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Scaling up Ambition:
Leveraging NDCs and Long-Term Strategies to
achieve the Paris Agreement Goals

Input Document for the G20 Climate Sustainability
Working Group

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Executive Summary

Highlights

- G20 action over the next two years will determine whether the world sets off on a path toward strong, sustainable, balanced, and inclusive growth in time to achieve the goals laid out in the Paris Agreement and avoid the worst impacts of climate change. As the Intergovernmental Panel on Climate Change has noted, immediate transformation is necessary to halve global emissions by 2030 in line with the 1.5°C goal. Ambitious climate action also offers promise of significant economic growth, job creation, and health benefits.
- Long-term strategies (LTS) and nationally determined contributions (NDCs) are key components of G20 action because they articulate to the international community how each country will address climate change – and by extension, the extent to which the G20 is poised to deliver on the Paris Agreement temperature goals and reap the associated socio-economic benefits. Due to the high relevance of NDCs and LTS to each other and to national development priorities and plans, they can play a key role in driving national development agendas.
- This paper highlights the critical role of LTS and NDCs in advancing the G20 goal of strong, sustainable, balanced, and inclusive growth. In addition, it argues that while LTS and NDCs make distinct contributions to enhancing global climate action, they are also closely interlinked. Because of the interdependencies between near-, medium-, and long-term planning and policies, G20 countries can benefit from undertaking these processes in tandem.¹ They are related in the following ways:
 - LTS offer countries a long-term perspective to inform the design of development trajectories – and crucially, near-term decisions – that align with the Paris Agreement goals.
 - Robust NDC implementation, in turn, can align near-term decisions with LTS as well as sustainable development, inequality reduction, and growth objectives.
 - Communicating new and updated, more ambitious NDCs by 2020 signals the ratcheting up of national ambition to align with global goals and deliver on the sustainable growth and development potential associated with climate action.
- G20 countries can play a major role in supporting non-G20 countries to advance their LTS and strengthen NDC implementation and enhancement.

Context

The benefits of ambitious climate action are staggering. Recent analysis finds that accelerating climate action, including smarter urban development, shifting to clean energy, and sustainable land

¹ For the purposes of this paper: “near-term” or “short-term” is within approximately the next five years; “medium-term” is through approximately 2030, including current and future NDCs; and “long-term” is approximately mid-century and beyond.

use, could generate US\$ 26 trillion in economic benefits between now and 2030². It could also create 65 million new jobs in 2030 and avoid 700,000 premature deaths from air pollution. This builds on analysis for the G20 in 2017 by OECD, which also highlighted the economic benefits of enhanced climate action³. These numbers clearly illustrate the benefits of pursuing “strong, sustainable, balanced, and inclusive growth” via ambitious climate action.

G20 members have a compelling opportunity to strengthen their sustainable growth trajectories in an inclusive way by further advancing climate action. Delivering on the sustainable growth and development benefits associated with strong climate ambition will require a long-term vision translated into clear near- and medium-term targets and implementation plans. It is essential that these are then embedded in economic development and infrastructure investment plans to maximize policy coherence and synergies.

The G20 has already started down the path towards advancing the necessary vision, targets, and plans to deliver that ambitious climate action. All G20 members have developed NDCs, and six have already communicated Long-Term Low-Greenhouse-Gas-Emissions Development Strategies (Long-Term Strategies or LTS) (see Box 2).

Even greater ambition is urgently needed to achieve the goals set out in the Paris Agreement.⁴ Current climate action commitments fall well short of those needed to avoid the most dangerous climate impacts, and global warming is likely to reach 1.5°C between 2030 and 2052 at current rates and then continue to rise⁴. In particular, the G20 countries will need to implement additional low-carbon policies to further reduce GHG emissions collectively by about 2.5 to 3.5 GtCO₂e/year to achieve their conditional and unconditional NDCs, respectively^{5,6}.

About this Paper

This paper highlights the critical role of NDCs and LTS in advancing the G20 goal of strong, sustainable, balanced, and inclusive growth. It outlines four ways that G20 countries can advance NDCs and LTS globally:

- Developing LTS that set a vision for low-carbon, climate-resilient, and sustainable development pathways through mid-century
- Laying the groundwork to successfully and efficiently implement current NDCs

² Global Commission on the Economy and Climate. 2018. *Unlocking the Inclusive Growth Strategy of the 21st Century: Accelerating Climate Action in Urgent Times*. Washington, DC: New Climate Economy, c/o World Resources Institute. https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_FULL-REPORT.pdf

³ OECD, 2017. *Investing in Climate, Investing in Growth*. Paris, France: OECD Publishing. <https://www.oecd.org/env/cc/g20-climate/synthesis-investing-in-climate-investing-in-growth.pdf>

⁴ IPCC, 2018: Summary for Policymakers. In: *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. World Meteorological Organization, Geneva, Switzerland. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

⁵ A conditional NDC is a contribution that a country can undertake if international support is provided, or other conditions are met. An unconditional NDC is a contribution that a county can undertake without any conditions and based on their own resources and capabilities.

⁶ UN Environment. 2018. *Emissions Gap Report 2018*. Nairobi, Kenya: UN Environment Programme, 112 pp.

- Communicating new or updated NDCs by 2020, reflecting enhanced ambition and alignment with sustainable growth and development goals
- Supporting other countries in implementing and updating NDCs and developing LTS

Conclusions and Recommendations

NDCs and LTS can underpin strong, sustainable, and inclusive growth. Ambitious climate action can deliver a wide range of economic and development benefits, including strong GDP growth, new job opportunities, and improved health outcomes. It can also deliver substantial government savings or revenues (e.g., through the phase-out of distorting subsidies and use of judicious carbon pricing), which can be used to balance fiscal deficits, invest in other public priorities, or offset reductions in other taxes. As such, LTS and NDCs also have strong synergies with the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). LTS and NDCs contribute to the implementation of the G20 Action Plan on the 2030 Agenda through which G20 members agreed to align their policy actions and ensure “that their collective efforts make positive global impact towards effective implementation of the 2030 Agenda in all three dimensions of sustainable development in a balanced and integrated manner”⁷. LTS and ambitious, fully implemented NDCs can support these outcomes by outlining a clear, long-term vision that aligns economic and climate goals, translates the long-term vision into ambitious near- and medium-term targets, and helps to ensure their full implementation.

LTS and NDCs make distinct contributions to enhancing global climate action, but are also closely linked with one another. In particular, the long-term perspective of an LTS is a valuable input to the implementation and update of NDCs, ensuring alignment with long-term goals and steering near-term actions away from locking in climate-incompatible infrastructure and land use. Robust NDC implementation can also open opportunities to reflect enhanced ambition in updated NDCs. NDC updates provide an opportunity to align near-term action and medium-term 2030 targets with LTS and with the global goals in the Paris Agreement.

LTS offer countries a long-term perspective to inform the design of development trajectories – and crucially, near-term decisions – that align with the Paris Agreement goals. This long-term vision can translate into more effective near- and medium-term decisions by:

- Providing a systemic roadmap for action that avoids locking in carbon-intensive, maladaptive technology, land-use, and infrastructure, avoids locking out future options, identifies and addresses technology gaps and needs, and engages coherently across all sectors.
- Building an aspirational vision for the country’s future that focuses on a sustainable development trajectory.
- Preparing for future risks and uncertainties and increasing the potential to attract private investment.
- Guiding the design and implementation of more ambitious NDCs and integrating climate action with development priorities and plans and investment decisions.

⁷ High level Principles on the Implementation of the 2030 Agenda, G20 Action Plan on the 2030 Agenda, Hangzhou, 2016.

- Supporting just transitions, including by anticipating when and where they may need to occur and creating new employment opportunities for workers whose livelihoods are tied to high-emissions sectors of the economy.

Robust NDC implementation, in turn, can align near-term decisions with long-term strategies as well as development and growth objectives. Several elements can advance NDC implementation planning across national contexts:

- Prioritization of policies and measures supporting NDC implementation based on delivery of LTS targets.
- A stable, efficient, and effective NDC governance framework allows for political greater ownership, efficiency, and strengthened institutional knowledge for all relevant ministries.
- Alignment of NDC implementation and LTS strategies and mid-century growth and development goals development objectives.
- A strengthened enabling environment for the finance investment needed to deliver NDC actions that goes beyond near- and medium-term planning.
- A system for sound and transparent integrated data management, considering factors such as improved data quality and access, incorporation into LTS, collection protocols, laws and mandates, and stakeholder engagement.

These elements can be advanced through a series of recommended steps, which can be incorporated into an NDC Implementation Plan:

- Tracking progress made toward achieving NDC targets.
- Reviewing and adjusting, as needed, the analysis that originally underpinned the NDC to potentially adjust targets, assumptions, etc.
- Assessing capacities, institutions, and regulatory frameworks required for NDC implementation and enhancing as needed.
- Engaging stakeholders inclusively who can support delivery, including from the private sector and private finance.

This process could also inform the updated NDCs to be communicated by 2020, as described below.

