



SYNTHESIS OF THE PREPARATORY PHASE

19/11/2018

1. Introduction

1.1. Background

1. With the adoption of the Paris Agreement in 2015, Parties agreed to organize a facilitative dialogue to take stock of progress towards the long-term goal of the Paris Agreement and inform the preparation of nationally determined contributions (NDCs). For many actors concerned with climate change, this dialogue would provide an opportunity to jointly take stock of global efforts to reduce emissions and enhance resilience, discuss where these efforts have taken us and identify avenues for increasing our collective ambition.

2. At the twenty-third session of the Conference of the Parties (COP), Parties requested the Presidency of COP 23 and the incoming Presidency of COP 24 to jointly lead the dialogue under the tradition of Talanoa. They also agreed that the *Talanoa Dialogue* would be divided into a preparatory and a political phase, and that the process would consider three questions: Where are we? Where do we want to go? And how do we get there?

3. Talanoa is a traditional word used in Fiji and the Pacific to reflect a process of inclusive, participatory and transparent dialogue; its purpose is to share stories and build empathy in order to make wise decisions for the collective good. The process involves the sharing of ideas, skills and experience through storytelling.

4. As requested by COP 23, we, the Presidencies, have prepared this synthesis report that reflects the wealth of information shared during the preparatory phase of the Talanoa Dialogue. This document strives to provide a sufficient yet comprehensive starting point for the political phase. It represents our best attempt to synthesize the inputs and stories shared so far, while avoiding bias towards any subject. The information contained in the document should be seen as a collection of ideas, rather than a set of conclusions; at no point does it represent consensus among participants.

1.2. Approach to the synthesis

5. We have prepared this synthesis in the form of key messages that respond to the three questions of the Talanoa Dialogue. Further elaboration is also provided with the intention of clarifying and expanding on the substance upon which each key message is based.

6. We have made efforts to, as agreed at COP 23, avoid statements of a confrontational nature and the singling out of individual Parties or groups of Parties. Our goal was to present a report that is constructive, facilitative and, above all, solutions oriented.

7. The sources of information are limited to the written inputs submitted through the Talanoa Platform, the special report of the Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C*, the *Yearbook of Global Climate Action 2017* and the stories shared during the

sessions of the subsidiary bodies in May. For ease of reading, and because information has been synthesized from hundreds of documents, we do not provide any reference to the original sources.¹

1.3. Summary of the preparatory phase process

8. The preparatory phase of the Talanoa Dialogue was launched at COP 23 and will come to an end at COP 24. The Presidencies have been encouraged by the high level of engagement and participation from a wide range of actors across the globe. The preparatory phase has been an enriching process, not only for the amount of information shared, but also for the wide range of perspectives and experiences this information conveys. Key milestones include:

- a. The Talanoa Platform was launched on 10 January 2018; in the period up to 29 October, it received a total of 473 inputs, 44 from Parties and 429 from non-Party stakeholders;
- b. At the sessions of the subsidiary bodies in May, 305 participants (207 Parties and 98 non-Party stakeholders) shared 474 stories in response to the three questions of the dialogue;
- c. Throughout the year, Parties and non-Party stakeholders cooperated in the organization of regional and national events; a total of over 90 events associated themselves with the Talanoa Dialogue and were added to the platform's calendar.

9. We would like to sincerely thank all participants for their valuable contributions. We encourage all delegations to read this synthesis in preparation for the political phase of the dialogue, with the aim of delivering an outcome of greater confidence, courage and enhanced ambition. The messages contained therein constitute a valuable source of information for taking stock of progress towards our long-term goals and for informing the preparation of NDCs. We also hope that a wider audience will find this document useful in promoting ambition and guiding future climate action.

2. Synthesis of information shared during the preparatory phase

2.1. Where are we?

Participants addressed this question by identifying action being undertaken to address climate change; articulating challenges and obstacles to long-term goals; providing an overview of the state of global emissions, emission concentrations and global efforts to meet our goals; and finally, by humanizing the realities of the impacts of climate change.

Overall, climate action is on the rise, generating momentum throughout the planet and providing opportunities and experiences that can be replicated. However, global greenhouse gas (GHG) emissions are still increasing, as is the concentration of GHGs in the atmosphere. The human loss and economic and social impacts caused by extreme weather events around the world underscore the urgent need to raise collective ambition.

2.1.1 Action to build a low-emission and climate-resilient society is expanding as an increasing number of actors across the world, including governments, private sector companies, citizens and others, join global efforts and cooperate to reduce emissions and increase resilience. Climate action is generating opportunities for economic and labour growth, jobs, energy and food security, health and other benefits, with an enormous amount of lessons learned and knowledge that can be replicated.

