

Yearbook of Global Climate Action 2018

Marrakech Partnership



United Nations
Climate Change Secretariat

Marrakech
Partnership



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Foreword



Patricia Espinosa Executive Secretary of the UNFCCC

Climate change remains a growing, existential threat. We were given stark warnings of this in 2018 from scientists in the Global Warming of 1.5 °C report of the International Panel on Climate Change and from nature in the form of record-breaking temperatures and extreme weather events.

Are we doing enough? The answer is clearly, no. We need to commit to urgent, increasingly ambitious global climate action.

In 2015, governments adopted the Paris Agreement and 2030 Agenda for Sustainable Development. The first describes a universal commitment and means to address climate change. The second describes our detailed aspirations for human wellbeing, thriving sustainably on a healthy planet.

What is clear in both agreements is that government action alone cannot bring success. All levels of government, all sectors public and private, civil society, and yes, individuals, need to step up their action. We need to act together, around the globe and at home, where we work and where we live. We need global climate action that encompasses the world and our relationship with this beautiful but finite planet.

The Paris Agreement recognizes that non-Party stakeholder participation is integral to success and countries since its adoption have taken steps to encourage broad-based global climate action. A year after Paris, countries endorsed the Marrakech Partnership for Global Climate Action, launched by the High-Level Champions, knowing that we can do more when we act together.

This Yearbook of Global Climate Action is part of that effort. It takes stock of what is happening on the ground to reveal progress and opportunities for increased action. The yearbook draws on information from the relaunched Global Climate Action portal, inputs to the Talanoa Dialogue, published reports and others sources, such as commitments pledged at the Global Climate Action Summit and continuing efforts of the Marrakech Partnership, to create a useful picture for national climate negotiators and non-Party actors.

Just as last year's book revealed, the 2018 Yearbook shows that action is increasing, in terms of number, location and scale. More organizations, more people, are taking climate action, and those that were already taking action are now doing more. This is a positive finding indeed. What's more, research hints that if non-Party action continues in this way, and if governments fulfill their commitments, we might avoid the worst effects of climate change.

On one hand, greenhouse gas emissions have yet to peak and countries struggle to maintain the concentrated attention and effort needed for a successful response to climate change. On the other hand, climate action is occurring, it is increasing, and there is a will to do more. I highlight this because falling into despair and hopelessness is a danger equal to complacency, none of which we can afford.

I thank the High-Level Champions for this yearbook and applaud the climate action it describes. Let it be a guide and inspiration to Parties and to all, for the sake of the planet and future generations.

Foreword



Inia Seruiratu

**High-Level Champion for Global Climate Action
Fiji Minister for Agriculture,
Rural & Maritime Development,
National Disaster Management and Meteorological Services**

Tomasz Chruszczow

**High-Level Champion for Global Climate Action
Special Envoy for Climate Change, Poland**

As the high-level champions for global climate action, we are pleased to present the second Yearbook on Global Climate Action.

We have seen global climate action steadily increasing in the past few years; concrete action by many countries, regions, businesses, civil society and indigenous groups are currently underway.

However, there is a need to further scale up ambition as we are still far from achieving a net-zero emissions world by 2050. The good news is there is still immense potential to do so.

Over the past year, under the Talanoa Dialogue, Parties and non-Party stakeholders have exchanged and submitted stories and ideas on their initiatives and solutions for future avenues. A total of 471 submissions have been received on the Talanoa dialogue platform (as of October 29, 2018) and more than 90 Talanoa events were held across the world. We were impressed by the active engagement of non-Party stakeholders in the

Talanoa Dialogue and it is our hope that these exchanges and submissions will inspire and impel the development of more ambitious nationally determined contributions (NDCs).

In September 2018, the Global Climate Action Summit brought together representatives of states, regions, cities, businesses, investors and NGOs in San Francisco. The summit also served as a platform for launching many new initiatives and commitments. The upgraded Non-State Actor Zone for Global Climate Action (NAZCA) online portal was launched during the summit and reflects the ever-increasing scale and scope of climate action.

This year also saw the release of a very important report, the International Panel on Climate Change (IPCC), Special Report on Global Warming of 1.5°C. The report states that limiting global warming to 1.5°C would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems. This reinforces the importance of all sectors and actors coming together to work on this huge but necessary undertaking. This is exactly what the Marrakech Partnership stands for.

Foreword

High-Level Champions Continued

The 2018 Yearbook provides an overview of these events, initiatives and reports, and reviews progress achieved over the past year. In line with the aim of promoting the development of global climate action, this year's edition also showcases a selection from the many initiatives and partnerships which are already demonstrating tangible progress.

Five major trends could be identified from the analysis of the vast amount of resources.

First, global climate action is helping close the gap in achieving the goals of the Paris Agreement.

Second, global climate action is growing and diversifying, addressing a wide range of sectors, from health care, forestry, agriculture, and coastal zone management to investments in both mitigation and adaptation.

Third, outputs of global climate action are increasing in middle- and low-income countries, and also contributing to delivering the Sustainable Development Goals.

Fourth, global climate action is helping finance the transition to a low greenhouse gas emission and climate resilient global economy.

Fifth, global climate action is becoming more transparent, thus more visible and better communicated, with a larger number of initiatives publicly registering and reporting their actions.

Crucially, global climate action has a key role to play in achieving the goals of the Paris Agreement but this action must be delivered now. Parties and non-Party stakeholders must demonstrate they have the courage and determination to deliver on their commitments and develop mutual trust to increase co-operation in implementing climate solutions. Delaying action means increasing the risk of missing the goals of the Paris Agreement and exposing the world to more and more dangerous consequences of climate change. There is neither planet B nor plan B.

Since its inception in 2016, the Marrakech Partnership has been built by an impressive and committed group of individuals, coalitions and initiatives. Through collaboration and dedication, this group has shaped the Marrakech Partnership into a unique space to explore innovative ideas and develop co-operative approaches that spur climate action on the ground all over the world. We look forward to seeing the Partnership grow and play an even more important role in the years to come. We strongly believe that joint effort, more participation, making use of synergies of actions, expanding partnerships and reaching out to sectors and geographical regions are the key to reaching the Paris goals. Every one of us is called upon to contribute to this momentum of coordinated collective action. Working together, we can achieve a carbon-neutral and resilient world that allows humans and the planet to flourish.

Foreword



Peter Damgaard Jensen CEO of Danish Pension Fund PKA, Chair of Institutional Investors Group on Climate Change

There is no doubt that climate change is one of the most significant challenges of our time, and this has never been outlined so clearly as in the most recent IPCC Special Report on Global Warming of 1.5 °C. The risks posed by a changing climate affect us all and, as such, it is necessary to act collectively to address it. The Paris Agreement gave us a framework and goals to work towards, and the Marrakech Partnership for Global Climate Action has encouraged the collaboration between governments and other key stakeholders, such as businesses, investors, cities and regions, recognizing their importance in bringing about a low-carbon and climate resilient society.

The engagement by these stakeholders towards achieving the Paris Agreement has been increasing substantially over the years. In 2018 this engagement was evident by the number of attendees and the outcomes of the Global Climate Action Summit in California. The Summit brought together leaders from all sectors of society and served as a launchpad for a number of bold worldwide commitments and accelerated action. Besides the Summit, we also saw great engagement by stakeholders in the Talanoa Dialogue process. The Talanoa Dialogue has sparked constructive and practical discussions from this diverse set of stakeholders, demonstrating the strong desire to work together on collective solutions.

We at PKA and the Institutional Investors Group on Climate Change (IIGCC) see the climate challenges as opportunities to grow, learn and improve. IIGCC's mission is to mobilise capital for the low carbon future by amplifying the investor voice and collaborating with business, policy makers and fellow investors. At PKA our legal duty as an institutional investor is to secure our members a better and safer future - not only financially, but also by investing in a more sustainable world. We see these as

complimentary, as proven by PKA's track record. For example, our climate-related investment portfolio has returned 10% annualized returns since inception, demonstrating that green investments can be just as beneficial for the bottom-line as for the climate.

Investment in low-carbon and climate resilient solutions is the future of businesses, and any investors, companies or governments hesitating to do their part will end up missing out on significant economic and financial opportunities. Nowhere is this more evident than in emerging and developing markets, where it is essential that investors work together with national governments to secure capital for the energy transition but also for greater resilience in a changing world.

Investors must also focus on action to drive more effective climate related financial disclosures by companies and address climate risks and opportunities in the investment process. Businesses have demonstrated that decarbonisation is possible while boosting employment, investment, and innovation.

I am, therefore, happy to see the progress achieved by non-Party stakeholders reflected in the 2018 Yearbook of Global Climate Action, and hope to see increased ambition and bolder action in the near future, as much can be achieved by working together towards a common goal. In parallel, we look to Parties to the Paris Agreement to send us the clear, long-term signal that political ambitions are steadily moving forward. This publication shines a light on the range of tangible commitments and concrete actions that makes it possible to achieve the Paris Agreement – and the right enabling policy frameworks will only ensure these actions continue to be scaled up and accelerated.

Acknowledgements



Photo: Chester Ho

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A special thanks to the team who helped prepare the analysis for Chapter 2. The analysis was led by Sander Chan, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) / Copernicus Institute of Sustainable Development, Utrecht University and Thomas Hale Blavatnik School of Government, University of Oxford. Team members included Jacopo Bencini (DIE), Lukas Edbauer (DIE), Imogen Jacques (DIE), Arturo Salazar (DIE), Tim Cholibois (Oxford University), Debora Leao Andreade Gouveia (Oxford University), Jose Maria Valenzuela (Oxford University).

The High-Level Champions would also like to thank their teams and the UNFCCC secretariat for their steady support throughout the process of developing the Yearbook.

The analysis was supported by the [Strengthening Non-State Climate Action in the Global South project](#).



Photo: Brynden

Executive summary

The urgency for all levels of government, the private sector and civil society to take immediate action to limit global warming and avoid the worst effects of climate change has been reinforced this year by the messages in the International Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C.¹ The vital role that non-Party stakeholders (cities, regions, businesses and civil society) can play in driving ambition and delivering action was recognized by the IPCC report and by the Paris Agreement. In 2018, the contribution of non-Party stakeholders has been further enhanced by submissions to the Talanoa Dialogue and demonstrated at events like the Global Climate Action Summit.

The Marrakech Partnership for Global Climate Action, established at the 22nd session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), aims to mobilize action quickly and to reap the benefits in efficiency and effectiveness that come through partnerships and coordination between different actors. In 2018, the High-Level Champions (Minister Inia Seruiratu and Special Envoy Tomasz Chruszczow), with the support of the UNFCCC secretariat, have continued to connect initiatives and coalitions with national plans to spur even greater ambition and action.

The purpose of this Yearbook – the second to be produced by the Secretariat under the guidance of the High-Level Champions – is to reflect the range of current global climate action from non-Party stakeholders and bring key messages to the international community to encourage a higher level of ambition by Parties and non-Party stakeholders alike. The Yearbook also describes opportunities for governments to work together with non-Party stakeholders to increase the speed and ambition of climate action.

Global climate action now

Global climate action is helping to close the gap in action to meet the goals of the Paris Agreement

Non-Party stakeholders can act individually, making commitments to climate action within their own span of control, and also work cooperatively, joining forces with each other and/or with national governments. Both of these types of activities are described by the umbrella term global climate action.

The breadth of commitments being made are significant and global, spanning cities, regions, businesses, investors and civil society. While numerous studies differ to some extent, commitments have been made by more than 9000 cities from

128 countries (16 per cent of the global population), around 240 states and regions from more than 40 countries (17 per cent of the global population) and more than 6000 businesses in 120 countries representing USD 36 trillion.²

Making commitments is only the first step towards the transformations necessary to achieve the Paris Agreement goals. For the world to be on track to those goals, non-Party and Party stakeholders alike need to deliver on and enhance their commitments. Aggregate tracking of outputs from individual commitments is challenging because of incomplete and sometimes inconsistent information on targets and greenhouse gas emissions. Moreover, work to align methodologies and concepts applied by the diverse range of stakeholders engaged in climate action are still being advanced. Despite these challenges the Yearbook does demonstrate progress for 127 specific cooperative initiatives many of which are included in the Global Climate Action portal³ (NAZCA). This assessment shows that outputs are increasingly being delivered. About 60 per cent of these initiatives are producing outputs that put them on a path to achieving their desired environmental or social outcomes.

Climate action is growing globally

The outputs from cooperative initiatives are increasingly being delivered in low- or middle-income countries. Before 2013, only a small proportion of the outputs were delivered in these countries, but by 2015 the number of outputs in these countries had increased significantly and this number has remained more or less constant since then. This reflects increased climate action in developing countries and increased international cooperation, even though most participants and lead organizations in cooperative initiatives are still from high-income countries.

Climate action is re-shaping the financial sector to help transition to a net-zero carbon and resilient society

The scale of finance needed to achieve the goals of the Paris Agreement is large. Global model pathways limiting global warming to 1.5°C are projected to involve annual investment needs in energy systems of around USD 2.4 trillion between 2016 and 2035.¹ However, climate action will also result in economic benefits. The Global Commission on the Economy concludes that bold action on climate could deliver a net economic gain of USD 26 trillion by 2030.⁴ Stakeholders in the finance sector are working in various streams to shift economies towards low-carbon and resilient modes of operation. Financial institutions, philanthropic foundations and national and subnational governments are collaborating to design innovative financing solutions. Businesses and investors are also reporting on and are

1. IPCC (2018). Special Report on Global Warming of 1.5°C. Available at: <http://www.ipcc.ch/report/sr15/>

2. Source: <http://www.climategroundswell.org/blog-test/2018/11/1/assessing-global-climate-action-after-the-california-summit>

3. <http://climateaction.unfccc.int/>

4. Source: *The New Climate Economy (2018). Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times.* Available at: <http://www.newclimateeconomy.report>

managing climate risks and opportunities and implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).⁵

Financial institutions are similarly increasingly mainstreaming climate change into their operations and investment decisions. One area that has developed significantly of late is the green bond market. These are debt instruments issued to fund environmental projects ranging from wind farms to water purification facilities, mainly in emerging markets. In 2018, the total value of climate-aligned bonds peaked at USD 1.45 trillion.⁶ Regulators have also started to work on designing a low-carbon and climate-resilient financial system, through initiatives such as the [Network of Central Banks and Supervisors for Greening the Financial System](#).

Global climate action is becoming more transparent and measurable

Monitoring, reporting and verification of progress made towards achieving commitments provides evidence of ambitious action for use by both Party and non-Party stakeholders. The NAZCA portal was relaunched in September 2018 at the Global Climate Action Submit (GCAS) to give a clear, comprehensive view of both individual and cooperative climate action by non-Party stakeholders and inspire greater ambition. In addition, many individual actors and cooperative initiatives publish their own reports on progress to showcase their activities and inspire others to act. Moreover, as tracking improves data availability, new methods allow more precise quantification of the potential of non-Party stakeholders, both globally and in specific countries.

The future of global climate action

Global climate action has the potential to impact on more sectors, touching on all areas of the Sustainable Development Goals. However, quantitative estimates focus on the potential contribution global climate action can make to reducing greenhouse gas emissions. For methodological reasons, emission reductions from individual commitments and from cooperative initiatives have been evaluated separately. The results reported in the paragraph below are from the most recent and most comprehensive study, published by Data Driven Yale, NewClimate Institute and PBL Netherlands Environmental Assessment Agency.

The potential emissions savings from a selection of cooperative initiatives are much higher than the aggregate of the individual commitments. If countries were to implement their NDCs and the cooperative initiatives were to meet their commitments, global emissions in 2030 would be in a range consistent with the long-term trajectory to meet the Paris Agreement goal of

well below 2°C. For the individual commitments and cooperative initiatives, it is assumed that all commitments are met fully and that they do not displace action elsewhere.

Non-Party stakeholders are already stepping up action to meet the challenges of climate change. During 2018, new initiatives were formed in areas as diverse as health care, investment and land use. In addition, many individual cities, regions and companies made new or more ambitious commitments. At the same time, cities, regions, companies, academia and civil society have been joining forces to champion climate action in their countries through national, multi-stakeholder coalitions, such as the Japanese Climate Initiative and We Are Still In (in the United States of America).

Accelerating action

Global climate action is increasing, but there is potential to go further. Parties and non-Party Stakeholders must enhance climate action and increase cooperation in implementation. This means increasing ambition in NDCs and more businesses, cities and regions making commitments. It also means that many of the commitments made by non-Party stakeholders will need to become increasingly more ambitious to make a real contribution to the transformation needed to meet the Paris Agreement. Both Parties and non-Party stakeholders will need to act now to increase ambition as delays in action increase the risk of missing the Paris goals and exposing the world to greater impacts from climate change.

Parties and non-Party stakeholders both have a role to play in setting the conditions necessary for ambitious climate action to be implemented. Across all thematic areas of the Marrakech Partnership there are common opportunities: strengthening finance; setting the right policies; sharing and creating knowledge on high-potential solutions; recognizing and showcasing existing action; and enhancing integration. Each of these opportunities needs to be addressed and enhanced among and between Parties and non-Party stakeholders.