Communicating new and updated NDCs by 2020 is necessary to ratchet up national ambition to align with global goals and LTS, and to deliver on the growth and development potential associated with climate action. The Paris Agreement requires parties to prepare and communicate a successive NDC every five years to reflect progress and increasing ambition. By 2020, parties are requested or urged (depending on NDC time frame) to communicate either an updated or a new NDC.⁸

G20 countries can also play a major role in supporting non-G20 countries to advance their LTS and strengthen NDC implementation and enhancement. The general avenues of support required by partner countries in this area are to help address capacity gaps related to institutional capacity and governance, policy and planning processes, including prioritization of adaptation and turning NDCs into concrete implementation plans, and mobilization of financial and other resources to strengthen

⁸ Decision 1/CP.21

country efforts to implement the conditional⁵ components of the NDCs. In their support to non-G20 countries, G20 countries can also encourage recipients of this support to approach their LTS and their NDCs in an integrated manner.

A great deal of support is already being provided, but gaps still remain, particularly related to mobilizing finance at the scale required to achieve the Paris Agreement. This reflects the G20 affirmation in the Hangzhou communique regarding “the importance of fulfilling the UNFCCC commitment by developed countries in providing means of implementation including financial resources to assist developing countries with respect to both mitigation and adaptation actions in line with Paris outcomes.” G20 support is also reflective of the 2016 findings of the G20 Climate Finance Study Group that highlights being client driven and focused on helping countries achieve their NDCs⁹. G20 also plays an important role providing bilateral development and climate funding and setting priorities in the financial sector.

The next two years are critical to set the world on a path toward strong, sustainable, balanced, and inclusive growth that achieves the goals laid out in the Paris Agreement in order to avoid the worst impacts of climate change. The G20 countries are at the forefront of delivering this agenda. By developing LTS, advancing implementation of current NDCs, communicating new or and updated and more ambitious NDCs, and supporting non-G20 countries in their efforts to do the same, in particular achieving the conditional targets of their NDCs, the G20 have the potential for an outsized impact in securing a safe and healthy future for the global economy and the global climate alike.

⁹ Climate Finance Study Group G20 Outlook on Mainstreaming Climate Change Considerations into Development Assistance and Climate Finance Programmes (June 2016). <http://www.g20.utoronto.ca/2016/2016-mainstreaming-climate-change-considerations.pdf>.

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1. Introduction

Framing Nationally Determined Contributions and Long-term Strategies in the Context of the G20

In 2018, the G20 reaffirmed its commitment to strong and sustainable growth, and recognized that “a strong economy and a healthy planet are mutually reinforcing.”¹⁰ Ambitious climate action can help achieve these goals - for example, recent analysis from the OECD shows that the G20 can generate inclusive economic growth in the short term while making ambitious progress toward long-term climate objectives.¹¹ Research from The New Climate Economy also shows that accelerating climate action, including smarter urban development, shifting to clean energy, and sustainable land use, could generate US\$ 26 trillion in global economic benefits between now and 2030¹². It could also create 65 million new jobs in 2030 and avoid 700,000 premature deaths from air pollution.

As global leaders with significant presence in the international economy, the G20 is in a central position to lead this ambitious transition across all economic systems—and, in particular, in the energy sector. For example, in 2015, G20 countries collectively accounted for 81% of energy related CO₂ emissions and 77% of global energy consumption¹³. (See Box 1 for an example of how G20 countries are taking steps to seize opportunities from energy transition¹⁴.)

¹⁰ G20 Leaders Declaration, Buenos Aires, para 19.

http://www.g20.utoronto.ca/2018/buenos_aires_leaders_declaration.pdf

¹¹ OECD. (2017). Investing in Climate, Investing in Growth. http://www.keepeek.com/Digital-Asset-Management/oced/economics/investing-in-climate-investing-in-growth_9789264273528-en#.Wm85painGUk#page6.

¹² Global Commission on the Economy and Climate. 2018. *Unlocking the Inclusive Growth Strategy of the 21st Century: Accelerating Climate Action in Urgent Times*. Washington, DC: New Climate Economy, c/o World Resources Institute. https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_FULL-REPORT.pdf

¹³ IEA. (2018). Energy Transitions in G20 Countries: Energy Transitions toward cleaner, flexible and transparent systems.

¹⁴ Details drawn from: NCE. (2018). The 2018 Report of the Global Commission on Climate and the Economy; Partnership on Sustainable Low Carbon Transport (SLoCAT). (2018). Transport and Climate Change 2018 Global Status Report; and Climate Transparency. (2018). Brown to Green: The G20 Transition to a Low-Carbon Economy. See also the Carbon Pricing Leadership Coalition Dashboard for an overview of all existing and emerging carbon pricing initiatives around the world: <https://www.carbonpricingleadership.org/news/2019/3/12/see-the-updated-carbon-pricing-dashboard>.

Box 1 | Seizing Opportunities in the Energy Transition

One way governments are taking advantage of opportunities related to the energy transition is through carbon pricing in the form of carbon taxes or emissions trading systems as part of a broader policy package to tackle climate change. A number of governments also have begun efforts to phase out fossil fuel subsidies including the EU, India, Mexico, and Saudi Arabia. Modelling undertaken by New Climate Economy shows significant potential benefits from these approaches. Combined revenue and fossil fuel savings could reach US\$ 2.8 trillion in 2030, which would be available to reinvest in public priorities in addition to other benefits such as net job growth, improved health outcomes, and an overall acceleration of economic activity. More carbon pricing and taxation policies are expected, such as those planned in G20 countries including Argentina, Canada, China, and South Africa.

The energy transition is directly linked to opportunities in other areas as well, such as transportation with the expansion of electric mobility. The transition of the transport sector through electrification, cleaner fuels and vehicles, more active transport (walking and cycling), and safer streets would yield significant, immediate public health benefits, and at the same time reducing the emissions impact from the sector. France, Japan, and the UK are frontrunners among the G20 on transitioning road transport, with phase-out plans from fossil fuels in all three countries. Other countries including China, India, Italy, Russia, Saudi Arabia, and South Korea have also recently initiated policies to reduce transport emissions or increase the use of electric vehicles. Although the transition to electric mobility poses a tremendous challenge by drastically increasing global power demand by the end of the century, meeting that demand through clean energy could yield tremendous benefits. For example, doubling global renewable energy capacity by 2030 (compared to current capacity) could save between US\$ 1.2 and US\$ 4.2 trillion each year, largely due to a reduction of costs incurred from pollution by nonrenewable sources.

The G20 is already demonstrating climate leadership. For example, all G20 members have established nationally determined contributions (NDCs) (national climate action pledges to 2025 or 2030), and several G20 countries are already on a track toward achieving these objectives (Box 2). Many G20 members are also developing “long-term low-greenhouse-gas emissions development strategies” (Long-Term Strategies or LTS), which map out countries’ climate action strategies through mid-century. As of March 2019, six G20 members had communicated their LTS to the United Nations Framework Convention on Climate Change (UNFCCC) - Canada, France, Germany, Mexico, the United Kingdom, and the United States (under a previous administration).

Box 2 | Snapshot Analysis of NDCs and Long-Term Strategies in G20 Countries

The G20 has committed to strong and sustainable growth, and collectively accounts for 78% of global greenhouse gas emissions⁶. Both of these elements are critical in designing the global transition that is underway to a low emissions and climate resilient future. Table 1 presents a snapshot analysis of NDCs and LTS in the G20. Collectively, G20 members are not yet on track to realize their NDCs for 2030. The UNEP Emissions Gap Report estimates that the G20 will need to implement additional policies to further reduce GHG emissions collectively by about 2.5 GtCO₂e/year to achieve their unconditional NDCs and 3.5 GtCO₂e/year to achieve their conditional NDCs⁶. In addition, only six G20 members have officially communicated LTS to the UNFCCC.

Table 1: Snapshot Analysis of NDCs and Long-Term Strategies in G20 Countries⁶

Country	Share of global GHG emissions in 2017	Peaking year of GHG emissions	Quantitative unconditional GHG NDC target	NDC coverage	NDC includes adaptation?	On track to meet the unconditional NDC with current policies?	LTS communicated to UNFCCC?	Quantitative vision for emission reductions 2050
Argentina	0.8%	No indication of peak	Not exceed a net emission of 483 million tons of carbon dioxide equivalent (tCO ₂ e) by the year 2030	Economy-wide, including LULUCF	Yes	No	No	Not set
Australia	1.2%	2006	Reduce GHG emissions by 26–28% by 2030, relative to 2005 levels	Economy-wide, including LULUCF	Yes	No	No	Not set
Brazil	2.3%	2004	Reduce GHG emissions by 37% by 2025, relative to 2005 levels, with an indicative goal to reduce GHG emissions by 43% by 2030, relative to 2005 levels	Economy-wide, including LULUCF	Yes	Yes	No	Not set
Canada	1.6%	2007	Reduce GHG emissions by 30% by 2030, relative to 2005 levels	Economy-wide, including LULUCF	No	No	Yes	Net GHG emissions falling by 80% in 2050, relative to 2005 levels
China	26.8%	By 2030 (CO ₂ only)	Reduce CO ₂ emissions per unit of GDP by 60–65% by 2030, relative to 2005 levels	Economy-wide, including LULUCF	Yes	Yes	No	Not set
European Union	9.0%	1990 or earlier	Reduce GHG emissions by 40% by 2030, relative to 1990 levels	Economy-wide, including LULUCF	No	No	No	Net zero GHG emissions by 2050

