

CDP Cities 2016

Climate action from 533 global cities



About the report

CDP and AECOM are proud to present our latest results from the 533 cities that disclosed their climate change related data through CDP this year. Thanks to CDP's cities program funders, Bloomberg Philanthropies, CDP has seen a 70% increase in the number of cities disclosing. A record number of cities are now measuring and disclosing environmental data on an annual basis in order to manage emissions, build resilience, and protect themselves from the growing impacts of climate change. City governments from Windhoek to Kolkata to Rio Grande, including 90% of C40 cities – a group of the world's mega-cities – are now disclosing through CDP.

The data presented here conveys information about every aspect of climate change measurement and management in cities. In 2011, 1 in 10 cities reported undertaking a city-wide emissions inventory, now 4 in 10 cities report doing so. 190 cities have set city-scale emissions reduction targets with over 3,000 actions to reduce emissions. 89% of cities view climate change as a risk to their city, with nearly 1,500 actions to adapt to climate change being disclosed.

Action by cities will be essential to achieving the ambitious goals of the Paris Agreement - but encouragingly more than 7,000 cities have made commitments through the Global Covenant of Mayors for Climate & Energy – and are reporting on their progress. These cities have shown great ambition, but they will need to collaborate with a wide range of stakeholders if they are to meet their targets and substantially reduce emissions, adapt to the effects of climate change and benefit economically and socially from a low carbon environment.

CDP congratulates the hard work and dedication of the world's city governments in measuring and disclosing this data. With this report, we provide city governments with information and insights that we hope will assist their work in tackling climate change.

For an in-depth analysis on the benefits for cities, regions, businesses and investors to collaborate on climate action, please see CDP's accompanying report, **"It takes a city: The case for collaborative climate action."**

Contents

Global	7
Africa	15
Asia and Oceania	23
Europe	31
Latin America	39
North America	47

Important Notice

The contents of this report may be used by anyone providing acknowledgment is given to CDP. This does not represent a license to repackage or resell any of the data reported to CDP and presented in this report. If you intend to repackage or resell any of the contents of this report, you need to obtain express permission from CDP before doing so.

CDP has prepared the data and analysis in this report based on responses to the CDP 2016 cities information request. No representation or warranty (express or implied) is given by CDP as to the accuracy or completeness of the information and opinions contained in this report. You should not act upon the information contained in this publication without obtaining specific professional advice. To the extent permitted by law, CDP does not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this report or for any decision based on it. All information and views expressed herein by CDP are based on its judgment at the time of this report and are subject to change without notice due to economic, political, industry and city-specific factors. Guest commentaries where included in this report reflect the views of their respective authors; their inclusion is not an endorsement of them.

'CDP' refers to CDP Worldwide, a registered charity number 1122330 and a company limited by guarantee, registered in England number 05013650.

© 2016 CDP. All rights reserved.



Global

533 disclosing cities in 89 countries

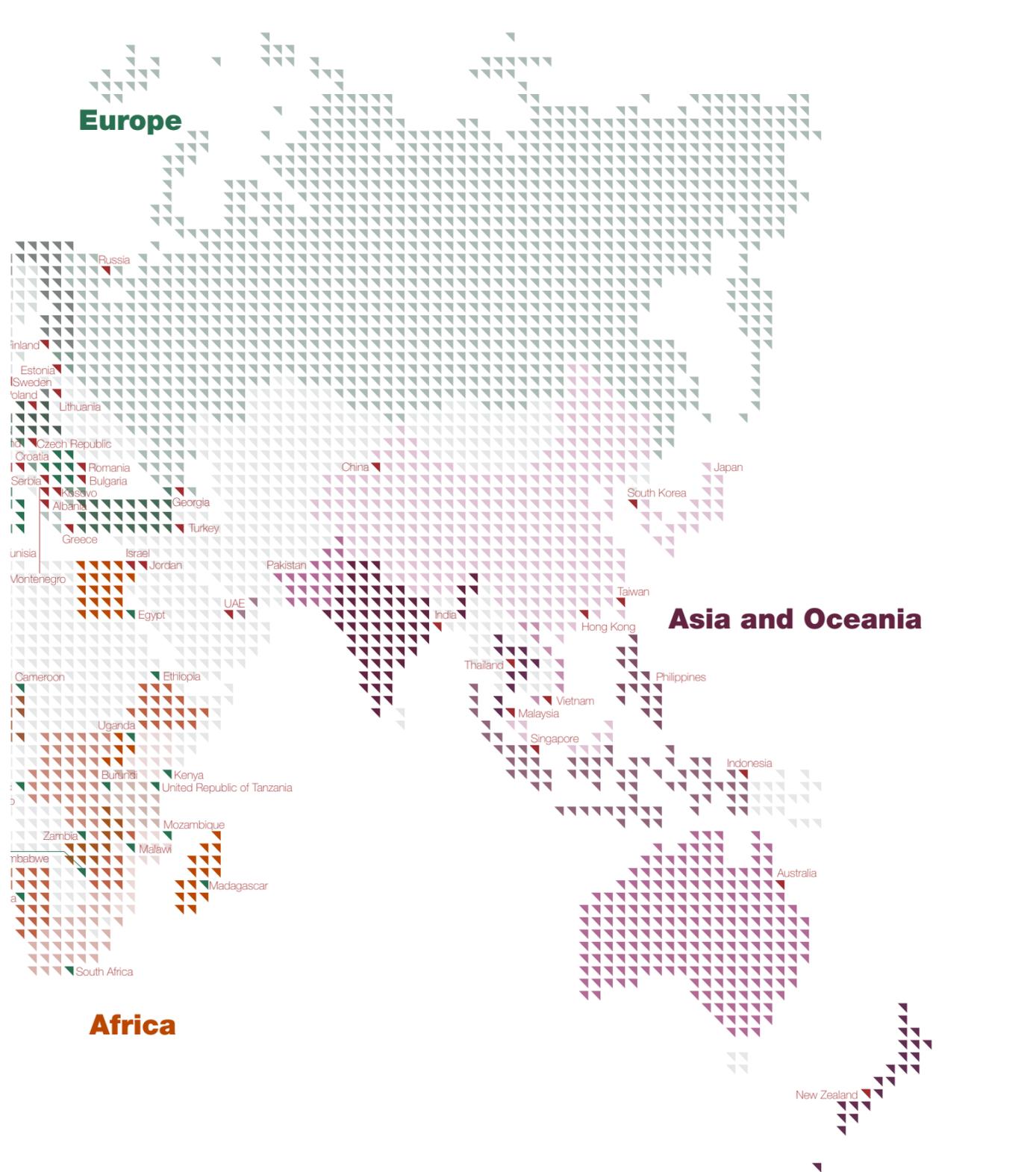
Africa › Burkina Faso › Bakata › Burundi › La mairie de Bujumbura › Cameroon › Bangangté › Foumban › Yaoundé 6 › Cote d'Ivoire › Abidjan › Grand-Bassam › Democratic Republic of Congo › Kananga › Kinshasa › Egypt › Cairo › Ethiopia › Addis Ababa › Ghana › Accra › Kenya › Kisumu › Nairobi › Nakuru › Madagascar › Antananarivo › Malawi › Blantyre › Lilongwe › Morocco › Rabat › Mozambique › Cidade de Maputo › Namibia › Windhoek › Nigeria › Abuja › Ibadan › Lagos › Senegal › Dioudoubou › Ziguinchor › South Africa › Cape Town › Durban › Ekurhuleni › Emfuleni › Johannesburg › Nelson Mandela Bay › Pietermaritzburg › Pretoria › Tshwane › Sekhukhune › Ugu › Vhembe › Tunisia › Commune Ain Drahem › Uganda › Jinja › United Republic of Tanzania › Arusha › Dar es Salaam › Morogoro › Mwanza › Zambia › Mazabuka › Zimbabwe › Harare
Asia and Oceania › Australia › Adelaide › Byron Shire › Cairns › Canberra › Melbourne › Perth › Sydney › China › Guangzhou › Shenzhen › Wuhan › Hong Kong › India › Bangalore › Jaipur › Kolkata › Indonesia › Bogor › Jakarta › Yogyakarta › Israel › Tel Aviv-Yafo › Japan › Hiroshima › Nagoya › Okayama › Tokyo › Yokohama › Jordan › Amman › Malaysia › Iskandar › Kuala Lumpur › Petaling Jaya › New Zealand › Auckland › Kapiti Coast › Napier › Wellington › Pakistan › Karachi › Philippines › Angeles › Antipolo › Batangas › Makati › Quezon › Singapore › Singapore › South Korea › Ansan › Boseong › Changwon › Cheongsong › Daejeon › Damyang › Geoje › Geumsan › Goheung › Gokseong › Gunpo › Gurye › Gwangju › Gwangyang › Haenam › Hoengseong › Hongcheon › Hwacheon › Imsil › Incheon › Inje › Jangheung › Jangseong › Jecheon › Jeju › Jeongseon › Jeonju › Mokpo › Muan › Naju › Nonsan › Pyeongtaek › Sejong › Seocheon › Seogwipo › Seoul › Shinan › Sunchang › Suwon › Tongyeong › Ulsan › Wonju › Yeonggwang › Taiwan › Hsinchu › Kaohsiung › New Taipei › Pingtung › Tainan › Taipei City › Taoyuan › Yilan › Thailand › Bangkok › UAE › Dubai › Vietnam › Hanoi › Ho Chi Minh
Europe › Albania › Tirana › Bulgaria › Sofia Municipality › Stara Zagora › Croatia › Zagreb › Czech Republic › Brno › Denmark › Aarhus Kommune › Allerød Municipality › City of Århus › Copenhagen › Egedal Municipality › Frederikshavn › Kommune › Gladsaxe Kommune › Hjørring › Hoeje-Taastrup Kommune › Hørsholm Kommune › Hvidovre › Jammerbugt Kommune › Middelfart Kommune › Odder Kommune › Skive Kommune › Sønderborg Kommune › Estonia › Johvi › Finland › Helsinki › Lahti › Turku › France › Amiens Métropole › Communauté urbaine du Grand Nancy › Nice Côte d'Azur › Paris › Villeurbanne › Georgia › Tbilisi › Germany › Berlin › Hamburg › Landeshauptstadt Magdeburg › Stadt Heidelberg › Gibraltar › Gibraltar › Greece › Athens › Thessaloniki › Iceland › Akureyri › Reykjavík › Ireland › Dublin › Italy › Bologna › Bolzano › Cagliari › Ferrara › Firenze › Genova › Lucca › Milano › Monza › Napoli › Olbia › Oristano › Padova › Piacenza › Ravenna › Reggio Emilia › Rimini › Roma › Torino › Udine › Venezia › Kosovo › Pristina › Lithuania › Šiauliai › Vilnius › Monaco › Monaco › Montenegro › Podgorica › Netherlands › Amsterdam › Groningen › Nijmegen › Rotterdam › The Hague › Norway › Bærum Kommune › Oslo › Tromsø › Trondheim › Poland › City of Wrocław › Gdańsk › Gdynia › Tarnów › Warsaw › Portugal › Águeda › Barreiro › Braga › Cascais › Fafe › Faro › Funchal › Lamego › Lisbon › Matosinhos › Moita › Ovar › Porto › Santarém › Torres Vedras › Vila Nova de Famalicão › Viseu › Romania › Alba-Iulia › Tulcea › Russia › Moscow › Serbia › Subotica › Slovenia › Ljubljana › Spain › Barcelona › Madrid › Murcia › Zaragoza › Sweden › Stockholm › Trelleborg › Switzerland › Basel-Stadt › Lausanne › Nyon › Stadt Zürich › Turkey › Bornova › Eskişehir › Istanbul › Kadiocak › Seferihisar › United Kingdom › Birmingham › Bournemouth › Cambridge › Cardiff › Glasgow › Leicester › London › Manchester
Latin America › Argentina › Buenos Aires › Córdoba › Mendoza › Río Grande › San Isidro › Santa Fé Ciudad › Vicente López › Bolivia › Gobierno Autónomo Municipal de Tarija › La Paz › Brazil › Aparecida › Aparecida de Goiânia › Aracaju › Assis › Barueri › Bauri › Belém › Belo Horizonte › Betim › Birigui › Blumenau › Brasília › Brotas › Cabreúva › Caieiras › Campinas › Campo Grande › Campos de Goytacazes › Canoas › Capivari › Catalão › Caxias do Sul › Cerquillo › Cosmópolis › Cotia › Cubatão › Cuiabá › Curitiba › Duque de Caxias › Estância Climática de São Bento do Sapucaí › Estância Hidromineral de Águas de São Pedro › Estância Turística de Guaratinguetá › Estância Turística de ITU › Estância Turística de Olímpia › Feira de Santana › Florianópolis › Fortaleza › Franco da Rocha › Goiânia › Guarulhos › Jabotão dos Guararapes › Jahu › Jundiá › Limeira › Lorena › Macapá › Mairiporã › Manaus › Mauá › Montes Claros › Natal › Nova Odessa › Palmas › Piracicaba › Porto Alegre › Porto Feliz › Porto Velho › Recife › Rio Branco › Rio de Janeiro › Rio Verde › Salvador › Santos › São Bernardo do Campo › São Caetano › São Gonçalo › São João da Boa Vista › São José do Rio Preto › São Luís › São Paulo › Sertãozinho › Sorocaba › Tatuí › Tupã › Uberlândia › Vinhedo › Vitória › Chile › Colina › Copiapó › Independencia › La Pintada › La Serena › Peñalolén › Providencia › Región Metropolitana de Santiago › San Fernando › Santiago › Temuco › Colombia › Alcaldía de Pasto › Alcaldía de Pereira › Alcaldía de Tunja › Alcaldía Distrital de Santa Marta › Alcaldía Municipal de Armenia › Alcaldía de Sincelejo › Bogotá › Cartagena › Medellín › Santiago de Cali › Costa Rica › Belén › Dominican Republic › Santo Domingo de Guzmán › Ecuador › Quito › Santiago de Guayaquil › Guatemala › Guatemala › Honduras › Alcaldía de Tegucigalpa › Mexico › Cuernavaca › Guadalajara › León de los Aldamas › Luárez › Mexicali › Mexico City › Monclova › Monterrey › Morelia › Municipio de Mérida › Naucalpan de Juárez › San José de Gracia › San Luis Potosí › Tampico › Torreón › Zaragoza › Panama › Alcaldía de Panamá › Peru › Arequipa › Lima › Miraflores › Punta Hermosa › Uruguay › Montevideo › Venezuela › Alcaldía Metropolitana de Caracas
North America › Canada › Ajax, ON › Brandon, MB › Calgary › City of Winnipeg › Edmonton › Halifax › Hamilton › London, ON › Montreal › North Vancouver › Peterborough › Prince George, BC › Regional Municipality of Durham › Salaberry-de-Valleyfield › Saskatoon › Sudbury › Toronto › Vancouver › Victoria › Windsor › USA › Abington › Albany › Alton, IL › Ann Arbor › Arlington, VA › Asheville › Aspen and Pitkin County › Atlanta › Aurora, CO › Austin › Baltimore › Bellingham, WA › Benicia › Blacksburg › Boston › Boulder › Brisbane, CA › Brownsville › Buffalo › Burlington › Cambridge › Carmel, IN › Chapel Hill, NC › Charlotte › Charlottesville, VA › Chicago › Cincinnati › Cleveland › Columbia, SC › Columbus › Dallas › Davis, CA › Denver › Des Moines › Detroit › District of Columbia › Durham › Easton, PA › El Paso › Elgin, IL › Emeryville, CA › Eugene › Flagstaff › Fort Wayne Fort Worth › Greenbelt, MD › Hayward › Hermosa Beach, CA › Hollywood › Houston › Huntington Beach › Indianapolis › Iowa › Jackson, MS › Knoxville › Lake Forest, IL › Lakewood › Lancaster › Lancaster, PA › Las Vegas › Long Beach › Los Altos Hills › Los Angeles › Louisville, KY › Medford › Miami › Milwaukee › Minneapolis › Nashville and Davidson › New Bedford, MA › New Orleans › New York City › Northampton, MA › Oakland › Oklahoma › Orlando › Palo Alto › Park City, UT › Philadelphia › Phoenix › Piedmont, CA › Pittsburgh › Portland, ME › Portland, OR › Providence › Raleigh › Reno › Richmond, CA › Richmond, VA › Roanoke › Rochester › Sacramento › Salt Lake City › San Antonio › San Diego › San Francisco › San José › Santa Monica › Savannah › Seattle › Somerville, MA › St Louis › Takoma Park, MD › Tucson › University City, MO › Vail, CO › West Hollywood › Westport, CT › Winston-Salem › Wisconsin Rapids › Yonkers