- As of 18 November 2018, 184 Parties to the UNFCCC (over 90 per cent) had ratified the Paris Agreement; 180 had formally recorded their NDC in the registry; 10 had communicated a

¹ Quantitative estimates have mostly been taken from the IPCC special report *Global Warming of 1.5°C*, the United Nations Environment Programme's publication *The Emissions Gap Report 2017*, document FCCC/CP/2016/2 titled "Aggregate effect of the intended nationally determined contributions: an update", the *Yearbook of Global Climate Action 2017*, document FCCC/SBI/2018/INF.13 and input from the World Meteorological Organization.

long-term, low-emission development strategy; and 91 were working on a national adaptation plan;

- Several Parties have stated their intention to become climate neutral or to meet their energy needs using renewable technologies only, among them small island developing States;
- According to input received, 157 Parties have identified economy-wide targets and 140 sector-specific ones (primarily on energy and land use), adding up to about 830 targets in total;
- The International Civil Aviation Organization and the International Maritime Organization have identified measures to limit the growth of GHGs from international transport, including through mandatory measures, climate strategies, standards and offsetting programmes;
- National governments have taken steps to strengthen national policy, regulatory and institutional frameworks to address climate change. The large majority have put in place national climate policies, are advancing the integration and mainstreaming of climate into development, including through diversifying their economy in ways that contribute to low-emission and climate-resilient development. According to input received, climate-related laws come to a total of 1,500;
- Subnational governments have also joined efforts to combat climate change: about 9,000 commitments have been put forward by cities (including 244 commitments on urban resilience) and 240 have been put forward by States. According to input received, these include over 1,000 targets on GHGs (57 per cent of these targets), renewable energy share (19 per cent), energy efficiency (17 per cent), adaptation (5 per cent) and others;
- The number of companies taking climate action is also increasing: about 6,000 commitments have been identified by businesses from 120 countries. According to inputs received, 90 per cent of the 500 largest global companies have set GHG or renewable energy targets and more than 480 companies have set science-based targets. Hundreds of other global businesses are taking action through their supply chains to purchase clean energy, sustainable fuels and others.
- Awareness within the investment community is increasing as more asset owners and investors incorporate and disclose climate-related aspects of their operations and act as champions of climate compatible investments; according to input received, 74 per cent of asset owners associated with the United Nations Principles for Responsible Investment state they are acting on climate change and see it as one of the most important long-term trends for investments; further, nearly 400 investors with USD 32 trillion in assets have joined the Investor Agenda to report and scale up finance for transitioning to a net-zero economy;
- A large amount of civil society and non-governmental organizations, covering a wide variety of interests and backgrounds, including grass-roots movements, faith, citizens, indigenous peoples, gender and others, are playing a vital role in raising awareness, mobilizing political support, working directly with implementation actions and collecting lessons learned and information to empower individuals and communities to act;
- As regards finance, the Standing Committee on Finance estimates global total climate-related finance flows at around USD 680 billion on average in the period 2015–2016, which represents an increase of about 17 per cent when compared with the period 2013–2014;
- Climate finance from Annex II Parties to non-Annex I Parties has increased both in volume and rate from year to year: climate finance from Annex II Parties to non-Annex Parties through bilateral, regional and other channels amounted to USD 30 billion in 2015 and USD 34 billion in 2016, which represents a 26 per cent increase compared with 2013–2014. If these sources are added to multilateral climate funds and multilateral development banks, climate finance from Annex II Parties to non-Annex I Parties reached USD 48.8 billion in 2015 and USD 56.1 billion in 2016;
- A wealth of collaboration initiatives between governments and non-governmental actors have been highlighted; these provide forums to capitalize on synergies, exchange information and

experience, increase ownership and buy-in, discuss and establish common avenues for action, showcase ambition, and incentivize more local, national and global action.

2.1.2 Action under the Convention and the Kyoto Protocol up to 2020 is under way; however, much more of global effort is still required to deliver the expected level of action and support.

- The Doha Amendment will come into force after 144 Parties (representing three quarters of Parties) to the Kyoto Protocol have deposited their instruments of acceptance; as of 18 November 2018, 121 Parties had done so;
- In their input and stories, many Parties provided examples of their mitigation efforts in the pre-2020 period, including efforts to achieve their commitments under the second commitment period of the Kyoto Protocol, quantified economy-wide emission reduction targets and nationally appropriate mitigation actions;
- Estimates presented at the Talanoa Dialogue suggest that current global GHG emission trends are in line with the achievement of the actions identified by Parties in the context of the Cancun Agreements; economic downturn in some countries has played a role in this trend;
- In implementing their actions, Parties have stressed the challenges and barriers that prevent them from delivering their actions (see key message 2.1.3);
- Public financial support channeled through bilateral and multilateral channels increased in the period 2010–2016; however, provision of adequate and predictable climate finance remains an important aspect in the pre-2020 period, including in the context of Global Environment Facility and Green Climate Fund replenishment.

