



GLOBAL COVENANT
of MAYORS for
CLIMATE & ENERGY

CLIMATE EMERGENCY: UNLOCKING THE URBAN OPPORTUNITY TOGETHER

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GCoM SIGNATORIES



2018
9,149
(6,000+ at the time
of signing the Paris
Agreement in 2015)²

2019
10,239
(12% increase
since 2018)

GCoM CITIES POPULATION



2018
780
MILLION

2019
864
MILLION
(21% of the global
urban population)
(11% increase
since 2018)

GCoM CITIES COULD REDUCE EMISSIONS BY



2018
1.4
GtCO₂e
by 2030 compared
to BAU

2019
2.3
GtCO₂e
by 2030 compared
to BAU

2018
2.8
GtCO₂e
by 2050 compared
to BAU

2019
4.2
GtCO₂e
by 2050 compared
to BAU

SINCE DECEMBER 2016

1,194
JURISDICTIONS

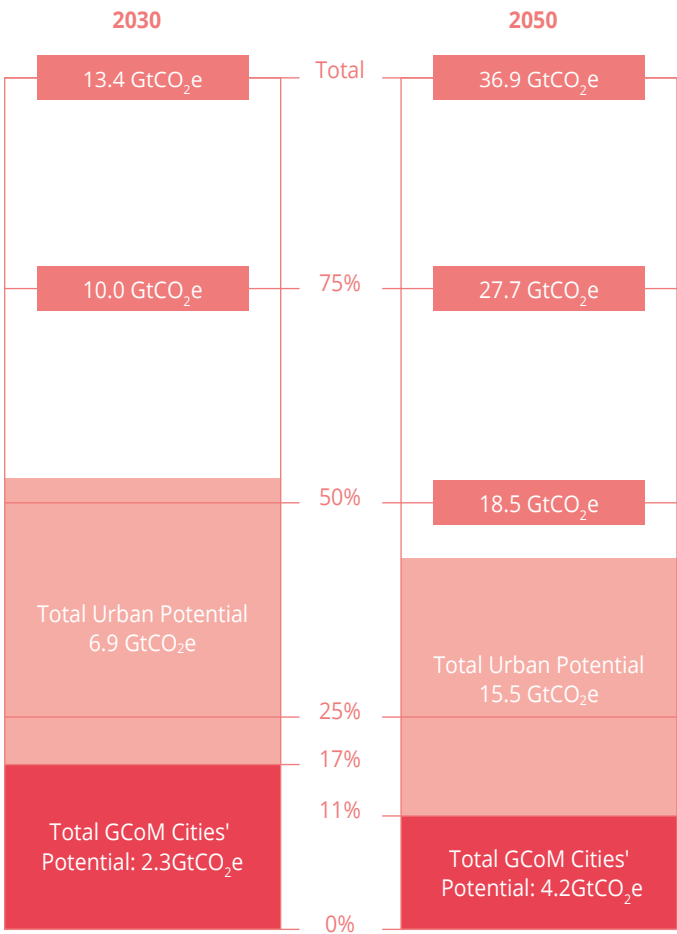
ACROSS
25
COUNTRIES
have declared
a Climate Emergency

INCLUDING
180
GCoM CITIES³
(only 6 national
governments have
so far declared⁴)

1. THE MOST SIGNIFICANT OPPORTUNITY TO ADDRESS THE ESCALATING GLOBAL CLIMATE CRISIS LIES IN OUR CITIES

Transformative climate action in cities can catalyse national economic prosperity and enhance quality of life for urban dwellers, while reducing global emissions. Over recent years, unprecedented high temperatures, floods and drought have severely affected cities worldwide and impacted nationally critical infrastructure, services and economic activities. National governments and cities need to work together to prepare for, and adapt to, the increased risk posed by climate change. While many nations have made climate commitments, the world needs to do more to remain within 1.5 degrees of global temperature increase and protect the future of our planet. Global Covenant of Mayors for Climate & Energy (GCoM) cities are committed, now more than ever, to offering nations a vital and valuable solution to the climate crisis.

Figure 1 (below)
Globally, there remains a huge gap between the emissions reductions stated in Nationally Determined Contributions (NDCs), and the reductions needed to keep the world within +1.5°C of warming. In 2030, the gap is estimated to be 13.4GtCO₂e. Under existing targets, GCoM cities can be expected to avoid 2.3GtCO₂e by 2030 compared with a business-as-usual scenario (BAU), and thereby fill 17% of the gap. The total urban emissions reduction potential globally represents 51% of the gap. By 2050, the global emissions gap widens to 36.9GtCO₂e. Relatively few GCoM cities have set targets for 2050 so far. More widespread and more ambitious city action is needed to help address the global gap.⁶



Potential of GCoM cities to reduce global emissions gap between NDC and 1.5 degree warming scenario

GCoM cities' potential emissions reductions are equivalent to:

OVER 714 MILLION HOMES' ELECTRICITY USE FOR ONE YEAR

1,053 COAL-FIRED POWER PLANTS OPERATING FOR ONE YEAR

OVER 870 MILLION PASSENGER VEHICLES DRIVEN FOR ONE YEAR⁵

Climate Emergency, Urban Opportunity, a new report supported by the Global Covenant of Mayors, finds that it is technically feasible to reduce greenhouse gas emissions from urban areas globally by 90% by 2050. This would avoid an estimated 15.5GtCO₂e over the next thirty years - more than the 2014 energy-related emissions of China and the United States combined, and over half of the energy-related emission reductions needed to stay on a 2°C pathway.

