

# The state of play

Emissions reporting and climate change action at the sub-national level

Based on responses to The Climate Group and CDP's research with state and regional governments



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There is strong interest in sharing best practice at this level of government, which demonstrates that climate action must and can be from the bottom up. In many countries more ambition is demonstrated in this regard by state and regional governments than at the national government level.

**Johannes Remmel**

*Minister for Climate Protection, Environment,  
Agriculture, Conservation and Consumer Affairs  
North Rhine-Westphalia*



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## Executive summary

State and regional governments are vital but sometimes overlooked contributors to the global effort to address climate change. Over the past two decades, the world has looked to national governments to confront the risks posed by a changing climate. But to date, national policies to address climate change have fallen short. According to the International Energy Agency, current national policies have the world on track for an average global temperature rise of 5.3 degrees Celsius above pre-industrial level by the end of the century – far beyond the 2 degree increase identified by scientists and endorsed by world leaders as the threshold for avoiding dangerous climate impacts.

In the meantime, state and regional governments have been rising to the challenge. Sub-national governments benefit from working at a level that allows for more flexibility in policy development and implementation, greater experimentation and a better ability to review and refine existing policies. States and regions around the world are setting ambitious climate targets and developing a new generation of climate policy models which reflect a new reality, less motivated by overarching global goals and more grounded on local needs.

The role of states and regions as a significant force of climate ambition, action and innovation is increasingly acknowledged. However, there is no standardized global data set to demonstrate the current and potential impact of this important level of government on global climate efforts.

This report presents the results of a global pilot program undertaken by CDP and The Climate Group. It is the first time that state and regional governments from across the world have reported their climate targets, actions and achievements via a standardized platform. This pilot paves the way for a deeper understanding of states and regions climate leadership, better management of sub-national emissions reductions efforts and better accountability of climate targets and efforts by states and regions to meet them.

The data presented conveys information about current climate change measurement and management at this sub-national level, and the importance of reporting. 12 leading state and regional governments from across five continents reported climate change information through CDP, from Vermont (US) to KwaZulu-Natal (South Africa), and from Catalonia (Spain) to Tasmania (Australia)<sup>1</sup>. Together these governments account for almost 750 million tonnes of greenhouse gas emissions, more than the 2012 carbon dioxide emissions of Australia and Spain combined<sup>2</sup>.

This report is also part of a wider call for action by regional governments globally, ahead of the 21st Conference of Parties to the UNFCCC (COP 21) due to take place

Governments with a region-wide emissions reduction target

75%

Governments with a region-wide emissions inventory

92%

in Paris, December 2015. Together with regional government networks (R20 and nrg4SD) and partners around the world, The Climate Group and CDP are driving the **Compact of States and Regions**, a commitment to provide an annual account of the climate targets set by state and regional governments around the world, and the progress made by governments to achieve those targets.

It is the partners' intent that this unified, standardized, annual assessment will support the international climate negotiations by providing a clear and accurate picture of the overall contribution being made by state and regional governments around the world, through aggregated global data.

This pilot program was generously funded by Zennström Philanthropies, without which these achievements would not have been made possible.

CDP and The Climate Group salute the hard work and dedication of state and regional governments in measuring and reporting these important pieces of data. With this report, we provide information and insights that we hope will assist their work in tackling the considerable challenge of climate change and inspire other regions to join this pioneering group of governments and participate in our reporting program.

Based on the success and learnings from this initial sample, we will upscale this pilot to a full program in 2015.

<sup>1</sup> List of all participants: North Denmark Region, Province of KwaZulu-Natal, Province of Quebec, State of North Rhine-Westphalia, State of Rio de Janeiro, State of Sao Paulo, State of Vermont, State of Jalisco, State of Tasmania, Cornwall Council, Region of Catalonia, and Region of the Basque Country.