India	7.0%	No indication of peak	Reduce GHG emissions per unit of GDP by 33–35% by 2030, relative to 2005 levels	Not specified	Yes	Yes	No	Not set
Indonesia	1.7%	No indication of peak	Reduce GHG emissions by 29% by 2030, relative to a BAU scenario	Economy-wide, including LULUCF	Yes	Uncertain – Studies, including those recently published (Kitous et al., 2017; Kuramochi et al., 2017; CAT 2018) do not agree on whether the NDC targets are likely to be met under policies currently implemented. Two recent studies (Kitous et al., 2017; CAT 2018i), both excluding LULUCF, suggest that the conditional NDC may be achieved, while Kuramochi et al. (2017) project that Indonesia will fall short of achieving its unconditional NDC target, partially due to large growth in emissions from LULUCF.	No	Not set
Japan	3.0%	No indication of peak	Reduce GHG emissions by 26% by 2030, relative to 2013 levels	Economy-wide, including LULUCF and overseas credits for 2030	No	Yes	No	Reduce GHG emissions by 80% by 2050
Mexico	1.5%	By 2030	Reduce GHG emissions by 22% by 2030, relative to projected emissions	Economy-wide, including LULUCF	Yes	Uncertain - Studies disagree on whether Mexico is likely to meet its NDC targets under current policies (Kuramochi et al., 2017a; CAT, 2018j).	Yes	Reduce GHG emissions by 50% by 2050, relative to 2000 levels
Republic of Korea	1.6%	By 2020	Reduce GHG emissions by 37% by 2030, relative to projected emissions	Economy-wide (including market mechanisms)	Yes	No	No	Not set
Russia	4.6%	1990 or earlier	Reduce GHG emissions by 25–30% by 2030, relative to 1990 levels	Economy-wide, including LULUCF	No	Yes	No	Not set

Saudi Arabia	1.5%	No indication of peak	No GHG target	Individual measures	Yes	No	No	Not set
South Africa	1.1%	Between 2020 and 2025	A target for GHG emissions to be in the range of 398 to 614 MtCO _{2e} between 2025 and 2030	Economy-wide, including LULUCF	Yes	No	No	Not set
Turkey	1.2%	No commitment to peak	Reduce GHG emissions by up to 21% by 2030, relative to projected emissions	Economy-wide, including LULUCF	No	Yes	No	Not set
United States	13.1%	2007	Reduce GHG emissions by 26–28% by 2025, relative to 2005 levels	Economy-wide, including LULUCF	No	No	Yes	Economy wide net GHG emissions reductions of 80% or more below 2005 levels by 2050
Note: France, Germany, Italy, and the UK are not depicted separately in Table 1 but instead included as part of the European Union. France, Germany, and the UK have submitted their LTS to the UNFCCC.								

While all G20 countries are taking concrete actions to mitigate climate change, there is undoubtedly variation in countries' levels of ambition and progress. Collectively, there is an urgent need to raise ambition across the G20 countries, which together account for approximately 80 percent of global GHG emissions.

The need for more ambition is a message underscored by the October 2018 IPCC report, *Global Warming of 1.5°C*.⁴ According to this report, pathways reflecting current NDCs will not limit global warming to 1.5°C above pre-industrial levels, even if supplemented by very challenging increases in the scale and ambition of emissions reductions after 2030. If this global temperature target is breached, there will be significant changes in the world's ecosystems, oceans, land temperatures, and water availability, and existing stresses will be exacerbated, such as food insecurity and population displacement, and negative impacts on human health. 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 ... These systems transitions ... imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options."⁴

Accordingly, now is the time for action (Figure 1). Encouraged by the Talanoa Dialogue, which called for enhanced global ambition by 2020,¹⁵ and the adoption of the Katowice Climate Package (including the so-called Paris Agreement Rulebook),¹⁶ many countries will not only advance implementation of their current NDCs, but will also communicate new or updated and more ambitious NDCs and

¹⁵ <https://unfccc.int/sites/default/files/resource/Talanoa%20Call%20for%20Action.pdf>

¹⁶ <https://unfccc.int/katowice>

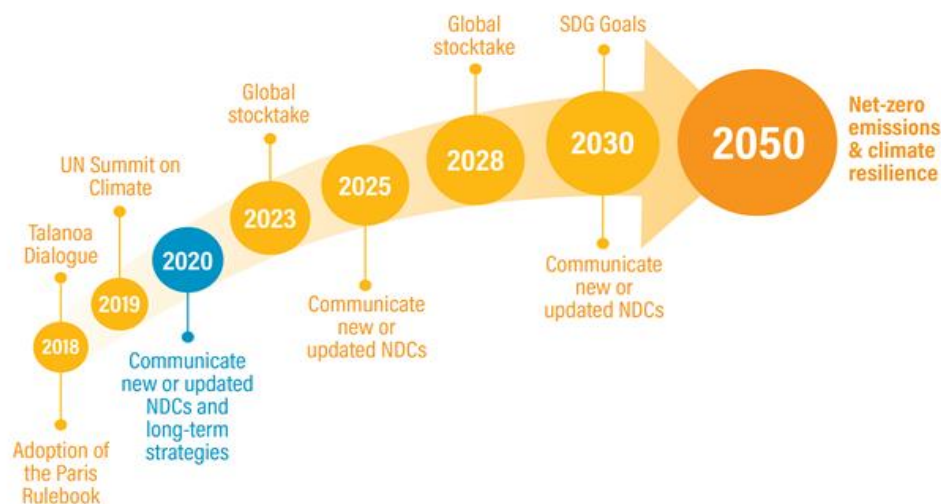
develop LTS. The Secretary-General’s Climate Summit in 2019 is expected to serve as a key moment for world leaders to put forward ambitious climate actions prior to the invitation to communicate new and/or updated NDCs, as well as LTS, by 2020. In addition, the first Sustainable Development Goals Summit will be convened back-to-back with the Climate Summit to strengthen synergies between climate action and sustainable development for all. In this context, G20 countries have an immediate opportunity to raise climate ambition while advancing strong, sustainable growth.

The G20 can provide a clear signal to the world that limiting warming to 1.5-2°C is achievable, and that major economies are committed to this vision, by increasing climate action in line with the Paris Agreement’s long-term goals.

The G20 can demonstrate this strong leadership under the Paris Agreement in four ways:

1. By 2020, finalizing and communicating LTS to the UNFCCC that set a vision for low-carbon and climate-resilient development pathways through mid-century.
2. Laying the groundwork or enhancing the momentum to implement current NDCs, and also embedding NDCs into national policy planning.
3. By 2020, communicating new or updated NDCs with enhanced ambition.
4. Supporting other countries in implementing and updating NDCs and developing LTS.

Figure 1: Ambition Mechanism in the Paris Agreement



While these four pillars each make a unique contribution to enhancing global climate action, there are strong synergies among them, such that G20 countries can benefit from considering them in an integrated manner. In addition, LTS can inform the implementation of current NDCs and the development of NDC updates, ensuring that both align with long-term goals. Robust NDC implementation can open opportunities to reflect enhanced ambition in updated NDCs. NDC updates support alignment of near-term action with LTS. Ambitious action domestically can generate knowledge and capacity to be shared globally. Lastly, NDCs and LTS are both highly relevant to national development priorities and plans and they can play a key role in driving national development agendas.

About this Paper

This paper is structured in five parts:

First, the paper explains the role of NDCs and LTS in supporting strong, sustainable, balanced, and inclusive growth while enhancing climate ambition.

Second, the paper highlights the benefits of LTS and presents possible approaches for their design, building on insights gleaned from the strategies already communicated by G20 countries. It also includes recommendations about how these strategies can help inform and strengthen the implementation and update of current NDCs, such that they are consistent and aligned with a long-term vision.

Third, the paper highlights some key success factors that G20 countries may consider to support ambitious NDC implementation.

Fourth, the paper describes the benefits of updating current NDCs by 2020, as well as possible approaches and opportunities to guide NDC updates generally and at the sector level.

Finally, the paper provides some ideas on how the G20 can help support other countries in advancing NDC implementation and updates, as well as LTS, as part of a contribution towards enhancing international cooperation to implement the NDCs and achieve the targets and goals of the Paris Agreement and 2030 Agenda for Sustainable Development.

The paper highlights some of the most important issues that warrant consideration by G20 members regarding NDC implementation, updates, and support, as well as the development of LTS. The paper is detailed and covers several topics; however, its treatment of these issues is not comprehensive. Please see the references and footnotes throughout the paper for further reading.

This paper builds upon the 2018 paper focusing on long-term low greenhouse gas development strategies prepared by World Resources Institute (WRI) and United Nations Development Programme (UNDP) for the Argentine G20 Presidency as a contribution to the Climate Sustainability Working Group.¹⁷

Role of NDCs and LTS in Supporting Strong, Sustainable, Balanced, and Inclusive Growth

The realization of NDC and LTS ambition to mitigate climate change and adapt to its effects provides an opportunity to align climate and sustainable development strategies in support of the Paris Agreement, the 2030 Agenda, and the G20 commitment to strong, sustainable, balanced, and inclusive growth.