A comparative analysis of GCoM city commitments with the technically feasible urban abatement potential shows that existing GCoM city targets would already deliver a 35% reduction in emissions compared with the business-as-usual (BAU) scenario in 2030. The global urban abatement potential in 2030 is estimated at 45% compared with BAU, meaning that GCoM cities are aiming to deliver a significant part of the global potential. However, there is much more that GCoM cities could offer in 2050; current GCoM city targets will achieve a 57% reduction against the BAU scenario, whereas the technically feasible potential would be 90%.⁷

The success of our cities is pivotal to the success of our nations. National governments can help to harness the opportunities found in transitioning to zero-carbon and climate resilient cities, and provide the critical support needed to accelerate action. In doing so, nations will strengthen global progress towards the Paris Agreement goals while protecting the health and prosperity of citizens.



UNDER THE PARIS AGREEMENT, NATIONAL GOVERNMENTS COMMITTED TO INCREASE THEIR ABILITY TO ADAPT TO CLIMATE CHANGE.



THE VALUE OF NATIONALLY CRITICAL INFRASTRUCTURE IN URBAN AREAS AND THE POTENTIAL CONSEQUENCE OF INACTION MEANS CITIES URGENTLY NEED SUPPORT FROM NATIONAL GOVERNMENTS TO MOBILISE THE ACTION REQUIRED.



< 2 IN 5
COUNTRIES
HAVE A
COORDINATED
STRATEGY FOR
THEIR CITIES.⁸

"COUNTRIES CAN
HARNESS
THE DYNAMISM
AND CREATIVITY
OF CITIES TO
INCREASE THE
AMBITION OF
THEIR NATIONALLY
DETERMINED
CONTRIBUTIONS."⁹

CHRISTIANA FIGUERES,
VICE CHAIR, GCoM





2. NATIONS CAN GALVANISE MORE AMBITIOUS CITY CLIMATE COMMITMENTS

With climate risk becoming ever more real for GCoM cities, they are setting ambitious targets to reduce emissions and transition to a climate safe future. Since urban areas are the source of around 70% of global emissions, city emissions reductions can contribute greatly to Nationally Determined Contributions (NDCs). To stave off the most catastrophic impacts of climate change, more ambitious targets - made possible when national governments better support their cities - are needed. Many cities have already set targets in line with NDCs, and more can do so; but even more is possible when national governments support cities to achieve emissions reductions in line with a +1.5°C maximum warming scenario. It is in national interests to ensure that cities are supported to establish 2050 targets that are compatible with the Paris Agreement goals.