<sup>2</sup> European Commission Joint Research Centre, Trends in Global CO<sub>2</sub> emissions, 2013 report

## Participating state and regional governments



# Climate change risk and adaptation

## Physical risks

Physical risks were identified by all governments that responded to the risks and adaptation section of CDP’s information request. Changes in rainfall and temperature were the two most identified risks, representing over half of the total. These risks are either reported as current or future. Overall, almost 60% have current timeframes, signifying that they will either be felt now or by 2025. In addition, over 70% of physical risks were identified as either being serious or extremely serious. Snapshot 1 highlights two examples of the sorts of physical risks facing regions.

Governments that reported a physical risk from climate change

# 100%

Based on 11 responses

Fig 1: Physical risks from climate change

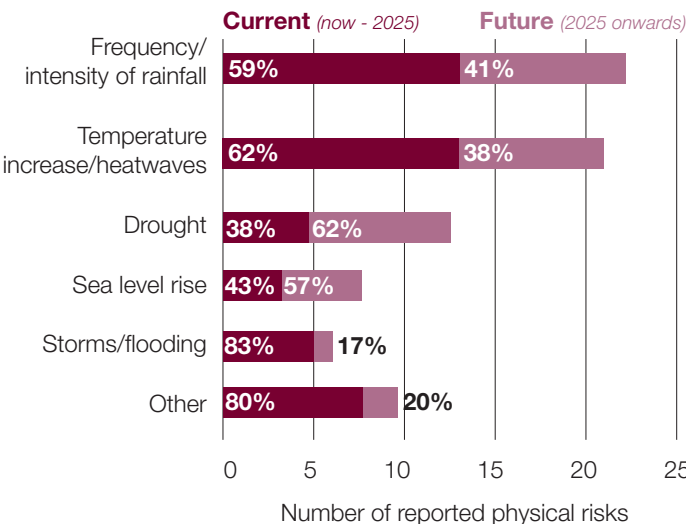
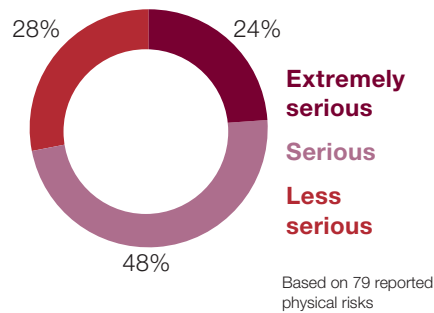


Fig 2: Severity of physical risks



## Snapshot 1: Physical risk focus

### Region of Catalonia

- Risk:** Temperature increase/heatwaves
- Severity:** Serious
- Timeframe:** Current



Significant, robust increase in the mean annual temperature in Catalonia, for the period 2001-2050 compared to 1971-2000, with mean trend of between +0.8 °C and +1.8 °C. Furthermore, temperatures will rise even further in the period 2031-2050 compared to 2011-2030.

### Region of Catalonia



### State of Rio de Janeiro

- Risk:** Storms/flooding
- Severity:** Extremely serious
- Timeframe:** Current



Over the past five years, the State of Rio de Janeiro suffered extremely serious natural disasters, in particular those derived from very large storms.

### State of Rio de Janeiro





## Social risks and adaptations

Social risks were identified by 91% of governments that responded to the risks and adaptation section of CDP's information request. The spread of disease is one such risk, as identified by the Province of KwaZulu-Natal. Governments are taking action to reduce their vulnerability to risks, and all governments that responded to the risks and adaptation section of CDP's information request reported an action to reduce vulnerability to physical risks from climate change. The most reported actions to reduce vulnerability targeted changes in rainfall and temperature, as seen in Fig 3. Snapshot 2 highlights the action being taken to reduce the impacts of two previously identified physical risks by the Region of Catalonia and the State of Rio de Janeiro.