¹⁷ WRI, UNDP. (2018). Long-Term Low Greenhouse Gas Emission Development Strategies: Approaches and Methodologies for Their Design.

A profound shift in the development paradigm is necessary to achieve a long-term vision for sustainable development, aligned with the Paris Agreement and the 2030 Agenda¹⁸. Limiting global warming to 1.5°C will require an unprecedented and immediate transformation in all aspects of society, across energy, land, industrial, urban and other systems, as well as across geographies⁴. Behavior and technologies will need to shift and substantial new investments in low-carbon technologies and efficiency will be necessary, with significant impacts on sustainable development pathways.

The 2030 Agenda and the Paris Agreement are two mutually reinforcing, universal, and transformative agendas. Priorities being selected at the national level to implement the Sustainable Development Goals (SDGs) will have implications for climate mitigation and adaptation. At the same time, climate action contributes to achieving the SDGs.¹⁹ The pledge to “leave no one behind”, which is central in the 2030 Agenda and requires prioritizing the poorest and most vulnerable so that they can progress faster than those who are better off has strong implications for climate policy design. Underpinning the commitment to end extreme poverty and curb inequalities by 2030, the pledge also strongly aligns with adaptation goals and the commitment to ensure “just transitions” of the workforce. Climate action consistent with this objective should receive greater support from decision-makers and populations. Ensuring these processes are aligned at all levels is an important step to reducing duplication, identifying, and resolving tradeoffs, and leveraging existing resources and efforts.

NDCs and LTS should be aligned with both agendas and can guide countries through the dramatic transformation needed. LTS can visualize the needed turning point in a country’s development patterns building on other national priorities²⁰ while NDCs provide a channel to concretize commitments.

At the international level, robust LTS can reinforce responsible global leadership and contribute to implementing the G20 Action Plan on the 2030 Agenda – the G20 policy framework²¹ mainstreaming sustainable development into policy actions. G20 leaders agreed to ensure that their “collective efforts make positive global impact towards effective implementation of the 2030 Agenda in all three dimensions of sustainable development [economic, environmental, and social] in a balanced and integrated manner”. They also recognized that “Within the overall sustainable development agenda, the G20’s comparative advantage lies in its convening power and its collective ability to adopt and support initiatives at the highest global level, including those that involve macro-economic framework, and to create the global enabling environment”²². As a complement to NDCs, LTS foster credibility and certainty that the goals of the Paris Agreement can be achieved in line with national

¹⁸ Comstock, M., & Hackmann, B. (2018). Achieving Long-term Ambition on Climate Change. Op Ed. UNDP.

¹⁹ Visit Climate Watch to explore the alignment between the NDCs and SDGs. <https://www.climatewatchdata.org/ndcs-sdg>.

²⁰ Bouyé et al. (2018). Connecting the Dots: Elements for Joined-Up Implementation of the 2030 Agenda and the Paris Agreement.

²¹ G20 Action Plan on the 2030 Agenda for Sustainable Development, Hangzhou, 2016.

https://www.b20germany.org/fileadmin/user_upload/G20_Action_Plan_on_the_2030_Agenda_for_Sustainable_Development.pdf

²² Ibid.

development priorities and are a helpful tool for governments to communicate their determination to address climate change over an extended period and across administrations²³.

From a national perspective, long-term planning is fundamental to engage society in crafting a collective vision that fosters mobilization of all. LTS can guide short-term political and economic cycles and provide certainty for key economic actors to take concrete action^{24,25}. These strategies can also highlight the financial and capacity building needs of developing countries that require support in achieving their climate and sustainable development goals.

Taken together, NDCs and LTS can guide national climate action in line with other national priorities. The numerous benefits for G20 countries in developing and implementing these domestic climate plans include²⁶:

- Supporting countries to collectively get on track toward the 1.5-2°C goal and showing that such a path is achievable
- Demonstrating political commitment and responsible global leadership, and that major economies are committed to achieving simultaneously the goals of the Paris Agreement and the 2030 Agenda
- Achieving economic and other sustainable development benefits associated with mitigating and adapting to climate change such as job creation and reducing urban air pollution
- Demonstrating that countries can simultaneously pursue ambitious growth development objectives and ambitious climate action plus, supporting policy integration of climate change into other national priorities
- Setting a longer-term vision and agenda to guide near- and medium-term action and planning, avoiding lock-in and stranded assets
- Supporting a just transition for communities and sectors tied to high-emissions economies by identifying potential trade-offs for industries and employment and planning measures to accommodate the transition
- Strengthening institutional arrangements and technical capacity for climate action
- Providing a common framework for inclusive citizen engagement
- Informing key stakeholders, including the private sector,, and providing certainty for investments
- Securing domestic budget and communicating any relevant support needs and domestic investment priorities

²³ Espinosa, Patricia. (2018). The Paris Agreement, A Strategy for a Longer Term. Expert Perspective.

²⁴ Ibid.

²⁵ Duarte, Mafalda. (2018). Marching Toward 2050: Purpose and Elements of Long-term Low Greenhouse Gas Emissions and Development Strategies. Expert Perspective,

²⁶ Drawn from WRI, UNDP. (2015). Designing and Preparing Intended Nationally Determined Contributions and WRI, UNDP. (2018). Long-Term Low Greenhouse Gas Emission Development Strategies: Approaches and Methodologies for Their Design.

2. Developing Long-term Strategies

How Long-Term Strategies Can Help Deliver the Paris Agreement's Goals

Under the Paris Agreement's accompanying decision 1/CP 21, Parties were invited to develop mid-century LTS by 2020. As of March 2019, 11 countries have done so, including six G20 countries (Canada, France, Germany, Mexico, the United Kingdom, and the United States²⁷), and several others are in the process of preparing these strategies.

Similar to LTS focusing on low-GHG emission development trajectories, long-term planning is not new to G20 countries. Several G20 countries have conducted long-term planning in the context of economic development and sectoral planning in an effort to inform near- and medium-term plans and policymaking. For example, China established an economic development plan for the periods of 2020 to 2035 and 2035 to 2050; the European Union has a 2050 low-carbon economy roadmap; and Japan recently embarked on an effort to extend its Strategic Energy plan from 2030 to 2050. These medium- to long-term planning processes have established a far-sighted vision depicting where societies hope to be decades from now, and have accordingly shed light on the measures that should be taken today to realize such a vision. Long-term planning in the context of low-carbon, climate-resilient development provides an opportunity for countries and their citizens to define a vision for the future in line with the achievement of the Paris Agreement's goals and in the context of national sustainable development priorities. G20 leadership on LTS can help demonstrate commitment towards these societal goals and guide the world toward a more prosperous future.

LTS are critical to the realization of the Paris Agreement's goals related to mitigation and adaptation, while ensuring they align with long-term national development priorities. LTS typically include a long-term vision, which can include quantitative targets for emission reductions and goals for adaptation and resilience. In addition, descriptions of sectoral pathways will inform the realization of these targets and goals.

Long-term strategies' support of the Paris Agreement's mitigation goals: The Paris Agreement has a long-term goal of limiting warming to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, as well as achieving “a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.”²⁸ Given that the G20 accounts for the vast majority of global emissions, the long-term trajectories of G20 countries will largely determine whether these goals are achieved. Countries can embrace a variety of targets in their LTS to help advance achievement of these goals, including targets related to the timing and level of emissions peaking, achievement of net zero GHG emissions, and rates of decarbonization, among others. Often a combination of goals, including coupled medium- and long-term term emissions reduction targets (e.g., for 2030 and 2050) are most helpful in guiding a decarbonization trajectory.¹⁰ For example, France's LTS presents indicative

²⁷ In the United States, a Mid-Century Strategy was submitted in 2016 that included modeling scenarios with technology and implications for policy through mid-century and communicated this product to the UNFCCC. This submission does not reflect current United States Administration's approach to climate action.

²⁸ UNFCCC. (2015). The Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

sectoral targets for 2028 and 2050 for all sectors of the economy, and Germany's strategy also presents quantitative sectoral targets for 2030.²⁹

Long-term strategies' support of the Paris Agreement's adaptation goals: Countries may also choose to include adaptation in their LTS, which can help advance the Paris Agreement's goal to increase the "ability to adapt to the adverse impacts of climate change and foster climate resilience."²³ In doing so, they could choose to include goals related to resilience, reductions of vulnerability, enhanced adaptive capacity, or others. LTS may also include descriptions related to vulnerable groups and sectors, future climate impacts, links to National Adaptation Plans (NAPs) and development goals, co-benefits from mitigation and adaptation responses, and other aspects. Countries may choose to build upon other adaptation planning efforts, including the National Adaptation Programmes of Action (NAPAs), NAPs, sectoral adaptation plans, and national and sub-national plans.¹⁰ Among the LTS submitted by G20 countries to date, all describe the risks associated with climate inaction, although the degree to which adaptation is addressed in countries' strategies varies. Some countries, like Canada, France, Germany, and the United States, lightly touch on adaptation and refer to other national adaptation planning documents. Mexico fully includes adaptation in its LTS.²⁹

For mitigation, adaptation, and resilience goals, existing sectoral strategies can be incorporated into LTS to inform the goals that are set. Doing so can help guide the design of related policies and investments. Vice versa, an economy-wide LTS can also help inform the design of new sectoral plans and policies.