Please note that not all cities choose to disclose their information publicly. Please visit www.cdp.net/en/cities for more information.

Cities



Breakdown of city disclosure by region in 2016





Mitigation

190

Number of cities with a city-wide emissions reduction target

Percentage of cities with a city-wide emissions inventory



246

Number of CDP cities committed to the Compact of Mayors, which in June 2016, merged into the Global Covenant of Mayors for Climate & Energy.

Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 5 emissions reduction activities

Number of cities		Anticipated emissions reduction (metric tonnes CO ₂ e)
298	Energy efficiency/ retrofit measures	13,775,821
221	Infrastructure for non motorized transport	10,006,843
159	Low or zero carbon energy supply generation	10,004,901
184	Waste prevention policies and programs	6,427,637
143	Improve fuel economy and reduce CO ₂ from non motorized vehicles	5,644,729

Climate hazards

Percentage of cities that view climate change as a significant risk to their city

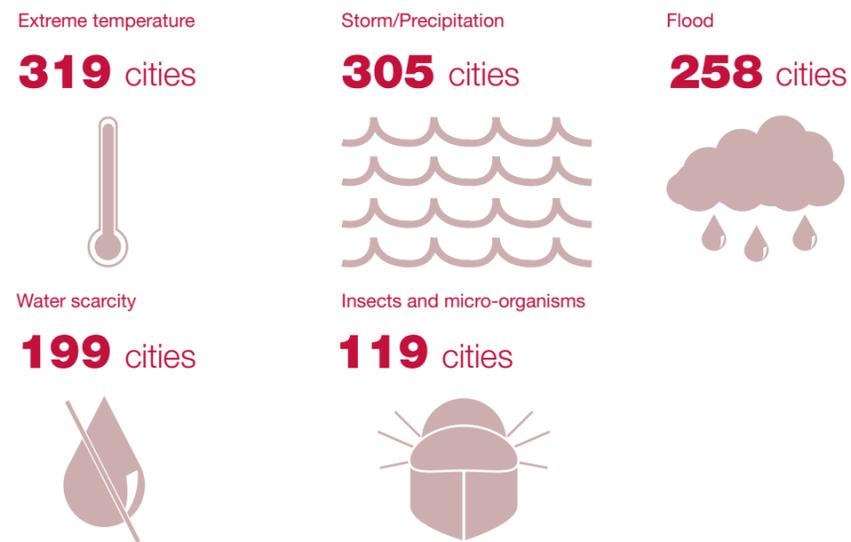


Number of cities that have completed a climate change risk or vulnerability assessment