2.1.3 Many governments and other actors, particularly in poor and vulnerable regions, are facing challenges and barriers that prevent them from tapping the full potential of climate action and speeding and scaling up their efforts towards low-emission and climate-resilient development.

- Participants identified the following challenges and barriers in their input and stories:
 - Perceived trade-offs of the changes towards transition to low-emission development with competing national priorities (e.g. poverty alleviation, job security) or competitiveness;
 - Policy environments that provide the wrong incentives owing to lack of certainty or long-term stability, and/or misalignments between national and sectoral policies;
 - In many cases, insufficient leadership and determination to act at the decision-making level;
 - Perceived macroeconomic and political risk that hampers investment and results in higher costs of investing in mitigation and adaptation projects;
 - Imbalance in the influence and power of groups for and against climate action, particularly when the costs and benefits are distributed asymmetrically;
 - Expected negative effects of climate policies and measures on specific groups, for example, those dependent on a limited number of commodities or located far from export markets;
 - The cost of technologies, policies and measures and lack of finance to cover them;
 - Technical and technological challenges linked to local geographical conditions, infrastructure and others;
 - Lack of skills, know-how, data and information for the planning, execution and monitoring of low-emission and climate-resilient development;
 - Conflicting world views and values as well as cultural and psychological barriers which prevent people from acknowledging global problems and the required changes.

- These challenges and barriers are present in most countries and groups; however, it was acknowledged that these are most acute in the poorest and most vulnerable countries and in the context of adaptation and climate resilience efforts.

2.1.4 Despite all our efforts, greenhouse gas emissions, their concentration in the atmosphere and global average temperature warming, are still on the rise.

- GHGs have been accumulating in the atmosphere since the process of industrialization began in 1750;
- Global GHG emissions seem to have remained relatively stable from 2014 to 2016 while the global economy continued to expand. However, preliminary data for 2017 show that emissions from fossil fuels and industry resumed growing at about 1.5 per cent to a record high of 36.6 GtCO₂ (65 per cent higher than in 1990); CO₂ emissions from land-use change were 4.8 Gt CO₂ in 2016, accounting for 12 per cent of all anthropogenic CO₂ emissions; evidence suggests, therefore, that global anthropogenic GHG emissions have not peaked;
- In 2016, concentrations of CO₂ in the atmosphere reached 403.3 parts per million (ppm), concentrations of methane reached 1853 parts per billion (ppb) and concentrations of nitrous oxide reached 328.9 ppb; these values constitute, respectively, 145, 257 and 122 per cent of pre-industrial levels; in April 2018, CO₂ concentrations measured in Mauna Loa surpassed 412.3 ppm, marking the highest concentration ever recorded;
- By the end of 2017, anthropogenic activities are estimated to have reduced the carbon budget for limiting temperature rise to 1.5 °C by approximately 2,200 Gt CO₂; the remaining budget depends on the choice of method and probability and lies between 420 and 770 Gt CO₂; it is being depleted by current emissions of 42 Gt CO₂ per year;
- Human activities are estimated to have caused approximately 1.0 °C of global warming above pre-industrial levels.

2.1.5 The harmful effects of climate change are already being felt across the world, with many stories about the existing impacts coming mainly from the least developed and most vulnerable communities.

- Several stories spoke to the fact that climate change is real and that it is happening now; many testimonies gave evidence of increases in the occurrence of climate-related extreme weather in all regions, with a particularly sharp increase in hydrological events;
- Stories referred to a record-breaking number of climate-related disasters across the world, many of which documented the number of lives lost, as well as the costs of the damage;
- Speakers referred to recent cyclones, hurricanes, heavy rainfall, droughts, wildfires, floods, sea level rise and other events that they experienced directly or that have been experienced by people they know;
- Stories referred to cases of loss of life and livelihoods; population displacement; crop shortfalls and resulting famines and malnutrition; the spread of disease and other health-related impacts; damage and destruction of infrastructure and capital loss; ecosystem damage and others;
- One story referred to a total of 11,000 extreme weather events occurring between 1997 and 2016 worldwide, which resulted in about 524,000 deaths and damage equivalent to USD 3.16 trillion. About 200 million people have also been displaced by extreme weather since 2008;
- In 2017, it is believed that the economic loss associated with severe weather and climate events amounted to USD 320 billion, the highest figure since records began;
- Climate-related risks for these natural and human systems will continue to increase in the absence of increased global ambition; according to the IPCC, climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5 °C, and between 1.5 °C and 2 °C. These differences include increases in: mean temperature in

most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions, and the probability of drought and precipitation deficits in some regions.