Long-term strategies support realization of 2030 sustainable development goals: If done well, LTS preparation would go hand-in-hand with development planning to ensure that the LTS is not considered a new, stand-alone strategy but rather the climate-related aspect of national development planning. An effective LTS will accordingly consider how SDGs, in addition to mitigation and adaptation, can be realized while phasing out GHG emissions and enhancing climate resilience. The strategy can include, for example, SDG-relevant goals for poverty and inequality reduction, provision of universal access to sustainable and affordable energy, ecosystems and biodiversity protection, sustainable management of natural resources and land restoration, sustained and inclusive development, and require that the SDGs be taken into account in advancing decarbonization. Criteria related to social, economic, and environmental goals can also be used to inform the selection of long-term climate actions. For instance, Germany's Climate Action Plan 2050 sets actions aligned with the criteria of social justice, affordability and economic efficiency, and citizen participation to ensure "economically efficient, socially balanced and environmentally sustainable development." And the reverse is applicable as well where the vision established in an LTS can helpfully inform the development of national sustainable development strategies.

An effective LTS will also plan for how a just transition will be realized for workers whose livelihoods are tied to emissions-intensive industries. Achieving a zero-carbon, climate-resilient future will require significant transformations across all sectors of economies. However, for the most emissions-intensive businesses and sectors, new employment opportunities and transition plans will be needed to ease the transition and manage trade-offs, e.g. between labor interests and other objectives. This

²⁹ Ross, K., & Fransen, T. (2017). Early Insights on Long-term Climate Strategies. Washington D.C.: World Resources Institute. Retrieved from <http://www.wri.org/publication/early-insights>

includes creating new employment opportunities for workers whose livelihoods are tied to high-emissions sectors of the economy. Just transitions can only be achieved through long-term planning. The elaboration of LTS provides a significant opportunity to assess and anticipate social and employment impacts of climate policies, build a common strategy with unions and business representatives through an inclusive social dialogue, plan for professional transitions over several years, including trainings for workers and creation of decent, quality jobs, and identify the most effective measures to protect workers' livelihoods. Several countries have included these aspects of a vision in their LTS by referencing new investments, e.g., in clean technologies, job creation, and other benefits that may stem from long-term transitions²⁹.


Processes and Approaches for Long-Term Strategy Development





The steps a country may choose to take when developing an LTS include the following:

- securing a political decision to initiate the process and establish institutional arrangements
- defining the objectives of the strategy
- selecting the elements to be included in the strategy
- collecting inputs, including data, modeling and scenarios, and complementary qualitative approaches
- developing the strategy
- providing for transparent communication
- including review and revision processes

Countries need not start from scratch and should consider building off existing processes and institutional arrangements, as relevant, such as those related to the design of the NDC. These steps, which are not necessarily sequential, are illustrated in Box 3. It will be critically important to engage relevant stakeholders throughout all of these steps in order to build consensus, address concerns, and ultimately strengthen the LTS itself.

Box 3 | Steps in Developing a Long-Term Strategy

<p>Securing a political decision to initiate the process and establish institutional arrangements</p> 	<p>Strong political support is important to initiate the LTS preparation process. It helps ensure that the exercise is not limited to a single ministry but involves a whole-of-government approach. The process could be initiated by a head of state, who would provide a mandate for its development, or by a ministry or department and then raised with the head of state to secure his or her support.</p> <p>After political support is secured, it is critical to establish institutional arrangements, including which institution will lead the development process, stakeholder engagement processes, and how coordination will occur across sectoral ministries, with local governments, and other relevant actors.</p>
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<p>Defining objectives of the strategy</p> 	<p>After the mandate to establish an LTS is secured, it is useful to define the strategy’s objectives and scope. Article 2 and Article 4 of the Paris Agreement could serve as an objective of the strategy. The objectives could be elaborated to include a vision that includes social and economic objectives and considerations. Engaging the whole government and a broad range of stakeholders in defining these objectives is recommended to secure expert feedback and greater buy-in or support from sector ministries, local authorities, citizens, civil society, academia, and/or the private sector.</p>
<p>Selecting the elements</p> 	<p>Decision-makers, with the support of technical experts and key stakeholders, should identify options for the design of the elements of the LTS and define the strategy’s ambition and scope. The elements may include a long-term vision, development considerations, mitigation elements, adaptation elements, sectoral strategies, implementation approaches, monitoring plans, and revision processes. Engaging experts and the public in this step through a consultation process facilitates the strategy’s implementation.</p>
<p>Collecting inputs</p>  <p>Developing the strategy</p>  <p>Transparent communication</p>	<p>Relevant data and data analysis are the foundation of the LTS preparation and design process. Sources of data include information on national objectives and priorities, data relevant to growth strategies and SDGs, current and future GHG emissions and removals as well as historic trends, current mitigation activities, mitigation potential, future vulnerabilities across key sectors and geographies, and resource mobilization strategies.</p> <p>After the elements are selected and relevant inputs are collected, the next step will be to develop the strategy itself with the support of relevant decision makers and stakeholders.</p> <p>Clear and transparent communication of LTS can help national and international stakeholders understand the goals of the strategy, as well as its underlying assumptions, and learn from the strategy. It can help send clear signals to private sector actors, including investors, and decision-makers at all levels of government, increase citizen’s confidence in the future, and foster engagement and behavior changes.</p>



Establishing review and revision

It is beneficial to lay out a clear monitoring plans and revision processes from the start to enhance communication and collaboration while clarifying expectations. Given the long-term nature of the strategy, and the uncertainty related to long-term planning and technology pathways, periodically revising the strategy is essential to ensure that it reflects the latest science, understanding, economic and social trends, and priorities.

How Long-Term Strategies Can Support Near-Term Planning

While planning for the mid-century may seem like a task that is distinct from everyday planning, if done well, the development of an LTS should inform current policies and plans while also setting the course for future action. For example, there are many ways in which long-term planning can support shorter-term decision-making, including:³⁰

- **Providing a systemic roadmap that avoids lock-in:** LTS typically have quantitative and qualitative goals that can help guide near- and medium-term policies and planning. Such goals can inform a trajectory of action and help ensure that shorter-term planning is consistent with a pathway to realize a society’s long-term vision. Establishing a long-term agenda can help decision-makers identify long-lasting technologies or behavior that are compatible with desired transitions. Accordingly, long-term planning can help avoid lock-in of infrastructure and land-use with long-term, high-emission implications and stranded assets, and lead to more informed, sustainable investments. For example, Germany’s Strategy on Energy Efficiency in Buildings considers the longevity of building materials and determines the types of investments in efficiency and renewable energy sources necessary to achieve a carbon neutral building stock by 2050.
- **Preparing for risks and uncertainties and encouraging investment:** The development of an LTS will necessitate consideration of uncertainty and risks related to climate impacts, new technological developments, economic growth, and other factors. For example, Mexico’s LTS includes the addition of climate change criteria into planning and building of infrastructure, taking into account future climate scenarios. Such an exercise can help decision-makers assess the conditions and timeframe that necessitate certain types of action. Some interventions – no or low regret options - can be pursued right away regardless of risk and uncertainty. Others may be necessary but cannot be deployed until certain conditions are met, while others may require dedicated actions today to keep options open in the future. Countries can accordingly combine and sequence those interventions and develop an adaptive pathway in preparation for changing conditions over time, which ultimately helps make the development pathway of a country more robust. Long-term planning can also reduce uncertainty for private actors,

³⁰ Informed by WRI, UNDP. (2018). Long-Term Low Greenhouse Gas Emission Development Strategies: Approaches and Methodologies for Their Design.

including investors, helping to incentivize their investment in climate action. Clear, confident signals from government can drive more ambitious climate action in the private sector.

- **Supporting just transitions:** The LTS can inform decision-makers about what measures need to be put in place in the short and medium term to support a just transition, especially with regard to successful professional transitions (e.g., through the provision of trainings and job creation) and the preparation of adequate financial measures and social protection schemes. Some LTS also require frequent evaluation, which can enable governments to address potential trade-offs with adjustments and compensatory measures. For instance, Germany's LTS requires an assessment of sectoral targets at regular intervals to take into account economic and social impacts and other changes.
- **Identifying technology gaps and needs:** Long-term planning will require an assessment of what types of technology and innovation is needed in the future if a country's long-term vision is to be achieved. In doing so, a country can help prepare for such trends and design policies, implementation plans, and resource mobilization and investment plans in a way that is forward-looking. For example, Canada's LTS dedicates a section to exploring technology, including RD&D and innovation.
- **Fostering more informed investment decisions:** Long-term planning can help reveal the economic benefits and costs, as well as other impacts, of investing in long-term climate action. With this more complete information, decision-makers may consider low-carbon interventions differently.
- **Providing opportunities to engage all sectors:** LTS could help break the silo of climate policy action that may exist in some countries by engaging sectors that have not necessarily been brought into the ambit of medium-term climate commitments, such as the NDC, and actions. The analysis that is the basis of the LTS can identify mitigation potential in all sectors and explore lock in risks over time.