Key messages for 2018

Global climate action by non-Party stakeholders is crucial to deliver existing NDCs and raise ambition. Parties and non-Party stakeholders acting together have the potential to put the world on a path to global warming of well below 2°C. To achieve this potential, this Yearbook identifies priorities for Parties in NDC and policy development and on international cooperation. For non-Party stakeholders, priorities include making and delivering on ambitious commitments and working with others to amplify the results. Together, Parties and non-Party stakeholders can deliver new and innovative financial and business models and develop and implement the technological solutions needed to transform to a zero-carbon and resilient economy.

5. <https://www.fsb-tcfd.org/>

6. <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018>

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Photo: Andre Cuervo



Introduction

There is universal recognition that all levels of government, the private sector and civil society need to take urgent and effective action to limit the global average temperature rise to 1.5°C and avoid the worst effects of climate change. The urgency of this action has been reinforced this year by the messages from the International Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C.⁷ The impacts of climate change are also becoming more apparent, with countries across the world experiencing extreme heat waves, wildfires and flooding. In 2017, weather- and climate-related disasters were responsible for thousands of deaths and USD 320 billion in losses.⁸ Yet, 2018 has also seen continued momentum in global climate action involving non-Party stakeholders, such as cities, regions, companies, investors and citizens.

The need for a new form of multilateralism, involving all in society in the implementation of climate action, was explicitly recognized by the Paris Agreement. Parties recognized that non-Party stakeholders have a vital role to play in driving ambition and delivering action. The High-Level Champions, mandated by Parties at the 21st session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), launched the Marrakech Partnership for Global Climate Action at COP22, building upon the work started by the Lima-Paris Action Agenda. The Marrakech Partnership was established to help mobilize non-Party stakeholder action quickly and to reap the benefits in efficiency and effectiveness that come through partnerships and coordination. The [2017 Yearbook of Global Climate Action](#) highlighted areas where some progress has been made. It also highlighted areas where more action is needed. These areas included closing the gap in emission reductions, spreading action globally, investing in the transformation to a zero-carbon society and making action transparent. Further progress in these areas is described in this Yearbook.

In 2018, the High-Level Champions (Minister Inia Seruiratu and Special Envoy Tomasz Chruszczow), with the support of the UNFCCC secretariat, have continued to connect initiatives and coalitions to spur even greater ambition and action. This greater ambition and action is important since the aggregate commitments of countries' Nationally Determined Contributions (NDCs) are still insufficient to reach the goals of the Paris Agreement. The Talanoa Dialogue in 2018 seeks to boost ambition by taking stock of progress and informing the NDCs.

The Dialogue invited stakeholders to respond with solutions-oriented answers to three questions: *Where are we? Where do we want to go? How do we get there?* The answers received will provide the substantive basis for ministerial discussions this year at COP24 in Katowice, Poland. Non-Party stakeholders have engaged in the Dialogue throughout 2018. More than 470 submissions have been received and representatives from more than 100 organizations were active in the discussions at the Climate Talks sessions in April/May in Bonn, Germany. Through the Talanoa Dialogue, many practical examples of effective climate action have been brought forward and form the basis for a companion report to this Yearbook on good practice. The key messages from the Dialogue are captured in a synthesis report to be considered by the ministerial segment at the political phase of the Talanoa Dialogue at COP24.

There have been other opportunities for non-Party stakeholders to showcase their achievements and make new and stronger commitments during the past year. These have included the Global Climate Action Summit (GCAS) in California, Climate Week in New York City and regional climate weeks, including Africa Climate Week in Nairobi, Asia-Pacific Climate Week in Singapore, and Latin America and Caribbean Climate Week in Montevideo. Announcements at these events included new initiatives in areas such as finance, land-based mitigation, health care, transport and food. In addition, many businesses, cities and regions have made new or more ambitious commitments under existing initiatives. Non-Party stakeholders can take action on their own or can cooperate with other non-Party stakeholders or governments in what is referred to as cooperative initiatives.

The purpose of this Yearbook is to reflect the whole range of global climate action from non-Party stakeholders and bring key messages to the international community to drive ambition of Parties and non-Party stakeholders alike. Based on monitoring and reporting of action and on progress towards commitments, the Yearbook describes the scale and scope of global climate action happening now. The range of action is illustrated through on the ground examples. While the scale and scope of action are increasing significantly, there is still a lot of potential to do more. Climate actions by non-Party stakeholders can contribute significantly to delivering countries' commitments and increasing the ambition of those commitments. Estimates of this potential contribution, and challenges to and opportunities for realizing this potential are also discussed in this Yearbook, which concludes with key messages to Parties.

7. IPCC (2018). Special Report on Global Warming of 1.5°C. Available at: <http://www.ipcc.ch/report/sr15/>

8. The New Climate Economy (2018). Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times. Available at: <https://newclimateeconomy.report/>

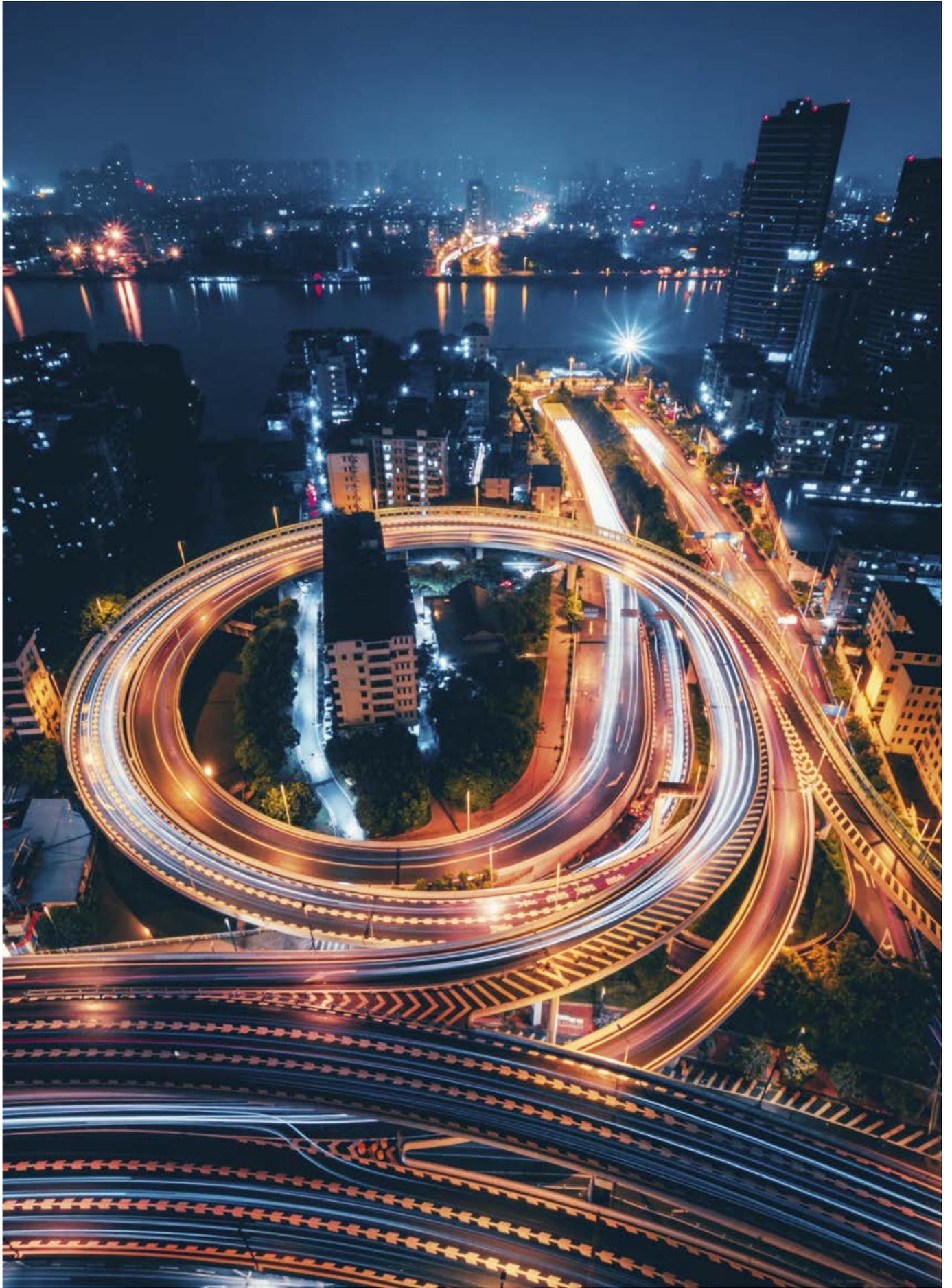


Photo: Simon Zhu

2

Global climate action now

Global climate action right now is dynamic and continues to grow – the 2017 Yearbook described more than 70 initiatives in the seven thematic areas (land use, oceans and coastal zones, water, human settlements, transport, energy and industry) of the Marrakech Partnership. This section of the Yearbook describes the scale and scope of action happening in 2018. The analysis presented builds on that of the 2017 Yearbook to examine progress in four areas:

- » Closing the gap in action to meet the Paris Agreement goals;
- » Spreading action globally;
- » Financing the transition;
- » Making action more transparent.

Progress in each area is analysed based on data from a wide selection of commitments and initiatives and is illustrated through examples of action on the ground. The sources and approach used for this Chapter are described in Box 1.

Closing the gap in action to meet the Paris Agreement goals

Non-Party stakeholders have an important role to play to support national climate action and ambition to close the gap to the Paris targets by acting to reduce emissions and adapt to climate change, by driving change in economic systems and technologies, and by supporting the politics of enhanced ambition.

The initiatives operating across all the themes of the Marrakech Partnership were described in the 2017 Yearbook, and these initiatives, joined by new ones in 2018, continue to deliver progress on climate action. The case stories that follow illustrate examples of the types of action taken by stakeholders in the human settlements, energy and transport areas.

Cities, both individually and through cooperative initiatives, are already making significant commitments and are acting to reduce greenhouse gas emissions and adapt to climate change. As hubs of economic activity and intellectual capital, cities are naturally positioned to lead the transition to low-carbon and resilient forms of human settlement. The case story below (Box 2) describes action to implement district energy technology which allows cities to provide heating, cooling and water services in a resource-efficient way.

Box 1

Sources and approach for Chapter 2

Data such as number and type of stakeholders making commitments or participating in cooperative initiatives are drawn from NAZCA and from analysis by the ClimateSouth Project (by the German Development Institute/Deutsches Institut für Entwicklungspolitik; Blavatnik School of Government at Oxford University; the African Centre for Technology Studies; and The Energy and Resources Institute). Information on the outputs from initiatives are drawn from that analysis informed by the online survey conducted for the 2017 Yearbook and from independent research.

The illustrative examples were selected from the 2017 online survey results, submissions from the Talanoa Dialogue and independent research. They are presented as case stories and snapshots and have been selected to show examples of replicable and tangible outcomes across the globe in each of the seven thematic areas and in cross-cutting areas, such as technology and finance. The case stories and snapshots represent only a few highlights of the many actions that could have been included in this Yearbook.



Photo: Mirko Blicke



Pipes being laid during the construction phase of the new Banja Luka district energy system.

Box 2

Human Settlements Thematic Area Case Story – District Energy in Cities Initiative

Launched in 2014, the District Energy in Cities Initiative^a is a partnership to accelerate urban transitions through the deployment of modern district energy systems. Focusing on emerging economies and developing countries across Asia, Latin America, Africa and Eastern Europe, the initiative provides technical assistance to local governments that wish to develop, retrofit or scale-up district energy systems. The initiative aims to overcome upstream investment barriers, facilitates peer-to-peer learning and advocates for the establishment of enabling policy and regulatory frameworks that attract private investment.

After three years of development, the initiative's first pilot project, in Banja Luka (Bosnia and Herzegovina), is now operational. The newly installed biomass boiler plant will reduce carbon dioxide emissions by 90 per cent. The retrofit is also expected to save up to EUR 900,000 annually because of reduced expenditure on fuel oil – money which can be reinvested in local services. There will also be a health benefit to the local population through a significant improvement in air quality, as the upgrade cuts sulphur dioxide emissions by 94 per cent.

"With the help of the District Energy in Cities Initiative, we built a modern, environmentally friendly district heating plant within only one year. The new system provides more than 22,000 citizens with stable, affordable and clean heating," said Igor Radojičić, Mayor of Banja Luka. "International expertise and investment have helped us to move away from the polluting and financially unsustainable system, and I am convinced that further modernization of the hot water supply and building stock will allow us to achieve even greater energy savings in the future."

The initiative has demonstrated the power of partnership with banks and investors. There is huge potential for roll-out across the globe if development banks and international finance institutions create a 'preparation or readiness fund' for district energy projects in cities.

■ Please see here for a fuller version of the [Human Settlement Case Story](#)

a. <http://www.districtenergyinitiative.org/>



Photo: Hei Lau

Energy production and use is the main contributor to greenhouse gas emissions and is a critical ingredient in all economic endeavours. Transforming the energy system is therefore crucial to achieving the net-zero emissions needed by 2050. Climate action is occurring across all areas of energy, including renewable energy, energy efficiency and energy access. The Kigali cooling initiative (Box 3), is tackling one area: the demand for cooling services.

Box 3

Energy Thematic Area

Case Story – Kigali Cooling Efficiency Program

The Kigali Cooling Efficiency Program (K-CEP)^a is a philanthropic collaboration at the crossroad of the Montreal Protocol, UNFCCC, and the Sustainable Development Goals (SDGs). It supports the Kigali Amendment of the Montreal Protocol and the transition to efficient and clean cooling solutions for all.

a. <https://www.k-cep.org>

Dan Hamza-Goodacre, Executive Director of K-CEP, recognizes the synergy as a strength:

“A quantum leap in the climate and development benefits from efficient and clean cooling is imminent if we link the phase-down of super-polluting F-gases, as required by the Montreal Protocol, with the significant and booming energy demand for cooling. Joined up policies and financing can drive smart manufacturing and consumption and make sustainable cooling available to all.”

The initiative focuses not only on air-conditioning and refrigeration, but also on other cooling solutions, such as building design, shading, cool roofs and super-efficient fans. In its first year, K-CEP has already provided support to 38 developing countries across Africa, the Middle East, Asia, Latin America and the Caribbean to produce National Cooling Plans and/or to draft or revise their minimum energy performance standards for cooling appliances. So far, USD 35 million in grant money has been committed to over 20 organizations in a range of projects.

For example, in Rwanda, K-CEP worked with the United Nations Environment Programme (UN Environment) and the Government on a national cooling initiative. In Lebanon, K-CEP worked with the UN Development Programme and with the country's National Ozone Unit, funding a training module on energy efficiency aimed at service technicians, using a train-the-trainers approach that promotes replication of the training benefits.

■ Please see here for a fuller version of the [Energy Case Story](#)



Galapagos Ecological Airport.

Emissions from the transport sector are expected to increase in the coming decades under business as usual due to increasing demand. Many initiatives in this sector, detailed in the 2017 Yearbook, are setting the strategic directions and enabling conditions to reduce emissions and increase resilience across all modes of transport.

According to the International Air Transport Association, passenger demand for air travel will double by 2035, compared to 2016.⁹ Air transport has both global implications in terms of emissions from flights and local impact from the activities of airports. Airport Carbon Accreditation (Box 4) acts to reduce these local impacts.

Box 4

Transport Thematic Area

Case Story – Airport Carbon Accreditation

Airport Carbon Accreditation,^a launched and managed by Airports Council International Europe, the association of European airport operators, empowers airports to manage, reduce and ultimately neutralize their carbon footprint.

There has been continuous progress since the accreditation initiative began in 2009. Today, there are 245 accredited airports worldwide: 136 in Europe, 47 in Asia-Pacific, 35 in North America, 17 in Latin America and the Caribbean and 10 in Africa. These 245 airports represent 44.2 per cent of the world's air passenger traffic. The European region has committed to achieve 100 carbon neutral airports in Europe by 2030. The amount of CO₂ emissions related to airport operations reduced globally by the accredited airports in the year 2017-2018 alone is 347,000 tonne CO₂, with an additional 67,200 t CO₂ compensated for by means of emission reductions achieved in other sectors through offsets. The initiative now has at least one carbon neutral airport in every region: 39 in Europe, 6 in Asia-Pacific, and 1 in each of the other regions.

“As the global carbon standard for our industry, participation in Airport Carbon Accreditation is a natural fit for us and has no expiration date. We are proud to be the first airport in Latin America and the Caribbean to reach the highest level of Airport Carbon Accreditation – 3+ Neutrality – and will keep working to give the best service without harming the environment.” **Jorge Rosillo, General Manager at Galapagos Ecological Airport, Corporación América**

■ Please see here for a fuller version of the [Transport Case Story](#)

The case stories above demonstrate that even single initiatives can work across different sectors and towards multiple objectives. The snapshots below illustrate how different initiatives also complement each other in a single sector.

a. <https://airportcarbonaccreditation.org/>

9. Source: <https://www.iata.org/pressroom/pr/Pages/2016-10-18-02.aspx>

There is growing global momentum to scale up climate action in industry and business, both of which have an essential role to play in responding to climate change. The various industry sectors each have particular challenges and opportunities in tackling climate change, which may benefit from sectoral approaches and customized solutions. The mining and metals industry, as an example, produces materials which are used in almost every aspect of modern society, but is also largely energy-intensive and particularly vulnerable to the physical impacts of climate change.



Innovation at work at Goldcorp Inc.'s all electric Borden Mine. Photo courtesy of the Mining Association of Canada.