Governments that reported a social risk from climate change

91%

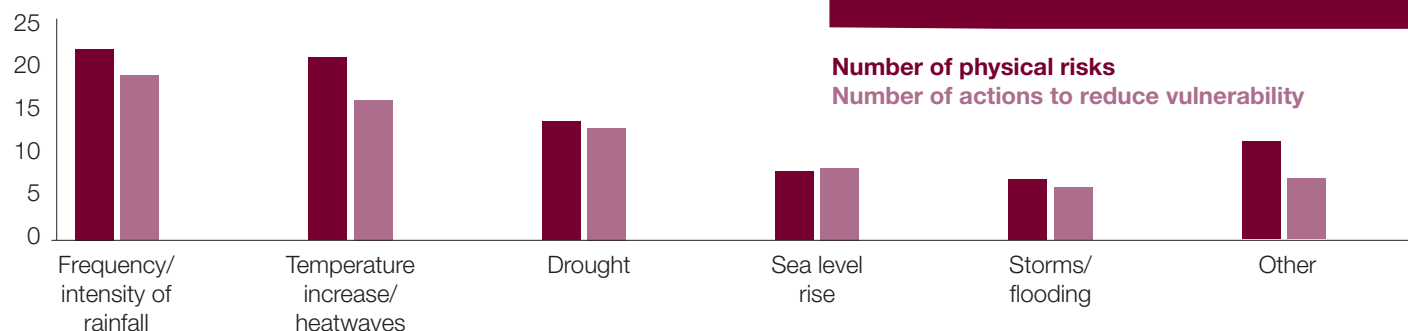
Based on 11 responses

The impact of climate change on health will inevitably be distributed throughout the province. There are however two "high-risk areas" that the prevalence of diseases like Malaria and other diseases needs attention: The Umkhanyakude District Municipality and the South coast.

### Province of KwaZulu-Natal

**Fig 3:** Actions to reduce vulnerability to physical risks

Based on 79 reported physical risks and 63 reported actions



## Snapshot 2: Adaptation actions focus

### Region of Catalonia

- Risk identified:** Temperature increase/heatwaves
- Number of actions taken:** 2
- Types of action taken:** Disease prevention measures and biodiversity monitoring

**Disease prevention measures: Action plan to prevent the effects of heat waves on health (POCS).** Promoted by the Catalan Ministry of Health, and last revised in 2012, the POCS establishes a series of measures and recommendations for the most vulnerable public to prevent the impact of heat waves. Heat waves will be one of the extreme weather phenomena with the greatest increase in frequency in the future due to climate change.

### Region of Catalonia

### State of Rio de Janeiro

- Risk identified:** Storms/flooding
- Number of actions taken:** 4
- Types of action taken:** Storm water capture systems, landslide risk mapping, crisis management including warning and evacuation and others.

**Crisis management including warning and evacuation systems:** Floods and landslides are very common natural disasters in the state due to irregular occupation of banks and beds of rivers and to the inefficiency of urban development policies. Evacuation training for the population and systems to communicate the danger of landslides and flooding were installed in critical areas.

### State of Rio de Janeiro

## The untapped potential of sub-national governments

Many state and regional governments are global climate leaders in their own right. These governments are feeling the effects of climate change first-hand on their local environments, economies and communities. They are setting ambitious targets and implementing innovative strategies to combat climate change.

States and regions have huge potential to effect change at both the local and global level. On average, about 75% of all public expenditure on environmental protection is made by sub-national governments.<sup>3</sup> Many state and regional governments have authority over key aspects of climate and energy policy such as power generation, supply and distribution of electricity, the regulation of the built environment, waste management, transport and land use planning. These governments provide a critical link in the vertical integration of climate policies and benefit from working at a level and scale that allows for quicker action and greater experimentation. As a result, states and regions play an essential role as policy innovators.

In 2005, a unique global alliance of state and regional governments was created by The Climate Group with the aim of maximizing the untapped potential of states and regions to drive global climate action. Today, The Climate Group States & Regions has grown to a global alliance of 27 federated state and regional governments, representing 313 million citizens, 11% of global GDP and 2.3 Gigatons CO<sub>2</sub>e. Sub-national government Premiers and Ministers have committed to take ambitious climate action and support one another as global peers to set bold climate targets and access innovative climate solutions. It's no coincidence that eight of the twelve governments that took part in the reporting pilot program are members of The Climate Group States & Regions.