Accordingly, LTS can help support the effective design of national development plans, sectoral development plans and actions, infrastructure investment plans, land-use planning, and innovation agendas, among other activities of government. In fact, LTS should not be seen as a separate exercise but one that is linked to existing development and sectoral plans and policies. This can help ensure policy coherence, optimize resources, and build buy-in from key institutions.

How Long-Term Strategies Can Be Designed to Help Delivery of the Current NDCs and Identify Areas for NDC Updates

If done well, implementation strategies and updates to NDCs and the LTS will be designed hand-in-hand, to ensure coherence between the two. The steps countries take to develop an LTS (Box 3) can be undertaken to support NDC implementation (Chapter 3) and inform NDC updates over time (Chapter 4). The long-term vision, for example, can help guide the development of near- and medium-term milestones, which can then be embedded into implementation plan strategies and NDCs themselves. LTS can also help identify priority measures which: (1) are essential for realizing the long-term vision; or (2) should be avoided so that emissions-intensive infrastructure, carbon-intense land use and management, traditional technologies, and behavior are not locked in. For example, some technologies, policies, and investments – for example, RD&D into technological approaches to

carbon removal³¹— may not appear to be cost effective or necessary in the medium term (e.g., 10 years) but are critical for consideration if we are to keep our future options open to achieve net zero emissions by mid-century. LTS can also help guide short- and medium-term measures to contend with the economic shifts and social disruptions that may result from such a transition. These measures can be considered in NDC implementation plans and NDC updates, discussed further in Chapters 3 and 4, respectively. Additionally, means for managing long-term transitions in a just manner can be taken into account in NDC Implementation Plans.

Ideally, LTS are embedded into existing policies and planning efforts, infrastructure development plans, and investment plans to ensure uptake. It will be important to consider how institutional arrangements and legal frameworks, as well as stakeholder consultation processes, are streamlined most effectively.

3. Advancing Implementation of Nationally Determined Contributions

Processes and approaches for implementing NDCs

To signal their strong support for the Paris Agreement, G20 members submitted their first INDCs³² or NDCs in 2015 and 2016. Although global efforts are not collectively on track to sufficiently limit warming, the Paris Agreement’s establishment of five-year cycles of communicating new NDCs provides opportunities for enhancing ambition over time. The snapshot provided in Box 2 presents G20 country NDC targets. How the NDCs are implemented in each individual country will ultimately determine to what degree Paris Agreement goals are achieved.

Although NDCs are inherently country-driven and location-specific, certain common factors govern the extent to which NDC strategies are designed to be successfully implemented. The following are strategies that may be beneficial for G20 members to successfully drive forward their NDC plans into concrete actions on the ground. This chapter highlights key issues that countries may consider to facilitate NDC implementation and achieve NDC targets, outlining the way forward post-2020. NDC implementation strategies discussed herein are based upon the forthcoming NDC implementation document developed by UNDP, UN Environment, UNEP DTU, UNFCCC, and World Resources Institute.³³

Prioritization of Policies and Measures Supporting NDC Implementation

The foundation of a country’s NDC implementation strategy will be the policies and measures that contribute to meeting NDC targets, that is, which support GHG emission reductions and

³¹ Mulligan, J., G. Ellison, K. Levin, and C. McCormick. 2018. “Technological Carbon Removal in the United States.” Working Paper. Washington, DC: World Resources Institute. Available online at <https://www.wri.org/publication/tech-carbon-removal-usa>.

³² INDCs or Intended Nationally Determined Contributions are automatically converted into first NDCs when the Paris Agreement is ratified unless countries communicate a revised first NDC at the time of ratification.

³³ UNDP, UN Environment, UNEP DTU, UNFCCC, & WRI. (Forthcoming). “Implementing NDCs.”

enhancement of removals by sinks, increased adaptation and resilience to climate change, and associated sustainable development benefits (e.g., poverty and inequality reduction, air quality, job creation). Defining and prioritizing these policies and measures is a critical step. A diverse array of criteria may be used to assess, compare, and prioritize policies and measures, including the following:^{28,34,35}

- GHG mitigation potential of sectors, policies, and measures as well as sources of GHG emission hotspots
- Timing and urgency for both adaptation and mitigation measures
- Costs and benefits of implementation (e.g., economic return, leveraged private sector investment)
- Feasibility - economic, social, technological, and environmental. For example, can the policy or measure be implemented and enforced based on the current legal, regulatory, institutional, social, and economic context and does it have necessary support from key stakeholders?
- Sustainable development benefits and impacts, especially for less climate resilient and more vulnerable populations, and strategic relevance to national sustainable development priorities

The following may be prioritized as well based on the national context:

- Transformational, long-term impact on the economy and decarbonization goals
- Demonstrated success in similar areas in the country and globally
- The sectors focused upon are priority sectors (e.g., high-emitting, fast-growing)
- NDC action impacts will be results-oriented and transparently measurable
- Whether it is a no-regret policy or measure (i.e., it has net positive benefit without factoring in climate or mitigation/adaptation benefits)
- Alignment with national long-term goals in the Paris Agreement and long-term low emission development pathways
- The policy or measure results in climate co-benefits, that is, they contribute to climate change adaptation and/or mitigation, even if not the main objective

Decision-support tools commonly used to assess sustainability of NDC climate actions include cost-benefit analysis, cost-effectiveness analysis, and multi-criteria decision analysis^{33,36}. Social and poverty impact assessment and distributional analysis are also essential to design equitable climate actions. Specific consideration of the impacts of proposed climate actions on national priorities set to advance SDGs and the overarching objective of “leaving no one behind” also help ensure that the NDC support other sustainable development goals and benefit the most deprived and vulnerable populations. Environmental impact assessments provide details regarding environmental impacts.

In the context of selecting the portfolio of actions to implement the NDC, it is often preferable for policies and measures to advance NDC implementation not be undertaken in silos but rather

³⁴ UNDP, UNEP DTU Partnership, & UNFCCC Secretariat. (2016). *Guidance for NAMA Design in the Context of Nationally Determined Contributions: A Tool to Realize GHG Mitigation under NDCs*.

³⁵ UNFCCC LDC Expert Group. (2012). *National Adaptation Plans: Technical Guidelines for the National Adaptation Plan Process*.

³⁶ USAID. (2013). *Analyzing Climate Change Adaptation Options Using Multi-Criteria Analysis*.

integrated across sectors and in collaboration with other related policies and programmes. The formulation of the NDC also provides governance opportunities to emphasize cross-agency coordination and collaboration, strong leadership from the central government, further mainstream climate actions into national development plans and sectoral strategies, and consider long-term transitions in the NDC decision-making frameworks to meet Paris Agreement goals. Countries should not overlook prioritizing relatively small changes in policy settings and calibrations that can build up over time and result in meaningful, durable change rather than higher-profile, short-term major impacts³⁷. Underlying models and assumptions that generate projections of policies and measures in support of NDC implementation should be revisited periodically as additional data becomes available, model innovations emerge, technology costs decline, and political priorities change.

A Stable and Efficient NDC Governance Framework

A sound institutional framework that governs overall NDC implementation and implementation of individual policies and measures will strengthen the efficiency and capacity to deliver on climate and/or development-related policies and measures. The structure may involve the following core elements^{28,30}: (i) a national oversight body responsible for coordination of relevant actors and quality control³⁸; (ii) independent regulators such as a non-governmental body entrusted with oversight; (iii) executive and legislative bodies, e.g., to design necessary policies and laws; and (iv) the set of laws and regulations to underpin policies and measures to meet NDC targets. The functionality of these elements will hinge upon considerations such as institutional capability, stakeholder engagement, the planning strategy, and existing policies, laws, and regulations.

The process developed for NDC governance should include a mechanism of inclusiveness to incorporate inputs from parties that may have been not sufficiently involved in the development of the NDC or LTS. To enhance inclusivity, the mechanism can include a technical working group of sectoral experts such as research organizations, etc.

NDC oversight effectiveness hinges upon the capabilities of the national oversight body in technical expertise, ability to engage the whole government, and leadership where institutional anchorage is seen as not dependent from a certain political direction. The selected governance structure supports mobilization of colleagues and expert peers, and raises awareness about NDC implementation priorities and processes. Strong political support is critical to strengthen buy in to national NDC processes, and this can be particularly important to emphasize Paris Agreement targets do not just address highly technical climate change issues but rather day-to-day national development and planning issues. Ensuring alignment and coordination with related programmes such as to achieve SDGs and disaster risk reduction (DRR) targets is also a primary consideration and helps to bridge climate with other areas of national focus such as poverty reduction, environment and health, and creation of job opportunities. For example, Mexico institutions that oversee SDGs and the NDC meet regularly, synergize annual work plans, and set common strategies to mainstream SDG/NDC actions into planning and budgeting.²⁰

³⁷ Levin, K., Cashore, B., Bernstein, S., & Auld, G. (2012). Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change. *Policy Sciences*, 45, 123-152.