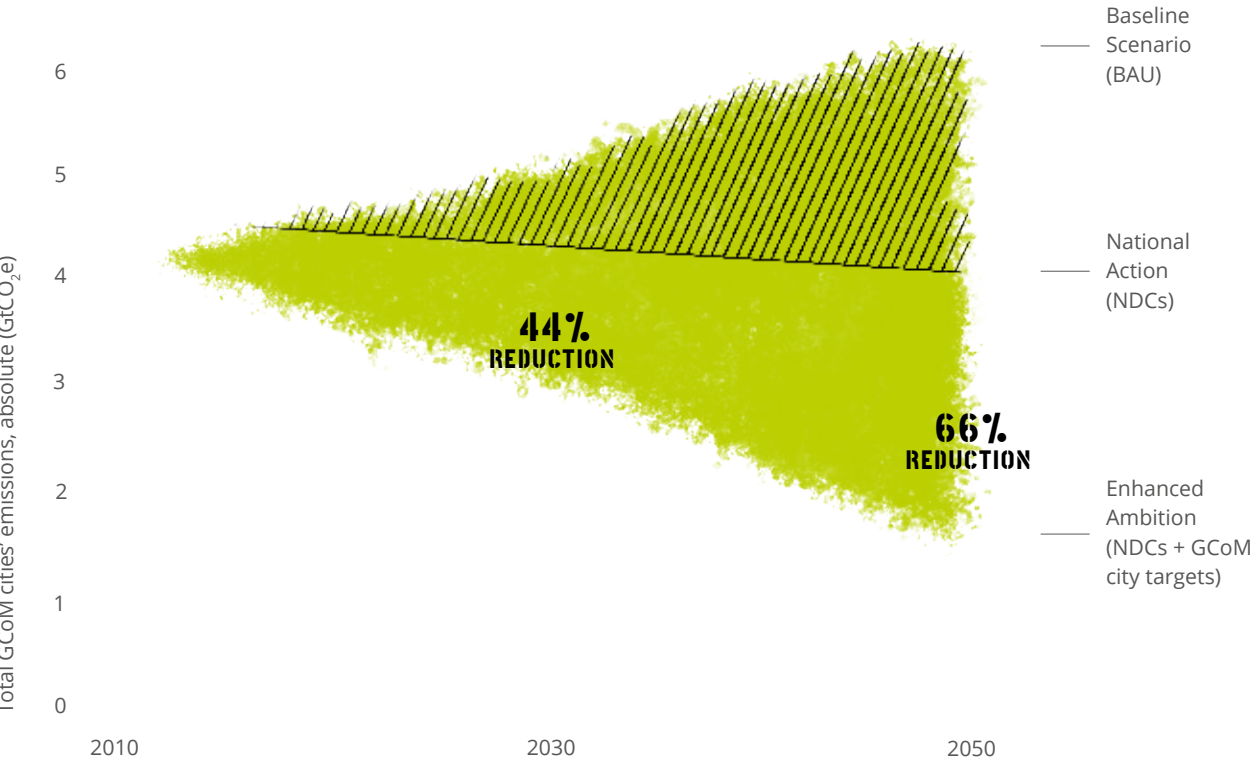
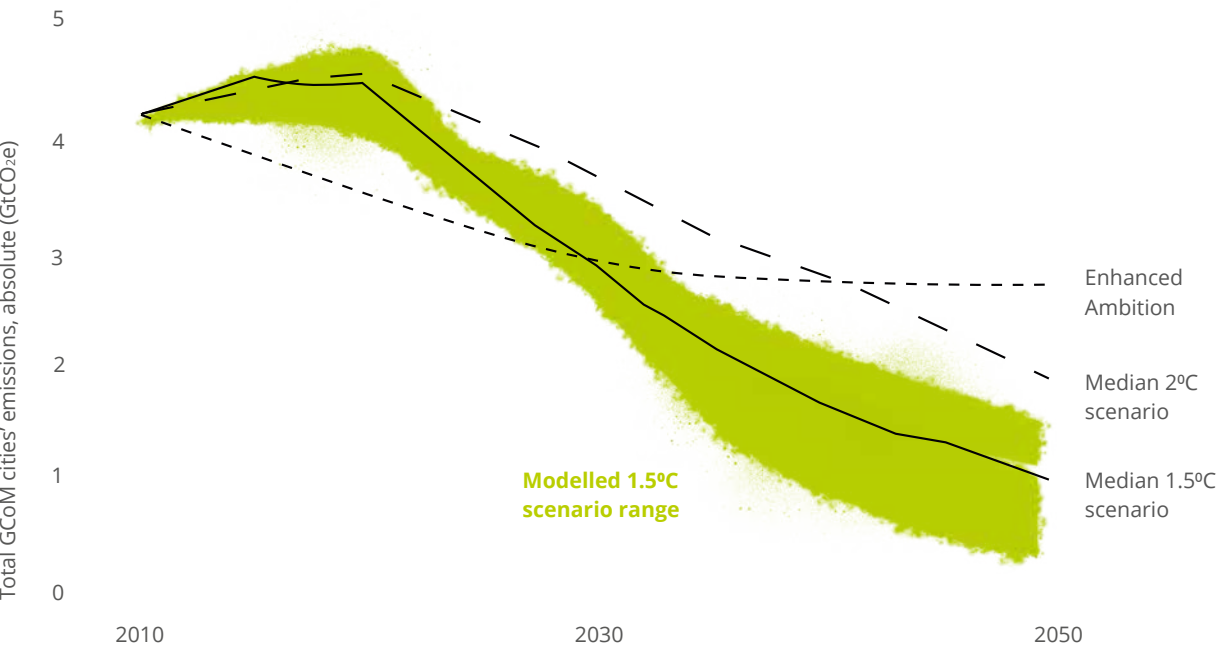


Figure 2 (above)
Through their existing emissions targets, GCoM cities (“enhanced ambition”) are aiming to deliver potential emissions savings against a BAU (“baseline”) scenario of 2.3 GtCO₂e in 2030 and 4.2 GtCO₂e in 2050. These savings represent a potential 44% reduction from the projected BAU emissions in 2030, and 66% reduction in 2050. Projected savings have increased since 2018; more cities are making more progress. (CDP-ICLEI Unified Reporting System and MyCovenant, n = 10,239 cities).