Box 5

Industry sector Snapshot Mining and metals

The mining and metals sector is making strides to reduce its emissions and adapt to a changing climate. Several companies have emission reduction targets and are committed to mitigation and adaptation strategies. There are currently seven mining and metals companies committed to implementing science-based targets, and one has already set one. There are also 10 mining and metals companies publicly supporting the Task Force on Climate-related Financial Disclosures' (TCFD)^a recommendations to ensure transparency around climate-related risks and opportunities.

Phasing out coal production and consumption brings with it major economic, social and political challenges for some countries. These are being addressed in projects such as Coal Transitions,^b an international research project aimed at developing credible and feasible trajectories and policy guidance for deep transitions in the coal sector in six major coal-using countries. There are also governmental efforts aimed at addressing these challenges, such as the Task Force on Just Transition for Canadian Coal Power Workers and Communities^c and the European Commission's Coal Regions in Transition Platform.^d The multi-stakeholder approach implicit in most initiatives may be a useful

way to address the challenges more widely. Further, 28 countries and 19 subnational governments have joined the Powering Past Coal Alliance^e and have committed to phasing out existing traditional coal power and place a moratorium on any new coal power stations without operational carbon capture and storage. A wide range of businesses, industries and organizations have also made commitments to focus on powering their operations without coal. Sectoral associations are fostering collective action towards a low-carbon and resilient society, such as the Mining Association of Canada's Towards Sustainable Mining (TSM)^f initiative, which has been adopted by associations in Argentina, Botswana, Finland, the Philippines and Spain.

"We want to make sure responsible mining is prioritized globally, and with five countries outside of Canada already on board, we hope TSM's goal of meeting society's needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way continues to be adopted by others." **Pierre Gratton, President and CEO of the Mining Association of Canada**

■ Please see here for a fuller version of the [Industry Snapshot](#)

a. <https://www.fsb-tcfd.org/>

b. <https://coaltransitions.org/>

c. <https://www.canada.ca/en/environment-climate-change/services/climate-change/task-force-just-transition.html>

d. <https://ec.europa.eu/energy/en/events/conference-coal-regions-transition-platform>

e. <https://poweringpastcoal.org/>

f. <http://mining.ca/towards-sustainable-mining>

Agricultural development is not only imperative to ensure food security for the increasing world population, but also to provide jobs to a large percentage of people whose livelihoods depend on the sector – it is estimated that about 65 per cent of poor working adults (earning less than USD 1.9 per day) currently make a living through agriculture.¹⁰ However, the direct and indirect impacts of climate change pose a threat to food production, as crop yields are highly climate-sensitive. The sector is also a main contributor to climate change itself – agriculture, forestry and land-use change combined are responsible for 25 per cent¹¹ of global greenhouse gas emissions. Action such as climate

smart agricultural approaches have the potential to reduce greenhouse gas emissions and enable adaptation and more resilient agricultural systems, as well as providing co-benefits for food security and livelihoods. Box 6 provides a snapshot on some of the initiatives that are taking action on agriculture. By enabling more productive, low-carbon and resilient agricultural systems, these initiatives not only ensure sustainable food production but can also contribute towards poverty reduction, improve the economic status of women, and generate more inclusive and efficient value chains.

Box 6

Land-use Thematic Area Snapshot Agriculture

Climate-smart agriculture

Climate-smart agriculture (CSA) is an approach to increase productivity and incomes, adapt to climate change and reduce greenhouse gas emissions where possible. CSA helps the people who manage agricultural systems to respond effectively to climate change. The approach takes a holistic view of agriculture, for example diversifying income streams for coffee farmers on Mount Kilimanjaro by introducing vanilla as an alternative crop and promoting trout farming in the rehabilitated canals of the irrigation system. Over the past years, various multi-stakeholder alliances and platforms have been established at the national, regional and global levels to support the dissemination and implementation of the CSA approach, such as the Global Alliance for Climate-Smart Agriculture,^a an independent alliance whose secretariat is hosted by the UN Food and Agriculture Organization. Regional efforts include the Promotion of Smart Agriculture towards Climate Change and Agro-ecology Transition in West Africa,^b aimed at supporting the transition towards agro-ecology in West Africa to reinforce the resilience of vulnerable populations, and the North America CSA Alliance,^c a platform for knowledge sharing and application of climate science to agriculture in Canada, Mexico and the United States.

Financing agriculture

Innovative financing mechanisms can be effective tools in helping reduce the impacts of shocks and stresses on farmer livelihoods. TRADER^d (*Taking Risk out of Agricultural Trade for Relief and Development Enhanced with Resilience*) is a collaboration between livestock traders, pastoral communities, meat exporters, county government officials, Islamic scholars, and other key stakeholders to unlock a solution for building livestock-keeping households' resilience to climate extremes and triggering sustained and inclusive growth in the Horn of Africa drylands. TRADER injected approximately USD 125,000 in capital into the Wajir livestock market system and provided 2,145 vulnerable households with a short-term subsidy designed to increase off-take of weakened livestock from drought-affected pastoral areas. LEAP^e (*Linking Social and Financial Capital to Enhance Resilience of Agro-Pastoral Communities*) is a coalition of partners aimed at tackling barriers, such as the financial exclusion of rural agro-pastoralists, especially women. Among LEAP's prototypes, undertaken in its pilot project in Mali and Niger, are savings and credit products tailored for Village Savings and Loan Associations, digital-based financial education, warehouse storage credit and index-based microinsurance. In a six-month period, over 1,300 members from 66 savings groups (88 per cent female) applied for and received loans.

a. <http://www.fao.org/gacsa/action-groups/csaalliances-platforms-networks/en/>

b. <http://ndcpartnership.org/funding-and-initiatives-navigator/promotion-smart-agriculture-towards-climate-change-west-africa>

c. <http://www.fao.org/3/a-bp089e.pdf>

d. <http://www.globalresiliencepartnership.org/wp-content/uploads/2018/02/Mercy-Corps-TRADER-Solution-Statement.pdf>

e. <http://www.globalresiliencepartnership.org/teams/linking-social-financial-capital/>



10. World Bank (2016). Who Are the Poor in the Developing World?. Available at: <http://documents.worldbank.org/curated/en/187011475416542282/pdf/WPS7844.pdf>

11. Source: <http://www.worldbank.org/en/topic/agriculture/overview>

Box 6

Land-use Thematic Area Snapshot

Agriculture

Continued

Securing adequate protection mechanisms, such as tailored insurance, is also crucial for small-scale farmers. One of the projects under the InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions,^f for example, is aimed at developing an innovative weather index insurance product based on satellite data covering extreme events, such as drought or excess rainfall, in Paraguay. The product will be linked to the credits offered to the rural clients of the Paraguayan Microfinance Institution – one of the project partners – with a focus on the maize and soya producers in the portfolio.

Initiatives aimed at assisting farmers' access to financial credit can also boost sustainable and low-carbon practices in the sector. The Climate-smart Cattle Ranching initiative supported by the Lab,^g for example, provides an innovative business model for cattle ranchers to adopt more sustainable and efficient practices in Brazil. The initiative will provide loans and technical assistance to ranchers on the condition that

they comply with Brazil's Forest Code and adopt the national Good Agricultural Practices. Rather than land titles, traceable livestock will serve as guarantees to secure loans, using the newest monitoring technology to trace animal ownership.

Reducing greenhouse gas emissions from agriculture

The 4/1000 Soils for Food Security and Climate Initiative,^h a global partnership, is aimed at demonstrating that agriculture can play a crucial role in increasing carbon storage in soils. Initiatives such as SAVE FOODⁱ and the Milan Urban Food Policy Pact^j aim to reduce emissions across the food supply chain by tackling issues such as food loss and waste. The ICLEI-RUAF CITYFOOD Network^k aims to accelerate local and regional government action on sustainable and resilient city-region food systems by combining networking with technical expertise through training and policy guidance and facilitating local and regional engagement in international discourse.

- f. <https://www.insuresilience.org/>
- g. <https://www.climatefinancelab.org/>
- h. <https://www.4p1000.org/>
- i. <https://www.save-food.org/>
- j. <http://www.milanurbanfoodpolicypact.org/>
- k. <https://www.ruaf.org/cityfood>

■ Please see here for a fuller version of the [Land-use Snapshot](#)

Tracking performance

The examples of initiatives mentioned in the case stories and snapshots have progressed from commitments to defining how to achieve their goals and to actual implementation on the ground. As much as coming forward with commitments is an important first step, it is crucial that non-Party stakeholders also deliver on them. Many of the specific commitments of the initiatives are medium to long term and many of them have not been in operation long enough to achieve their targets. Thus, it is difficult to track the current quantitative impact of commitments and initiatives collectively on emissions, also due to differences and gaps in reporting.¹² Tracking of outputs from individual commitments is made even more difficult by the large number of stakeholders involved. However, it is possible for the smaller

number of cooperative initiatives. Progress is assessed by looking at the outputs and evaluating to what extent these have helped, or are likely to help, achieve the ultimate target(s) of the initiative. A high output performance for an initiative means that the outputs that have been produced help set the conditions needed to achieve the targets in the longer term.

An assessment of the cumulative outputs of 127 initiatives for the period 2013-2018 shows growth in the share of higher-performing initiatives (Figure 1).¹³ By September 2018, more than 60 per cent of the initiatives had achieved a high or medium-high performance, producing relevant outputs that could help achieve the desired environmental or social outcomes.¹⁴

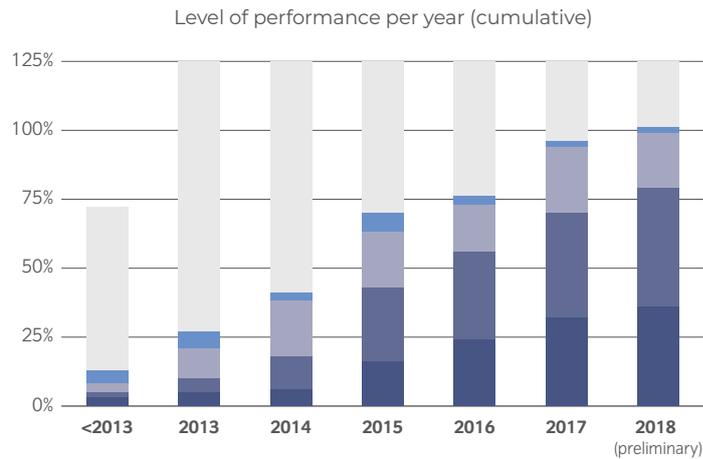
12. UN Environment (2018). Bridging the emissions gap – The role of non-state and subnational actors Pre-release version of a chapter of the forthcoming UN Environment Emissions Gap Report 2018. Available at: <https://www.unenvironment.org/resources/report/bridging-emissions-gap-role-non-state-and-subnational-actors>

13. Source: (2018) Cooperative Climate Action: Global Performance & Delivery in the Global South. Preliminary findings of the ClimateSouth project. Research report published by the African Centre for Technology Studies (ACTS), the Blavatnik School of Government at the University of Oxford, the German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) and The Energy and Resources Institute.

14. High output performance relates to initiatives that produce fitting outputs for more than 75 per cent of their functions, medium output performance indicates fitting outputs for 50-75% of functions; medium-low indicates >25-50% of fitting outputs and low indicates >0-25% fitting outputs

Figure 1

Percentage of the analysed initiatives (by number) with output performance in different categories.



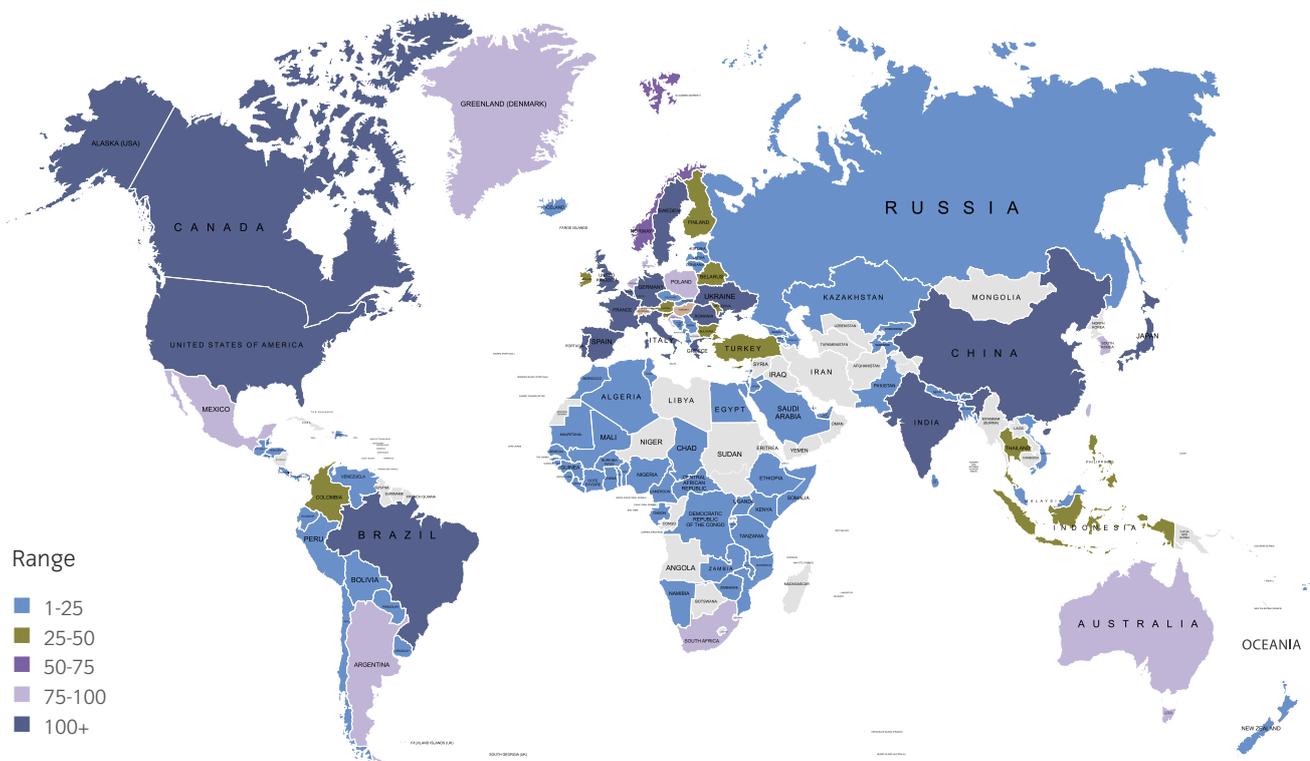
Source: ClimateSouth 2018

Spreading action globally

The spread of global action highlighted in last year's Yearbook has continued in 2018. As shown in Figure 2, action is being taken by stakeholders in all regions of the world. Whilst Europe is the region that has seen the greatest increase in stakeholders registered in NAZCA between 2016 and October 2018 the number of stakeholders engaged in climate action in Asia, Africa and Latin America and the Caribbean also shows clear growth (increasing by approximately 30, 20 and 20 per cent respectively).

Figure 2

Map showing the location (where available) of stakeholders engaged in climate actions recorded in NAZCA as at October 2018.



Disclaimer: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

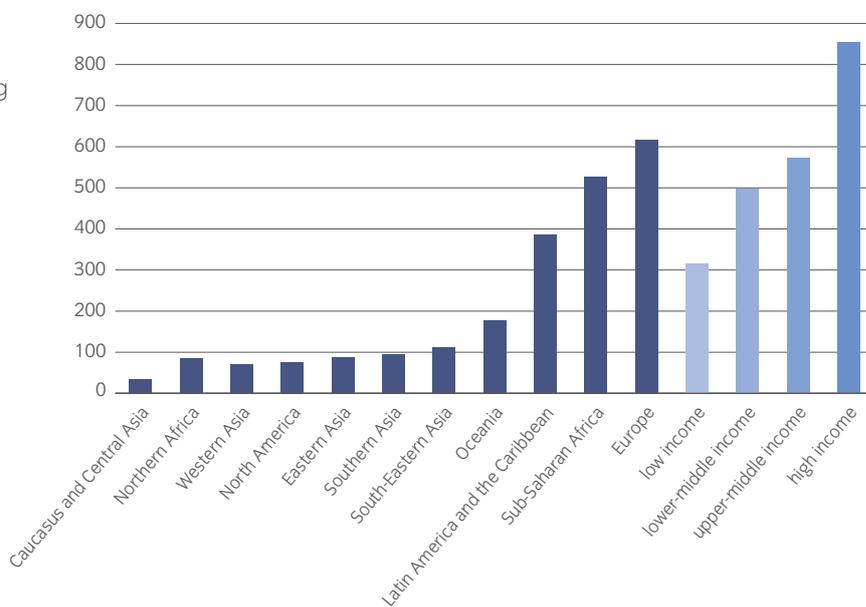
Source: Global Climate Action portal (NAZCA)

The location of the stakeholders in the initiatives is only one part of the picture. Of equal importance is where the initiatives are implemented, or plan to be implemented, and where the outputs of the initiatives are produced. Figure 3 shows the number of initiatives that are being implemented or planning to be implemented in each country. A significant number of initiatives are either active or are planned to be active in both sub-Saharan Africa and Latin America and the Caribbean.

This picture is reinforced by looking in detail at where the outputs of the initiatives are located (Figure 4). Outputs include conferences, workshops, capacity-building sessions, publications, standard-setting, project development and other activities designed to further the initiatives' goals. Before 2013, the proportion of outputs produced in lower-middle and low income countries was small. This number increased significantly in 2015 and remained more or less constant to 2017.