³⁸ The national oversight body does not need to be a new body, but rather could be integrated into existing coordination bodies.

The preparation of an NDC implementation strategy is a good place to begin NDC coordination, and this can be in the form of an NDC Implementation Plan (elaborated later in this chapter). The reverse is true as well, where processes already in place – such as sectoral strategies – may be integrated into NDC implementation frameworks. Coordination responsibilities would also include tracking progress towards NDC goals, promoting transparency, attracting local buy-in amongst policymakers and international support if needed, establishing decision-taking procedures, and establishing inclusive stakeholder engagement. Selection of which agency or institution plays lead roles as central bodies that oversee elements of the NDC systems (e.g., vertical or horizontal coordination, data collection and tracking of progress, strategic planning) should take into account implications of agencies chosen as leaders and those that are not. Disseminating responsibilities across agencies that reflect all key partners such as high emitting sectors, a diversified political support, and key areas of expertise could support the leadership.

Stakeholder engagement for individual NDC policies and measures and the holistic NDC process is critical to ensuring an effective flow of information, maximization of local expertise, added credibility, enhanced climate awareness, and to get a clearer picture of distributions of costs and benefits¹⁰. Collaboration with key actors should include a broad constituency, including finance and technical experts, research organizations, universities, civil society, vulnerable populations, and youth, minority, and gender groups. Local stakeholders should be engaged early in the NDC planning process to secure their contributions and better inform the planning process and strengthen partnerships.

Mapping in-country expertise and charting roles and responsibilities to implement the NDC while strengthening national capacity is critical to facilitate long-term sustainability and sustainable development pathways. In many cases, this can be built off capacity assessments already conducted such as those for REDD+ and Nationally Appropriate Mitigation Actions (NAMAs). A human capacity assessment for NDC implementation would help pinpoint availability of relevant skill sets in government agencies, finance required to access these resources, and institutional arrangements to facilitate using that expertise²⁸. An analysis related to the capacity of national data systems would be well-placed in the NDC implementation planning process as well to assess: data quality and availability, efficiency of data flow processes and overall system efficiency, sources of information, and the capability of systems to be expanded to include NDC implementation. The informational capacity analysis will inform the ability of data systems to track NDC progress such as GHG emission reductions and non-GHG impacts such as implementation of SDG targets, enable transparency and accountability, and monitor progress towards mainstreaming NDC processes into related national policies such as sectoral strategies (e.g., tracking review and validation of updated sectoral strategies that reflect the NDC).

An examination of laws and regulations that directly and indirectly affect NDC governance frameworks to support mitigation and adaptation goals (e.g., permitting, land management, corporate accountability, government procurement) can be advantageous to provide a measure of NDC implementation barriers and identify circumstances that could potentially undermine the ability to achieve the NDC targets. The legal basis of systems related to NDC implementation such as binding mandates can clarify roles and responsibilities, reduce miscommunication, and strengthen the understanding NDC implementation is sustainable in the medium and long term. These legal and regulatory instruments may include: empowering entities with appropriate legal status; establishing

mechanisms to strengthen coordination across line ministries; public participation in the decision-making process such as a mandatory public review period; open access to climate change information and data; and budget allocation for climate priorities. Such laws and regulations may be in place or pending, and the examination can consider the extent they are being effectively enforced and implemented.

Alignment of NDC Implementation Strategies and Development Objectives

The NDC implementation approach should be closely aligned with national growth and sustainable development priorities and objectives for greater coherence and mutual benefits, to minimize policy conflicts, duplication, and fragmentation of resources, and also to encourage a less siloed approach where information, capacity, and technical expertise are more efficiently shared.

While progress in embedding climate actions in development policy planning and budgeting has been slow in past decades, country experiences show that formulation of NDC targets with planning and sector ministries helps build awareness and capacities of non-climate experts to incorporate those targets into national and sector development plans. Opportunities for aligning NDCs and the Paris Agreement with national planning processes are extensive due to significant cross-sectoral impacts of climate change policies and measures. In particular, NDC long-term sustainability and the degree to which it is embedded into national planning processes have potential to offer synergy with key aspects of the following: National Development Plans; sectoral plans / strategies, actions, and investment plans; green growth development strategies; NAMAs; Low Emission Development Strategies (LEDS); NAPs; Sectoral Adaptation Plans; NAPAs; National Biodiversity Strategies and Action Plans (NBSAPS); and Technology Needs Assessments. In addition, approaches for aligning national Sendai Framework for Disaster Risk Reduction policies and measures with those related to policies and measures that implement the NDC are discussed in Box 4.^{39,40}

Growing numbers of countries are adopting a more integrated approach to NDC and SDG mainstreaming in policy design. Such an approach enables countries to address strong linkages and synergies between the NDC policies and measures and SDG targets. Although SDG 13 emphasizes taking urgent action to combat climate change and its impacts, climate change has been mainstreamed throughout the 2030 Agenda. Forty-nine targets across 13 SDGs can provide direct mitigation and adaptation outcomes.²⁰ Furthermore, a 2016 study⁴¹ showed that climate actions embedded in 92 INDCs are relevant for the clear majority of all SDG targets (154 of 169) across the 17 SDGs, suggesting substantial potential for mutually supportive implementation strategies.

To support the NDC/SDG alignment decision-making process, UNDP identified entry points organized around three categories as critical for fostering greater complementarity between NDCs and SDGs⁴²:

³⁹ UNFCCC. (2018). *Opportunities and options for integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015–2030*.

⁴⁰ CRED & UNISDR (2018). *Economic Losses, Poverty & Disasters 1998-2017*.

⁴¹ Northrop, E., Biru, H., Lima, S., Bouye, m., & Song, R. (2016). *Examining the Alignment between the Intended Nationally Determined Contributions and Sustainable Development Goals*. Working Paper. Washington, DC: World Resources Institute.

⁴² UNDP. (2017). *Aligning Nationally Determined Contributions and Sustainable Development Goals: Lessons Learned and Practical Guidance*.

(i) establishing an enabling environment (e.g., institutional arrangements, data management, policy coherence); (ii) planning and delivering on commitments (e.g., targets and timing of commitments, financing opportunities such as measures to encourage private sector investment); and (iii) tracking progress, reporting, and NDC revisions. For existing NDC/SDG linkages, governments can refer to the ClimateWatch portal¹⁹, which identifies potential alignment between targets, actions, policies, and needs related in NDCs and SDGs.

Box 4 | Policy Integration with the Sendai Framework for Disaster Risk Reduction 2015-2030

In 2018, natural catastrophes such as extreme storms, wildfires, and droughts claimed the lives of 10,400 people and resulted in economic losses of US\$ 160 billion. In 2015, the global urgency placed upon disaster risk reduction (DRR) was highlighted through the Sendai Framework along with the Paris Agreement and 2030 Agenda for Sustainable Development, and the interconnectedness of the three landmark agendas is clear. As noted in the Sendai Framework, disasters have become more frequent and intense, many are exacerbated by climate change, and they are significantly impeding progress toward sustainable development.

Despite growing awareness, exposure of persons and assets to disaster risk worldwide has increased faster than vulnerability has decreased so strengthening avenues to achieve the four Sendai Framework priorities for actions is a development priority. This falls under the general paradigm shift away from managing disasters as they occur to managing risk and building resilience beforehand. Due to significant overlap between the 2015 agendas, UNFCCC recently charted a course to achieve ‘partial but robust policy integration’ to enhance coherence, efficiency, and effectiveness⁴⁰. Integrating DRR into investment and policy decisions enables cost-effective risk reduction, and therefore a precondition for sustainable development in a changing climate

A Strengthened Landscape for NDC Finance

Delivering on the Paris Agreement is dependent upon economic transformation and national development strategies that embody sustainable, low-carbon, and robust growth⁴³. In support of this mandate, approaches to mobilize NDC finance should be consistent with national growth and sustainable development priorities and plans. As part of the process to carry forward an NDC from planning to implementation, countries may take a similar approach in identifying options to fund policies and measures that support implementation of the NDC. Early activities include the following four strategies³³:

- Mapping of NDC needs and priorities such as by tracking public and private climate expenditures and investments to realign expenditures to where it matters most.

⁴³ Professor Lord Stern. (2016). *The roles of financial institutions and finance ministries in delivering the Paris Agreement on climate change*. Grantham Research Institute on Climate Change and the Environment, London School of Economics.

- Determining costs of NDC actions (upfront capital, ongoing maintenance, capacity building, and human resources for implementation).
- Seeking avenues to scale up collaboration with and regulation of the private sector to encourage investment and mobilize new resources.
- Developing financing strategies for specific priority interventions, such as financial mechanisms at the project level, to better align public and private capital with NDC goals.

Crowding in private capital to catalyze private investment that might not otherwise occur is critical to make system transitions consistent with a 1.5°C warming limit.³ To demonstrate the market potential, over 90% of renewable energy investment in 2016 was financed from private sources⁴⁴. As an example, increasing private sector engagement in NDC implementation, countries in association with Green Climate Fund Readiness have conducted studies on the state of the financial sector, access to finance, risks for project developers, and recommendations to improve regulatory frameworks and modernize business legislation. Elaborating options for risk-sharing financial instruments and target areas for climate finance training are areas of focus as well. As an example, Nepal developed a strategic investment framework considering private sector engagement in the course of investigating approaches to access the Green Climate Fund⁴⁵.

