climate hazards and the assets, systems and services (shown in grey) most impacted by climate change in each region. For example, rain storms, drought and heat waves are the top hazards reported in North America. Of the reporting entities that experience rain storms, 22 percent identify “extremely serious” or “serious” impacts indicating some combination of damage to assets and services, loss of life or injury or significant economic disruption. Eighty-three percent report increased frequency of rain storms. As interconnected systems, urban areas are particularly vulnerable. The increasing occurrence of extreme weather events often causes ripple effects across an urban system, disrupting vital infrastructure and services. For example, when the electricity grid fails, transportation, telecommunications and computerized systems can experience cascading failures.

The climate impact projections from the IPCC, based on 1.5- and 2-degree warming scenarios, underscore that resilience-building and adaptation are just as important as mitigating emissions. Even if we limit warming to 1.5 degrees, climate impacts will be substantial, with up to 15 percent of the global population potentially exposed to severe heat and up to 69 million exposed to flooding⁶.

Through cCR data, we can see specific climate-related hazards as well as the assets, systems and services impacted. This sort of data gives a far more textured picture that is valuable for both NDCs and National Adaptation Plans (NAPs).



The IPCC analysis is an aggregate assessment of global impacts. Subnational data on climate hazards and impacts offers a valuable ground-level picture of how climate change is affecting the well-being of communities. Without robust reporting and multilevel consultations, NAPs may be missing critical information from the subnational level.

⁶ Levin, K., Half a Degree and a World Apart: The Difference in Climate Impacts Between 1.5°C and 2°C of Warming (WRI blog, 2018) www.wri.org/blog/

ADVANCING SUSTAINABLE DEVELOPMENT THROUGH A CLIMATE LENS

LOCAL AND REGIONAL GOVERNMENTS HAVE A DIRECT MANDATE TO SERVE THEIR COMMUNITIES, WHETHER URBAN, PERI-URBAN OR RURAL.

Local and regional governments do not consider climate mitigation and adaption in the abstract. They consider the concrete, specific benefits it will deliver in their communities, and how climate action advances broader sustainable development objectives.

CCR data from 2018 shows where subnational governments are focusing their efforts, what sectors they are investing in and the benefits they are providing their communities.



Through robust subnational reporting that ties climate action with broader sustainable development objectives, all levels of government can see where and how climate action at the subnational level also advances components of the Sustainable Development Goals (SDGs).

THE CITIES AND REGIONS TALANOA DIALOGUES FOR MULTILEVEL ACTION

2018 MARKED THE START OF THE TALANOA DIALOGUES: MULTILEVEL, MULTI-STAKEHOLDER CLIMATE CONSULTATIONS TAKING PLACE WORLDWIDE.

These inclusive, in-country consultations are designed to jump start the review of NDCs and prepare national governments to submit more ambitious and inclusive commitments in 2020.

The Cities and Regions Talanoa Dialogues have shown that even where [all levels of government see the value of multilevel collaboration](#), the necessary support systems and processes are not in place to systemize this collaboration.

Discussion from the Cities and Regions Talanoa Dialogues also confirmed that in many cases, national governments are not aware of climate actions implemented at the local level, and that, as a result, [NDCs do not always fully reflect the emissions reduction potential in cities and regions](#).

For example, at a dialogue held in Balikpapan, Indonesia, participants acknowledged that existing climate mitigation and adaptation efforts were not unified. In order to strengthen and implement the Indonesian NDC, participants of the Balikpapan Dialogue discussed possible solutions, including the creation of working groups to lead multilevel, multi-sectoral development.

Participants also agreed that there needs to be better horizontal and vertical communication between cities, provinces and the national government. Additionally, while Balikpapan reports using the cCR, neighboring jurisdictions also engaged in climate action do not. This means that [further action is needed to make local climate data](#) across the region [comparable](#).

At the Balikpapan Dialogue some local and regional participants were made aware of a national registry system designed to acknowledge local initiatives at the national level and take subnational efforts into account in national climate planning.

This example illustrates that multilevel discussions are an initial step towards establishing lasting mechanisms that enhance multilevel collaboration and information-sharing. As nations aim to scale up ambition and submit revised NDCs in 2020, it is critical that they have an accurate and up-to-date picture of climate action and climate risks at the subnational level.

In early 2018, ICLEI, along with GCoM and UN-Habitat as special partners, launched the Cities and Regions Talanoa Dialogues, in response to the call for Talanoa Dialogues by the Fijian COP23 Presidency. The aim is to facilitate consultations involving all levels of government and key actors to measure, shape and strengthen NDCs. Over the course of 2018, cities and regions engaged in a total of 60 Talanoa events in 40 countries.