The governments who participated in this pilot exemplify what is possible when ambition and commitment combine. For example,

- ▀ Québec, through the 'Electric Vehicle Action Plan' which aims to electrify individual and collective transportation all over its territory, the provincial government is tackling the 43.5% of its emissions which come from transport.
- ▀ North-Rhine Westphalia, a state in Germany which is responsible for a third of all of Germany's current emissions, has a legislated target to reduce its emissions by 80% by 2050 on 1990 levels.

The State of North-Rhine Westphalia is a leading sub-national government that is addressing climate change and has committed to:

- ▀ An emissions reduction target of 25% by 2020, on a 1990 baseline;
- ▀ An emissions reduction target of 80% by 2050, on a 1990 baseline; and
- ▀ For their State Government operations to be carbon neutral by 2030.

Similarly across members of The Climate Group States & Regions, California brought the AB32 bill into law in 2006 - the first piece of major government legislation to cut carbon emissions and tackle the rise in temperature. The Scottish executive has steadily increased its share of renewable energy and is now set to build the third largest offshore wind farm in the world. In 2000, around 12% of Scotland's electricity came from renewables. Today their contribution stands at over a third, with a 2020 target of 100% renewable energy.

For the first time, this leadership and innovation by states and regions is now supported by a global platform for measuring, reporting, sharing and comparing the impact of their climate action. CDP's states and regions platform provides an essential tool for governments to understand the local and global impacts of their climate action; identify and replicate the most effective climate policies; improve existing programs; understand the risks as well as the economic benefits; and through this global knowledge-base, take even more ambitious action.

**Libby Ferguson**  
States and Regions Director  
The Climate Group





We are agents of change committed to impactful global climate action which generates important economic development opportunities and new green economy jobs driven by innovation and creativity. Governments like ours play an essential role as policy innovators, experimenting with and proving the success of new climate policy models.

**Philippe Couillard**

Premier of Québec  
Co-Chair of The Climate  
Group States & Regions

## Emissions management

### Measuring emissions

Measurement, management and disclosure of greenhouse gas emissions are at the heart of a climate change strategy and emissions reduction efforts. To manage, we must measure, and an encouraging 92% of participating governments have a region-wide GHG emissions inventory in place. 73% of participating governments measuring region-wide emissions used the IPCC guidelines to compile their region-wide inventory, and over 80% of governments reported an inventory since 2010, the most recent being 2012. More than half of participating governments have then gone one step further and incorporated emissions reduction planning into the master planning for their region.

Governments with a region-wide emissions inventory

92%

Based on 12 responses

Fig 4: Primary methodology used to calculate region-wide emissions

2006 IPCC Guidelines  
for National Greenhouse  
Gas Inventories

73%

Based on 11 responses



Other

Danish specific methodology (9%)

ICLEI and GPC 2013 (9%)

US EPA State Inventory Tool (9%)

Total greenhouse gas emissions  
reported through CDP

748 Mt  
CO<sub>2</sub>e

Based on 12 responses

Governments with a recent  
region-wide emissions inventory  
(since 2010)

83%

Based on 12 responses

Governments with emissions  
reductions in regional master plan

55%

Based on 11 responses

Governments with verified or  
audited emissions data

27%

Based on 11 responses

**The State of Jalisco's State Development Plan includes a chapter of Climate Change. It is the first time in the history of Jalisco, that climate change is included as one strategic topic with clear objectives. One of the sectorial objectives is reduction of GHG emissions.**

State of Jalisco

**The Catalan Inventory is part of the Spanish Inventory on GHG emissions. Spain as a member of the EU and the United Nations Framework Convention on Climate Change periodically is audited by a panel of experts selected by UNFCCC.**

Region of Catalonia

## Reducing emissions

Governments are taking action to reduce their contributions to climate change by setting targets to mitigate their GHG emissions. 75% of governments have emissions reduction targets in place that are region-wide. These emissions reduction targets cluster around the years 2020 and 2050, and vary in percentage reduction commitments of 10% to 80%. The State of Vermont for instance has two emissions reduction targets in place for their state, one for a 50% reduction in emissions by 2028, and one for a 75% reduction in emissions by 2050, based on a 1990 baseline.