Figure 3

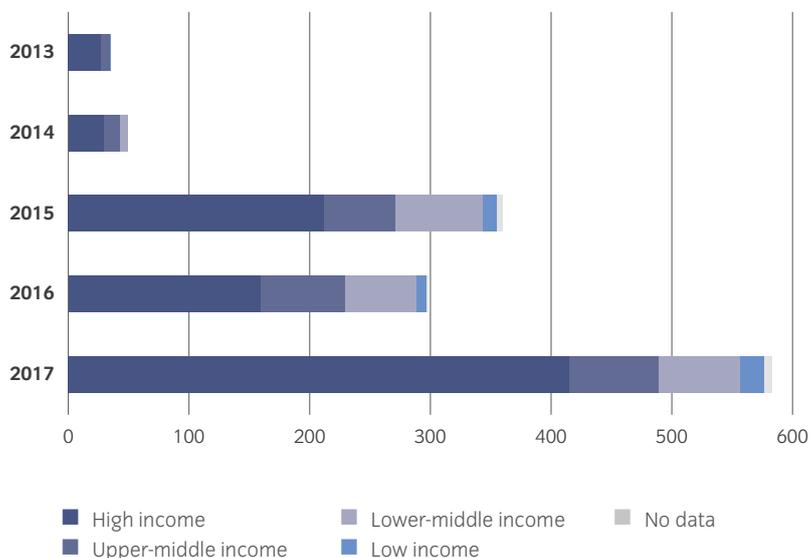
Where initiatives are being implemented or planning to be implemented.



Source: ClimateSouth 2018

Figure 4

Outputs from analysed cooperative initiatives by country group by year.



Source: ClimateSouth 2018

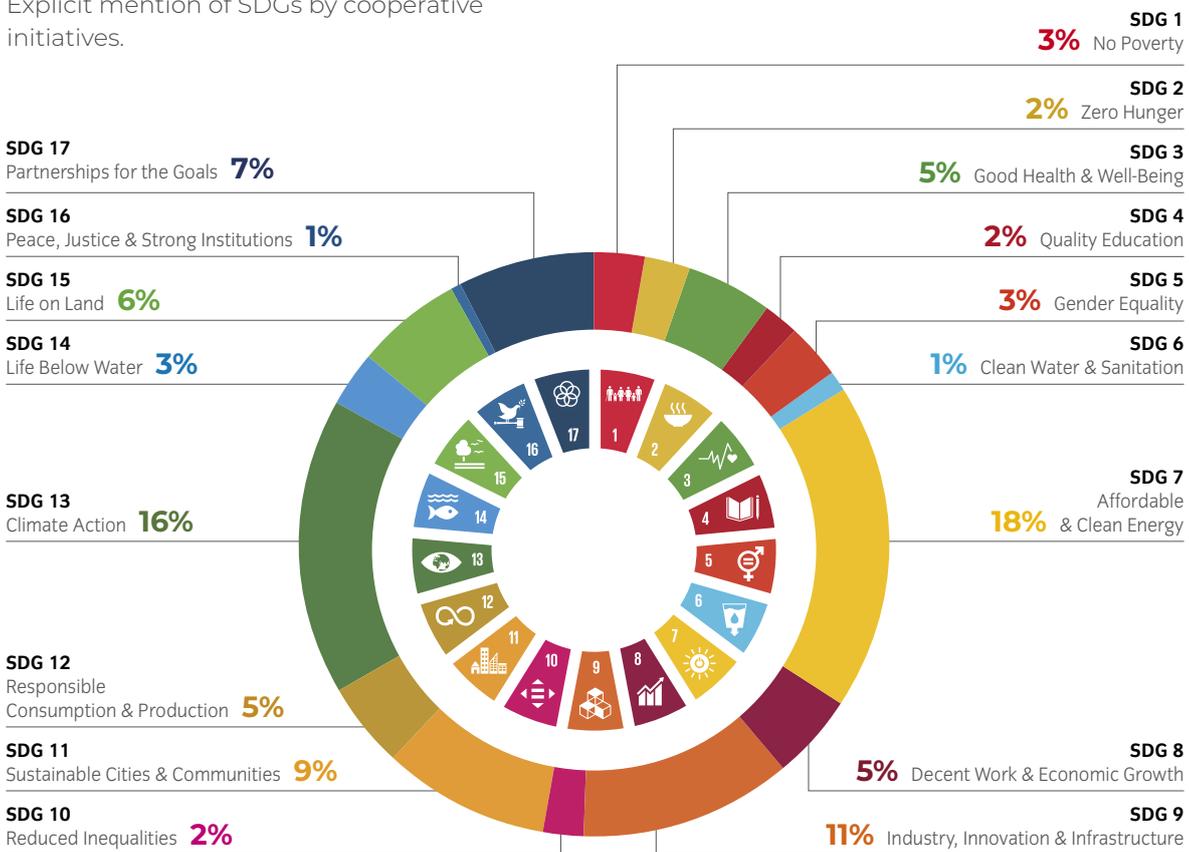
Action contributing to achieving the Sustainable Development Goals

Action is not only delivering benefits on the ground for climate change but also across the range of SDGs. Figure 5 shows the explicit reference to achieving SDGs in the cooperative initiatives. Not surprisingly, the one most often mentioned is SDG13

(climate action), but SDG7 (affordable and clean energy), SDG9 (industry innovation and infrastructure) and SDG11 (sustainable cities and communities) are also prominent. Other issues, such as clean water and sanitation, while not reported extensively in the analysed initiatives, are part of the growing body of climate action.¹⁵ Global climate action therefore is helping countries deliver on a range of economic and social goals.

Figure 5

Explicit mention of SDGs by cooperative initiatives.



Source: ClimateSouth 2018

Examples of the multiple benefits that can come from climate action include the stories of Eco Cuencas and the Global Coral Reef Partnership that are presented in Boxes 7 and 8. Coral reefs are important not only for biodiversity but also ecosystem services that support human livelihoods, such as fish production, shoreline protection and tourism. Coral reefs are threatened by a range of land-based activities and increasingly by ocean acidification caused by climate change. Climate change is also

very likely to increase the stresses already placed on freshwater. These stresses come from changes to the availability and quality of water due to the impact of climate change combined with the rise in demand for water. This rise in demand comes from population growth and changes in consumption patterns, from increasing industrialization and an increase in the use of irrigation. The case stories below are examples of initiatives that take action on these challenges.

15. Source: <http://www.siwi.org/latest/open-letter-building-resilient-future-water/>



Photo: Trevor Cole

Box 7**Water Thematic Area****Case Story – Eco Cuencas**

Eco Cuencas^a is a partnership between Latin American and European organizations to improve the management of water basins and increase their resilience to climate change through the use of economic instruments. Three pilot projects have been delivered: in the Piracicaba, Capivari and Jundiá watershed in Brazil; the transboundary river basin Chira-Catamayo between Peru and Ecuador; and the Rio Grande II reservoir in Colombia. These pilot projects provide information to authorities responsible for water management to ensure integrated and comprehensive planning that considers the impacts of climate change, assesses the efficiency of current pricing systems in river basins, and provides guidance for optimizing financial and institutional mechanisms. In Colombia, for example, the main objective was to improve the water quality in the river basin by implementing payment for ecosystem services (PES), targeting low-income landowners of threatened riverbank forests, headwaters and/or wetlands. A total of 888 hectares, managed by 25 families, were initially defined for conservation – activities by the families have since increased the preserved area to 907 hectares.

“The Eco Cuencas project has enabled us to show the effectiveness of PES as a valid mechanism not only to intervene in areas of high environmental threat and improve the water regimen, but also to form a resilient conservation alliance through the establishment of development plans for the estates together with the landowners.” **Maria Claudia de la Ossa, Director at Cuenca Verde (NGO, Colombia)**

All three project areas have already faced the physical impacts of climate change, such as floods and droughts. These impacts have helped emphasize the need for an integrated initiative on the ground. Each project area had challenges that needed to be addressed, taking into consideration the specific political, legal and socio-economic context. Given the importance of that context, the initiative benefited from the multi-stakeholder approach adopted.

■ Please see here for a fuller version of the [Water Case Story](#)

a. <https://www.ecocuencas.com/>



Before-and-after photographs of a coral bleaching event in American Samoa (The Ocean Agency/XL Catlin Seaview Survey).

Box 8**Oceans and Coastal Zones****Thematic Area Case Story –
Global Coral Reef Partnership**

The Global Coral Reef Partnership^a was launched in 2014 by UN Environment and the Regional Seas Convention and Action Plan. To help governments and other partners set priorities for increasing the resilience of reefs, the Partnership has – among other activities – developed a tool to downsize climate model projections for coral bleaching conditions to give details for areas as small as 4 km² for every year to 2100. This tool has also been used to help prioritize areas for the implementation of the Green Fins Initiative,^b which integrates the ideas of sustainability and resilience into the core business of coral reef diving and snorkelling tourism. The Partnership has also developed a Guide to Resilience Assessment of Coral Reefs for Decision Support. The guide provides reef planners and managers clear and concise guidance on how management actions can be designed and implemented to protect and enhance the resilience of reefs. A small grants scheme was also implemented in 2017 with the International Coral Reef Initiative^c for innovative projects that build resilience.

“The Partnership brings together a diverse set of partners, leveraging their comparative advantages. This has enabled us to innovate, to develop and test new approaches for reducing pressures on coral reefs, bridging science and policy. The International Year of the Reef 2018 provides a foundation to scale up action further, through public communication as well as policy outreach.” **Jerker Tamelander, Head, UN Environment Coral Reef Unit**

■ Please see here for a fuller version of the [Oceans and Coastal Zones Case Story](#)

a. <https://sustainabledevelopment.un.org/partnership?p=7450>

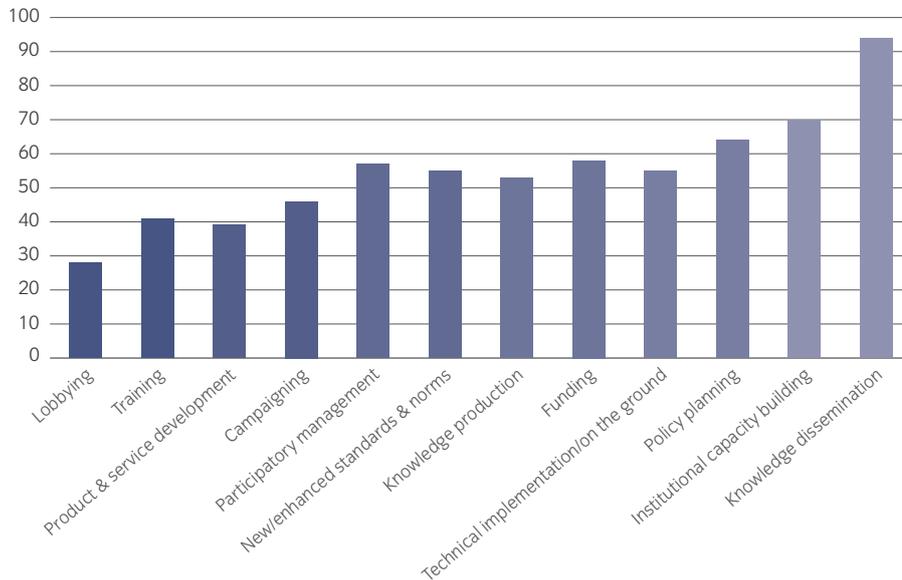
b. <http://greenfins.net>

c. <https://www.icriforum.org/about-icri>

These case stories illustrate the importance of sharing tools, knowledge and capacity. Most cooperative initiatives include these elements among their main activities (Figure 6).

Figure 6

Main activities by cooperative initiatives.



Source: ClimateSouth 2018

Action contributing to make climate technologies available globally

To achieve the scale of changes needed, climate technologies (taken in the broadest sense to include knowledge, products and services) must be made available globally. This will require action across areas including innovation, funding, and building capacity and markets for technologies.

Developing and testing ideas for climate technology innovations

While many of the climate solutions already exist, some still require research and development. The shipping sector, for example, primarily relies on high-emitting carbon fuels. In April 2018, international consensus¹⁶ was reached to reduce greenhouse gas emissions from the shipping industry, but innovative technologies are required to move away from polluting fuels (see Box 9 for examples).

Initiatives are underway to build a climate science community across geographic regions, promoting collaboration between researchers from developed and developing countries. The One Planet Fellowship (Box 9) is one such initiative.

Funding climate technology development and diffusion

Initiatives are experimenting with innovative approaches to attract private capital to the climate technology space, for both mitigation and adaptation (see examples in Box 10).

Building capacity and markets for climate technologies

The Climate Technology Center and Network (CTCN) supports the work of Party and non-Party stakeholders with technical support to access technologies. CTCN, hosted by UN Environment and the UN Industrial Development Organization (UNIDO), engages a global network of academic organizations, private sector actors and public research institutions. CTCN provides assistance throughout the entire process of project development, from identifying suitable technologies to financing and implementation. Many other initiatives, such as the [SE4All](#) Accelerator platforms, include activities to facilitate implementation of specific solutions globally.

Technology innovation often leads to the development of new markets. While this allows commercial operators and supply chain providers to tap into new business opportunities, a prime factor to enable it is the setting of legal and regulatory frameworks by governments. In this context, [Below50](#), a global campaign, brings together companies, universities, international agencies and industry associations to grow the global market for cleaner fuels that produce at least 50 per cent less CO₂ emissions than conventional fossil fuels. By creating partnering opportunities within supply chains and across sectors, and by engaging investors, the campaign builds momentum to advocate for long-term policy frameworks that allow emerging technologies to access mainstream markets.

16. Source: <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/06GHGinitialstrategy.aspx>



Photo: Louis Reed

Technology Snapshots

■ Please see here for a fuller version of the [Technology Snapshots](#)

Box 9

The Low Carbon Sea Transport project,^a a joint initiative of the University of the South Pacific and University of Emden Leer (Germany), will test innovative technologies that can stimulate emission reductions in local and regional sea transport in small island states.

One Planet Fellowship,^b launched in December 2017, will bring together 600 African and European researchers working on climate change adaptation. The Fellowship is funded by a partnership of philanthropic foundations and will be run in cooperation with African Women in Agricultural Research and Development.^c

a. <https://www.giz.de/en/worldwide/59626.html>

b. <https://group.bnpparibas/en/press-release/bnp-paribas-foundation-bill-melinda-gates-foundation-patronage-president-french-republic-launch-planet-fellowship>

c. <https://awardfellowships.org/>

Box 10

The Breakthrough Energy Coalition,^a a partnership of high-net-worth individuals, businesses and financial institutions, is funding solutions for future low-carbon living. The Coalition has launched a USD 1 billion fund that will invest in promising technologies in the areas of energy storage, liquid fuels, off-grid micro-grids, low-carbon building materials and geothermal energy.

The Lab^b has supported the setting up of the Climate Resilience and Adaptation Finance and Technology Transfer Facility, a commercial investment vehicle dedicated to expanding the availability of technologies and solutions for climate adaptation and resilience. The fund aims to mobilize USD 500 million to support companies that provide climate-resilient products and services.

a. <http://www.b-t.energy/>

b. <https://www.climatefinancelab.org/>



Photo: Sean Pollock

Facilitating the diffusion of climate technologies: ownership, context and incentives

Experience from existing programmes suggests that technology facilitation is most successful when driven by local actors who take account of community needs, cultural contexts and socio-economic and environmental conditions. Moreover, it is vital that programmes seek support and buy-in from stakeholders at all levels: from the local to the national. Engagement must be targeted, open, transparent and inclusive and the process must provide stakeholders with the opportunity to voice their concerns and suggest solutions. By their very nature, cooperative initiatives facilitate this open engagement.

Financing the transformation to a net-zero carbon and resilient society

Due to the large scale of finance needed to achieve the goals of the Paris Agreement, non-Party stakeholders continue working together with Parties to establish the conditions necessary to deliver climate finance. Finance actors have the capacity to help shift economies towards low-carbon and resilient modes of operation. They can do so directly by providing funding, or indirectly through their investment policies, which shape business models and markets worldwide. The momentum and organization in the investor community for action is growing, with more investments in low-carbon solutions and a growing demand for companies to respond to the challenges of climate change.

The financial system itself is directly affected by the impacts of climate change. Changing natural environments and socio-economic contexts require the finance sector to re-assess operational and decision-making processes and design new product types and services. The finance sector is also undertaking efforts to mainstream climate change considerations into operational and strategic practices. The

number of initiatives focusing on the finance sector is increasing. The snapshots on the following page (Boxes 11 and 12) provide an overview of some of the initiatives operating in the finance sector.

Stakeholders are collaborating to design innovative financing solutions

At the global level, the [Invest4Climate](#) platform brings together development and climate finance institutions to work with private sector actors and national and subnational representatives on mobilizing and delivering finance needed to transition to a low-carbon and climate-resilient future. At the regional level, specialist funds combine private capital with funding from governments and development banks to enable low-carbon and climate-resilient infrastructure projects.