2.2. Where do we want to go?

Participants addressed this question by reiterating our goal to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit this increase to 1.5 °C. In this context, many depicted a vision in which we have gone through a profound transformation of our energy, land, infrastructure and industrial systems, as well as through a behavioral shift, to build a net-zero emission and climate-resilient society. This transformation requires building a community for a shared future for mankind that ensures a just transition of the work force and respects and acknowledges the rights, needs and knowledge of indigenous peoples and other communities.

Several inputs and stories emphasized the call for efforts to keep global warming to below 1.5 °C, as a matter of life and death for small islands and other vulnerable communities. According to the IPCC, the avoided climate change impacts on sustainable development, eradication of poverty and reducing inequalities would be greater if global warming were limited to 1.5 °C rather than 2 °C, if mitigation and adaptation synergies are maximized while trade-offs are minimized. The IPCC states that limiting global warming to 1.5 °C would require rapid and far-reaching transitions in human systems, which are unprecedented in scale but not necessarily in terms of speed, and imply deep emission reductions in all sectors.

2.2.1 Current efforts from existing policies as well as the aggregate ambition of Parties' nationally determined contributions fall short of keeping global temperature rise to well below 2 °C above pre-industrial levels and are significantly inadequate for limiting it to 1.5 °C; concerted efforts need to be made to increase global ambition, as the transformation must start today.

- Reports submitted to the Talanoa Dialogue indicate that the aggregate efforts from existing NDCs fall well short of achieving the long-term goal of the Paris Agreement; their full implementation would lead to a median increase in global temperatures of about 3.2 °C by 2100;
- The IPCC estimates that global warming is likely to reach 1.5 °C between 2030 and 2052 if emissions continue to increase at current rates;
- In 2020 GHG emissions will probably be at the high end of the scenarios consistent with the 2 °C and 1.5 °C goals, making it increasingly difficult to be on track to meet these goals by 2030;
- Inputs to the dialogue indicate that the gap of effort to achieve the least-cost pathway towards limiting temperature rise in 2030 corresponds to:
 - Assuming that current policies remain unchanged: 24–27 Gt CO₂e for 2 °C;
 - Assuming that all NDCs are fully implemented: 10.1–21.1 Gt CO₂e for 2 °C and 17.8–27.5 Gt CO₂e for 1.5 °C;
- Models show that, for limiting global warming to below 2 °C, global net anthropogenic CO₂ emissions should decline by about 20 per cent from 2010 levels by 2030 and reach net zero around 2075; for limiting warming to 1.5 °C, these emissions should decline by about 45 per cent by 2030 and reach net zero around 2050; non-CO₂ emissions require deep reductions for both goals;
- Many participants stressed that the transformation towards net-zero emission and climate-resilient development must start today, as many of the technologies and means to bring about this transformation are available and are cost-effective; further, delayed action could imply cost escalation, lock-in in carbon-emitting infrastructure, stranded assets and reduced flexibility in future response;
- CO₂ emission reductions that limit global warming to 1.5 °C involve different portfolios of measures, striking different balances between lowering energy and resource intensity, rate of

decarbonization and the reliance on CO₂ removal; different portfolios face different challenges and potential synergies and trade-offs with sustainable development.

2.2.2 By 2030, global anthropogenic GHG emissions have peaked and are rapidly declining following decisions and actions taken today by Parties and non-Party stakeholders.