Figure 3 (below)
Until 2030, GCoM cities’ targets are in line with a 1.5 degree pathway. But the “1.5°C scenario” highlights the remaining discrepancy between the current GCoM trajectory (“enhanced ambition”) and the emissions reduction required by GCoM cities to limit global warming to +1.5°C. Even to meet a 2°C scenario, the “enhanced ambition” trajectory would need to decrease by another 30% by 2050. There is more to be done to strengthen city targets and plan for the longer term. Nations should promote greater city ambition and, in turn, draw on cities’ momentum to strengthen NDCs. (CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n=10,239 cities).¹⁰



	Reporting Year	Target Year	
		2030	2050
Potential annual emissions savings from enhanced ambition scenario compared with business as usual (GtCO ₂ e)	2018	1.4	2.8
	2019	2.3	4.2
Potential cumulative emissions savings from enhanced ambition scenario compared with business as usual (GtCO ₂ e)	2018	17	60
	2019	24.3	90.2



Figure 4
77% of GCoM cities have set targets to reduce their emissions by 2030. On a regional basis, GCoM cities in the EU and Western Europe are most likely to have set either 2020 or 2030 targets. However, only 2.6% of all GCoM cities (261 cities) have so far adopted city targets through to 2050. By setting a target for 2050, these 261 cities alone have increased the potential 2050 emissions savings of GCoM cities by 6% compared with the baseline scenario, or 10% compared with the “enhanced ambition” scenario if those cities had not set 2050 targets. There is huge potential for more cities to adopt long-term targets and action plans, and move nations closer to a 1.5°C trajectory. (CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n=10,239 cities).

Region	Number of GCoM cities
East Asia	36
Eastern Europe & Central Asia	423
EU & Western Europe	8860
Latin America & Caribbean	370
Middle East & North Africa	77
North America	192
Oceania	35
South East Asia	69
South Asia	16
Sub-Saharan Africa	161

¹⁰ Baseline refers to the business-as-usual emissions trajectory, assuming no intervention beyond current policies; National action takes into account declared Nationally Determined Contributions (NDCs); Enhanced ambition incorporates existing GCoM city commitments to reduce emissions, in addition to NDCs; 1.5°C scenario shows the emissions trajectory required to achieve a maximum +1.5°C global warming. The +1.5°C and 2°C scenarios indicate carbon emission limits for individual countries, global regions and cities, however require the thresholds to be met globally. Figure 3 presents the proportion of emissions associated with the GCoM cities. Limiting the temperature increase to below +1.5°C or even 2°C will also require efforts from the many cities who have not yet joined GCoM or set targets. This highlights the importance and potential power of growth across the GCoM alliance.

TO ALIGN WITH
A+1.5°C
PATHWAY,
GCoM CITIES'
EMISSIONS
MUST REDUCE
BY 31%
BY 2030
AND 76%
BY 2050.

CURRENTLY,
30%
EMISSIONS
REDUCTION IS
EXPECTED
BY 2030
AND 44%
BY 2050.

261
GCoM CITIES
HAVE SET
A 2050
EMISSIONS
TARGET
IN LINE WITH A
1.5°C
PATHWAY.

THESE TARGETS
WILL REDUCE
GCoM
EMISSIONS
BY 10%
BEYOND
2030.