Bonds are a natural fit to finance low-carbon and climate-resilient infrastructure projects. They are financial instruments under which project developers can receive money from investors as a debt which, in addition to interest, is repayable at specified dates. At the outset of project development, bonds can help to raise large sums of money to cover development and construction costs, while allowing investors to benefit from interest payments that can be spread across long time-scales. Bonds thus offer stable and predictable investment opportunities (see [Climate Bonds Initiative](#)). In 2018, the total value of climate-aligned bonds peaked at USD 1.45 trillion. Examples of innovative bonds issued in 2018 include the USD 95 million sustainability bond offered by the Tropical Landscape Financing Facility, a public-private partnership supported by the Indonesian government. The bond will help to finance a sustainable natural rubber plantation on heavily degraded land in two Indonesian provinces.

Businesses and investors are reporting on and managing climate risks and opportunities

The Recommendations of the [TCFD](#), released in June 2017, provide a framework for companies, finance institutions and other stakeholders with public debt or equity to evaluate and disclose material information on climate-related risks and opportunities. There was wide recognition of the value of the recommendations and they are supported by 513 companies with a combined market capitalization of USD 7.9 trillion. Major sustainability reporting platforms, including [CDP](#), the [Global Reporting Initiative](#) and [Principles for Responsible Investment](#), have endorsed the recommendations, and some platforms have produced guidelines and best practices to help reporting organizations align their disclosure practices. For example, as of this year, all companies reporting through CDP will be able to access data required for TCFD-compliant disclosure. Investors have a key role to play to further drive voluntary compliance with the TCFD recommendations (see Box 12).

Finance Snapshots

■ Please see here for a fuller version of the [Finance Snapshots](#)

Box 11

A USD 350 million Sub-national Climate Fund for Africa,^a supported by Regions of Climate Action (R20) and Blue Orchard, was launched at COP23. In May 2018, the formation of the Sub-national Climate Fund for Islands and Coastal Regions was announced by Fiji and Reunion Island working with R20 and the Pacific Regional NDC Hub. At the local and regional levels, ICLEI launched a new call for applications to local and regional governments worldwide to submit projects to ICLEI's Transformative Actions Program^b (TAP) at the GCAS on 13 September 2018. Local and regional governments were able to apply through the TAP for support to develop concepts into low-risk, high-feasibility, high-impact sustainable infrastructure projects. ICLEI aims to help projects improve their bankability by increasing their visibility to potential investors, introducing them to project preparation facilities, or helping them connect with specific tools or services that can increase the maturity of the proposed project. The C40 Cities Finance Facility^c supports members of the C40 Cities Climate

Leadership Group to prepare and deliver low-carbon and climate-resilient projects, such as delivering a public cycling scheme in Bogota.

Founded in 2014, The Lab^d is a public-private partnership that brings together major development banks, private sector financial institutions and companies, climate finance donor governments and philanthropic foundations. The Lab sources and selects ideas and supports them with analysis, stress-testing and guidance from experts and investors. By March 2018, the Lab had mobilized nearly USD 1 billion and attracted another USD 535 million in expressions of interest. Out of this amount, USD 300 million was sourced from the private sector. Funded projects cover a range of sectors, addressing mitigation and adaptation challenges in the forest, agriculture, transport, energy and water contexts. Building on its global success, national labs were established in India (2015) and Brazil (2016).

a. <https://regions20.org/sub-national-climate-fund-sncf-2/>

b. <http://tap-potential.org/>

c. <https://www.c40cff.org/>

d. <https://www.climatefinancelab.org/>

Box 12

In December 2017, a group of investors launched Climate Action 100+^a, an initiative to engage important greenhouse gas emitters and other companies with the potential to drive the clean energy transition. Investors that are part of the coalition will engage with over 160 of the world's largest corporate greenhouse gas emitters to spur them to implement the TCFD recommendations and align their corporate strategies to reduce emissions. The initiative (as of October 2018) brings together more than 290 of the most influential investors, which collectively hold over USD 30 trillion in assets under management.

In addition to more robust corporate reporting, many organizations use internal carbon prices to assess and manage climate-related financial risks, to drive operational emissions reductions, and shift to low-carbon activities. In 2017, over 1,300 companies disclosed that they are already using, or intending to introduce, an internal carbon price within the next two years. The Carbon Pricing Leadership Coalition,^b an alliance of over 200 partners from government, businesses and civil society, supports organizations that aim to introduce carbon prices.

a. <http://www.climateaction100.org/>

b. <https://www.carbonpricingleadership.org/>



Photo: Nigel Tadyanehondo

Regulators have started to work on designing a low-carbon and climate-resilient financial system

Reserve banks and financial regulators have started to assess how climate change will affect the global financial system. In December 2017, regulators from various countries across Europe, the Asia-Pacific region, Africa and Latin America founded the [Network of Central Banks and Supervisors for Greening the Financial System](#). The aim of the Network is to share best practices and exchange experiences on managing climate-related risks and to explore the role of the finance sector in supporting the transition to low-carbon economies. The Network currently comprises 18 members and five observers. National green investment banks are becoming a replicable model that moves problem-solving and agency to the national level, empowering developing countries to benefit from international financial resources while also better attracting private and domestic capital.

Making action more transparent and measurable

The importance of making progress on action more transparent has been reiterated this year in submissions to the Talanoa Dialogue and in UN Environment's Emissions Gap Report, in the chapter on Non-Party Climate Action.¹⁷ Transparent reporting

on progress helps build confidence in the ability of non-Party stakeholders to deliver results. This in turn can help provide a platform for increasing ambition. As reported in the 2017 Yearbook, well-established actors, such as the Climate Initiatives Platform, ICLEI carbonn® Climate Registry, Global Covenant of Mayors, CDP and C40 Cities, have all contributed to increasing transparency. In 2018, over 1,300 new companies, cities, states and regions, spanning 60 countries, have started to take part in the annual climate change disclosure cycle to CDP.¹⁸ Initiatives, such as the New York Declaration on Forests, the Global Fuel Economy Initiative and the International Association of Public Transporters' Declaration on Climate Leadership,¹⁹ have published reports on progress in 2018. Other initiatives also publish annual reports, including the Global Alliance for Buildings and Construction.²⁰

Standardized reporting frameworks are established for Party and non-Party stakeholders. The [Greenhouse Gas Protocol](#) provides standards and tools for use in measuring and managing greenhouse gas emissions. It is used by companies, subnational actors and by some national governments. The Global Covenant of Mayors aims to define a common global reporting framework for cities and local governments. This is linked to the new data reporting standard²¹ that was released at COP23 in 2017. Building upon this, a new global framework for reporting city greenhouse gas emissions inventories was released in September 2018 at the Global Climate Action Summit.²² The [Initiative for Climate Action Transparency](#) provides guidance for national and subnational policymakers to measure and assess the impact of climate actions. In May 2018, new guidance was published covering a range of sectors and issues, such as stakeholder participation and technical review. There is specific guidance on tools for integration of impacts of action by non-Party stakeholders, for reporting but also to assess the extent to which these actions might help achieve or exceed national targets.

Global Climate Action portal (NAZCA)

As a product of a unique collaboration between the UNFCCC secretariat and core data partners (CDP, ICLEI carbonn® Climate Registry, Climate Bonds Initiative, the UN Environment's Climate Initiatives Platform, Global Covenant of Mayors, Investors on Climate Change, The Climate Group, and UN Global Compact), NAZCA consolidates and reports on the climate actions of cities, regions, companies and civil society organizations, providing transparency and visibility to the climate actions made by non-Party stakeholders.

17. UN Environment (2018).

18. Source: speech given by Paul Simpson at the Global Climate Action Summit Sept 13, 2018. Available at: <https://www.cdp.net/en/articles/media/the-global-climate-action-summit-and-the-rise-of-disclosure>

19. New York Declaration on Forests Progress Assessment 2018 [forestdeclaration.org/summary https://www.globalfuelconomy.org/data-and-research/publications/gfei-delivering-climate-action](https://www.globalfuelconomy.org/data-and-research/publications/gfei-delivering-climate-action), <http://www.uitp.org/sites/default/files/UIITP%20DECLARATION%20ON%20CLIMATE%20LEADERSHIP%202018%20REPORT%20OF%20IMPLEMENTATION%20FINAL.pdf>

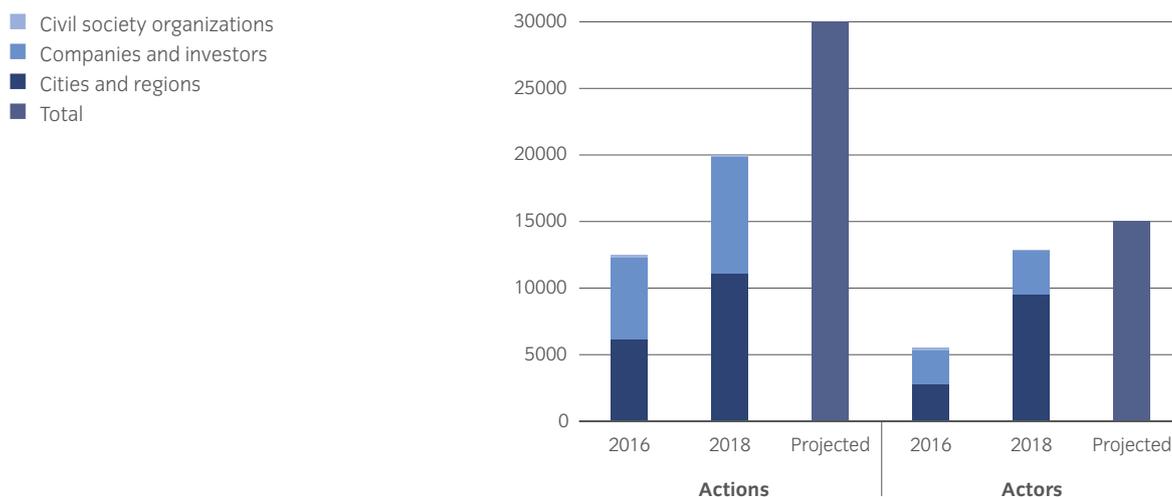
20. <https://globalabc.org/uploads/media/default/0001/01/35860b0b1bb31a8bc2f6b0acd18841d8d00e1f6.pdf>

21. <http://www.iclei.org/details/article/global-covenant-of-mayors-announces-collective-impact-of-committed-cities-and-new-data-reporting-sta.html>

22. https://www.globalcovenantofmayors.org/wp-content/uploads/2018/09/Data-TWG_ReportingFramework_website.docx

Figure 7

Number of climate actions and actors registered in NAZCA in 2016 and October 2018 by stakeholder type, together with the projection of the total numbers expected when all data sets are fully processed.



NAZCA was launched by the Peruvian Presidency of COP20, alongside the Lima Paris Action Agenda (LPAA) in 2014. It was a central tool for the LPAA and the French Presidency to build momentum and support the adoption of the universal climate agreement at COP21. This culminated with its inclusion in the Paris outcome where countries welcome the efforts of these actors to scale up their climate actions and encourage the registration of these actions on NAZCA.

In September 2018, at the GCAS, the portal began a phased upgrade with the launch of a new version:

- » Showing evidence of transformation in Global Climate Action, with a significant increase in the number of non-Party stakeholders taking climate action over time;
- » Identifying the geographical coverage around the globe of Non-Party stakeholders taking climate actions;
- » Broadening the climate action classifications, to include elements such as the Marrakech Partnership thematic areas and the Sustainable Development Goals (SDGs);
- » Increasing focus on the non-Party stakeholders by creating individual profile pages with contextual, climate and action information allowing better tracking and understanding of their commitments.

The work on NAZCA continues beyond 2018 to further populate new elements such as climate action status and progress and additional contextual and greenhouse gas inventory data for non-Party stakeholders. As such, NAZCA is evolving into a tool that can effectively facilitate Parties efforts to implement the Paris Agreement.

The relaunch of the portal also included a major data update, with new data continuing to be added. The scale of climate action already observed in NAZCA corroborates with the assessments of global climate actions published at and around the California summit:²³ that a large and diverse range of cities, states and regions, and private sector organizations are taking climate action.

By 2016, NAZCA reported around 12,000 individual and co-operative climate actions. Following the update in October 2018, this number increased to around 20,000 actions. Data is still being added and once all data sets are processed, it is foreseen that this number will increase to over 30,000 actions.

Regarding the number of stakeholders, by 2016, NAZCA reported approximately 5,000 Non-Party stakeholders who have either undertaken an individual or co-operative climate action. By October 2018 this increased to around 12,000 stakeholders – with the potential to increase to over 15,000 when the latest data is fully processed.

23. The announcements and reports published at the Global Climate Action Summit can be accessed on the NAZCA events page <http://climateaction.unfccc.int/views/events.html>



Photo: Bui Bao

3

The future of global climate action

The wide scope of climate action happening now was discussed in the previous section of this Yearbook. Yet much more needs to be done by both Parties and non-Party stakeholders to close the gap between the current emissions pathway and the additional action needed to deliver on the Paris Agreement. This section describes the vision for 2050 in the thematic areas of the Marrakech Partnership, the potential emissions savings from existing global climate action, and outlines how non-Party stakeholders are already increasing ambition to meet these challenges.

Vision for 2050

The vision of where we need to go presented in this section has been drawn from the submissions to the Talanoa Dialogue and from the IPCC Special Report on Global Warming of 1.5°C. For global emissions, the overarching need is that by 2050 we have transformed to a net-zero emissions world, where anthropogenic CO₂ emissions are balanced globally by anthropogenic CO₂ removals. At the same time, we need to continue to pursue a path of development that is inclusive and sustainable, where people and nature thrive. These overarching aims will need to be achieved through changes in every sector of society and in our relationship with the natural environment:

- » Integrated policies will be needed to sustainably manage competing demands on land for human settlements, infrastructure development, food, livestock feed, fibre, bioenergy, carbon storage, biodiversity and other ecosystem services. Mitigation options that can manage the increasing demand for land include sustainable intensification of agricultural practices, ecosystem restoration, and changes towards less resource-intensive diets. The resilience of land use will need to be secured through approaches such as conservation agriculture, efficient irrigation, landscape restoration, biodiversity management and community-based adaptation. Deforestation will need to have been stopped altogether;
- » Oceans and coastal ecosystems will need to be made resilient to the impacts of climate change through, for example, improving coastal defences and sustainable management of ocean ecosystems. Measures will need to be put in place to ensure sustainable management of ocean-based resources, such as fish stocks;
- » Water will need to be managed in a balanced and sustainable way for all ecosystems. Water availability will be under pressure in many regions from the impacts of climate change and rising demand. Water efficiency will need to increase in every sector. The systematic monitoring and management of water-related risks will have to be mainstreamed, based on improved understanding of long- and short-term approaches to both global and local threats (for example, migration, health, livelihoods);
- » Human settlements will need to be transformed to adapt to climate change through options such as green infrastructure and changes in land and urban planning, and to make deep emission reductions in sectors such as transport and buildings. They will need to reduce water and energy use in their buildings and infrastructure, manage waste sustainably and to enable sustainable transport choices;
- » Transport will need to be decarbonized by shifting to electric vehicles and developing alternatives to fossil fuels for long-distance transport, aviation and shipping. Lifestyle choices will also need to shift mode, for example choosing to walk or cycle and reducing travel distance. Such changes can be achieved through the implementation of integrated land-use and transport planning and economic instruments. New and existing transport infrastructure will need to be made resilient to the impacts of climate change;
- » In energy systems, there will need to be a substantial reduction in energy demand driven by efficiency gains and demand shifts, a decline in the carbon intensity of electricity towards zero by mid-century, and an increase in electrification of energy use and leveraging of innovative technologies to transform systems as a whole. Existing and new energy infrastructure will need to be resilient to the impacts of climate change;
- » Industry will need to reduce emissions by 75-90 per cent by 2050 compared to 2010. Business will need to deploy a range of new and existing technologies and practices and manage water and material use sustainably in their own operations and in their supply chains. They will need to ensure that new and existing infrastructure is resilient to the impacts of climate change. New business models and products to maximize energy, water and material efficiency and to enable sustainable choices for consumers will need to be developed.

These transformations also require a marked shift in investment patterns. Total annual average energy-related mitigation investment for the period 2015-2050 in pathways limiting global warming to 1.5°C is estimated to be around USD 900 billion.²⁴ However, making the transformation to a net-zero carbon society will not only limit the damage and risks arising from climate change but also bring a range of economic, social and environmental benefits. The Global Commission on the Economy concluded that bold action on climate change could yield a direct economic gain of USD 26 trillion by 2030, compared to business as usual. It can also generate over 65 million new jobs and prevent 700,000 premature deaths from air pollution globally.²⁵

Potential from existing commitments

Global climate action has the potential to impact on more sectors, touching on all the areas of the Sustainable Development Goals. Quantitative estimates, however, have focused on the potential mitigation contribution from global climate action on greenhouse gas emissions. These estimates have been derived globally and for specific countries. In this section, the most recent estimates of the potential greenhouse gas emissions savings from existing commitments and cooperative initiatives of non-Party stakeholders are discussed and put in the context of earlier estimates.