- With the adoption of the Paris Agreement, Parties recognized that, to achieve the long-term temperature goal, global GHG emissions should peak as soon as possible, recognizing that peaking will take longer for developing country Parties. According to the IPCC, avoiding overshoot and reliance on future large-scale deployment of CO₂ removal can be achieved only if global CO₂ emissions start to decline well before 2030;
- Many participants depicted a world in 2030 where emissions have already peaked and are rapidly declining, which is characterized as follows:
 - All countries have developed long-term, low-emission strategies and are advancing implementation of their national and sub-national adaptation plans;
 - Technologies and practices that enable net-zero CO₂ emissions are to be developed and phased in;
 - A significant portion of polluting and climate-vulnerable infrastructure and practices have been phased out;
 - Climate action provides opportunities for social mobility and growth and, in all nations, the workforce has learned new skills and participates fully in the transformation; women, youth, local communities and indigenous peoples actively participate in this process;
 - Our energy needs are satisfied through significant improvements in energy efficiency and the use of low-emission sources and technologies and demand for high-emission sources of energy has long since peaked; we have electrified most of our final energy use;
 - We are pursuing low-emission and sustainable mobility through mass transport, city planning, electric mobility and the use of sustainably produced biofuels;
 - International aviation and maritime transport have achieved net-zero emissions growth; mechanisms have been set in place to phase out GHG emissions from their operations;
 - Our industries adopt the concept of a circular economy and operate with maximum standards of energy efficiency; they develop products and technologies that contribute to lowering emissions and increasing resilience;
 - All new infrastructure is emissions neutral and climate resilient; we use, as standard, the most efficient materials, as well as technologies for lighting, cooling and heating;
 - We apply practices and technologies that increase the resilience of our food production systems and limit GHG emissions from agriculture to below current levels; sustainable intensification and reorientation of large-scale food production systems have significantly lessened our impact on land, coastal and marine ecosystems;
 - We have made significant changes to our diets through reduced consumption of meat and dairy products; we have eliminated food waste;
 - Capital markets integrate climate risk within their operations; a large portion of their investments have been redirected into cleaner assets and away from polluting ones;
 - We have phased out the worst climate pollutants, including methane, black carbon, tropospheric ozone and some fluorinated gases;
 - We have eliminated illegal logging and have increased protection to natural carbon sinks and reservoirs – such as forests, peatlands and mangroves – in a way that respects other Sustainable Development Goals; we manage our land and marine ecosystems in a sustainable way.

2.2.3 By 2050, we have achieved/transitioned to global net-zero CO₂ emissions by balancing global anthropogenic CO₂ emissions and removals and significantly reducing non-CO₂ emissions through technology, restoration and sustainable management of terrestrial ecosystems and lifestyle choices.

- With the adoption of the Paris Agreement, Parties recognized that to achieve the long-term temperature goal, a balance between anthropogenic GHG emissions and removals should be achieved by the second half of the century. Some stories and inputs stressed that, for limiting global warming to below the 1.5 °C goal, such a balance should be achieved as early as 2050.
- According to the IPCC, reaching and sustaining net zero global anthropogenic CO₂ emissions and sustaining net non-CO₂ radiative forcing would halt anthropogenic global warming on multi-decadal timescales; on longer timescales, sustained net negative global anthropogenic CO₂ emissions and/or further reductions in non-CO₂ radiative forcing may still be required to prevent further warming due to earth system feedbacks and reverse ocean acidification and will be required to minimize sea level rise;
- Many participants depicted a world in 2050 where global efforts have led to the achievement of zero-net emissions, and which is characterized by:
 - Universal access to modern energy sources that generate no emissions, with a large majority of countries running on 100 per cent renewable energy;
 - GHG emissions have been phased out in our transport systems, including international aviation and maritime transport;
 - The degradation of forests and other ecosystems has long been halted and all degraded ecosystems are recovering through restoration practices;
 - All buildings and infrastructure are resilient, emissions neutral and operate with the highest levels of energy efficiency;
 - Waste has been eliminated by reducing, recycling or reusing all materials;
 - Our industries operate at the highest potential efficiency and have eliminated all fugitive emissions;
 - Our food systems are modern, climate resilient, low or zero emissions and produce enough to cater for the needs of, and reach, the world's population;
 - Our lifestyles are sustainable: we live within our means and have foregone excessive and unnecessary consumption.

2.3. How do we get there?

Participants addressed this question by identifying and discussing the actions and efforts by different actors – including Parties, national and subnational governments, private sector companies, the investment community and civil society – that are required to achieve the long-term goal of the Paris Agreement. Our success will be determined by committed and sustained leadership; attention to ethics, social justice and equity; a robust governance for addressing climate change at all levels; a deep understanding of the interdependencies between climate change action, sustainable development and poverty alleviation; our efforts to integrate national ambition with real economic action to enable the full potential of each country to help meet the goals of the Paris Agreement; our ability to motivate and encourage private companies, the investment community and civil society; and the determination to cooperate with a view to ensuring that all relevant actors have access to the financial resources, technologies and capacity necessary to act.

Many participants noted that everyone has something to contribute and that, as such, multilateralism should continue to be a powerful instrument for uniting forces. “Getting there” will require strict adherence to the Convention and its principles; the delivery of action and support in the pre-2020 period, including the entry into force of the Doha Amendment; the finalization of the Paris Agreement Work Programme; and the pursuit of synergy between climate action with the

2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015–2030.