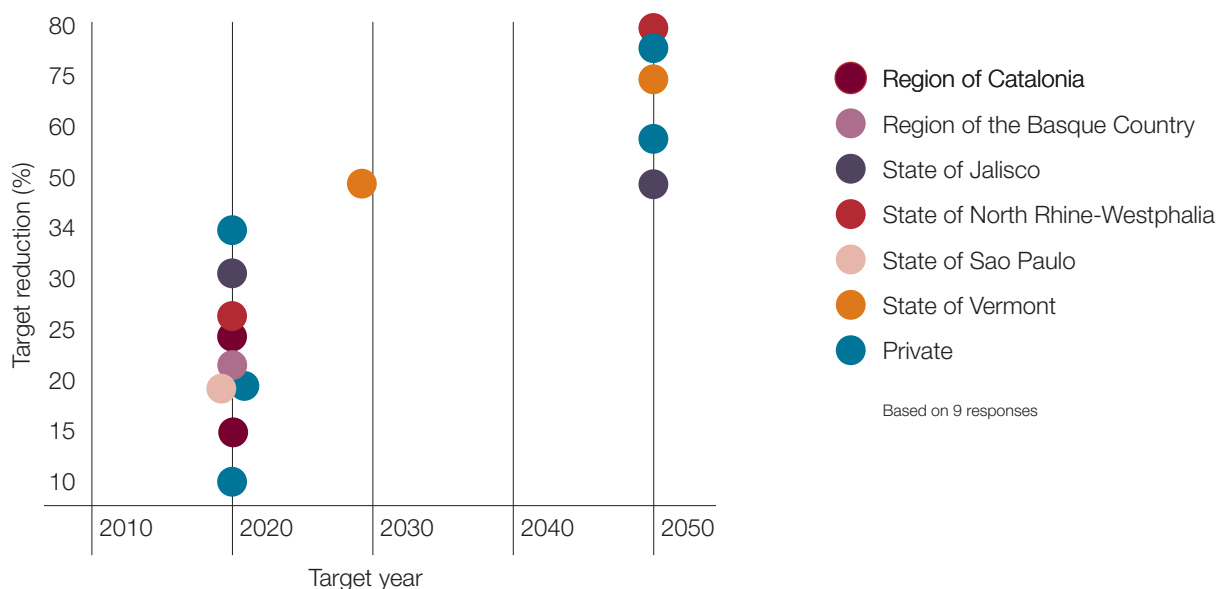
64% of governments have also set targets to increase the amount of electricity and energy generated from renewable sources. Snapshot 3 highlights examples of these targets in the Region of Catalonia, the North Denmark Region, and Province of KwaZulu-Natal.