Global potential from climate action

Non-Party stakeholders can act individually, making commitments to action within their own span of control, and can also join forces with each other and with national governments to form what are termed 'cooperative initiatives'. These cooperative initiatives often drive forward systemic change, seeking to shift the practices of an entire sector or bring concerted action to help pilot, facilitate or scale up the adoption of low-carbon, resilient solutions. Due to differences in the way targets are set and data reported, individual commitments and cooperative initiatives are often quantified separately. The discussion in this section is based largely on a report by Data Driven Yale, NewClimate Institute and PBL Netherlands Environmental Assessment Agency (DDY/NCI/PBL),²⁶ which is the most recent and comprehensive study available on both individual commitments and cooperative initiatives. The study covers individual quantified commitments from cities, regions and businesses in nine high-emitting countries and the European Union (EU) to reduce greenhouse gas emissions or increase

the use of renewable energy.²⁷ For cooperative initiatives, 21 initiatives were selected based on the likely scale of impact on greenhouse gas emissions, the presence of a quantifiable greenhouse gas emission reduction target and a high likelihood of implementation.²⁸ The initiatives cover a range of sectors, including energy production and its use in different economic sectors; forestry; and non-CO₂ greenhouse gas emissions, such as methane.

The report's estimates of the potential impact of non-Party stakeholders' commitments account for overlaps among non-Party actors. The report also accounts for overlaps between non-Party actors and both current government policies and the NDC targets using two different scenarios. The results given for non-Party stakeholders can therefore be considered additional to their contribution to achieving government targets, although with some uncertainty.

If the commitments by individual non-Party stakeholders are implemented fully, the report estimates that global greenhouse gas emissions in 2030 would be around 1.5 to 2.2 GtCO₂e/year lower than they would be with current national government policies alone. The range in results is due to uncertainties in calculating emission reductions, for example from assumptions about the mix of energy saved. If Parties deliver on their NDCs, the additional impact of individual commitments of cities, states and regions would be between 0.2 and 0.7 GtCO₂e/year by 2030. These emissions savings would bring the world closer to a trajectory well below 2°C but are not sufficient on their own to ensure the delivery of the Paris Agreement goals. It is assumed that to deliver these emission reductions, all commitments are fully implemented and that this implementation does not change the pace of government actions or of other actors without commitments.

The potential emission reductions from the selected cooperative initiatives are much higher than the potential aggregate impact of the individual city, region and business commitments. If the initiatives' goals are realized, global emissions in 2030 would be around one-third (15-23 GtCO₂e/year) lower than would be expected with current national policies alone. If countries implement their NDCs fully and the cooperative initiatives meet their goals, global emissions in 2030 would be in a range consistent with the long-term goals of the Paris Agreement. These estimates assume all initiatives meet their goals, including goals to increase the number of non-Party stakeholders that are active members of the initiatives and, also, that such efforts do not displace action elsewhere.

24. Source: IPCC (2018).

25. Source: <https://newclimateeconomy.net>

26. Data Driven Yale, New Climate Institute, PBL (2018). Global climate action of regions, states and businesses.

Available at: http://datadriven.yale.edu/wp-content/uploads/2018/08/YALE-NCI-PBL_Global_climate_action.pdf

27. Data Driven Yale, New Climate Institute, PBL (2018). Methodology for quantifying the potential impact of individual region, city, and business commitments.

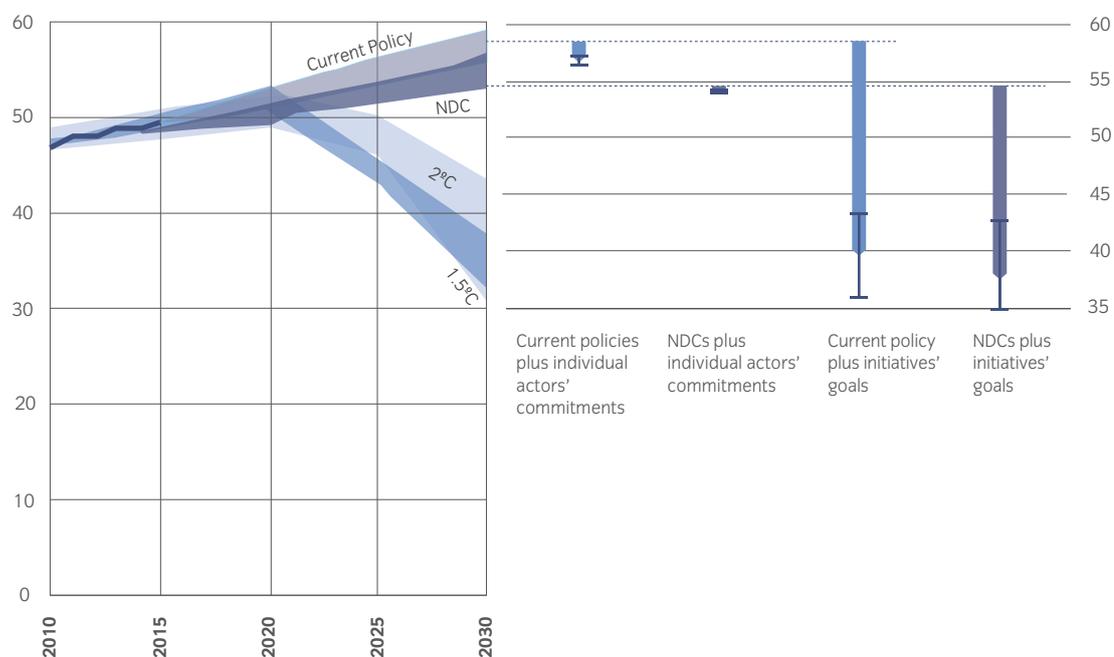
Available at: <https://newclimate.org/2018/08/30/global-climate-action-from-cities-regions-and-businesses/>

28. Data Driven Yale, New Climate Institute, PBL (2018). Methodology for quantifying the potential impact of international cooperative initiatives.

Available at: <https://newclimate.org/wp-content/uploads/2018/09/Methodology-for-Quantifying-Potential-Impacts-of-ICIs.pdf>

Figure 8

Potential impact of the full implementation of analysed individual actors' commitments and the goals of the cooperative initiatives on global greenhouse gas emissions in 2030.



Source: Data Driven Yale/NewClimate Institute/ PBL Environment Assessment Agency 2018²⁶

The higher potential impact of cooperative initiatives than the aggregate impact of individual commitments, reflects the more long-term vision entailed in many of the initiatives' goals compared to the generally shorter-term commitments made by individual cities, regions and companies. The goals of cooperative initiatives also span more sectors and gases, for example forestry and non-CO₂ greenhouse gas emissions, and reflect the gains from collective effort – cooperative initiatives often include a broad mix of Party and non-Party participants. The large impact of cooperative initiatives includes a significant contribution from initiatives in the forestry sector. The potential for emission reductions from these initiatives reflects the current high deforestation rates in many countries and the initiatives' ambitious targets to address them. However, there is also a relatively high degree of uncertainty in the calculation of global forest carbon emissions, and initiatives such as the New York Declaration on Forests report that progress towards achieving their targets is slow.²⁹

The above estimates for the potential emission reductions from cooperative initiatives are significantly larger than previous

estimates.³⁰ Compared to previous estimates, they include emission reductions from a larger number of initiatives and also account for some initiatives' aspirations to increase the number of active members supporting their goals.

Potential at the country level

To help Parties understand how non-Party stakeholder action can help deliver increasing ambition in NDCs, it is useful to translate the global figures to the country level. This has been done for 10 high-emitting countries/regions.³¹ The figure below shows the greenhouse gas emissions in 2030 under the current policies scenario and the savings relative to that scenario from individual commitments and cooperative initiatives.

In the United States, many non-Party stakeholders have taken a leadership role and made new or renewed commitments on climate change. The impact of these individual commitments alone is significant compared to current national policies, potentially reducing emissions to at least halfway to meeting the original US commitment under the Paris Agreement.

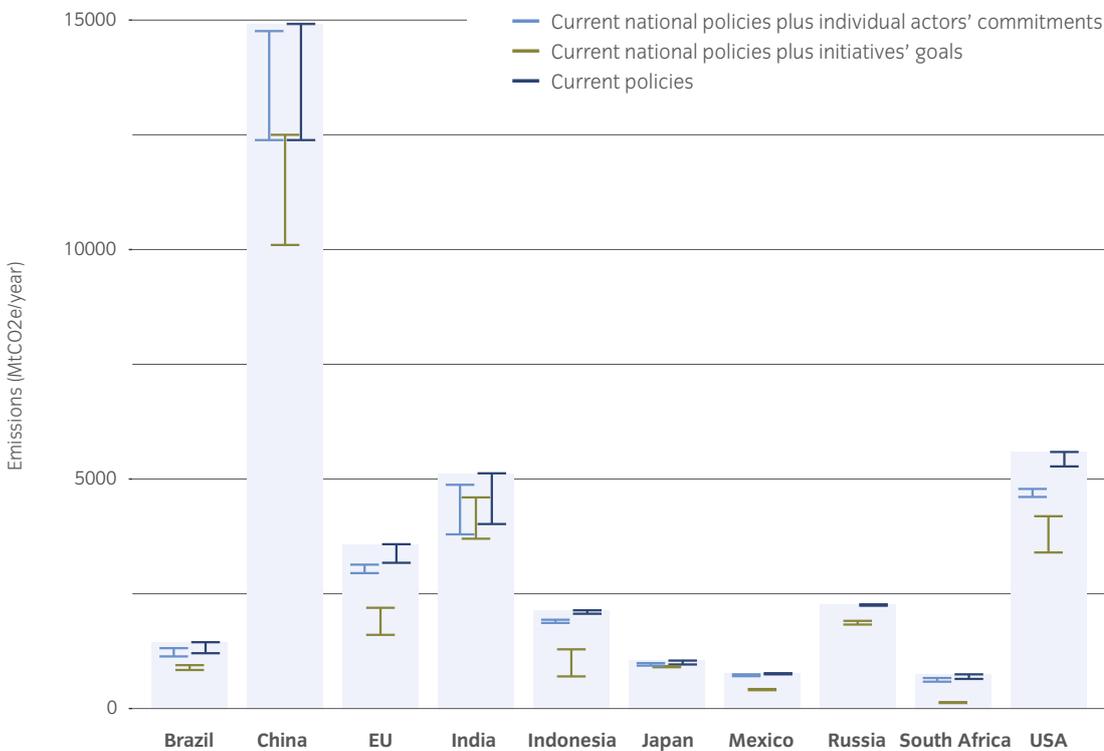
29. New York Declaration on Forests (2018). 2018 Progress Assessment of the New York Declaration on Forests. Available at: <http://www.forestdeclaration.org/summary/>

30. Graichen et al (2016). International Climate Initiatives – A way forward to close the emissions gap? Initiatives' potential and role under the Paris Agreement. Available at: https://www.umweltbundesamt.de/sites/default/files/medien/1968/publikationen/2016-11-29_discussion_paper_clean_version_final.pdf and Roelfsma et al (2018) Integrate assessment of international climate mitigation commitments outside the UNFCCC. Available at: <https://www.sciencedirect.com/science/article/pii/S0959378016303636?via%3Dihub>

31. All estimates in this section are from Data Driven Yale unless otherwise referenced.

Figure 9

Emissions per country/region in the current policy scenario and reductions from individual commitments and cooperative initiatives compared to that scenario in 2030.



Source: DDY/NCI/PBL

The conclusion on the potential significance of action by non-Party actors in the US is supported by analysis by America's Pledge.³² The methodology followed was different than that used by DDY/NCI/PBL, but the results of each fall within the uncertainty range of the other. The America's Pledge analysis looked at sector-level actions and policies, while the DDY/NCI/PBL analysis focused on greenhouse gas emissions saving and renewable energy commitments.

Although the potential reduction in emissions from individual commitments in Brazil is relatively small compared to the current national policies scenario, the impact would be sufficient to bring emissions to the level of that country's NDC. In India, current national policies have set the country on a path to achieving its NDC. So, full implementation of commitments by non-Party stakeholders in India could bring emissions below the levels mentioned in the country's NDC. The additional impacts of individual commitments in China, EU, Indonesia, Japan, Mexico and South Africa are small compared to the current national policies scenario. In Russia, no cities, regions or companies have reported quantifiable individual commitments.

In China, Brazil, India, Russia and South Africa, emission reductions from cooperative initiatives would bring emissions in 2030 to below the NDC trajectory for each country. If the cooperative initiatives are fully implemented in the EU, emissions would be close to the EU's NDC target. Participation in cooperative agreements could bring emissions levels in each of Indonesia, Mexico and Japan to approximately meet their NDC target.

Increasing ambition – now

Non-Party stakeholders are already stepping up action. Box 13 below is a selection of announcements throughout the year and showcased at events, such as GCAS, Climate Week New York and regional Climate Weeks, that reflect new or more ambitious commitments by non-Party stakeholders. In addition to these collective announcements, many individual cities, regions and companies have made new or more ambitious commitments. These commitments cover areas such as greenhouse gas emission reductions; purchasing renewable energy or electric vehicles; and divesting from or stopping coal investments.

32. America's Pledge Initiative on Climate (2018). Fulfilling America's Pledge: How States, Cities and Businesses are leading the United States to a Low-Carbon Future. Available at: <https://www.americaspledgeonclimate.com/fulfilling-americas-pledge/>

Box 13

Increasing Ambition (based on announcements up to October 2018)

Businesses

Since the start of 2018, over 130 companies have joined the Science Based Targets^a initiative, committing to reduce emissions in line with the Paris Agreement. The total number on board stands at more than 480.

The EP100^b initiative has seen substantial growth, with more than 30 companies now committed to making smarter use of energy. This includes new joiners from heavy-emitting sectors, such as Ultratech Cement, Sasol and Mahindra Heavy Engines Ltd.

Sixty businesses, making up nearly 50 per cent of emissions in New Zealand, have formed the Climate Leaders Coalition,^c pledging to make their businesses compliant with the goals of the Paris Agreement. The businesses cover a wide range of sectors, including transport, manufacturing, energy, farming and leisure in New Zealand.

Renewable energy buyers in companies and renewable energy developers have committed to help people adjust to changes in the work environment caused by action to address climate change. They have taken the Pledge for a Just Transition to Decent Jobs.^d

The number of corporations committing to use 100 per cent renewable power has continued to grow, with Sony, Grupo Bimbo and Mahindra Holidays and Resorts India among the more than 150 companies now signed up to RE 100.^e The total renewables demand from these companies is now equivalent to the power needed by a medium-sized country such as Thailand.

An alliance of 21 companies has announced the launch of the Step Up Declaration^f to harness the power of the fourth industrial revolution (artificial intelligence, cloud computing and the Internet of Things) to reduce greenhouse gas emissions across all economic sectors.

Food providers serving more than 60 million meals have announced their commitment to the Cool Food Pledge,^g which aims to help companies, universities, hospitals and cities deliver healthy food and reduce food-related emissions.

a. <https://sciencebasedtargets.org/>
 b. <https://www.theclimategroup.org/project/ep100>
 c. <https://www.climateleaderscoalition.org.nz/>
 d. <http://www.bteam.org/plan-b/just-transition-pledge/>
 e. <http://there100.org/>

The EV 100^h initiative has expanded geographically, now bringing together more than 20 companies in China, Europe, India, Japan, Oceania and North America committed to making electric transport the new normal.

Three US oil and gas majors have joined the Oil and Gas Climate Initiative.ⁱ The initiative has set a target to reduce collective average methane intensity of upstream oil and gas operations to below 0.25 per cent by 2025.

CEO members of the Alliance of CEO Climate Leaders, an informal leadership group of major global businesses from 18 sectors and convened by the World Economic Forum, reaffirmed their commitment to the implementation of the Paris Agreement. They have offered their support to governments to work on bold action plans to achieve greater climate ambition. The CEOs expressed their support for emission-reduction strategies, including: science-based targets; internal carbon pricing; renewable energy and value chain collaboration; increased disclosure and reporting of climate-related financial risks; and investment in innovation. They also emphasized the role of public-private collaboration to deliver impact at scale and stay on track with the objectives of the Paris Agreement.

Cities and regions

Seventy-two cities worldwide, representing 425 million citizens, have publicly committed to develop and begin implementing ambitious climate action plans by 2020,^j to achieve the highest goals of the Paris Agreement at the local level. Of these, 27 cities have already peaked their greenhouse gas emissions and are working to become emissions-neutral by no later than 2050.

Globally, cities made 244 commitments on urban resilience, committing to developing by the end of 2020 an inclusive climate change mitigation and adaptation plan that benefits all citizens equitably.^k In addition, 443 commitments have been made in renewable energy, including through ICLEI's 100 per cent RE Energy Cities and Regions Network.^l

f. <https://stepupdeclaration.org/>
 g. <https://www.wri.org/our-work/project/cool-food-pledge>
 h. <https://www.theclimategroup.org/project/ev100>
 i. <https://ollandgasclimateinitiative.com/>
 j. https://www.c40.org/press_releases/scores-of-cities-commit-to-bold-climate-action-to-deliver-on-the-highest-ambition-of-paris-agreement
 k. https://www.c40.org/press_releases/scores-of-cities-commit-to-bold-climate-action-to-deliver-on-the-highest-ambition-of-paris-agreement
 l. <https://iclei.org/en/100RE.html>

Box 13

Increasing Ambition (based on announcements up to October 2018)

Continued

Ten new states, regions and cities have joined the Powering Past Coal Alliance,^m increasing momentum for the phase-out of unabated coal power generation.

ASEAN Smart Cities Networkⁿ has signed five agreements highlighting South-South collaboration, including a letter of intent between Chonburi's Amata Smart City in Thailand and the Yokohama Urban Solution Alliance to work on a smart-energy management system.