3. WHEN CITIES ARE AT RISK, NATIONS ARE AT RISK

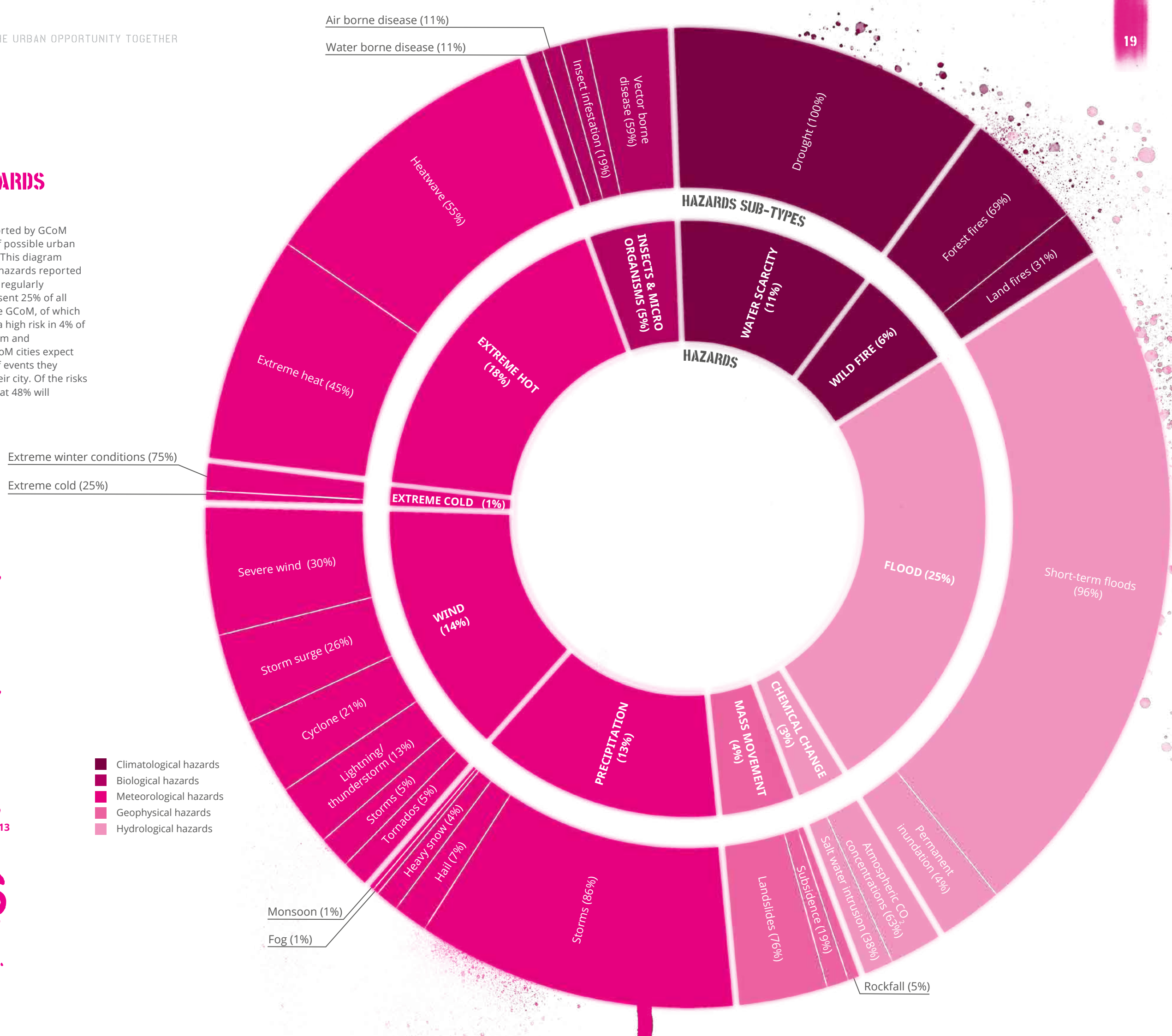
GCoM cities report that they are already experiencing severe climate events, which are affecting their people, economies and physical environments. The private sector is also affected, as businesses rely on urban infrastructure to operate and investors are increasingly concerned about rising costs of climate events, and resultant isolation and depreciation of assets. Ultimately, where urban risks are not managed, the social and economic repercussions will extend to the national level through impacts on health and wellbeing, forced migration, business relocation, reduced productivity and interruption of supply chains, among others. Cities and nations must act together to mitigate these risks and adapt to changes already in effect.

CITIES' CLIMATE HAZARDS

Figure 5

Analysis of the 'high risk'¹¹ hazards reported by GCoM cities in 2019 shows that the majority of possible urban climate hazards are already a high risk. This diagram highlights the distribution of 'high risk' hazards reported by GCoM cities across the hazard types regularly identified in cities. Flood hazards represent 25% of all hazards reported as high risk across the GCoM, of which permanent inundation is deemed to be a high risk in 4% of cases (CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n = 568 hazards). GCoM cities expect an increase in frequency and intensity of events they reported as being the highest risks to their city. Of the risks that cities have identified, they expect that 48% will manifest within the next five years.¹²

THE GCOM CITIES
THAT REPORT
HIGH RISK
OF HEAT WAVES
AND DROUGHT
HAVE COMBINED
POPULATIONS OF
124 MILLION
AND 127 MILLION¹³
RESPECTIVELY. EACH AROUND
15 TIMES
THE POPULATION OF
NEW YORK CITY.



GCOM CITIES
WITH HIGHER
CLIMATE RISK
HAVE LOWER
NATIONAL
"READINESS"
TO ADAPT.¹⁴

>80% OF
REPORTED PHYSICAL
RISKS TO
BUSINESSES ARE
WITHIN FOUR
PREDOMINANTLY URBAN
INDUSTRIES:
FINANCIAL SERVICES,
INFRASTRUCTURE,
TRANSPORTATION
AND MANUFACTURING.¹⁵