2,022
Total number of climate hazards across 533 cities

Top climate hazards disclosed by cities



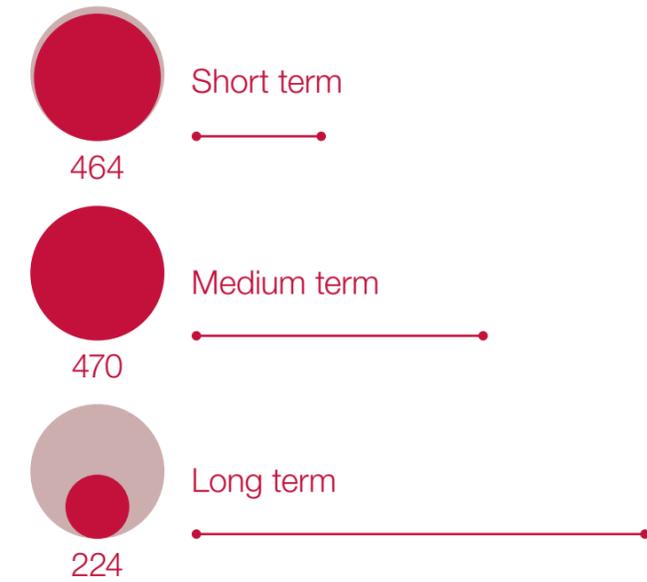
Magnitude of climate hazards



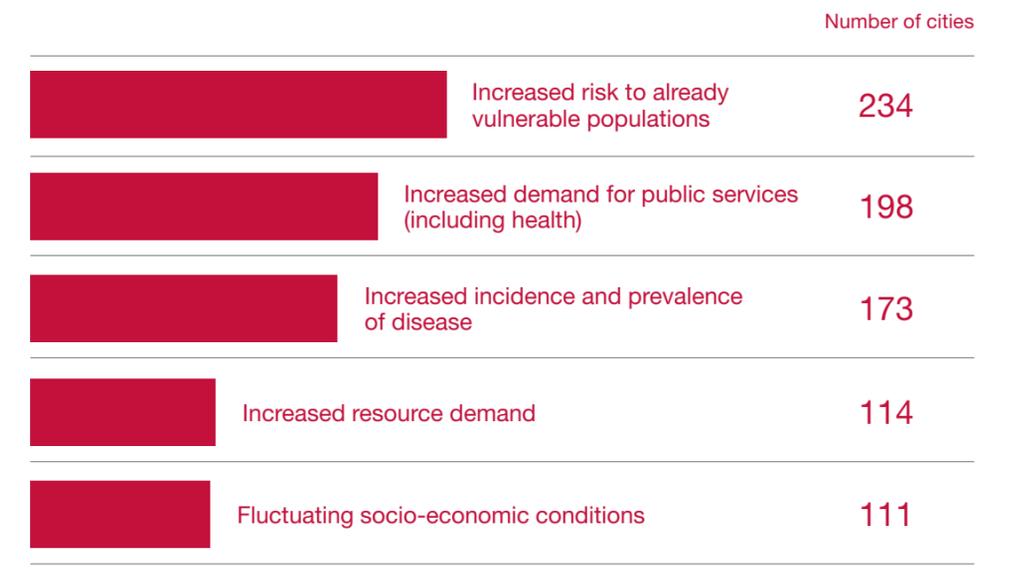
Climate hazards cont'd

705
Number of currently occurring climate hazards disclosed by cities

Number of climate hazards disclosed by cities by timescale



Number of social risks disclosed by cities



Adaptation

1,445
Total number of adaptation actions disclosed

Number of cities with a climate change adaptation plan



Top 5 adaptation actions taken for the top climate hazards

	Number of cities
Community engagement/education	147
Crisis management including warning and evacuation systems	129
Flood mapping	123
Tree planting and/or creation of green space	101
Projects and policies targeted at those most vulnerable	86



Water

Number of cities that foresee substantive risks to their water supply in the short or long term



686
Total number of water supply risks disclosed

Top 5 water supply risks disclosed

	Number of cities
Increased water stress or scarcity	248
Declining water quality	137
Flooding	114
Inadequate or aging infrastructure	97
Higher water prices	54

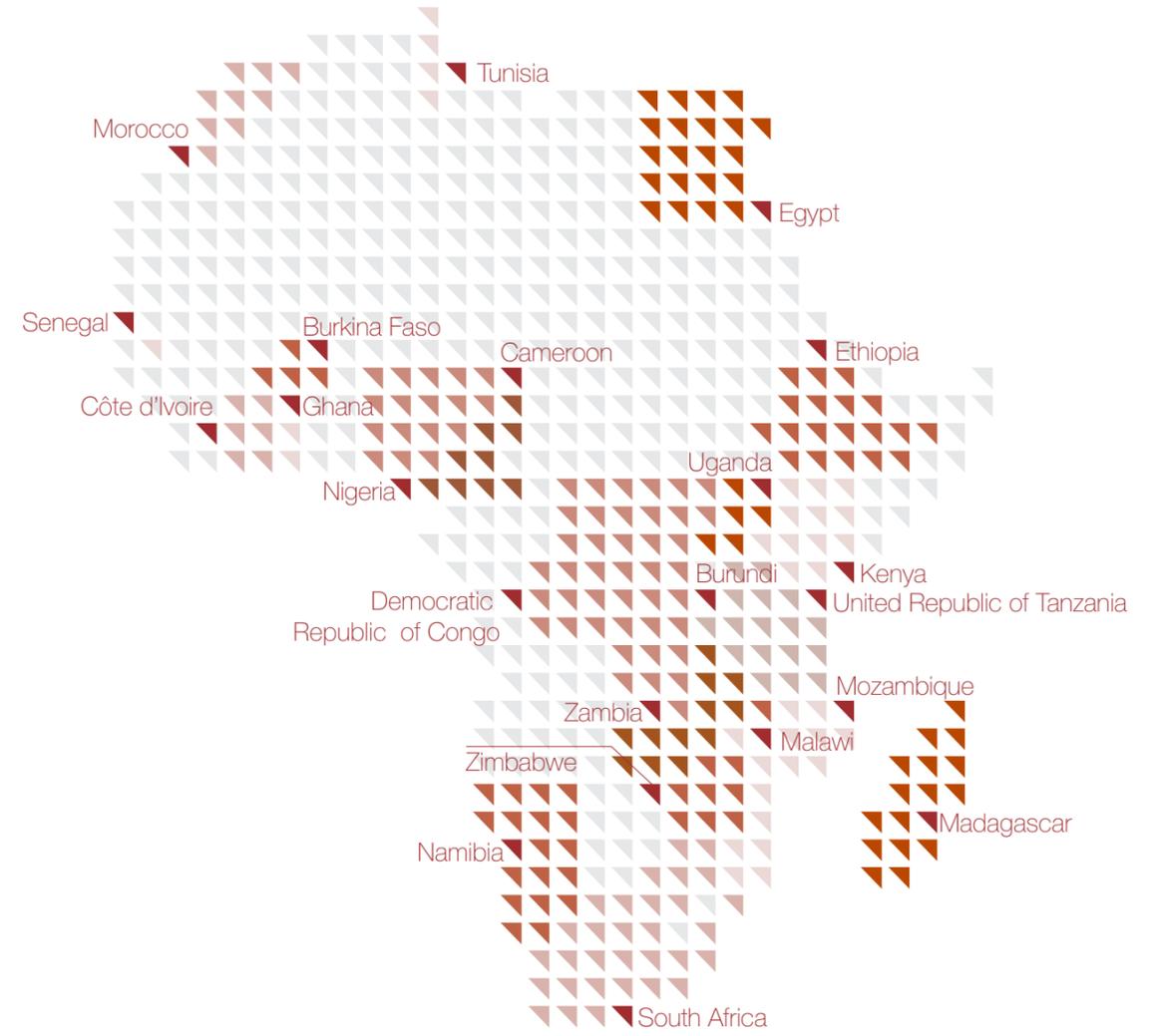
681
Total number of water adaptation actions disclosed

Top 5 water adaptation actions disclosed

	Number of cities
Conservation awareness and education	138
Investment in existing water supply infrastructure	128
Stormwater management (natural or man-made infrastructure)	80
Watershed preservation	47
Diversifying water supply (including new sources)	41



Africa



 **46** from  **22**
 Cities Countries

Africa › Burkina Faso › Bakata › Burundi › La mairie de Bujumbura › Cameroon › Bangangté › Fouban › Yaoundé 6 › Cote d'Ivoire › Abidjan › Grand-Bassam › Democratic Republic of Congo › Kananga › Kinshasa › Egypt › Cairo › Ethiopia › Addis Ababa › Ghana › Accra › Kenya › Kisumu › Nairobi › Nakuru › Madagascar › Antananarivo › Malawi › Blantyre › Lilongwe › Mozambique › Cidade de Maputo › Nacala › Namibia › Windhoek › Nigeria › Abuja › Ibadan › Lagos › Senegal › Dioudoubou › Ziguinchor › South Africa › Cape Town › Durban › Ekurhuleni › Emfuleni › Johannesburg › Nelson Mandela Bay › Pietermaritzburg › Pretoria › Tshwane › Sekhukhune › Ugu › Vhembe › Tunisia › Commune Ain Drahem › Uganda › Jinja › United Republic of Tanzania › Arusha › Dar es Salaam › Morogoro › Mwanza › Zambia › Mazabuka › Zimbabwe › Harare

Mitigation

3

Number of cities with a city-wide emissions reduction target

Total community-scale emissions reported by cities in Africa

118,328,891 metric tonnes of CO₂e

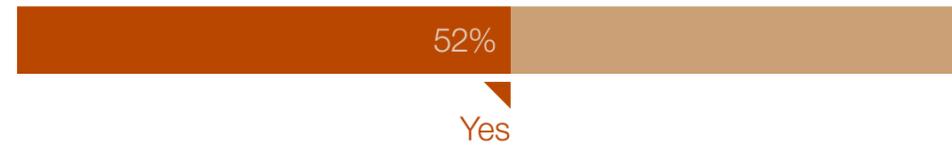
Percentage of cities with a city-wide emissions inventory in Africa



Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 3 city-wide emissions reduction activities

	Number of cities
Green space and/or biodiversity preservation and expansion	7
Improve bus infrastructure, services, and operations	6
Recycling or composting collections and/or facilities	4

Climate hazards

Percentage of cities that view climate change as a significant risk to their city



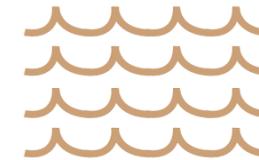
Number of cities that have completed a climate change risk or vulnerability assessment



Top 3 climate hazards as disclosed by cities

Flood

27 cities



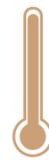
Insects and micro-organisms

17 cities



Extreme temperature

17 cities



169

Total number of climate hazards across 46 cities

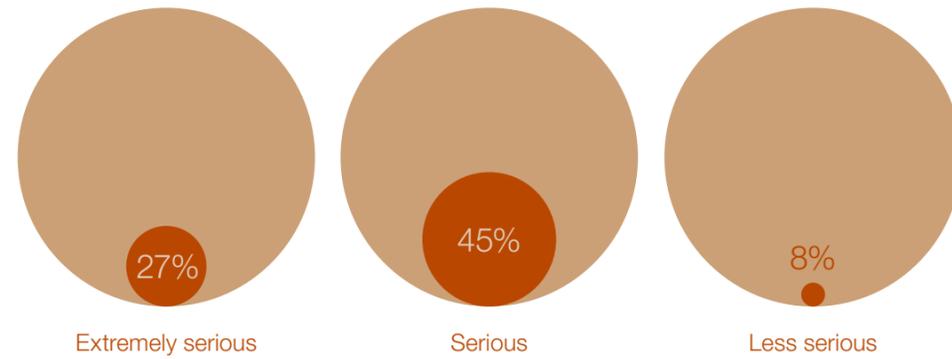


Lagos | Nigeria

Lagos with a population of 21 million people has a vast coastline but a relatively small land area. This makes it one of the most vulnerable cities in the world to the impact of climate change.