The number of signatories to C40's Advancing towards Zero Waste Declaration^o increased to 25, moving them on the path towards zero waste. These cities and regions together have a population of 150 million.

Thirty-eight cities, regions and businesses signed the Net Zero Carbon Buildings Declaration,^p which commits to ensuring that new buildings operate at net-zero carbon by 2030. This brings the total number of city signatories to 26.

The Under2 Coalition^q secured two multi-million dollar grants from the governments of Germany and Norway in September 2018, delivering on its promise to move from commitment to implementation. Two new projects will support 14 governments in emerging-economy regions to track emissions and plan long-term decarbonization pathways to achieve their climate targets and drive up ambition in their national governments. Nine regions in the coalition also took up the challenge to complete a 2050 pathways analysis within the next two years.

Twenty-six cities, representing more than 140 million urban citizens, have signed the C40 Green & Healthy Streets Declaration,^r pledging to procure only zero-emission buses from 2025 and ensure that a major area of their city is zero emission by 2030.

The Mobility Champions Community^s was launched to provide a platform for city leaders who are taking concrete action in the transition in urban mobility to collaborate.

Cross-sectoral

The 30x30 Challenge Coalition,^t including indigenous groups, regional governments and businesses, has committed to action to raise the ambition of land-based climate action to deliver 30 per cent of climate solutions needed by 2030.

More than 60 states, regions, cities and multinational businesses have now committed to 100 per cent zero-emission vehicle targets as part of the ZEV Challenge.^u

Nearly 400 investors with USD 32 trillion in assets have joined the Investor Agenda^v to report actions and scale up their commitment to act to finance the transition to a net-zero economy.

The Global Green Bond Partnership was launched to support non-Party stakeholders to accelerate the issuance of green bonds.

Four of California's largest health systems have formed the California Health Care Climate Alliance.^w

Four billion dollars over five years was committed at GCAS^x by 29 philanthropists to combat climate change.

m. <https://poweringpastcoal.org/>

n. <https://www.asean2018.sg/Newsroom/ASCN>

o. https://www.c40.org/press_releases/

[global-cities-and-regions-advance-towards-zero-waste](https://www.c40.org/press_releases/scores-of-cities-advance-towards-zero-waste)

p. https://www.c40.org/press_releases/scores-of-cities-commit-to-bold-climate-action-to-deliver-on-the-highest-ambition-of-paris-agreement

q. <https://www.under2coalition.org/>

r. https://www.c40.org/press_releases/scores-of-cities-commit-to-bold-climate-action-to-deliver-on-the-highest-ambition-of-paris-agreement

s. <https://www.uitp.org/mobility-champions-community>

t. <https://climatelandchallenge.org/>

u. <https://www.theclimategroup.org/news/world-rolls-forward-electric-vehicles-us-government-tries-roll-back>

v. <https://theinvestoragenda.org/>

w. <https://noharm-uscanada.org/content/us-canada/california-health-care-climate-alliance>

x. <https://www.globalclimateactionsummit.org/4-billion-commitment/>



Photo: Max Boettinger

Empowering bottom-up climate action

While climate action is growing, as demonstrated by the announcements detailed in Box 13, many more subnational and non-Party actors need to be engaged at the national level.

Over the past year and a half, cities, regions, companies, academia and civil society have been joining forces to champion climate action in their countries through national multi-stakeholder coalitions. National multi-stakeholder coalitions have been established in the United States, Japan and Mexico, and a global network, Alliances for Climate Action (ACA), was launched (see last paragraph in this section).

Since June 2017, *We Are Still In* has tripled in size, now totaling over 3,500 institutions, including local and state government, businesses large and small, investors, colleges and universities, tribes, health care businesses, cultural institutions, and faith communities. Signatories represent 155 million people across the United States, accounting for USD 9.45 trillion in gross domestic product. This year, *We Are Still In* brought forward hundreds of new commitments through its “We Are Taking Action” campaign. Its efforts and potential impact have been quantified in the latest *America’s Pledge* report.

The *Japan Climate Initiative (JCI)* was launched in July 2018 to champion the vision of a decarbonized Japanese society. As the first multi-stakeholder coalition in support of climate action in Japan, JCI seeks to showcase ambitious climate action already being taken by Japanese non-Party stakeholders, inspire others to take action, and collectively engage with the national government on opportunities for faster decarbonization in Japan. Starting with 105 organizations, JCI more than doubled

in size, to 252 organizations, in the span of a few months. These include 174 companies across different industries, including trade and investment, automobiles and energy; 25 local governments, including Tokyo and Yokohama City; and 53 other organizations, including research institutes, environmental consulting services and non-governmental organizations.

The *Alianza para la Acción Climática de Guadalajara* (Alliance for Climate Action Guadalajara) was launched in August 2018 by leaders from the second-largest metropolitan area in Mexico. As of October 2018, the alliance consists of over 35 Mexican entities, including the University of Guadalajara, the local government of the Guadalajara Metropolitan Area, the government of the state of Jalisco, as well as Mexican companies and civil society organizations. Signatories have pledged not only to undertake individual actions but also to implement joint climate actions to scale up impact. In addition, they plan to engage the national government and actors in other jurisdictions to accelerate the implementation of Mexico’s climate targets and leverage domestic opportunities for higher ambition.

All three coalitions are part of ACA, which supports domestic coalitions seeking to implement bold collaborative actions in line with the Paris Agreement’s 1.5°C target; build domestic public support for climate action; and collectively engage with national governments to help deliver and enhance national climate targets. ACA connects domestic coalitions with each other and elevates their voices internationally to build the groundswell of climate action. ACA global partners include C40 Cities Climate Leadership Group, CDP, the Climate Action Network, Fundación Avina, The Climate Group, the We Mean Business Coalition and WWF, working together with leading organizations at the national level.



Photo: Ishan



Accelerating action

Global climate action is increasing, but there is the potential to go further. Parties and non-Party stakeholders must be encouraged to deliver their commitments, enhance climate action and increase cooperation in implementation. This means increasing ambition in NDCs and increasing non-Party stakeholder involvement in the enhancement and implementation of NDCs. More businesses, cities and regions need to make and deliver on climate commitments. Many of the commitments made by non-Party stakeholders would need to become more ambitious to markedly contribute to the transformation needed to meet the Paris Agreement. Delays in action can increase the risk of missing the Paris goals and exposing the world to higher levels of impact from climate change.

Parties and non-Party stakeholders have a role to play in creating the conditions necessary for ambitious climate action to be implemented. The challenges to, and opportunities for, stepping up action were discussed in the 2017 Yearbook, in the 2018 Summary for Policymakers, and during the Talanoa Dialogue. This section details some of the actions needed to address the challenges and realize the opportunities to accelerate global climate action. The recommendations are illustrated with examples of actions, drawn from the sources above.

Across all thematic areas of the Marrakech Partnership, there are common opportunities: strengthening finance; setting the right policies; sharing and creating knowledge on high-potential solutions; recognizing and showcasing existing action; and enhancing integration. In addition, across all areas there is the need to develop and implement solutions in a way that is inclusive, recognizes the contributions from all parts of society and protects those who are most vulnerable. The priorities in each area were identified through the Talanoa Dialogue, the Technical Examination Process in 2018 and the thematic trackers of the Marrakech Partnership.

Strengthening finance

Financing climate action is a significant challenge both in terms of overall scale and in the types of financing needed. The challenges include high upfront costs for some projects, fragmentation of markets, high transaction costs and, particularly in the case of

adaptation, weak business cases. At the same time, the returns on investment in some technologies, such as solar, are now competitive with traditional technologies in many countries. Priorities for action to increase the level and rate of finance for climate action are:

- » National and international public financing to be mobilized by governments and financial institutions to leverage private sector investments. Public private partnerships can be an effective way to facilitate flow of energy efficiency finance to the private sector. Public finance can also be used guarantee and de-risk instruments to leverage private sector financing. The Organisation for Economic Co-operation and Development has developed principles to make such instruments more effective and efficient.³³ The Multilateral Development Banks and development finance institutions have also developed specific principles for use of blended concessional finance for private sector projects.³⁴
- » Businesses and financial institutions to implement climate-related financial reporting frameworks according to the recommendations of the TCFD. These recommendations describe information that businesses should disclose to help understand the climate-related material risks and opportunities to which they are exposed.³⁵
- » National and subnational governments to use public procurement policies to help build markets for low-carbon and resilient products and services. The Rijkswaterstaat (Ministry of Infrastructure and Water) in the Netherlands, for example, uses two measures to monetize sustainability during public procurement, reducing the “price” against which the project is evaluated for the most sustainable projects. The first measure relates to performance on emission reductions across the company, projects and supply chain. The second is on the sustainability of materials in a particular design (related to a life cycle analysis).³⁶
- » Finance institutions to increase finance for technical assistance and capacity-building to increase the pipeline of bankable projects. In many countries and sectors, the capacity and knowledge needed to develop bankable projects and for local financial institutions to make

33. OECD (2018). OECD DAC Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals. Available at: <https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf>

34. (2017). DFI Working Group on Blended Concessional Finance for Private Sector Projects Summary Report. Available at: https://www.ifc.org/wps/wcm/connect/30635fde-1c38-42af-97b9-2304e962fc85/DFI+Blended+Concessional+Finance+for+Private+Sector+Operations_Summary+R...pdf?MOD=AJPERES

35. TCFD (2017). Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures. Available at: <https://www.fsb-tcfid.org/publications/final-recommendations-report/>

36. Source: [Ec.europa.eu/environment/gpp/pdf/news_alert/Issue_83_Case_Study_162_RWS.pdf](https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue_83_Case_Study_162_RWS.pdf)



Photo: Evan Krause

appropriate investment decisions is limited. This slows the rate of investments that can be made even where money is available. The Green Climate Fund (GCF) recognizes this and provides a Readiness Programme to strengthen institutional capacity within a country.³⁷ Other international funds, such as the Nationally Appropriate Mitigation Action Facility, have similar programmes.

- » Financial institutions, Parties and non-Party stakeholders to cooperate to develop innovative financial instruments. It is recommended that these instruments be developed in cooperation with women's groups and groups representing marginalized communities to help ensure that the instruments are accessible to all. Examples of specific innovative instruments needing development or wider deployment include instruments:
 - » To aggregate small-scale energy, waste and water infrastructure projects for communities and small island states;
 - » To enable land value capture so that communities can reinvest land value increases resulting from public investments;
 - » To reduce the cost of up-front investments in energy efficiency in buildings through the savings achieved;

- » To support fishers and farmers to cope with the impacts of climate change (for example insurance schemes and microfinance) and to increase access to capital;
- » To provide guarantees or credit enhancement for local and subnational governments for investments in low-carbon and climate-resilient infrastructure at the subnational level.
- » Financial institutions, civil society and governments to cooperate to improve the level of knowledge within financial institutions on the climate risks to livelihoods and on the opportunities to invest to reduce risks. This increased understanding, together with availability of data on the potential impacts of climate change, should result in more climate-resilient investments, including to support diversification of business.
- » National development banks, central banks and financial regulators to take a stronger role in crowding in the commercial financial sector.

Setting the right policies

For non-Party stakeholders to implement the action needed to deliver on their commitments, the right policy conditions need to be in place. When these conditions are in place, stakeholders will not only be able to deliver on their commitments but also raise ambition. The priorities for government action identified by non-Party stakeholders are as follows:

- » National and subnational governments should carry out long-term policy planning and provide a stable policy environment. This is important to give the right signals to companies and to financial institutions to make investments now and at a scale needed to deliver a low-carbon future. When those investments have been made, businesses will be in a stronger position to support policymakers to raise ambition. Examples of specific policies identified for the thematic areas include:
 - » Policies to incentivize decarbonization of transport, such as ambitious targets for phase-out of fossil fueled cars and development of infrastructure for alternatives; increased implementation of freight optimization systems; support for public transport infrastructure, transit-oriented development and the use of non-motorized transport; and decarbonizing of shipping and aviation;
 - » Implementation of instruments such as water-pricing to manage water demand;
 - » Establishment of clear coastal and forest land tenure rights;

37. <http://www.gcfreadinessprogramme.org/>

- » Development and enforcement of building codes for new and refurbished buildings, and regulations to support implementation of infrastructure for electric vehicle charging;
 - » Planning for the impact on workers and communities of new business models, for example fossil fuel phase-out, and implementation of measures to reduce impact, such as retraining;
 - » Ratify and accelerate implementation of the Kigali Amendment to the Montreal Protocol to develop and deploy technologies using low global warming alternatives to those used now;
 - » Policies to support circular economy³⁸ strategies, such as to remove barriers to re-use, recycling and waste to energy.
- » Governments should develop policy in a way that involves a wide range of stakeholders, with particular attention to the inclusion of women and local communities. Such involvement not only delivers benefits in terms of buy-in from those involved but also brings a range of practical knowledge to the discussions on local solutions. Australia's Emissions Reduction Fund, for example, pays indigenous communities to use their traditional techniques to manage burning in savannahs, combined with satellite technologies. This reduces uncontrolled release of CO₂ and protects ecosystems. The process for participation needs to be designed to allow all voices to be heard equally;
 - » Involvement of a range of stakeholders can also help identify policies that may inadvertently inhibit climate action. For example, policies that limit the types of companies that can participate in trading electricity can make it more difficult for them to realize commitments on renewable energy. RE100 reports that countries with the most favourable environments have seen the largest uptake in corporate renewable power purchase agreements;
 - » Governments should encourage disclosure of climate risks by companies and financial institutions. This disclosure would need to allow for flexibility in the environmental, social and governance criteria to align with investment results while still being able to increase the level of awareness of the potential risks, including their own contributions to these risks. Action to address material risks would be the logical outcome of this increased awareness and attention;
- » Carbon pricing is identified as another important signal for investments, which also means that fossil fuel subsidies need to be phased out as soon as possible. Many governments have experience of phasing out fossil fuel subsidies, while at the same time protecting vulnerable groups in society. Sharing good practice can help increase the speed at which subsidies are removed. For example, The Friends of Fossil Fuel Subsidy Reform have presented replicable strategies for fossil fuel subsidy reform with high benefits for poverty reduction, gender equality and the SDGs at the UN High-Level Political Forum.³⁹
- Putting a price on carbon, while a necessary part of shifting investments, also needs to ensure that vulnerable groups are not adversely affected. Studies suggest that putting a carbon price on food would likely result in a decrease in nutrition for some countries or for the poorer parts of the population.⁴⁰ Any policy introducing a carbon price/tax would therefore need to be accompanied by measures to prevent unintended consequences that impede the achievement of the SDGs;
- » Parties and non-Party stakeholders also have an important role to play in driving individual behavioural change to reduce unsustainable consumption. National and subnational governments should set specific policy frameworks, and civil society and business should also contribute through information sharing, campaigning and development of alternative products/services. The **SAVE FOOD** initiative, for example, has more than 1,000 members working towards reducing food waste. Part of this initiative aims at making decision-makers and consumers aware of food waste and loss, to bring about a change in behaviour. National and regional strategies on non-motorized forms of transport also have an important role in enabling sustainable travel choices.

Sharing and creating knowledge about high-potential solutions

The range of actions and initiatives presented in the previous chapters show that while good progress is already happening, significant changes are needed in every thematic area to bring them up to scale. The good news is that many of the solutions needed to mitigate greenhouse gas emissions and adapt to climate change are already well developed, for example solar and wind technologies. For widespread implementation, there may be a need to tailor solutions to different environments and demonstrate their usefulness in those conditions, but further fundamental research is not required. In other cases, solutions, such as alternatives to fossil fuel in shipping, are still

38. Circular economy refers to an economy which keeps resources in use for as long as possible, for example recovering materials at the end of life instead of disposing of them.

39. Source: <http://fffsr.org/2018/07/hlpf-side-event-leadership-on-fossil-fuel-subsidy-reform-for-sustainable-energy-access-and-poverty-reduction/>

40. Frank et al (2017). Carbon prices, climate change mitigation & food security: How to avoid trade-offs? CGIAR Info Note October 2017. Available at: <https://cgspace.cgiar.org/rest/bitstreams/144184/retrieve>



Photo: Chuttersnap

in the developmental stage and more extensive research and demonstration are needed. In both cases, to spur action and increase confidence for greater ambition it is important to share knowledge of what works, where it works and how it works, and to carry out further research where it is still needed. Priorities to address the challenge of increasing ambition are:

- » Governments to set policies and commit public finance to encourage research and development (R&D) in the areas critical for the transition to a net-zero carbon world and non-Party stakeholders to collaborate to implement that R&D. The Global Commission on the Economy recommends that at least USD 50 billion of new capital be committed to R&D by 2020.⁴¹ Areas that have been identified in the submissions to the Talanoa Dialogue and the Technical Examination Process in 2018 as still needing development include applied research into sustainable farming practices, forest-friendly value creation, renewables-based hydrogen infrastructure, alternatives to fossil fuels for shipping and aviation, key technologies for the urban transition, and innovative products and processes to increase energy and material efficiency. An example of an initiative on R&D is [FoodShot Global](#), a consortium of 13 global food leaders committed to invest in and accelerate research into improving soil health at scale;
- » Many non-Party stakeholders, particularly smaller organizations and those located in lower-income countries, need additional capacity to implement needed action. National governments and development agencies can provide resources to increase this capacity. In addition, many initiatives provide an international peer-to-peer network that can build capacity;
- » The Technology Executive Committee, CTCN and GCF to increase collaboration to catalyse finance for climate technology incubators and accelerators;
- » Parties and non-Party stakeholders to collaborate to remove barriers, such as import tariffs or intellectual property issues, so that solutions can be implemented globally. The [International Solar Alliance](#), for example, brings together countries rich in solar resources to cooperate to increase deployment of solar energy. Lessons from these types of initiatives suggest that the most successful implementation includes elements of tailoring to local conditions, involvement of local stakeholders in decision making, and capacity building to ensure sustainability of solutions. It is therefore recommended that these elements be included wherever possible in designing projects;

41. The New Climate Economy (2018).

- » Parties and non-Party stakeholders to cooperate to translate the wide body of scientific knowledge already available to practical tools that can be used by national, subnational and local governments in adaptation and disaster-response planning. Long-term planning, underpinned by scientific knowledge, can help provide insight to communities and investors into the impact and costs of climate change. An example of this is in the Republic of Mauritius, which is the first small island developing state with its own early-warning system. The system provides three-day probabilistic forecasts for sea surges, enabling coastal communities to evacuate in a timely manner if necessary;
- » Non-Party stakeholders to cooperate to harness the power of the fourth industrial revolution (artificial intelligence, cloud computing and the Internet of Things) to deliver climate action. Examples include the use of digital technologies to optimize transport systems and for early warnings of disasters. Announced at the One Planet Summit 2018, Google, together with Bloomberg Philanthropies and the Global Covenant of Mayors, will provide nearly 10,000 cities worldwide with new online data to help them create and implement ambitious climate action plans.