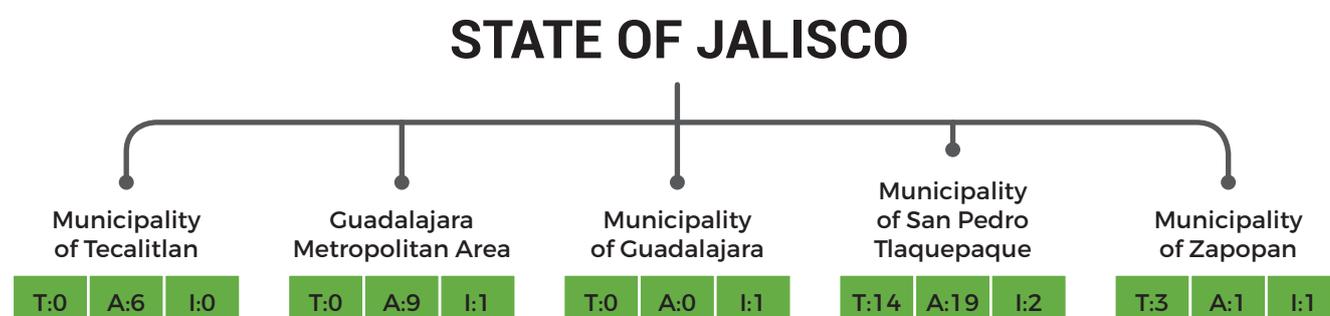
**CITIES & REGIONS
TALANOA DIALOGUES**

INTEGRATED MRV: WHY AND HOW IT WORKS

OVER THE PAST EIGHT YEARS, THE CCR HAS DEVELOPED INTO AN INTEGRATED REPORTING PLATFORM WHERE DATA FROM 1,060 SUBNATIONAL REPORTING ENTITIES FROM OVER 89 COUNTRIES CAN RECOGNIZE PEERS, CONNECT AND COMPARE DATA.

This integrated reporting and review process also enables technical experts to build capacity among reporting entities and ultimately to give recommendations for collaboration and enhanced action to all levels of government.

The MRV framework starts with [local and regional governments](#) at all administrative levels in a country registering to a system where they enter a [multilevel reporting family tree](#).



A successful MRV framework must follow well-designed and integrated reporting standards that are comparable across subnational governments and comply with standards that allow for aggregation. The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) is a common and robust standard for subnational GHG inventories developed by WRI, C40 and ICLEI. It provides subnational governments with a protocol and associated tools to report effectively.



Guadalajara Metropolitan Area, Mexico.

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.

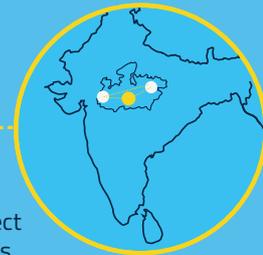
Recognition

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

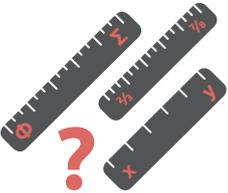
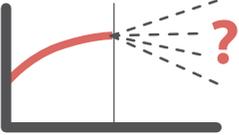
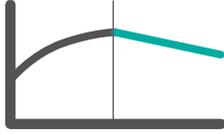
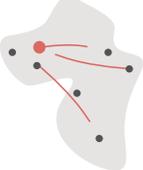
Integrated MRV provides a holistic and accurate profile of reported emissions and climate change adaptation developments. This enables more effective and coordinated action planning and implementation. Based on the profile created by the national family tree, national climate action plans can be tailored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



LOCAL AND REGIONAL GOVERNMENTS USE THE GPC TO IMPROVE SUBNATIONAL CLIMATE DATA.

By accurately comparing data, different levels of government can track the performance of their geographical jurisdictions and those of their “family members” as it relates to the wider picture. Higher levels of government can identify the strengths and weaknesses of reporting entities within their family tree and give assistance or support accordingly. This enables more effective and coordinated action planning and implementation. Based on the profile of the family tree, climate action plans can be coordinated across levels of government and tailored to address critical emissions sources.

The cCR supports reporting entities through this integrated MRV approach by providing technical infrastructure as well as capacity building in target cities and regions using the GreenClimateCities (GCC) program and its guiding process.

WITHOUT GPC	WITH GPC
<p>Different types of measurements</p> 	<p>One measurement</p> 
<p>Account for only a portion of emissions</p> 	<p>Consistently account for all emissions</p> 
<p>Unclear if climate targets will be met</p> 	<p>Emissions trajectory well understood</p> 
<p>Incomplete data limits investment</p> 	<p>Good data drives investment</p> 
<p>Unable to relate to national climate action</p> 	<p>Can measure city's contribution to national climate efforts</p> 

⁷ World Resources Institute, Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (WRI, 2014) www.ghgprotocol.org/

RECOMMENDATIONS

THE 1.5-DEGREE REPORT CONFIRMED THAT WE CAN EXPECT SUBSTANTIAL CLIMATE IMPACTS IN THE COMING DECADES, EVEN IF ALL LEVELS OF GOVERNMENT RAISE THEIR AMBITION TO HIT THE 1.5-DEGREE TARGET.