WITH BAU
EMISSIONS,
BY 2050
KEY CROP YIELDS
WILL REDUCE
BY >10%,
IMPACTING
2.5 BILLION
PEOPLE IN
1600 CITIES.¹⁶

800 MILLION
PEOPLE IN
570 CITIES
WILL BE IMPACTED BY
SEA LEVEL RISE
BY 2050.¹⁷

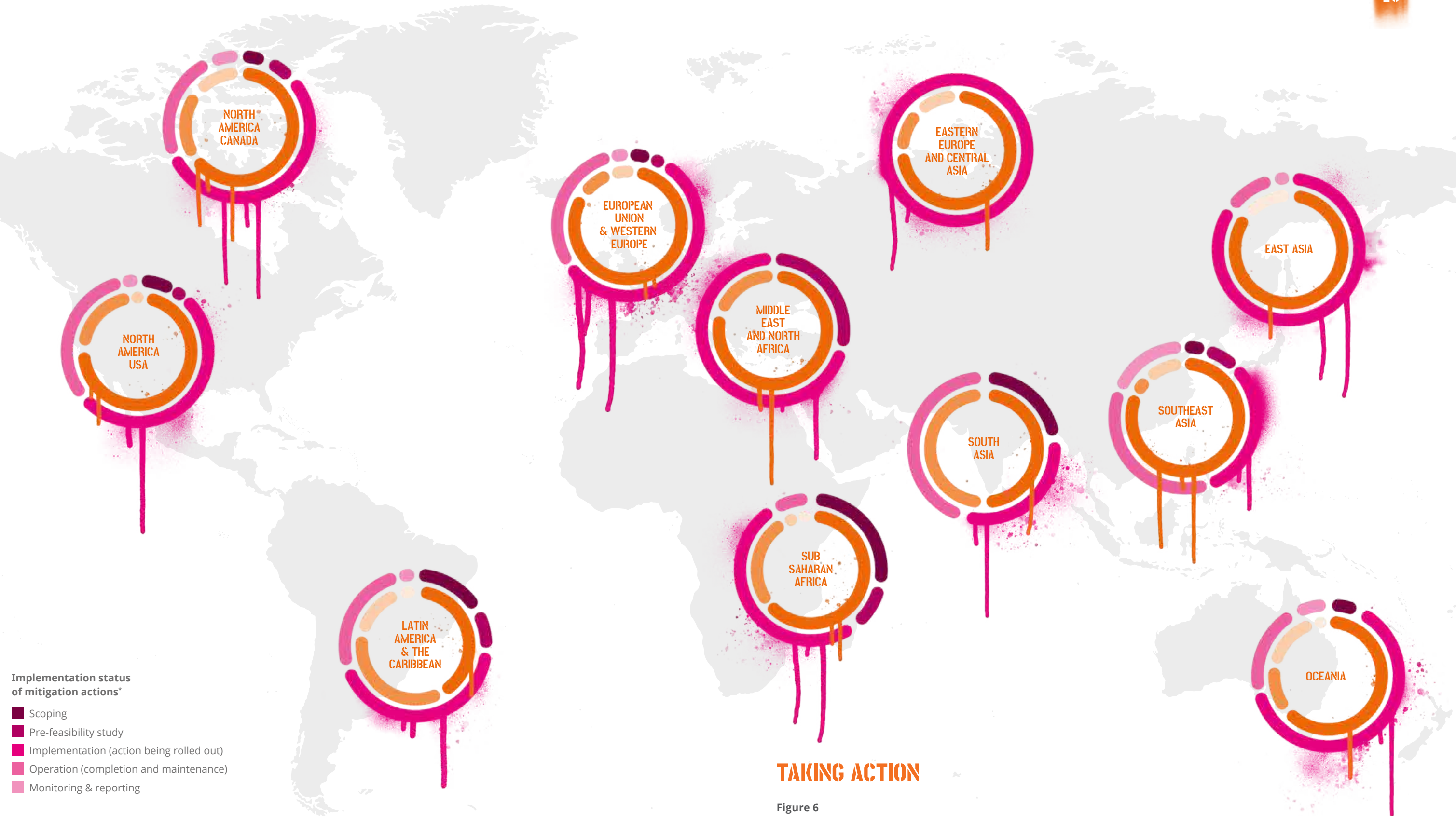
CITIES
ACCOUNT FOR
OVER 80%
OF GLOBAL GDP.¹⁸





4. CITIES ARE TAKING ACTION, AND GENERATING NATION-WIDE BENEFITS

GCoM cities are advancing action on adaptation and mitigation, offering exemplars and road-maps that other tiers of government can emulate. The benefits that cities foresee from climate action are valuable well beyond the city. With national coordination, these benefits can be scaled up and expanded to ensure equitable distribution of benefits across regions and communities. National governments can leverage competitive advantage from low carbon and resilient cities, which offer citizens and businesses a safe, clean and efficient place to thrive.



* Based on a sample of 1739 mitigation actions reported by GCoM cities to the CDP-ICLEI Unified Reporting System.

TAKING ACTION

Figure 6

GCoM cities' targets are backed up by a burgeoning volume of reported mitigation actions underway across sectors and regions, which are progressing through scoping and planning stages, and overwhelmingly entering implementation in all regions.

Simultaneously, GCoM cities are developing and implementing adaptation plans to increase their resilience to unavoidable climate impacts. Of 499 reporting cities, 71% report that they have a climate change adaptation plan in place. A further 17% currently have a plan under development. Cities' commitments to addressing climate risks will help to protect communities and business, and attract and retain investment. (CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n = 499).

GCoM CITIES
REPORT
CO-BENEFITS
OF MITIGATION
INCLUDING
HEALTH,
JOBS AND
ECONOMIC
GROWTH.