Recognizing and showcasing existing action

The role of non-Party stakeholders in driving and implementing climate action has increasingly been recognized in the UNFCCC process, starting with the Lima-Paris Action Agenda and continuing with the Paris Agreement and its implementation of High-Level Champions and Marrakech Partnership. In 2018, the Talanoa Dialogue also provided a platform to highlight action, as do conferences such as GCAS and The Climate Group's Climate Week New York, which coincides with the UN General Assembly. The Call to Global Climate Action issued by the participants of GCAS is an example of both showcasing action and calling for increased ambition⁴² (see Box 14).

These international fora and platforms are important, but to create long-lasting impact the visibility needs to be sustained and the stories shared need to be backed by credible evidence of delivery and the potential for replicability. Sustained and credible reporting helps build confidence in the ability of initiatives and organizations to deliver results and can encourage and inform increased ambition. It also enables learning, allowing organizations to assess performance against targets for their

Box 14

Call to Global Climate Action

The outcome of GCAS was a commitment by the participants to a climate-safe future for all.^a With over 500 new commitments made during the Summit, Mayors, CEOs, indigenous groups, investors and communities are all contributing to the growing scale of climate action.

The call is for the whole world to do more; with an emphasis on those in leadership positions to inspire change. Three main messages emerged from the Summit which capture different stages of climate action. First is scale: the breadth and depth from individual actions from states and regions to private sector climate action is evident and must be further encouraged. Second is the results of current action; it is clear that activities on the ground are saving money, creating jobs and reducing emissions and making a difference. Third is the potential for combined action to take the world on a path toward

a 1.5°C temperature goal – with countries working towards their nationally determined contributions and initiatives towards their goals.

The opportunities for action were discussed in five global challenge areas:

- » Healthy energy systems;
- » Inclusive economic growth;
- » Sustainable communities;
- » Land and Ocean Stewardship;
- » Transformative climate investments.

The final message of the Summit was to: step up action now, chart a clear path to a zero-carbon future and empower bottom-up climate action.

a. https://unfccc.int/sites/default/files/resource/428_Call%20to%20Action%20Annexes_COMPILED.pdf

42. Galvanizing the Groundswell of Climate Actions (2018). Assessing global climate action after the California summit: Key messages for COP24. Available at: <http://www.climategroundswell.org/s/25-Assessing-global-climate-action-after-the-California-summit-Key-messages-for-COP24.pdf>

own operations and in supply chains, and to experiment with new approaches. This assessment and learning are also critical to achieving the scale of changes needed.

Recommendations to improve recognition and showcase existing actions are:

- » Actions and commitments of non-Party stakeholders to be formulated according to common principles and minimum requirements, including clear and quantifiable targets based on the pathway to the Paris Agreement targets, in line with the financial and technical capacity of the actors, and accompanied by supportive policy frameworks;
- » Non-Party and Party stakeholders to work together to refine reporting frameworks towards climate targets to ensure consistency and robustness and avoid duplication. Initiatives, such as the Greenhouse Gas Protocol, have developed standards, guidance, tools and training that enable public and private operators to measure and manage greenhouse gas emissions.⁴³ The Bonn Challenge Barometer of Progress aims to provide a universal reporting framework for forest landscape restoration.⁴⁴ Specific recommendations for increased transparency relating to the Marrakech Partnership thematic areas include:
 - » Governments and energy companies to improve tracking systems for renewable electricity so that companies have a credible way of demonstrating progress towards their renewable targets;
 - » Cities and civil society to develop consistent reporting on cities' actions so that city governments can showcase and assess progress. The public availability of key data demonstrating progress and ambition is also important in attracting new businesses providing climate solutions to a city. The Global Covenant of Mayors,⁴⁵ alongside other initiatives, is developing a common data reporting framework;
 - » Local and central governments to cooperate to include subnational reporting of emissions and of actions in national reporting systems
 - » Financial institutions and civil society to cooperate to improve reporting of financial flows relating to climate change.
- » Governments and non-Party stakeholders to work together to ensure the provision of data to the Global Climate Action portal to ensure that climate action in all countries is recognized properly and reported accurately.

Enhancing integration

The issue of climate change cuts across all areas of human society and across the natural world. To be truly effective, a high level of integration is needed in the response to climate change. This was recognized with the convening of Parties through the UNFCCC process, and later with the involvement of non-Party stakeholders. With implementation, the integration needs to go even further. Priorities for enhanced integration include:

- » National and subnational governments to better integrate policy development to tackle issues across all sectors and to realize the multiple co-benefits that could come from alignment of action. Important areas of integration identified include:
 - » Coastal and marine planning and management, building on work such as the [Global Mangrove Alliance](#), which seeks to increase global mangrove cover by 20 per cent by 2030 to realize mitigation and adaptation benefits;
 - » The energy, water and land-use nexus;
 - » The interface between land and oceans;
 - » Agriculture and food planning into implementation of NDCs to ensure food security;
 - » Better linking of NDC implementation and local investment planning;
 - » Holistic planning for cities and for transport infrastructure for mitigation, adaptation and disaster response. The Pacific Resilience Partnership, as an example, has provided governance structures and frameworks to bring different members together to apply high-quality scientific and technical knowledge to implement multi-sectoral responses for disaster risk reduction and climate change adaptation;⁴⁶
 - » Better integration of consumer, industry and waste policies to provide incentives to improve material efficiency and to develop circular economies;
- » Businesses to adopt an integrated and collaborative approach across their supply chains to reduce emissions and improve resilience. Collective action can increase impact over individual actions, as has been recognized in the cooperative initiatives of the Marrakech Partnership. For example, companies collectively committing to renewable targets can increase buying power and create bigger markets. In the

43. <https://ghgprotocol.org/>

44. http://forestdeclaration.org/goal/goal-5/#_edn1

45. https://www.globalcovenantofmayors.org/wp-content/uploads/2018/09/Data-TWG_ReportingFramework_website.docx

46. PRP (2017). Pacific Resilience Partnership (PRP) Governance Structure – PRP Working Group Draft Final. Available at: www.pacificmet.net/sites/default/files/inline-files/documents/WP%208.0%20Att%202-PRP%20Working%20Group%20Governance%20Paper%20clean%2016%20June.pdf

water sector, companies endorsing the Business Alliance for Water and Climate have identified best practices in three innovation domains: climate-resilient agriculture, circular water management and natural infrastructure;⁴⁷

- » Party and non-Party stakeholders to integrate approaches to increase the scale and pace of action towards a zero-emissions, efficient and resilient building-construction sector. The Global Alliance for Buildings and Construction has developed a Global Roadmap that identifies priority actions;⁴⁸
- » Party and non-Party stakeholders to work together to expand national multi-stakeholder alliances, such as the Japan Climate Initiative and Alliance for Climate Action-Guadalajara, to empower non-Party stakeholders and promote stronger information exchange between governments and non-Party stakeholders at the national level;
- » Non-Party stakeholders to look for synergy and symbiotic relationships across sectors to provide new business models for action to implement the circular economy. An example of this synergistic thinking is the company Timberland in the United States, which has partnered with the tire manufacturer, Omni United, to develop a tire that is designed to be recycled at end of life to make soles for footwear.⁴⁹ Involvement of businesses in the cross-sectoral initiatives of global climate action should result in increased opportunities to make these connections;
- » Governments need to cooperate internationally to integrate climate change into trade and product standards and commodities and natural resources resilience planning. Non-Party stakeholders, particularly businesses, will have a role here through their supply chains. Experience from the Tropical Forest Alliance 2020 suggests that such supply chain initiatives can have a positive impact, for example by reducing deforestation that occurs in the supply of agricultural commodities. However, it also shows that unless integrated with strong governance and compliance frameworks, the results can be undermined by risks, such as shifting deforestation to other areas or increased smuggling of commodities;
- » Other issues, including land tenure rights for indigenous communities and the legal rights of people displaced by climate change, will need to be addressed at both the national and international levels. Governments will need to create the conditions for effective cross-jurisdictional governance models in order to encourage cooperation across city and regional boundaries and integrate national and subnational planning and policy;



Photo: Josh Edgoose

- » Parties and non-Party stakeholders to strengthen integration of regional, national and transboundary data systems. The impacts of climate change are not constrained by national borders and the response to those impacts needs to be informed by reliable data. One example is water basins, where decreasing water supply due to the impact of climate change and increasing demand can lead to conflicts between different users and different regions and countries. To implement successful water policy, the implementers need access to reliable data on the whole river basin to understand the supply and use of water. Non-Party stakeholders are recognizing such challenges and working to address them, through actions such as the development of the Handbook on Water Information Systems produced by the Paris Pact initiative in March 2018.⁵⁰

47. https://bafwac.org/tools-resources/?swoof=1&pa_types=projects-case-studies&pa_developer=bafwac

48. GABS (2016). Global Roadmap towards low-GHG and resilient Buildings. Available at: <https://globalabc.org/uploads/media/default/0001/01/0d6a71a346ea7e6841b1b29c77eba6d6ae986103.pdf>

49. <https://www.timberlandtires.com/>

50. RIOB (2018). The Handbook on Water Information Systems. Available at: <https://www.riob.org/pub/HandBook-SIE-en/>

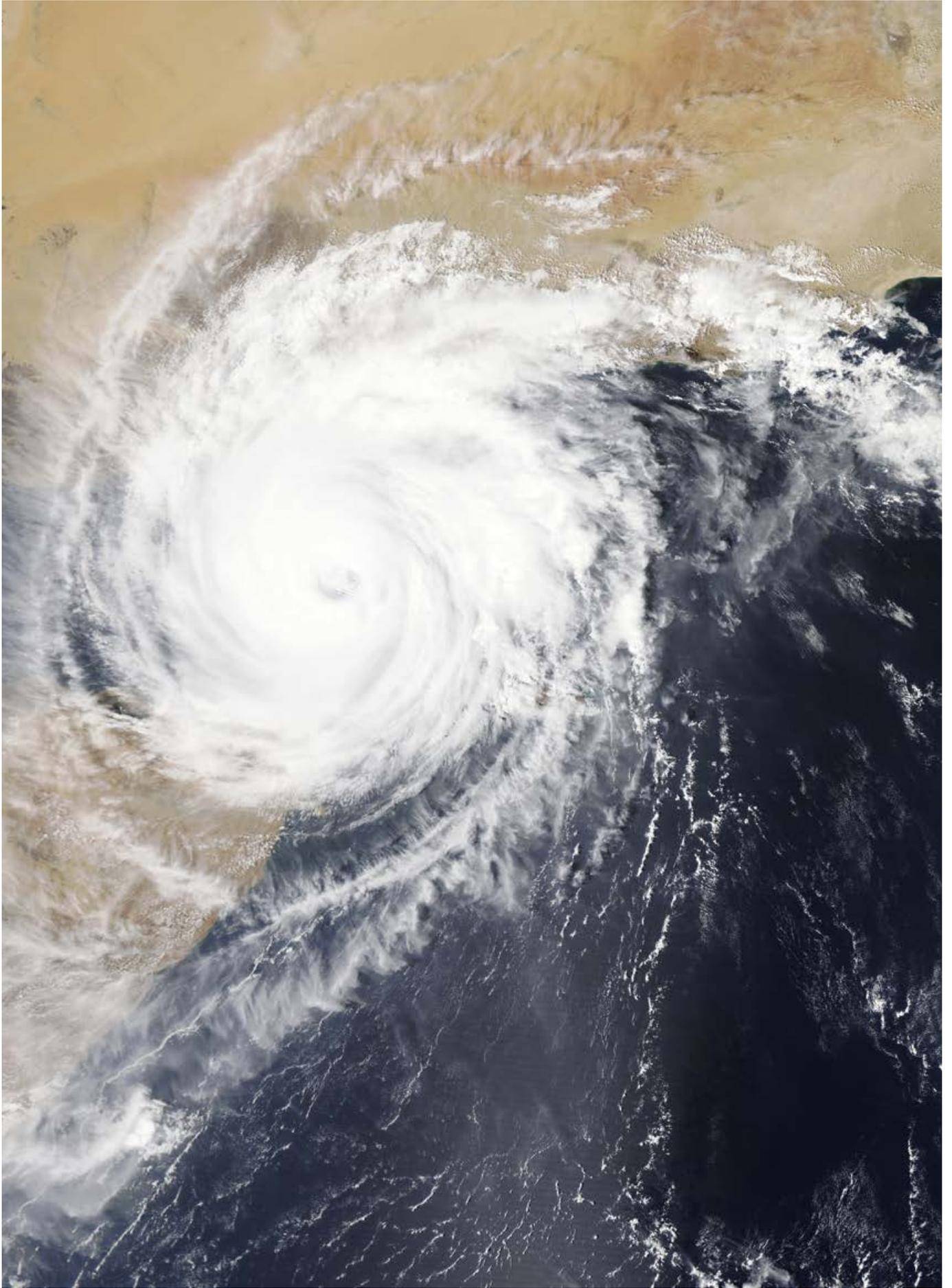


Photo: NASA

5

Key messages for pre-2020 action

Global climate action is crucial to deliver existing NDCs and raise ambition. Parties and non-Party stakeholders acting together have the potential to keep global warming to 1.5°C. To realize this potential, the urgent priorities, in particular for the pre-2020 action from this Yearbook for Parties and non-Party stakeholders are:

Key messages for Parties on NDC and policy development

- » Engage with all non-Party stakeholders to exchange information and collaborate on how best to achieve more both at the national and subnational levels and through international cooperation;
- » Put in place holistic approaches and policy frameworks as the successful implementation of NDCs will require action across all sectors of the economy and the natural environment. With the right policy frameworks, NDCs could address not only mitigation but also adaptation, disaster resilience and efficient use of resources, such as water and materials – either directly or generated as co-benefits of mitigation action. They can also provide for inclusive and sustainable development. Non-Party engagement can help deliver on all these objectives;
- » Set enabling frameworks to allow non-Party stakeholders to deliver on their commitments. These frameworks need to set clear and long-term directions; remove obstacles to climate action, such as fossil fuel subsidies; enable investment into climate solutions including finance flows to increase public-private partnerships; and encourage targeted R&D;
- » The changes needed in societies to meet the Paris Agreement goals are far-reaching and the impact on certain sectors of the economy profound. Ensuring a just transition for those adversely affected is therefore important and should be part of national plans.

Key messages for Parties on international cooperation

- » Many of the solutions and initiatives needed to reduce emissions and increase resilience are already developed but are not yet implemented widely. Parties should cooperate

with each other and with the private sector to ensure these solutions are shared globally and to help develop the capacity and finance to implement them widely, as appropriate;

- » Many issues of resilience are transboundary including oceans and coastal areas, land and water use, climate-induced migration and disaster response. Parties need to work together with non-Party stakeholders to address them at the appropriate scale and looking to reduce vulnerability;
- » Increase cooperation and engagement in the promotion of technological and capacity building support with non-Party stakeholders across the various sectors, drawing upon the existing and growing knowledge and technology base arising from climate action.
- » Globally, investments need to be shifted at large-scale to low-carbon and resilient projects, cities, regions and businesses. Parties have a role to play in ensuring that this shift can occur. International and national development banks can act to crowd-in private sector investments by providing innovative financing for example to limit risks to private sector.

Key messages for non-Party stakeholders

- » Collaborate with national and subnational governments and with other non-Party stakeholders to help develop policies to enable action;
- » Pursue collective action with other stakeholders to amplify the results of that action and bring greater ambition;
- » Take on ambitious commitments and encourage other non-Party stakeholders to follow their lead;
- » Develop new and innovative financial and business models to shift investments to those needed for a 1.5°C world;
- » Cooperate in a cross-sectoral manner to develop the new solutions needed to transform sectors such as transport and agriculture and to transfer those new and existing solutions globally;
- » Make the results of the action taken transparent and measurable, to inspire others to take action and to learn lessons about what works best.



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Climate Change Secretariat