Since national governments adopted the Paris Agreement, local and regional governments have scaled up climate action. To build on these efforts, we need a growing body of robust subnational climate data, used by all levels of government. Initiatives like GCoM and platforms like the cCR are designed to support this.

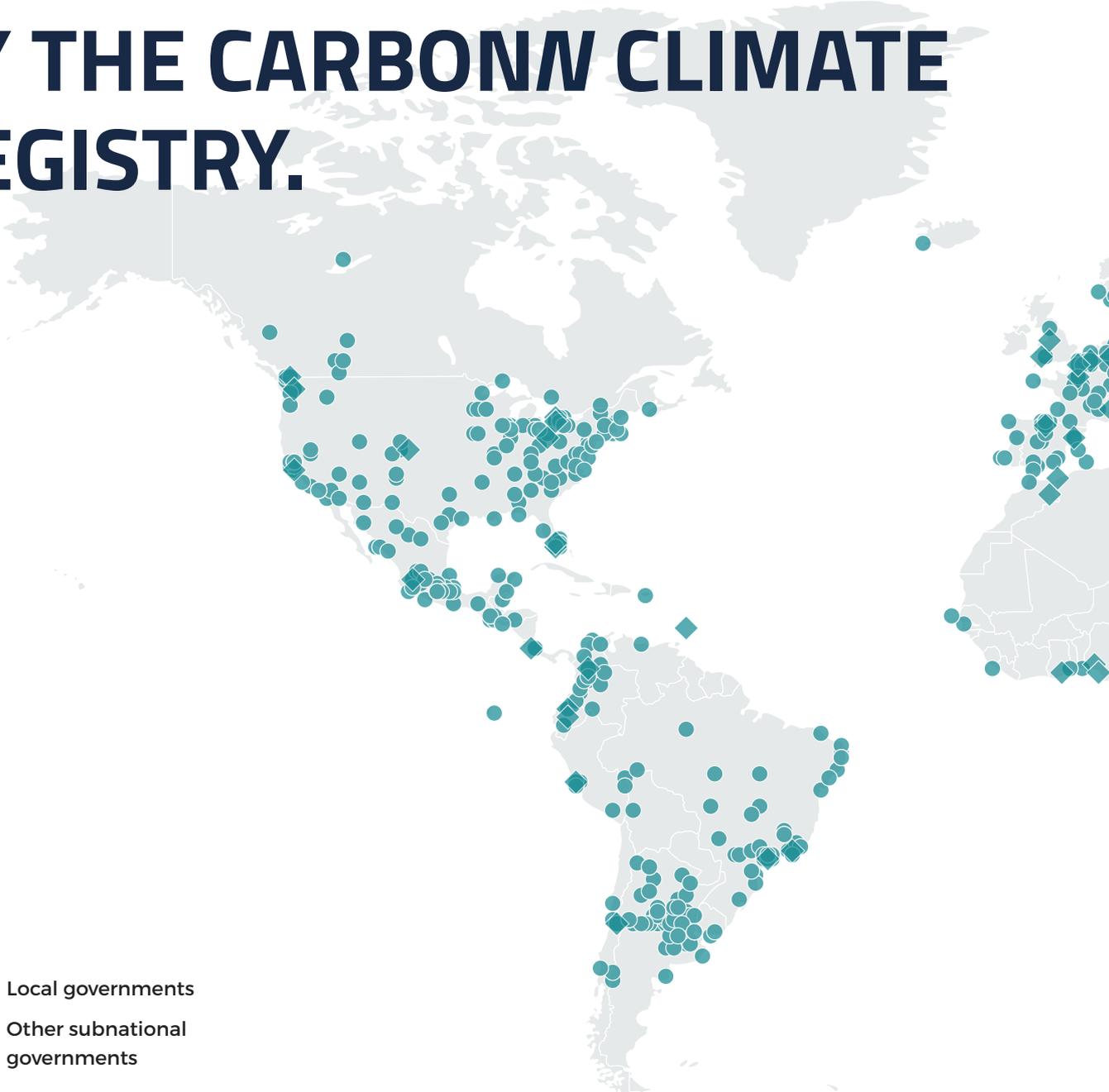
This body of subnational data paints a picture not only of subnational climate action but also the impacts of climate change for communities around the world. This granular view of climate action and impacts gleaned from subnational reporting is critical to more ambitious NDCs submitted in 2020, and to more effective adaptation and resilience building.

The path to 1.5 necessarily connects local, regional and national governments.



City of Katowice, Poland.