Most importantly, the case for courage, confidence and enhanced ambition was strongly made by a set of factors which were repeatedly referred to and include:

- *The consequences of inaction:* climate change will worsen the quality of life of everyone on the planet, affecting disproportionately the poor and most vulnerable; in the next 15 years, 100 million people could be pushed back into poverty; hundreds of thousands of additional deaths per year will occur between 2030 and 2050; and hundreds of millions of people would be displaced;
- *The realm of possibility:* decoupling GHG emissions from growth is not only possible but also one of the main motors of growth; climate action brings opportunities for economic growth, social mobility, productivity gains and competitiveness. According to one input, bold climate action could yield a direct economic gain of USD 26 trillion through 2030, whilst creating 65 million new low-carbon jobs and avoiding over 700,000 premature deaths from air pollution per year;
- *Untapped potential:* inputs indicate that NDCs may not incorporate the full potential of climate action; for example, ambition could be significantly increased by simply reflecting current rates of adoption of renewable energy technologies or by replicating sector-level policies and measures that have yielded successful results in different countries;
- *Ambition by non-Party stakeholders and cooperative initiatives:* according to input received, commitments by individual non-Party stakeholders could lower GHG emissions in 2030 by 1.5 to 2.2 Gt CO₂; further potential reductions from selected cooperative initiatives could yield reductions in 2030 equal to 15–23 Gt CO₂; it should be noted, however, that the potential from non-State and subnational action could be vast, but current impact is still low and hard to track;
- *Falling costs of technology:* the costs of technologies, such as solar and wind energy, light-emitting diodes, batteries and smart grid components, as well as high-efficiency and hydrofluorocarbon-free products, are falling to the extent that they can already compete with traditional technologies; these costs are already lower than when the NDCs were put forward and, by 2030, are expected to be much lower;
- *Society's calls for ambition:* citizens from around the world, including private sector leaders, bolstered by increased awareness and overwhelming scientific evidence, are calling for national and subnational governments to be more ambitious and take concerted action in line with the goals of the Paris Agreement.

2.3.1 Heads of State and Government, leaders of private sector entities, civil society organizations and international and regional organizations, prioritize climate action and lead their respective constituencies through a process of transformation to deliver the long-term goal of the Paris Agreement.

- The key factor to *get there*, is will. The Paris Agreement demonstrated what is possible when leaders are committed and ambitious: achieving the long-term goal will require the same level of political momentum to be maintained and that climate action remains at the top of the political and/or strategic agenda of leaders at all levels;
- Leaders think globally and for the longer term; remain steadfast in their conviction and concern about climate change; put the interests of society ahead of their own; demonstrate courage, determination, commitment and perseverance to do more; and, above all, understand the need to work together in pursuit of a common goal;
- Leaders acknowledge their responsibility to address climate change; within their jurisdictions, they listen to what science is saying, translate a global vision into national and local action, provide the necessary resources and motivate and mobilize all stakeholders to help to support and deliver a net-zero emission and climate-resilient future;

- Political leaders bring society together around a vision for low-emission and climate-resilient development;
- Leaders from the private sector take on the task of 'reinventing business', shift their ambitions and mindsets and act as agents of change by promoting the benefits of sustainability for competitiveness and growth;
- Civil society leaders continue to be the voice of the people and amplify their call for responsible, committed and accountable governments and companies;
- Leaders from the investment community become an engine of change by committing their companies and clients to deploy financial resources to expand technologies, support forward-looking companies of the future and divest from those remaining stuck in the past;
- Spiritual leaders unlock spiritual pathways for addressing climate change by helping people to reconnect with the wonders of nature and creation, to nurture love for the planet and foster compassion and reconciliation.

2.3.2 National and subnational governments continue to develop and strengthen national and sectoral institutional, policy and regulatory frameworks for low-emission and climate-resilient development; bold policies will incentivize action to reduce emissions and increase resilience.

- National governments could take a 'whole of the economy' approach to climate change, establish a sound scientific basis for climate action and lead participatory processes that deliver credible and ambitious long-term strategies and NDCs, and set in place the mechanisms and means to ensure that their ambitions are fulfilled;
- National governments could raise the profile of adaptation, increase national capacity to assess and address climate-related risks and incorporate related measures into development planning;
- National governments, in the context of their own circumstances and priorities, could strengthen and/or develop adequate policy, regulatory and institutional frameworks that integrate climate action into fiscal, economic and sectoral policy and provide incentives for action to reduce emissions and increase resilience;
- National and subnational governments could put forward bold and coherent sectoral policies and instruments that reduce GHG emissions and address climate vulnerability, whilst identifying the means to enforce, measure and monitor progress. Available policy tools identified during the Talanoa Dialogue include:
 - National, subnational or sectoral targets, for example on GHG emissions, risk reduction, energy efficiency enhancements, renovation rates, renewable energy, zero and low emission vehicles;
 - Incentives such as feed-in tariffs, subsidies and differential taxes applicable to cleaner and resilient technologies and products;
 - Pricing mechanisms such as emission taxes and trading schemes;
 - Subsidy reform relating to activities which are environmentally harmful, including those that have a high GHG intensity;
 - Economic diversification measures that contribute to emission reductions and resilience;
 - Market-related measures such as direct participation in electricity markets and labelling;
 - Performance standards for materials, energy use and efficiency and others;
 - Spatial planning and investment programmes in infrastructure that is resilient and reduces emissions (e.g. grids, electric mobility, mass transport);
 - Green procurement that fosters sustainable growth and guides public expenditures towards efficient, low-carbon choices in products, services and public works;