Climate hazards cont'd

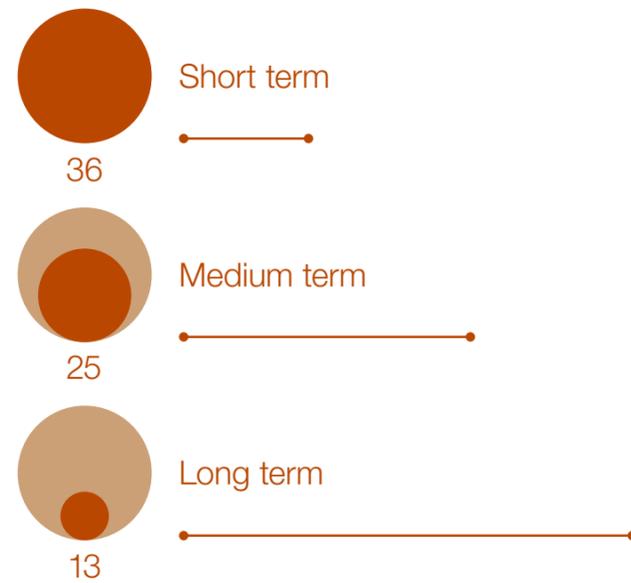
Magnitude of climate hazards



Top 3 assets or services impacted by the effects of climate change



Number of climate hazards disclosed by cities, by timescale



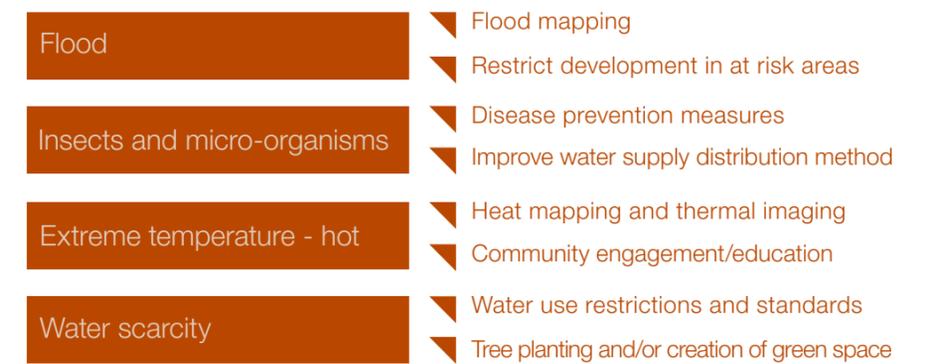
74
Number of currently occurring climate hazards disclosed by cities

Adaptation

Number of cities with a climate change adaptation plan



Top adaptation actions taken for the top climate hazards



Pietermaritzburg | South Africa

Pietermaritzburg is currently experiencing a devastating drought with impacts being severely felt in the agricultural sector. The drought has reportedly affected almost 10,000 provincial farmers and stock losses were mounting with more than 30,000 cattle having been lost.

Water

Number of cities that foresee substantive risks to their water supply in the short or long term



Top 3 water risks disclosed by cities

Risk	Number of cities
Increased water stress or scarcity	22
Inadequate or aging infrastructure	14
Declining water quality	9

Top 3 water adaptation actions disclosed by cities

Action	Number of cities
Investment in existing water supply infrastructure	18
Conservation awareness and education	10
Stormwater management (natural or man-made infrastructure)	7

Economic opportunities

Percentage of cities reporting that climate change could threaten the ability of businesses to operate successfully in their city



Percentage of cities that see an economic opportunity from climate change



Foumban | Cameroon

In partnership with a local women's association, Foumban has financed a project to roll-out improved cooking stoves. These stoves are sold at a reasonable price and do not require as much firewood to function as normal cooking stoves. As many families use firewood to cook and as a source of energy, forests are in danger of over and un-managed exploitation.



Asia and Oceania



▶ **94** from ▶ **18**
 Cities Countries

Asia and Oceania › Australia › Adelaide › Byron Shire › Cairns › Canberra › Melbourne › Perth › Sydney › China › Guangzhou › Shenzhen › Wuhan › Hong Kong › Hong Kong › India › Bangalore › Jaipur › Kolkata › Indonesia › Bogor › Jakarta › Yogyakarta › Israel › Tel Aviv-Yafo › Japan › Hiroshima › Nagoya › Okayama › Tokyo › Yokohama › Jordan › Amman › Malaysia › Iskandar › Kuala Lumpur › Petaling Jaya › New Zealand › Auckland › Kapiti Coast › Napier › Wellington › Pakistan › Karachi › Philippines › Angeles › Antipolo › Batangas › Makati › Quezon › Singapore › Singapore › South Korea › Ansan › Boseong › Changwon › Cheongsong › Daejeon › Damyang › Geoje › Geumsan › Goheung › Gokseong › Gunpo › Gurye › Gwangju › Gwangyang › Haenam › Hoengseong › Hongcheon › Hwacheon › Imsil › Incheon › Inje › Jangheung › Jangseong › Jecheon › Jeju › Jeongseon › Jeonju › Mokpo › Muan › Naju › Nonsan › Pyeongtaek › Samcheok › Sejong › Seocheon › Seogwipo › Seoul › Shinan › Sunchang › Suwon › Tongyeong › Uljin › Wonju › Yeonggwang › Taiwan › Hsinchu › Kaohsiung › New Taipei › Pingtung › Tainan › Taipei City › Taoyuan › Yilan › Thailand › Bangkok › UAE › Dubai › Vietnam › Hanoi › Ho Chi Minh

Mitigation

31

Number of cities with a city-wide emissions reduction target

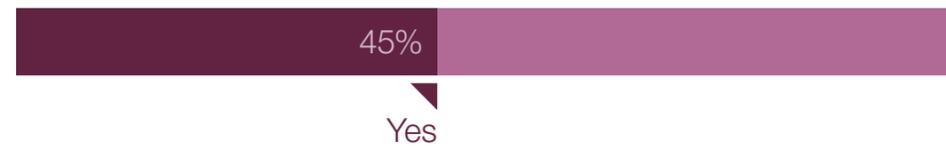
Total community-scale emissions reported by cities in Asia and Oceania

591,499,151 metric tonnes of CO₂e

Percentage of cities with a city-wide emissions inventory



Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 3 emissions reduction activities

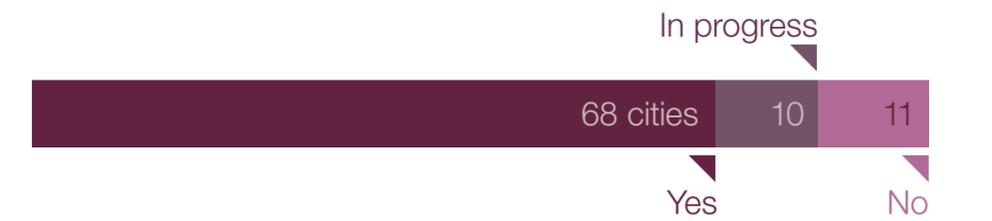
Number of cities	Activity	Anticipated emissions reduction (metric tonnes CO ₂ e)
10	Low or zero carbon energy supply generation	4,273,000
6	Waste prevention policies and programs	3,615,500
14	Energy efficiency/retrofit measures	2,493,685

Climate hazards

Percentage of cities that view climate change as a significant risk to their city



Number of cities that have completed a climate change risk or vulnerability assessment



Top 3 climate hazards as reported by cities

Extreme temperature

66 cities



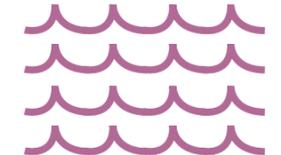
Storm/Precipitation

44 cities



Flood

53 cities



339

Total number of climate hazards across 94 cities

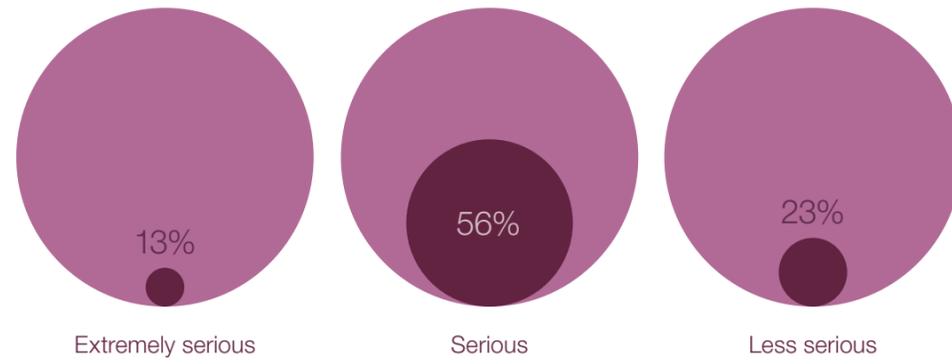


Hong Kong | China

Hong Kong aims to eliminate 40% of food waste disposal at landfills by 2022. They are planning to develop Organic Waste Treatment Facilities (OWTF) in phases to recycle food waste into compost and bio gas as renewable energy.