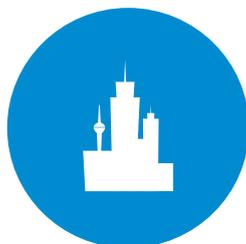
THIS REPORT IS POWERED BY THE CARBONN CLIMATE REGISTRY.

- 
- Local governments
◆ Other subnational governments



836

Population represented



1060

Reporting entities



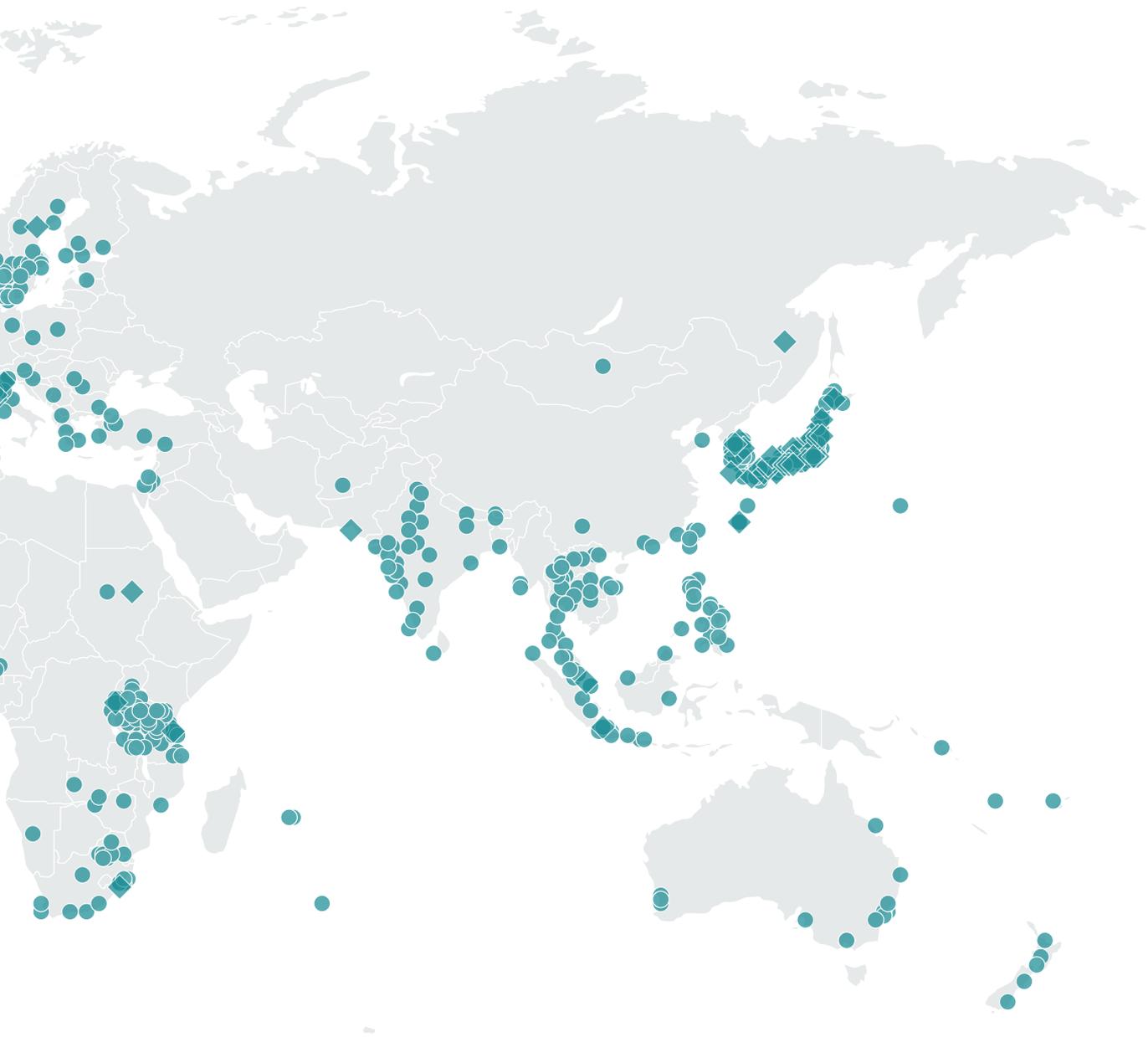
89

Countries represented



1953

Climate targets



7135

Actions



7.7

Committed GHG
emission reductions
by 2020



14.9

Committed GHG
emission reductions
by 2030



33.7

Committed GHG
emission reductions
by 2050

THIS REPORT IS A SNAPSHOT IN TIME.

For current data, visit carbonn.org or contact carbonn@iclei.org

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Federal Ministry
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ICLEI
Local
Governments
for Sustainability



Reporting in the

carbonn
Climate Registry

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