22% OF
REPORTED
MITIGATION
CO-BENEFITS
ARE RELATED
TO ADAPTATION.¹⁹

ACHIEVING THE
GLOBAL URBAN
EMISSIONS
REDUCTION
POTENTIAL
WOULD REQUIRE AN
INVESTMENT OF
US\$1.83
TRILLION.
PER YEAR.

BY 2030
THIS WOULD
GENERATE ANNUAL
RETURNS WORTH
US\$2.80
TRILLION,
AND SUPPORT
87 MILLION
JOBS PER YEAR.
BY 2050,
ANNUAL RETURNS
WOULD BE WORTH
US\$6.98
TRILLION.²⁰



A young Black woman with short hair, wearing a patterned shirt, is holding a large, hand-drawn sign. The sign is made of cardboard and has the text "NATIONAL GOVERNMENTS CAN UNLOCK URBAN OPPORTUNITY" written on it in bold, black, hand-painted letters. The woman is looking directly at the camera with a serious expression. The background is a solid blue color.

**NATIONAL
GOVERNMENTS
CAN UNLOCK
URBAN
OPPORTUNITY**

5. NATIONAL GOVERNMENTS CAN UNLOCK URBAN OPPORTUNITY

The vital importance of ambitious city action on climate change is clear. We need cities to help address the global emissions gap to keep the world within +1.5°C of global warming. The case for national support to cities is also clear. Where cities are at risk, nations are at risk; and where cities act to reduce emissions and adapt to climate change, the benefits are accrued nation-wide.

Many GCoM cities are utilising sub-national and local funding to kick-start their transition to a zero-carbon and climate resilient future. However, cities often lack the resources and capacity to deliver the costly interventions that are needed.²⁰ Nations have a responsibility to help unlock city action and financing pathways, both to bolster NDCs and advance global progress towards the Paris Agreement goals, and to ensure fair and equitable distribution of benefits nationally through a just transition.



NATIONS MUST:

Enhance funding to city governments.

National governments can generate income - and empower cities to increase their own income - to help fund low carbon and resilient urban projects. Governments can tag climate-related expenses in budgets, strengthen carbon taxes, eliminate fossil fuel subsidies and utilise other financial and fiscal instruments at the local level, such as land value capture rights and tax incentives for climate-smart developments. They can also shift budgets from expenditures in high emission infrastructure to more sustainable and resilient options, for example, through diverting funding from road projects to integrated public transport initiatives.

Establish a supportive national policy framework focused on the urban actions deemed to be most critical in the fight against climate change.

National governments can reform overarching frameworks, develop sector-specific strategies or introduce new policies that enable cities to take more ambitious action and achieve stretching targets. Through an overarching national strategy for cities, nations can build upon the work cities are already undertaking, and ensure the unique needs and values of cities are recognised.

ACROSS ALL REGIONS, GCOM CITIES IDENTIFIED BUDGETARY CAPACITY AS THE MOST SIGNIFICANT CHALLENGE TO DELIVERING ADAPTATION ACTION.²¹

Facilitate greater access for cities to international finance, including helping to match urban projects with prospective investors. National governments have a role in advocating for greater flows of international finance directly to cities, and can provide cities with technical support and resources to develop a pipeline of investor-ready opportunities.



9GtCO₂ COULD BE CUT FROM THE BUILDINGS SECTOR IN CITIES BY 2050, USING TECHNICALLY FEASIBLE SOLUTIONS.



A FURTHER 3.1Gt COULD BE CUT FROM THE TRANSPORT SECTOR.²²

5.9Gt OF THIS REQUIRES DECARBONISATION OF NATIONAL ELECTRICITY SUPPLIES.

Enable and promote the development of effective coalitions and alliances to support city action (public-public and public-private).

Collaboration with the private sector and other tiers of government will help to achieve integrated goals that consider interdependencies and mobilise support across sectors and administrative boundaries.



GAME ON!

Ensure the equitable distribution of benefits from climate action nation-wide, to facilitate a just green transition. Through integrated regional strategies, policies and legal frameworks, national governments can help cities achieve their economic and social potential while ensuring fair distribution of benefits nation-wide.

LOCAL GOVERNMENTS HAVE POWER OVER LESS THAN ONE-THIRD OF THE EMISSIONS REDUCTION POTENTIAL IN THEIR CITIES. NATIONAL AND STATE GOVERNMENTS HAVE POWER OVER A FURTHER THIRD. MORE THAN ONE-THIRD DEPENDS ON DIFFERENT LEVELS OF GOVERNMENT WORKING TOGETHER. THE FUTURE OF CITIES - AND NATIONS - DEPENDS ON COLLABORATION.²³

ACROSS GCOM CITIES
THAT HAVE REPORTED
FINANCIAL INFORMATION
ABOUT THEIR ACTIONS,
**62% OF MITIGATION
ACTIONS AND
68% OF ADAPTATION
ACTIONS ARE FUNDED
BY LOCAL GOVERNMENTS.**