Climate hazards cont'd

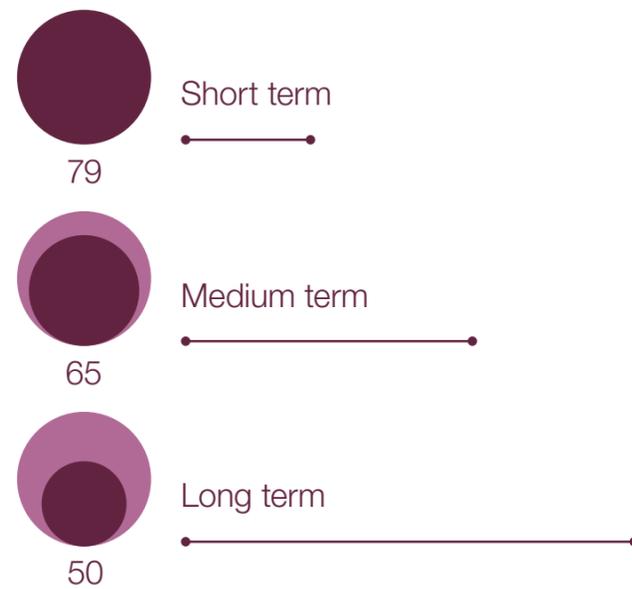
Magnitude of climate hazard



Top 3 assets or services impacted by the effects of climate change



Number of climate risks disclosed by cities by timescale

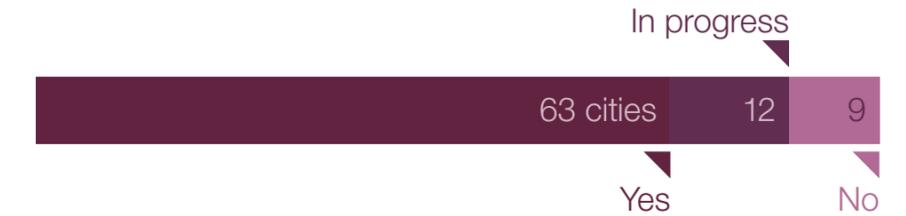


123

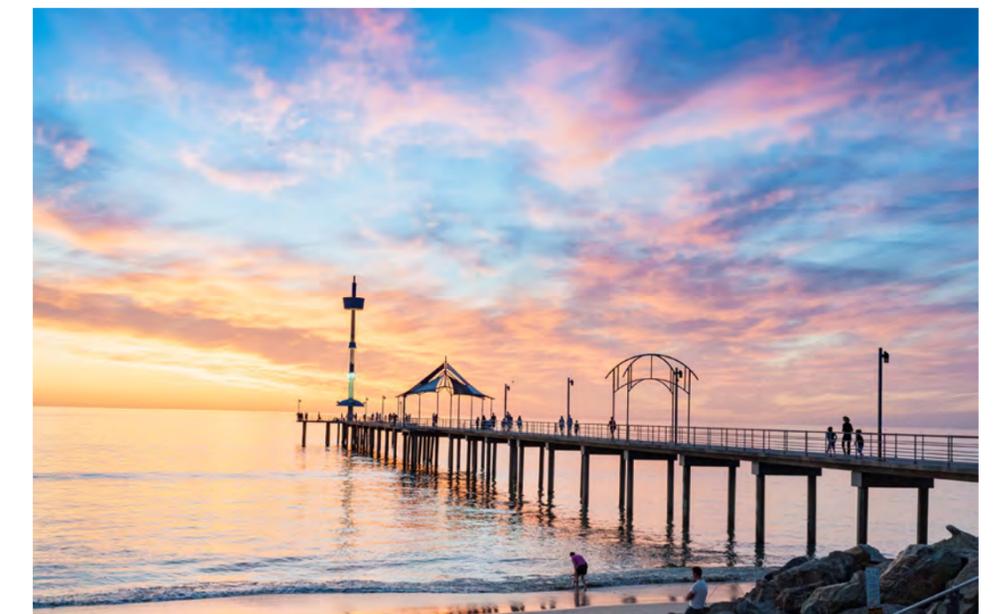
Number of currently occurring climate hazards disclosed by cities

Adaptation

Number of cities with a climate change adaptation plan



Top adaptation actions taken for the top climate hazards



Adelaide | Australia

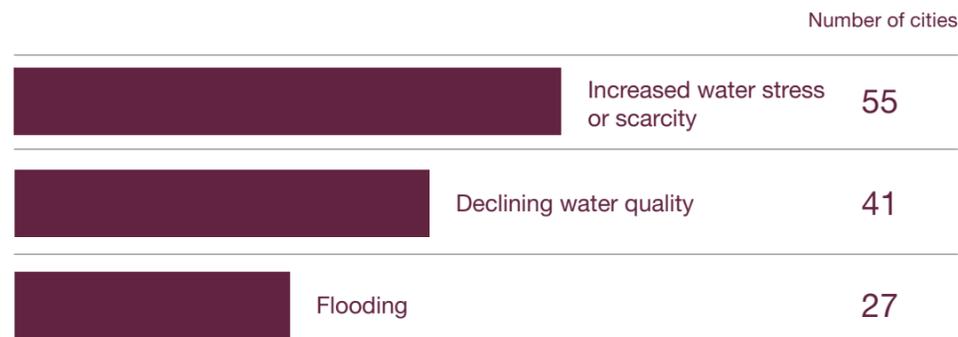
Adelaide and South Australia have formally endorsed their shared aspiration for Adelaide to be the world's first carbon neutral city through the formation of the Carbon Neutral Adelaide Partnership.

Water

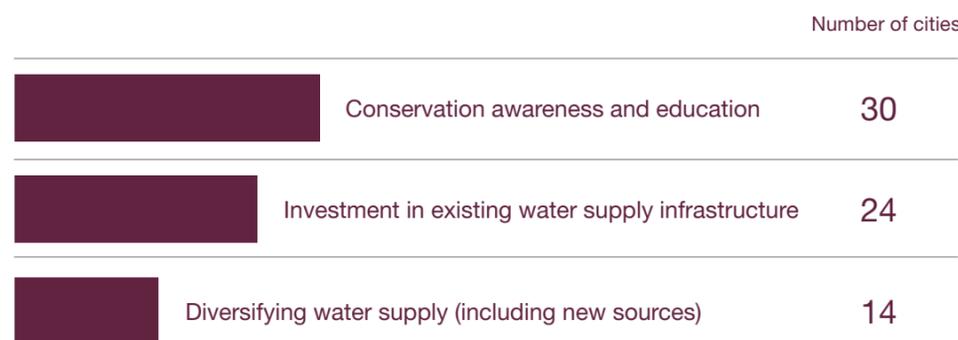
Number of cities that foresee substantive risks to their water supply in the short or long term



Top 3 water supply risks disclosed



Top 3 water adaptation actions disclosed



Economic opportunities

Percentage of cities reporting that climate change could threaten the ability of businesses to operate successfully in their city



Percentage of cities that see an economic opportunity from climate change



Pingtung | Taiwan

Pingtung County Government have set Taiwan's first low carbon transportation system, Kenting Express, combined with electric vehicles and charging system.



Europe



126 from **32**
Cities **Countries**

Europe › **Albania** › Tirana › **Bulgaria** › Sofia Municipality › Stara Zagora › **Croatia** › Zagreb › **Czech Republic** › Brno › **Denmark** › Aarhus Kommune › Allerød Municipality › City of Århus › Copenhagen › Egedal Municipality › Frederikshavn › Kommune › Gladsaxe Kommune › Hjørring › Høje-Taastrup Kommune › Hørsholm Kommune › Hvidovre › Jammerbugt Kommune › Middelfart Kommune › Odder Kommune › Skive Kommune › Sønderborg Kommune › **Estonia** › Johvi › **Finland** › Helsinki › Lahti › **Turku** › **France** › Amiens Métropole › Communauté urbaine du Grand Nancy › Nice Côte d'Azur › Paris › Villeurbanne › **Georgia** › Tbilisi › **Germany** › Berlin › Hamburg › Landeshauptstadt Magdeburg › Stadt Heidelberg › **Gibraltar** › Gibraltar › **Greece** › Athens › Thessaloniki › **Iceland** › Akureyri › Reykjavik › **Ireland** › Dublin › **Italy** › Bologna › Bolzano › Cagliari › Ferrara › Firenze › Genova › Lucca › Milano › Monza › Napoli › Olbia › Oristano › Padova › Piacenza › Ravenna › Reggio Emilia › Rimini › Roma › Torino › Udine › Venezia › **Kosovo** › Pristina › **Lithuania** › Šiauliai › Vilnius › **Monaco** › Monaco › **Montenegro** › Podgorica › **Netherlands** › Amsterdam › Groningen › Nijmegen › Rotterdam › The Hague › **Norway** › Bærum Kommune › Oslo › Tromsø › Trondheim › **Poland** › City of Wrocław › Gdańsk › Gdynia › Tarnów › Warsaw › **Portugal** › Águeda › Barreiro › Braga › Cascais › Fafe › Faro › Funchal › Lamego › Lisbon › Matosinhos › Moita › Ovar › Porto › Santarém › Torres Vedras › Vila Nova de Famalicão › Viseu › **Romania** › Alba-Iulia › Tulcea › **Russia** › Moscow › **Serbia** › Subotica › **Slovenia** › Ljubljana › **Spain** › Barcelona › Madrid › Murcia › Zaragoza › **Sweden** › Stockholm › Trelleborg › **Switzerland** › Basel-Stadt › Lausanne › Nyon › Stadt Zürich › **Turkey** › Bornova › Eskişehir › Istanbul › Kadiovacik › Seferihisar › **United Kingdom** › Birmingham › Bournemouth › Cambridge › Cardiff › Glasgow › Leicester › London › Manchester

Mitigation

73

Number of cities with a city-wide emissions reduction target

Total community-scale emissions reported by cities in Europe

217,633,573 metric tonnes of CO₂e

Percentage of cities with a city-wide emissions inventory



Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 3 emissions reduction activities

Number of cities	Activity	Anticipated emissions reduction (metric tonnes CO ₂ e)
23	On-site renewable energy generation	3,633,017
28	Infrastructure for non motorized transport	2,458,373
29	Low or zero carbon energy supply generation	1,968,649

Climate hazards

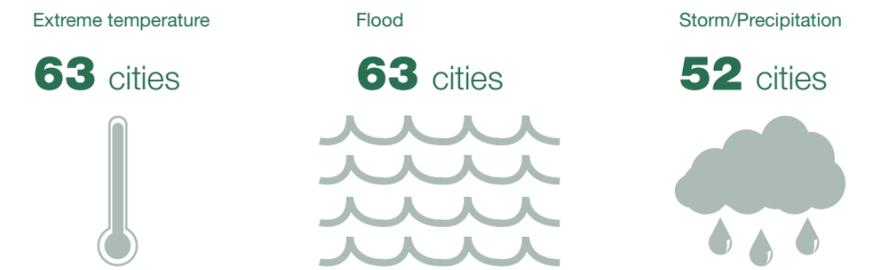
Percentage of cities that view climate change as a significant risk to their city