Governments with a region-wide emissions reduction target

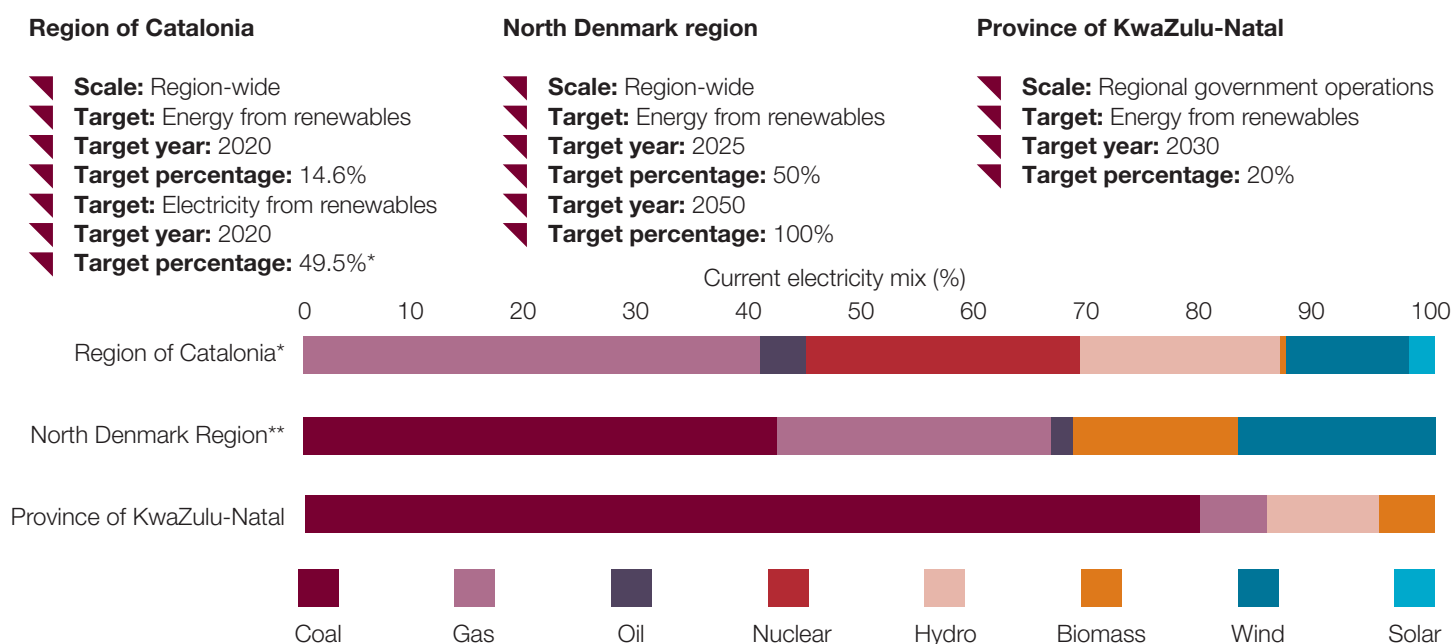
# 75%

Based on 12 responses

**Fig 5:** Government region-wide emissions reduction targets



**Snapshot 3:** Renewable energy and electricity targets



\* Refers to installed capacity data from 2014.

\*\* Refers to regional electricity consumption and production for domestic and public services only (not industrial or transport).

## Business risk and opportunity

Climate change presents opportunities as well as risks to state and regional governments. Physical and social risks impact on the ability for businesses to function within a given region, and this level of sub-national government has an important role to play in responding to these risks. 91% of participating governments recognize that physical climate change risks threaten business operating successfully in their region, however 100% of participating governments identified that there are also economic opportunities that result from climate change. More than half of participating governments are incentivizing their region's businesses, citizens and government departments to reduce their carbon emissions, and 75% of governments have current climate change projects that seek private sector funding.

Governments that reported physical climate change risks to successful business operation within their region

# 91%

Based on 11 responses

Governments that identified economic opportunities as a result of climate change

# 100%

Based on 12 responses

Governments that seek private sector investment for climate change projects

# 75%

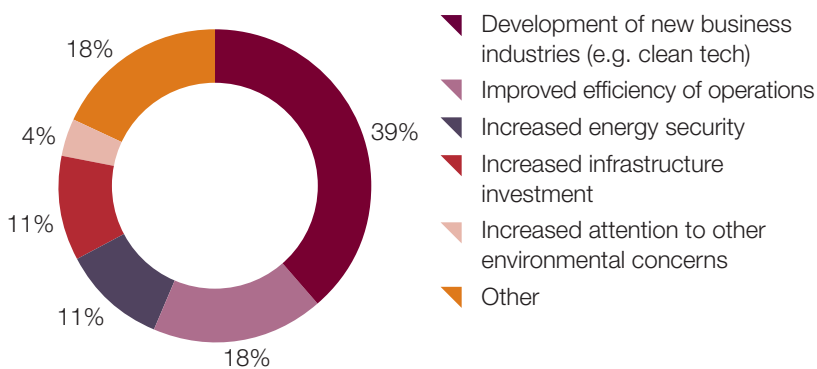
Based on 12 responses

Governments providing incentives for the management of climate change issues

# 58%

Based on 12 responses

**Fig 6:** Economic opportunities from climate change



**The physical impacts of climate change are a real threat to the environment, residences, businesses, and other physical infrastructure in Vermont. For example, increased precipitation and associated flooding will have negative impacts on many of our downtowns located along rivers and streams. Warmer winter & spring temperatures &/or changes in snowfall patterns will impact recreation businesses like the ski industry, the maple sugaring industry, etc. The physical impacts of climate change present real environmental, economic, and quality of life risks to Vermont.**