- Land-use policies, such as incentives for more resilient and less emission-intensive agricultural practices, clarifying land tenure, payment for environmental services and others;
- National and subnational governments should anticipate the impact on workers and other groups resulting from action to combat climate change; they should adopt labour market policies to pursue, among others, economic diversification, the development and acquisition of new skills by the workforce and the strengthening of safety nets.

2.3.3 Private sector actors continue, and step-up, initiatives and concerted action to reduce emissions and enhance resilience in line with the requirements of the Paris Agreement.

- Industries and businesses could align their activities with the Paris Agreement, including by incorporating climate considerations into their boards and financial reports, and adopting science-based, climate-related targets that have the potential to generate climate-neutral and climate-resilient supply chains;
- Industries and businesses could invest in environments that foster creativity and the innovation of technologies and practices that reduce emissions and increase resilience;
- Industries and businesses could adopt metrics and procedures to measure, monitor and report on their performance against their climate ambitions;
- Industries and businesses could assess the skills required for more sustainable models and incorporate related training and other opportunities within their operations;
- Industries and businesses could engage with their respective governments in the policymaking process to discuss potential courses of action and encourage more ambition;
- Industries and businesses could expand their networks of cooperation and come together to discuss climate action, assess opportunities and barriers, foster peer-to-peer learning, amplify their voice and the market signal it represents, and inspire others to follow;
- National governments could promote, recognize, endorse and establish programmes for rewarding voluntary actions and initiatives by private sector actors that contribute to low-emission and climate-resilient development.

2.3.4 Civil society groups strengthen their collective contribution and active engagement to promote climate action at the regional, national, State and local level.

- Governments and other stakeholders could step up efforts to increase the awareness and participation of different groups in action to combat climate change, while ensuring a fair representation of women, indigenous communities, young people and other groups that are often underrepresented;
- Civil society organizations could call for, and actively participate in, national dialogues, debates and policy processes on climate ambition;
- Civil society organizations could actively work with governments on the formulation of bold policy that is ambitious and takes into consideration the interests and needs of vulnerable populations;
- Civil society organizations could increase awareness of, and promote education on, the consequences of climate change and the benefits of action to reduce emissions and enhance resilience; they should promote actions by individuals, including changes in lifestyle which contribute to reducing emissions and increasing resilience.

2.3.5 Government and non-Party stakeholders step up efforts to increase and make financial flows consistent with a pathway towards low-emission and climate-resilient development and support the transformational change envisioned by the Paris Agreement.

- In the next 15 years, trillions of dollars will be invested annually on infrastructure across the world; estimates suggest that a 10 per cent increase in these investments would be required to make them consistent with the Paris Agreement, and that this extra cost could be partly or wholly offset by efficiency gains;
- In the particular case of energy, it is estimated that about an extra USD 900 billion annual investment in mitigation will be needed until 2050 to be consistent with pathways for limiting global warming to 1.5 °C, and that this figure will be 12 per cent lower for 2 °C;
- The cost of adaptation in developing countries could range between USD 140 and 300 billion annually by 2030 and USD 280 to 500 billion by 2050, depending on the level of mitigation ambition; solutions lie in investments in ex ante climate resilience building, as much as in scaled-up adaptation financing;
- National governments and the investment community could recognize the importance of divesting from polluting assets and increasing financial flows for low-emission and climate-resilient development and take up concerted efforts;
- National governments could pursue mandatory and/or voluntary legislative measures and initiatives that encourage investors to appropriately assess and manage climate-related risks and generate a positive environment for low-emission and climate-resilient investments; they should devise ways to facilitate access to finance by subnational actors;
- National governments could systematically integrate climate considerations into fiscal policy discussions, including in budgetary processes, fiscal rules and monitoring of economic growth;
- National governments could make strategic use of public finance and fiscal policy to leverage and/or steer private investment towards low-emission and climate-resilient development, including through incentive programmes, partnerships and research and development initiatives;
- National governments could increase financial cooperation and assistance to support climate action, particularly in developing countries, through their agencies, and multilateral and/or regional development banks;
- Regional, national and subnational governments, taking into consideration their priorities and capacities, could apply existing financial tools and mechanisms to support climate action, such as green bonds, guarantees, advantageous credit lines, climate insurance and other appropriate risk mitigation mechanisms, and collaborate in the establishment of national or regional green/climate funds, risk-pooling catastrophe risk management and insurance facilities and programmes;
- Financial sector institutions could assess and manage climate-related risk at all levels and include climate disclosures in their mainstream financial filings; these steps will enhance the ability of investors to appropriately assess and price climate-related risk and opportunities;
- International, regional and bilateral organizations could make concerted efforts to assist developing countries in the creation of a pipeline of bankable projects aimed at low-emission and climate-resilient development;
- Multilateral and regional development banks and other financial institutions could continue to mainstream climate change considerations within their operations and put in place targets and action plans to boost support for low-emission infrastructure and climate-proofing efforts; they should phase out support for emission-intensive projects, improve disclosure of climate risks, scale up efforts to mobilize private investment and continue to support policy and planning frameworks for low-emission and climate-resilient infrastructure.