Number of cities that have completed a climate change risk or vulnerability assessment



Top 3 climate hazards as disclosed by cities



351

Total number of climate hazards across 126 cities

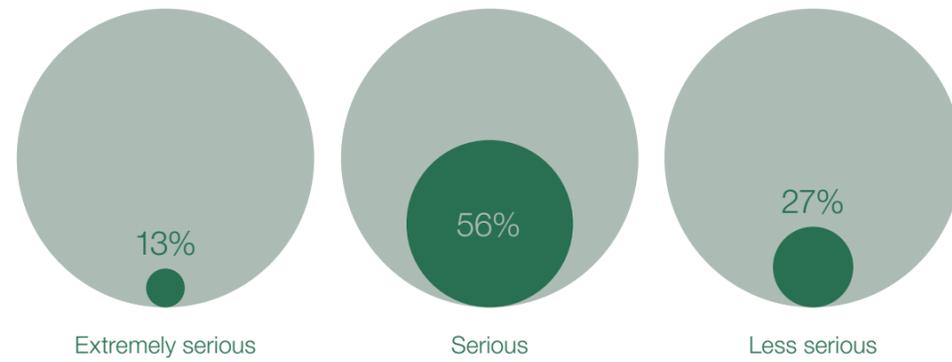


Bologna | Italy

Bologna's transportation hub is vulnerable to a severe weather even as there is no alternative supply chain plans in place. If severe weather events occur, disruptions to the city's supply chain will incur costs and losses in revenue to private businesses.

Climate hazards cont'd

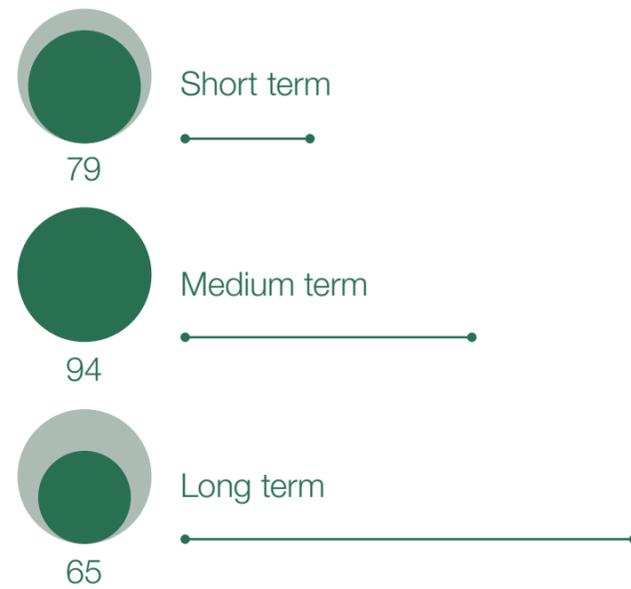
Magnitude of climate hazard



Assets or services impacted by the effects of climate change



Number of climate hazards disclosed by cities by timescale



97
Number of currently occurring climate hazards disclosed by cities

Adaptation

Number of cities with a climate change adaptation plan



Top adaptation actions taken for the top climate hazards



Hørsholm Kommune | Denmark

A new waste-to-energy plant is under construction and will be put into operation in Hørsholm Kommune by 2017. The new combined heat and power plant will supersede the old plant and has higher heating and electricity efficiencies, thereby reducing GHG emissions from other sources.

Water

Number of cities that foresee substantive risks to their water supply in the short or long term



Top 3 water supply risks disclosed

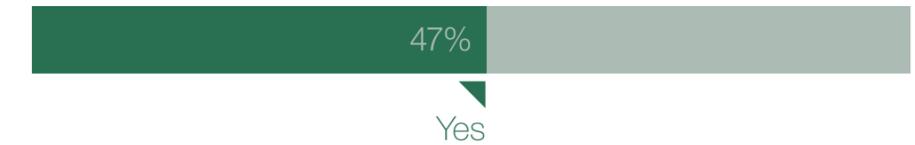
Risk	Number of cities
Increased water stress or scarcity	28
Declining water quality	19
Flooding	15

Top 3 water adaptation actions disclosed

Action	Number of cities
Investment in existing water supply infrastructure	19
Conservation awareness and education	10
Stormwater management (natural or man-made infrastructure)	9

Economic opportunities

Percentage of cities reporting that climate change could threaten the ability of businesses to operate successfully in their city



Percentage of cities that see an economic opportunity from climate change

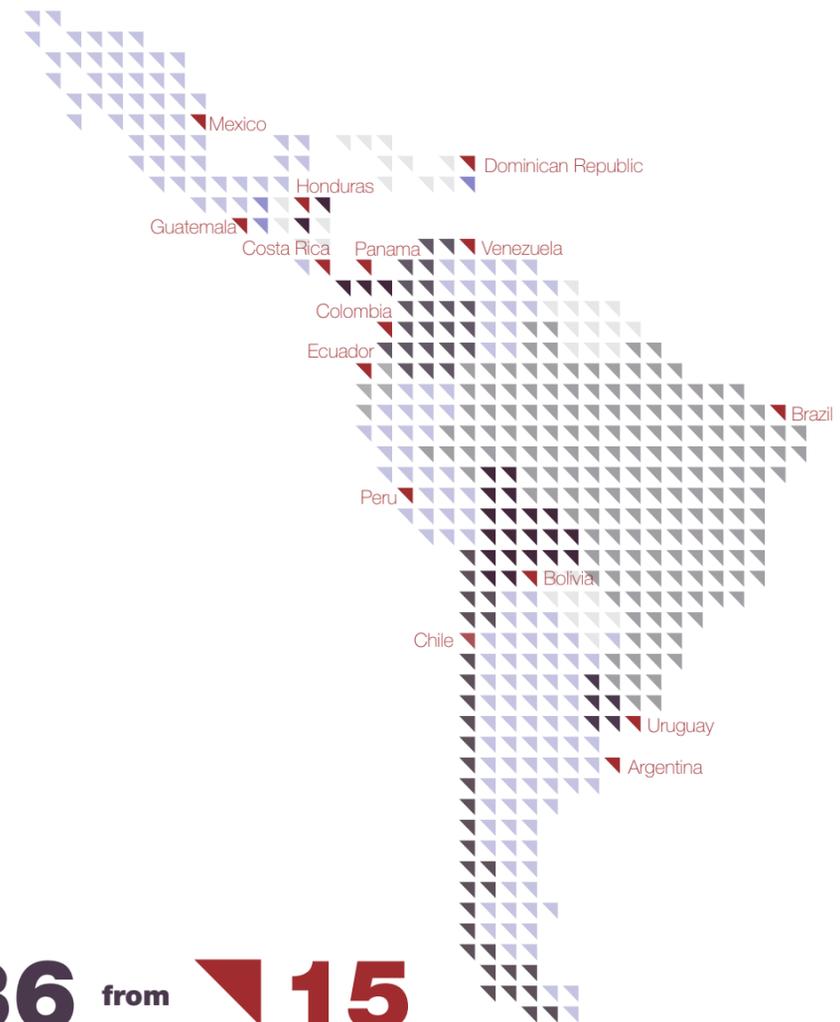


Manchester | United Kingdom

Manchester is deploying a smart distribution system (DMS) with a dedicated communication network for the whole Electricity North West by 2018. This will deliver a US\$65 million program of smart network changes and integrated storage pilots to promote connection of decentralised energy, and deploy smart meters for gas and electricity.



Latin America



 **136** from  **15**
 Cities Countries

Latin America › Argentina › Buenos Aires › Córdoba › Mendoza › Rio Grande › San Isidro (Argentina) › Santa Fé Ciudad › Vicente López › Bolivia › Gobierno Autónomo Municipal de Tarija › La Paz › Brazil › Aparecida › Aparecida de Goiânia › Aracaju › Assis › Barueri › Bauru › Belém › Belo Horizonte › Betim › Birigui › Blumenau › Brasília › Brotas › Cabreúva › Caieiras › Campinas › Campo Grande › Campos de Goytacazes › Canoas › Capivari › Catalão › Caxias do Sul › Cerquilha › Cosmópolis › Cotia › Cubatão › Cuiabá › Curitiba › Duque de Caxias › Estância Climática de São Bento do Sapucaí › Estância Hidromineral de Águas de São Pedro › Estância Turística de Guaratinguetá › Estância Turística de ITU › Estância Turística de Olímpia › Feira de Santana › Florianópolis › Fortaleza › Franco da Rocha › Goiânia › Guarulhos › Jaboaão dos Guararapes › Jahu › Jundiá › Limeira › Lorena › Macapá › Mairiporã › Manaus › Mauá › Montes Claros › Natal › Nova Odessa › Palmas › Piracicaba › Porto Alegre › Porto Feliz › Porto Velho › Recife › Rio Branco › Rio de Janeiro › Rio Verde › Salvador › Santos › São Bernardo do Campo › São Caetano › São Gonçalo › São João da Boa Vista › São José do Rio Preto › São Luís › São Paulo › Sertãozinho › Sorocaba › Tatuí › Tupã › Uberlândia › Vinhedo › Vitória › Chile › Colina › Copiapó › Independencia › La Pintada › La Serena › Peñalolén › Providencia › Región Metropolitana de Santiago › San Fernando › Santiago › Temuco › Colombia › Alcaldía de Pasto › Alcaldía de Pereira › Alcaldía de Tunja › Alcaldía Distrital de Santa Marta › Alcaldía Municipal de Armenia › Alcaldía de Sincelejo › Bogotá › Cartagena › Medellín › Santiago de Cali › Costa Rica › Belén › Dominican Republic › Santo Domingo de Guzmán › Ecuador › Quito › Santiago de Guayaquil › Guatemala › Guatemala › Honduras › Alcaldía de Tegucigalpa › Mexico › Cuernavaca › Guadalajara › León de los Aldamas › Luárez › Mexicali › Mexico City › Monclova › Monterrey › Morelia › Municipio de Mérida › Naucalpan de Juárez › San José de Gracia › San Luis Potosí › Tampico › Torreón › Zaragoza › Panama › Alcaldía de Panamá › Peru › Arequipa › Lima › Miraflores › Punta Hermosa › Uruguay › Montevideo › Venezuela › Alcaldía Metropolitana de Caracas