**A FURTHER
13% AND 15%
RESPECTIVELY
ARE FUNDED BY
SUB-NATIONAL
(REGIONAL)
GOVERNMENTS,
WHILE ONLY
3% AND 4%
ARE FUNDED BY
INTERNATIONAL
INSTITUTIONS.²⁴**

INCREASED FUNDING FROM
NATIONAL GOVERNMENTS,
PRIVATE AND INTERNATIONAL
SOURCES (INCLUDING FOR
PROJECT PREPARATION), AND
AN INCREASE IN CITIES' OWN
REVENUE GENERATING CAPACITY
COULD HELP TO DELIVER MORE,
AND MORE TRANSFORMATIVE,
CLIMATE ACTION TO REALISE
THE FULL EMISSIONS ABATEMENT
POTENTIAL OF CITIES AND ENSURE
ADAPTATION TO MAJOR PHYSICAL,
SOCIAL AND ECONOMIC RISKS.



REFERENCES

1. As of 1st August 2019.

2. GCoM's precursor initiatives, the Compact of Mayors and the European Covenant of Mayors, are now merged in the GCoM.

3. Excludes declarations by borough-level Councils within cities.

4. As of 20 November 2019. See <https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/>

5. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

6. Global emissions gap as reported by JRC Global Energy and Climate Outlook 2018. Global urban potential as reported by the Coalition for Urban Transitions in *Climate Emergency, Urban Opportunity*, 2019. GCoM city potential is reported by cities to the CDP-ICLEI Unified Reporting System and MyCovenant in 2019.

7. The methodologies are not a perfect match. For example, some GCoM cities have made commitments to reduce industrial emissions, which are excluded from the Urban Opportunity report. Meanwhile, the emissions inventories used by GCoM cities rarely include material efficiency, which is a major source of emission reductions in the Urban Opportunity report. Nonetheless, this analysis clearly shows that the 10,239 cities making commitments through GCoM are continuing to raise global climate ambition above the national pledges made under the Paris Agreement in 2015. Now, they need national governments to support them to go further and faster to avoid climate catastrophe.

8. Coalition for Urban Transitions, 2019. *Climate Emergency, Urban Opportunity: How National Governments Can Secure Economic Prosperity and Avert Climate Catastrophe by Transforming Cities*.

9. Quote from Christiana Figueres Vice-Chair, Global Covenant of Mayors; Former Executive Secretary, UN Framework Convention on Climate Change (2010-2016).

10. Scenarios from Joint Research Council Global Energy and Climate Outlook 2018, International Energy Agency Energy Technology Perspectives, Integrated Assessment Modeling Consortium - Various. Figure 3 presents a median scenario from these sources.

11. 'High risk' has been defined as those hazards that cities have reported as both 'high' probability and 'high' consequence.

12. CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n = 2,759 hazards.

13. CDP-ICLEI Unified Reporting System and MyCovenant, 2019, n = 4,279 hazards.

14. Analysis of GCoM city data in comparison with national-level statistics on 'readiness' from ND-GAIN, 2015. University of Notre Dame Global Adaptation Index Country Index Technical Report.

15. CDP, 2019, *Major risk or rosy opportunity? Are companies ready for climate change?*.

16. C40 Cities, 2018, *The Future We Don't Want*.

17. Refer back to reference 16.

18. Refer back to reference 8.

19. Based on data reported by 223 GCoM cities to the CDP-ICLEI Unified Reporting System, 2019. These cities reported 1,422 co-benefits related to their mitigation actions.

20. Refer back to reference 8.

21. Based on data from 416 GCoM cities reporting to the CDP-ICLEI Unified Reporting System, 2019.

22. Refer back to note 8.

23. Refer back to note 8.

24. Based on data reported by GCoM cities to the CDP-ICLEI Unified Reporting System, 2019, covering 1,216 mitigation actions and 1,109 adaptation actions.

ABOUT THE GLOBAL COVENANT OF MAYORS FOR CLIMATE & ENERGY

The Global Covenant of Mayors for Climate & Energy is the largest global alliance of cities and local governments voluntarily committed to actively combatting climate change and transitioning to a low carbon and climate resilient economy. In partnership with local, regional and global city networks, the Global Covenant of Mayors has:

10,239 CITY SIGNATORIES ACROSS 6 CONTINENTS AND 138 COUNTRIES REPRESENTING OVER 864 MILLION PEOPLE OR >10% OF THE GLOBAL POPULATION

LIMITATIONS

This report is based on self-reported data from GCoM cities reporting through the CDP-ICLEI Unified Reporting System and European Union MyCovenant platforms. Data has been checked for overall logic, but has not been verified at source. Where cities have reported insufficient data to support a robust analysis, these findings have been excluded. Where appropriate, the number of cities on which a particular analysis is based has been highlighted within the report.

For further information about the methodology and assumptions behind this report, please refer to the accompanying technical appendix available at www.globalcovenantofmayors.org.

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