2.3.6 Government and non-Party stakeholders step up efforts to accelerate the development and deployment of breakthrough technologies and innovative solutions to support the transformational change envisioned by the Paris Agreement.

- National governments could recognize that the costs of technology need to be addressed in a comprehensive and progressive manner so that barriers for technology development and transfer are overcome;
- National governments could recognize the importance of developing a strong and diversified entrepreneurial ecosystem that fosters and protects innovation and fair competition; they should encourage entrepreneurs to develop technologies and practices that support economic growth, reduce emissions and increase resilience through, for example, incentive programmes, the establishment and strengthening of incubators and accelerators and appropriate schemes for intellectual property rights;
- National governments and actors from the private sector could prioritize the application, use and scaling up of available and viable technologies with the greatest potential to deliver low-emission energy and transport, increased energy efficiency and resilient infrastructure and food systems;
- National governments, in partnership with the private sector, could increase public spending for research and development of technologies that are required to enable the transformation towards low-emission and climate-resilient development. Such efforts could target, among others, third generation biofuels, energy-storage technologies, new or newly-developed energy technologies such as fuel cells, energy efficiency of appliances and infrastructure, electrification of transport and other end uses of energy, sustainable carbon-removal technologies such as carbon capture, utilization and storage, low-emission and climate-resilient agriculture, and technologies of the fourth industrial revolution (e.g. smart grids, artificial intelligence and others).

2.3.7 Government and multilateral, regional and bilateral organizations step up efforts to build the capacity of both public and private entities in the developing world to take greater leadership in the transformation towards low-emission and climate-resilient development.

- According to the IPCC, international cooperation is a critical enabler for developing countries and vulnerable regions; strengthening the capacities for climate action of national and subnational authorities, civil society, the private sector, indigenous peoples and local communities can support the implementation of ambitious actions;
- National governments, through their agencies and international and regional organizations, could increase efforts to ensure that national actors in the developing world have the capacity, including skills, knowledge, data, information and tools, to:
 - Build a national long-term vision for low-emission and climate-resilient development and identify pathways leading to the achievement of this vision;
 - Establish and strengthen national frameworks for the governance and monitoring of climate action, and develop and implement policies and measures relating to mitigation and adaptation action;
 - Understand and address macroeconomic, budgetary and financial aspects of low-emission and climate-resilient development and generate the required financial flows;
 - Assess and plan measures to anticipate and manage any negative consequences for the workforce and other groups resulting from national and global climate action;
 - Assess technology needs to achieve low-emission and climate-resilient development; acquire and adapt these technologies to national realities.

- Governments and non-governmental actors across the world could acknowledge that achieving the long-term goal of the Paris Agreement requires the establishment of alliances and meaningful, long-term cooperative relationships and as such, they could:
 - Strengthen existing partnerships and initiatives to support and mobilize mitigation and adaptation action from a global, regional, national or sectoral perspective, and establish new ones required to fill existing gaps;
 - Recognize the opportunity that the UNFCCC process provides for the consideration of, and dialogue on, means to reach the long-term goal, with the active engagement of different national ministries, representatives from economic sectors, civil society and others;
 - Establish and/or support forums and initiatives within and outside the Convention for the exchange of experiences, lessons learned and good practices, where actors engaged in climate action can participate and learn from each other;
 - Support the establishment and enhancement of South–South cooperation initiatives, in particular those with the potential to facilitate research and development and large-scale deployment of low-emission and climate-resilient technologies;
 - Collaborate on a holistic approach to adaptation and resilience planning, which includes common identification of adaptation needs, priorities and practices; shared efforts on research, data and modelling; and the implementation of insurance schemes and adaptation measures across supply chains.
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