Mitigation

8

Number of cities with a city-wide emissions reduction target

Total community-scale emissions reported by cities in Latin America

202,054,752 metric tonnes of CO₂e

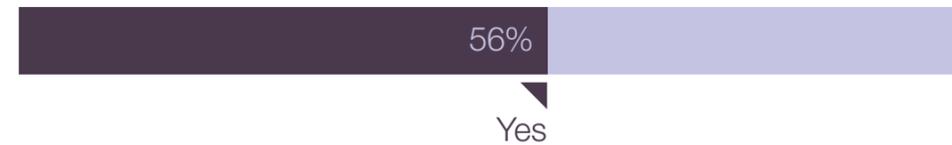
Percentage of cities with a city-wide emissions inventory



Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 3 emissions reduction activities

Number of cities	Activity	Anticipated emissions reduction (metric tonnes CO ₂ e)
14	Infrastructure for non motorized transport	6,863,740
7	Improve fuel economy and reduce CO ₂ from motorized vehicles	3,610,987
13	Awareness and education for non motorized transport	2,764,850

Climate hazards

Percentage of cities that view climate change as a significant risk to their city



Number of cities that have completed a climate change risk or vulnerability assessment



Top 3 climate hazards as disclosed by cities

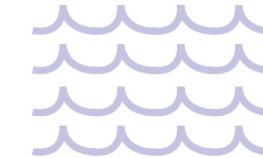
Extreme temperature

77 cities



Flood

70 cities



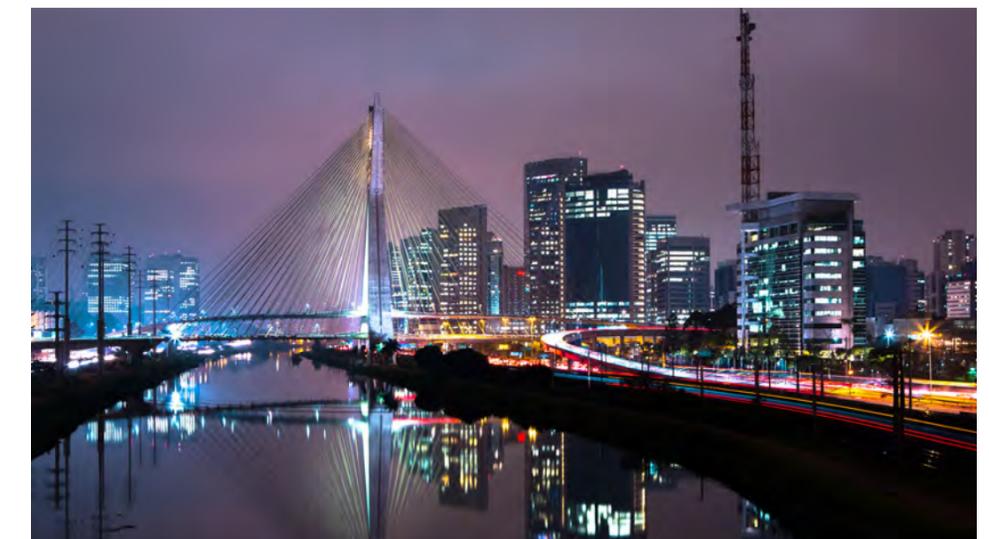
Storm/Precipitation

56 cities



482

Total number of climate hazards across 136 cities

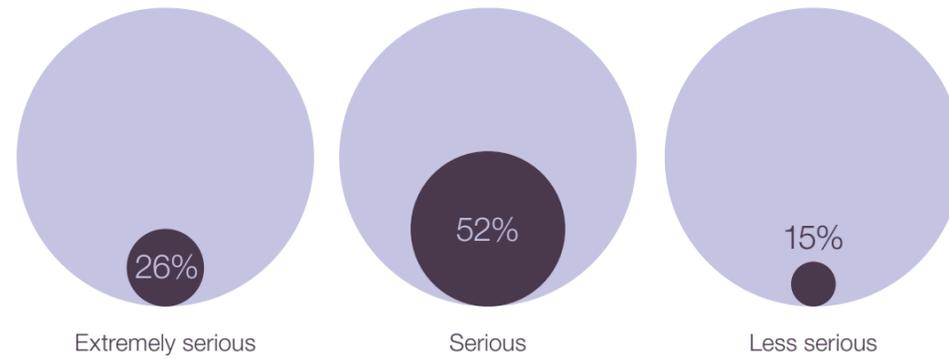


São Paulo | Brazil

São Paulo has seen an increase in floods and storms which impacts the energy supply system, causing blackouts, and affecting the communications system. As demonstrated by the recent drought in 2014 and 2015, the city is vulnerability to water scarcity and the spread of diseases such as, dengue, zika and chikunguya.

Climate hazards cont'd

Magnitude of climate hazard



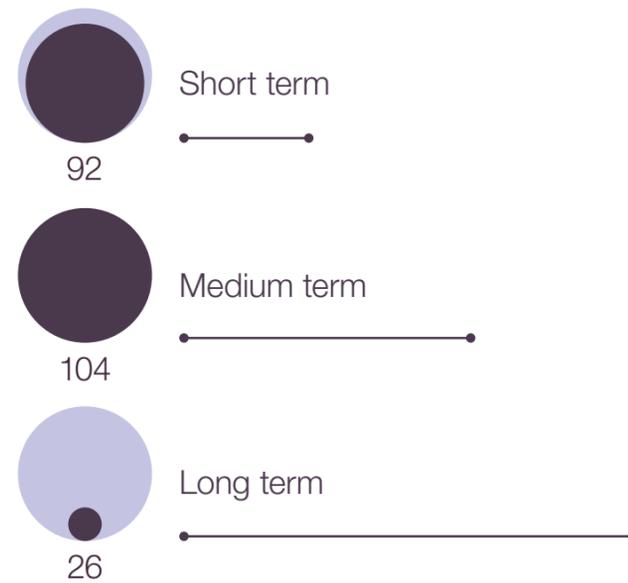
Top 3 assets or services impacted by the effects of climate change



177

Number of currently occurring climate hazards disclosed by cities

Number of climate hazards disclosed by cities by timescale

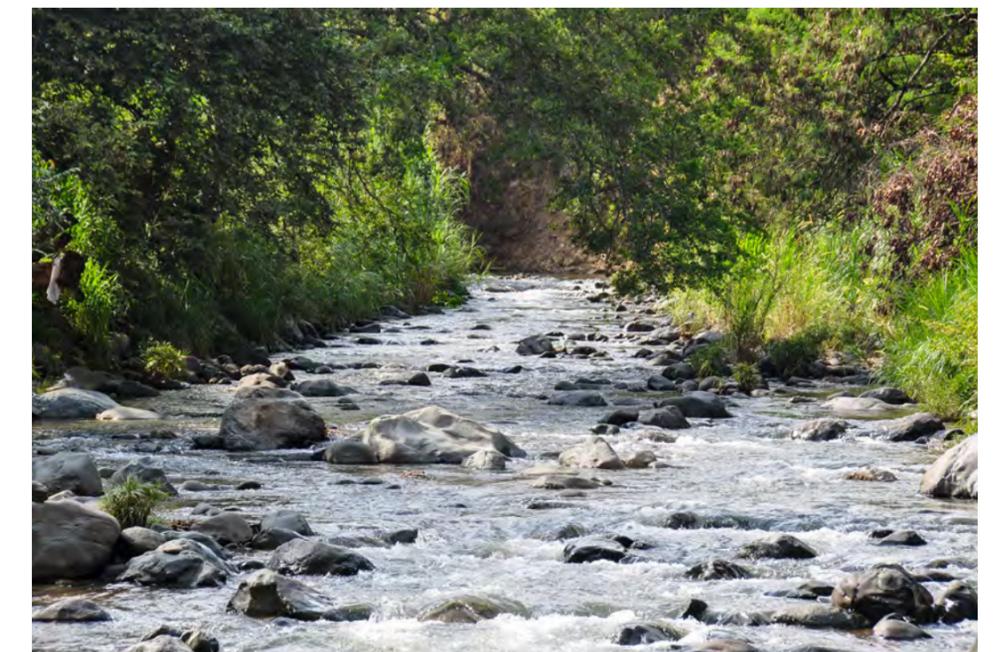


Adaptation

Number of cities with a climate change adaptation plan



Top adaptation actions taken for the top climate hazards



Cali | Colombia

Cali developed the "Jarillon del Cauca River and Complementary Works Plan – PJAOC", which aims to reduce flood risk associated with the Cauca River Interceptor Canal Sur, the Cali river and the drainage system in eastern Cali. This will protect the life and assets of 900,000 inhabitants in the east of the capital of Valle del Cauca.

Water

Number of cities that foresee substantive risks to their water supply in the short or long term



Top 3 water supply risks disclosed

	Number of cities
Increased water stress or scarcity	76
Declining water quality	37
Inadequate or aging infrastructure	27

Top 3 water adaptation actions disclosed

	Number of cities
Conservation awareness and education	45
Investment in existing water supply infrastructure	35
Conservation incentives	15

Economic opportunities

Percentage of cities reporting that climate change could threaten the ability of businesses to operate successfully in their city



Percentage of cities that see an economic opportunity from climate change



Belo Horizonte | Brazil

The main physical impact of climate change in Belo Horizonte is flooding. If this situation persists or gets worse, it may alienate potential entrepreneurs. Moreover, this problem causes an obvious impact on the traffic, decreasing the availability of workforce, and the disruption in the business chain.