### State of Vermont

North Rhine-Westphalia conducted 64 detailed consultations for companies and municipalities in North Rhine-Westphalia in 2013 as well as around 80 brief consultations, mostly by phone, on the subject of contracting. The main topics in the consultancy enquiries were savings contracting and the supply of energy from renewables and from combined power and heat generation.

### North Rhine-Westphalia

## Concluding remarks

This report captures the current state of play of climate change reporting at the sub-national level, as demonstrated by a group of 12 leading state and regional governments. The majority of the group chose to report publicly, showing a willingness for this information to be used more widely, and highlights the importance of transparency.

The measurement, management and reporting of climate change information is vital in preventing dangerous climate change and protecting our natural resources. CDP's global platform allows for respondents to demonstrate concrete climate action and chart progress being taken to combat climate change from around the world. It also brings a number of benefits to governments, allowing them to better understand and improve the impact of their climate policies, as well as providing opportunities to benchmark performance, share best practice and identify opportunities for improved action and collaboration.

This report, based on data from 12 regions, provides a glimpse of what could be possible if more regions around the world reported their climate change data through a standardized global platform. Based on the success and learnings from this pilot program for states and regions run by CDP and The Climate Group, we will upscale this pilot to a full program in 2015.

This report is also part of a wider call for action by regional governments globally, ahead of the 21st Conference of Parties to the UNFCCC (COP 21) due to take place in Paris, December 2015.

Together with regional government networks (R20 and nrg4SD) and partners around the world, The Climate Group and CDP are driving a **Compact of States and Regions**, a commitment to provide an annual account of the climate targets set by state and regional governments around the world, and the progress made by governments to achieve those targets.

It is the partners' intent that this unified, standardized, annual assessment will support the international climate negotiations by providing a clear and accurate picture of the overall contribution being made by state and regional governments around the world, through aggregated global data.

Building on the emissions reporting program established by The Climate Group and CDP, many state and regional governments have already confirmed their commitment to join the Compact.

We invite all sub-national governments around the world to support the Compact of States and Regions and join our 2015 reporting program. To find out more about the Compact please visit [theclimategroup.org/compact](http://theclimategroup.org/compact) or [cdp.net](http://cdp.net)

Governments that responded publicly through CDP

75%

Based on 12 responses



**The pilot offered the unique chance to gather all pieces of information related to climate change in Rio de Janeiro State in a single document, and, at the same time, the opportunity to demonstrate the voluntary efforts of our State in addressing and managing climate change issues.**

**State of Rio de Janeiro**



## Acknowledgments

**CDP and The Climate Group would like to thank the participants for their leadership and commitment to this important pilot, and Zennström Philanthropies for their generous funding.**

- ▼ Cornwall Council, GBR
- ▼ North Denmark Region, DNK
- ▼ Province of KwaZulu-Natal, ZAF
- ▼ Province of Quebec, CAN
- ▼ Region of the Basque Country, ESP
- ▼ Region of Catalonia, ESP
- ▼ State of Jalisco, MEX
- ▼ State of North Rhine-Westphalia, DEU
- ▼ State of Rio de Janeiro, BRA
- ▼ State of São Paulo, BRA
- ▼ State of Tasmania, AUS
- ▼ State of Vermont, USA





Thank you for facilitating our participation in this emissions reporting pilot, it was invaluable. This will form the basis for our planned KwaZulu-Natal emissions reporting programme.

**Thokozile Shezi**

*Office of the Premier / Head of Secretariat  
KwaZulu-Natal Climate Change  
& Sustainable Development Council*



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