North America



▶ **131** Cities from ▶ **2** Countries

North America › **Canada** › Ajax, ON › Brandon, MB › Calgary › City of Winnipeg › Edmonton › Halifax › Hamilton › London, ON › Montreal › North Vancouver › Peterborough › Prince George, BC › Regional Municipality of Durham › Salaberry-de-Valleyfield › Saskatoon › Sudbury › Toronto › Vancouver › Victoria › Windsor › **USA** › Abington › Albany › Alton, IL › Ann Arbor › Arlington, VA › Asheville › Aspen and Pitkin County › Atlanta › Aurora, CO › Austin › Baltimore › Bellingham, WA › Benicia › Blacksburg › Boston › Boulder › Brisbane, CA › Brownsville › Buffalo › Burlington › Cambridge › Carmel, IN › Chapel Hill, NC › Charlotte › Charlottesville, VA › Chicago › Cincinnati › Cleveland › Columbia, SC › Columbus › Dallas › Davis, CA › Denver › Des Moines › Detroit › District of Columbia › Durham › Easton, PA › El Paso › Elgin, IL › Emeryville, CA › Eugene › Flagstaff › Fort Wayne Fort Worth › Greenbelt, MD › Hayward › Hermosa Beach, CA › Hollywood › Houston › Huntington Beach › Indianapolis › Iowa › Jackson, MS › Knoxville › Lake Forest, IL › Lakewood › Lancaster › Lancaster, PA › Las Vegas › Long Beach › Los Altos Hills › Los Angeles › Louisville, KY › Medford › Miami › Milwaukee › Minneapolis › Nashville and Davidson › New Bedford, MA › New Orleans › New York City › Northampton, MA › Oakland › Oklahoma › Orlando › Palo Alto › Park City, UT › Philadelphia › Phoenix › Piedmont, CA › Pittsburgh › Portland, ME › Portland, OR › Providence › Raleigh › Reno › Richmond, CA › Richmond, VA › Roanoke › Rochester › Sacramento › Salt Lake City › San Antonio › San Diego › San Francisco › San José › Santa Monica › Savannah › Seattle › Somerville, MA › St Louis › Takoma Park, MD › Tucson › University City, MO › Vail, CO › West Hollywood › Westport, CT › Winston-Salem › Wisconsin Rapids › Yonkers

Mitigation

75

Number of cities with a city-wide emissions reduction target

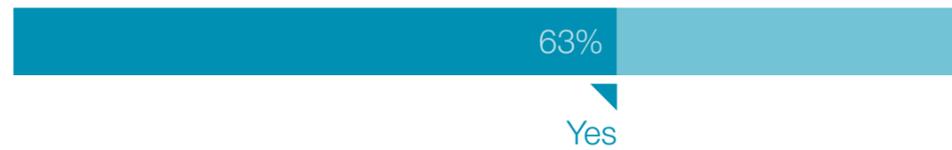
Total community-scale emissions reported by cities in North America

552,937,022 metric tonnes of CO₂e

Percentage of cities with a city-wide emissions inventory



Percentage of cities with a climate action plan



Percentage of cities incorporating sustainability goals into the master planning for the city



Top 3 emissions reduction activities

Number of cities	Activity	Anticipated emissions reduction (metric tonnes CO ₂ e)
68	Energy efficiency/retrofit measures	9,318,734
38	Low or zero carbon energy supply generation	3,763,252
28	Waste prevention policies and programs	1,580,933

Climate hazards

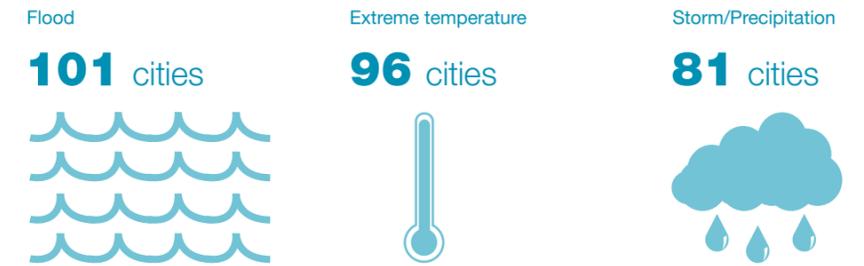
Percentage of cities that view climate change as a significant risk to their city



Number of cities that have completed a climate change risk or vulnerability assessment



Top 3 climate hazards as disclosed by cities



677

Total number of climate hazards across 131 cities

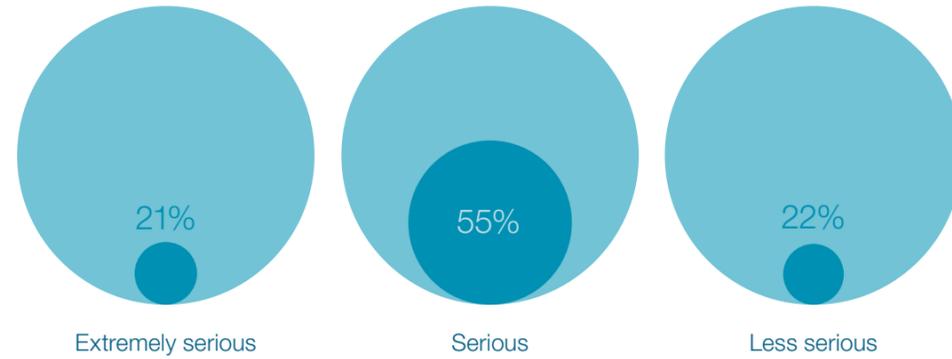


Toronto | Canada

Toronto's climate is getting warmer – it is expected that by 2040, the number of hot days exceeding 30 degrees Celsius will increase threefold, from 20 to 66 days. To mitigate the risks associated with extreme heat and increased heat waves, the City has developed a Climate Change and Health Strategy for Toronto.

Climate hazards cont'd

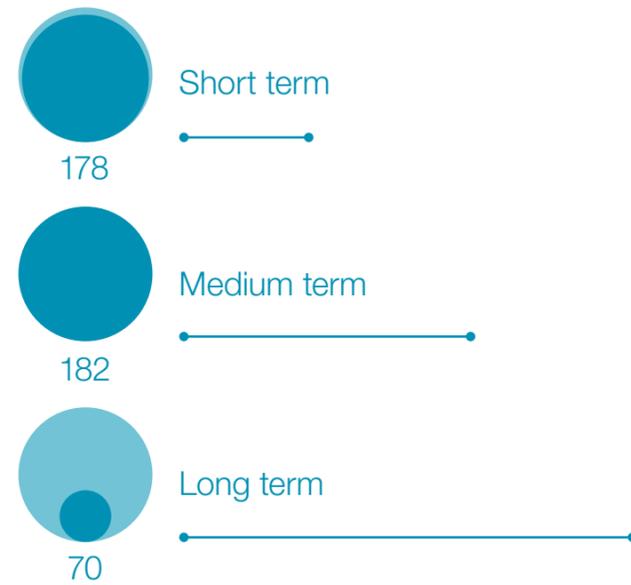
Magnitude of climate hazard



Top 3 assets or services impacted by the effects of climate change



Number of climate hazards disclosed by cities by timescale



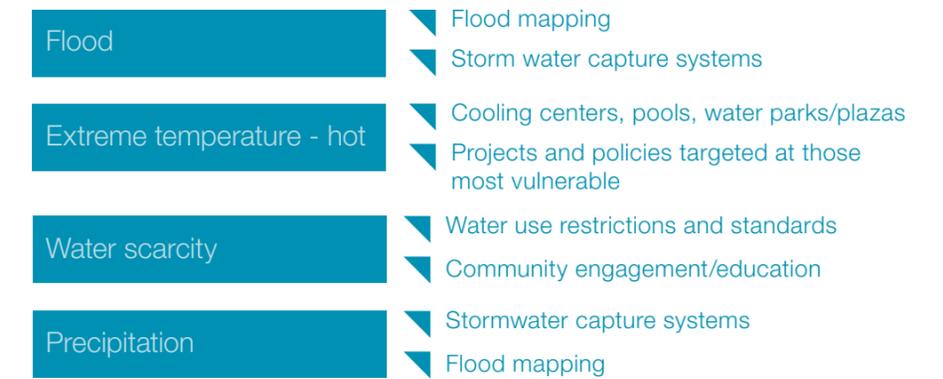
234
Number of currently occurring climate hazards disclosed by cities

Adaptation

Number of cities with a climate change adaptation plan



Top adaptation actions taken for the top climate hazards



Las Vegas | USA

Las Vegas has set a Renewable Energy Agreement for the City and its operations. To achieve this Las Vegas is partnering with the state's investor-owned utility NV Energy and they have an Energy Advisory Committee that is looking at renewable energy for the community.

Water

Number of cities that foresee substantive risks to their water supply in the short or long term



Top 3 water supply risks disclosed

Risk	Number of cities
Increased water stress or scarcity	67
Flooding	40
Inadequate or aging infrastructure	34

Top 3 water adaptation actions disclosed

Action	Number of cities
Conservation awareness and education	43
Stormwater management (natural or man-made infrastructure)	39
Investment in existing water supply infrastructure	32

Economic opportunities

Percentage of cities reporting that climate change could threaten the ability of businesses to operate successfully in their city



Percentage of cities that see an economic opportunity from climate change



Baltimore | USA

Baltimore is currently implementing a 3 year, \$52 million energy efficient and retrofit program for residential and commercial property owners and renters in the City. This program has multiple components that address increasing energy efficiency in multiple building sectors city-wide.



CDP Contacts

Paul Dickinson
Executive Chairman

Paul Simpson
Chief Executive Officer

Frances Way
Co-Chief Operating Officer

Sue Howells
Co-Chief Operating Officer

CDP's Cities Program

Conor Riffle
Director,
Cities and Data Product
Innovation

Maia Kutner
Head of Cities

Katie Walsh
Senior Manager,
North America

Andreia Banhe
Manager,
Latin America

Hanah Paik
Manager,
Asia Pacific

Juliette Harrison
Manager, Europe, Middle East
and Africa

Sara Telahoun
Senior Project Officer

Simeran Bachra
Data Analyst

CDP Board of Trustees

Chairman: Alan Brown
The Wellcome Trust

Jane Ambachtsheer
Mercer Investments

Jeremy Burke
UK Green Investment Bank

Kate Hampton
Children's Investment Fund
Foundation

Jeremy Smith
Disciple Media

Takejiro Sueyoshi

Martin Wise
Relpro

CDP Advisors

Lord Adair Turner

Rear Admiral Neil Morisetti CB

AECOM Team

Claire Bonham-Carter
Principal, Director of Sustainable
Development

Ben Smith
Principal, Director of Sustainable
Development

Christopher Pountney
Principal Consultant

Kelly Sharman
Senior Resource Studio
Manager

Nina Patel
Graphic Designer

NOTE: This report has been updated in 2020 to replace some erroneous usage of imagery on pgs. 14, 21 and 45.