LTS can serve as a roadmap on climate and development-related NDC policies and measures that will be prioritized with government support such as to scale up private investment in targeted sectors. Long-term signals from governments can contribute to sectoral stability or credibility and provide added value and market signals as national budgets are relatively short term compared to LTS.

Strategic blending of catalytic capital from public and philanthropic sources can play an important role in mobilizing private sector investment. Establishing enabling frameworks at the national level can underpin efforts to scale up market transformation while decreasing fragmented approaches in implementation.⁴⁶ OECD, World Bank, and UN Environment highlighted these six transformative areas to align financial flows with climate action and development goals:⁴⁷

1. Plan infrastructure for a low-emission and resilient future: long-term planning of sustainable infrastructure projects is needed to align a pipeline of projects with long-term climate and development objectives
2. Unleash innovation to accelerate the transition: scaling up climate solutions should include accelerating deployment of existing technologies, models, and services, and moving to the next generation of climate solutions
3. Ensure fiscal sustainability for a low-emission, resilient future: public budgets channeled toward climate objectives would signal stability and momentum toward a low-emission , resilient economic future

⁴⁴ IRENA & Climate Policy Initiative. (2018). *Global Landscape of Renewable Energy Finance 2018*.

⁴⁵ Approach Paper – Strategic Investment Framework for Financing Climate Actions in Nepal by Leveraging Green Climate Fund. (2017).

⁴⁶ Convergence. (2018). *The State of Blended Finance 2018*.

⁴⁷ OECD, The World Bank, & UN Environment. *Financing Climate Futures: Rethinking Infrastructure, 2018*. OECD Publishing, Paris.

4. Reset the financial system in line with long-term climate risks and opportunities: improve climate-risk management strategies, incentivize risk disclosure, and support a supervisory authority
5. Rethink development finance for climate: financial institutions should better integrate climate into development objectives and better align portfolios to the Paris Agreement
6. Empower city governments to build low-emission and resilient urban societies: ensuring urban resilience requires national and local governments to work together on land-use and transport strategies, align multi-level strategies, build city project finance capacity, and prioritize social and economic benefits of low-emission, resilient planning

Governments play a key role in enabling these six transformative areas, e.g., by empowering local authorities, and scaling up local access to national budgets to develop and implement NDC policies and measures. Countries have multiple tools at their disposal to encourage the scaling up of finance for NDC implementation, notably, regulatory and institutional arrangements to incentivize investment, minimize inefficiency, and create more effective flow of finance across sectors and between national and sub-national levels. The India Energy Efficiency Scale Up Programme and US EPA Energy Star Program are two such examples.

Modelling and scenario analyses of NDC policies and measures can quantify added value, benefits, sensitivity to inputs, and risks in terms of GHG emission reductions. This analysis can help maximize NDC expenditures and identify de-risking measures to most cost-effectively promote private sector investment in targeted sectors⁴⁸. In addition to scenario analysis, another example of mapping the course toward sustainable investment and inclusive growth is the European Union strategy for sustainable finance, which considers better integrating sustainability in credit ratings and market research.⁴⁹

Climate budget analysis and management has an extensive track record with identifying gaps in investment and opportunities for attracting climate investment. For example, Indonesia used a climate budget tagging process to assess the effectiveness and efficiency of climate change spending, and this contributed to project evaluation and selection to create a project pipeline for investing proceeds from the country's US\$ 1.25 billion sovereign Green Sukuk bonds.⁵⁰ In addition, more than 15 countries have employed Climate Public Expenditure and Institutional Reviews (CPEIR) to provide climate information on public financial flows, and another 15 have conducted Investment and Financial Flow Assessments (I&FF) to assess investments needed to mitigate GHG emissions and adapt to climate change in key sectors.^{51,52} Furthermore, efforts to align and tag budgets on NDC implementation and related platforms such as SDGs and sustainable development creates greater opportunity for consistency.

⁴⁸ UNDP. (2018). *Derisking Renewable Energy Investment: Off-Grid Electrification*.

⁴⁹ Communication from the Commission to the European Parliament, The European Council, The Council, The European Central Bank, The European Economic and Social Committee of the Regions. Action Plan: Financing Sustainable Growth. COM/2018/097 final.

⁵⁰ Indonesia Ministry of Finance, Fiscal Policy Agency. (2014). *Low Emission Budget Tagging and Scoring System (LESS) for Climate Change Mitigation Expenditures in Indonesia*.

⁵¹ UNDP. (2015). *A Methodological Guidebook: Climate Public Expenditure and Institutional Review*.

⁵² UNDP. (2009). *Methodology Guidebook for the Assessment of Investment and Financial Flows to Address Climate Change*.

As an example of NDC/SDG alignment, Uganda conducts assessments of NDC/SDG annual budget goal consistency and expenditures with national development plans.²⁰ This assessment is presented annually to the Parliament through a 'Certificate of Compliance' report released ahead of the budgetary debate. These reports and related briefs raise attention to the extent to which priority climate and SDG targets have been adequately funded in the previous year, and the data and recommendations inform parliamentary and government discussions on the annual budget, and encourage earmarking higher budget allocations to climate and SDGs that have not been adequately funded. The government of Uganda is also working on developing a climate change budget tagging system with the support from the World Bank.

NDC investment and finance strategies should identify potential public sources of national and international funding (such as the Green Climate Fund where applicable) as well as private sector finance. Support or buy-in particularly from the Ministries of Finance, Planning, or Economy can help raise credibility in mobilizing resources as well as to inject national finance expertise and incorporate NDC policies and measures into the public budget formulation and execution process. Framing NDC implementation and financing NDC implementation in terms of financing national development might enhance government buy in.

Sound and Transparent Data Management

The tracking of performance data is central to ensuring NDC systems implementation is functioning effectively and efficiently and is therefore critical to assess if NDC implementation is proceeding as planned. Integrated data management between NDC implementation and, e.g., SDG tracking, could strengthen these opportunities for efficiency and data availability. Establishing an MRV system (encompassing measurement, reporting, and verification) fulfills Paris Agreement provisions on accounting and transparency (Articles 4 and 13, respectively) and informs the global stocktake on national GHG emission levels and country progress toward achieving NDCs, climate and adaptation impacts and adaptation, sustainable development efforts, financial support, technology transfer, and capacity building.

The Paris Agreement implementation guidelines newly agreed at COP24 address NDC tracking and notes Parties shall submit their first Biennial Transparency Report (BTR) to inform tracking of NDC progress and achievements, and a national inventory report by 31 December 2024.³³ Data management systems associated with the MRV system contribute towards these upcoming reporting efforts. Guidance on NDC monitoring plans will be issued by the Subsidiary Body for Scientific and Technical Advice (SBSTA) by November 2020 and is discussed in the upcoming NDC guidance document.³³

The data management or MRV system will play a lead role in achieving the following objectives:

- Creating qualitative indicators and quantitative measures of achievement and progress towards the NDC targets and SDGs
- Tracking efforts and identifying actions that are still needed

- Assessing effectiveness of actions in terms of achievement of targets, speed of implementation, budgetary requirements, partnerships secured, etc.
- Transparently reporting progress to domestic and international audiences
- Compiling data for reporting (e.g., NDC, National Communication, NAP, SDGs, and BTR)
- Informing policymaking (e.g., whether to continue, discontinue, enhance, or begin new policies and measures)

An analysis of the effectiveness of an MRV system should consider: (i) data collection protocols and analysis tools; (ii) reporting procedures and report templates; (iii) verification procedures, (iv) institutional coordination and clarity of roles and responsibilities; (v) laws and mandates such as mandates to conduct monitoring and justification to collect data from the private sector; and (vi) stakeholder engagement. Existing structures established to generate National Communications, Biennial Update Reports, GHG inventories, NAP Monitoring & Evaluation systems, and system methodologies established for the Clean Development Mechanism (CDM) and National Forest Monitoring Systems for REDD+ can be helpful starting points for the MRV.

NDC Implementation Plan

Preparing for NDC implementation includes several steps such as: (i) taking stock of the current NDC; (ii) reviewing the analysis that originally underpinned the NDC; (iii) prioritizing policies and measures; (iv) assessing capacities, institutions involved, and regulatory frameworks required for NDC implementation; and (v) engaging stakeholders. NDC Implementation Plans (or Roadmaps or Strategies) can support NDC coordination and transparency as clarity of global expectations improves and the upcoming deadlines for NDC updates. To date, countries such as Fiji, Ghana, Lebanon, Tanzania, Trinidad and Tobago, and Vanuatu have made early strides in drafting these Plans.

NDC implementation planning reflects short-, medium-, and long-term policies and measures and this requires taking these into account in first NDC timeframes that extend to 2025 or 2030, national development plans that extend five years for many countries, and LTS extending to 2050. NDC Implementation Plans can be a standalone strategy or integrated throughout other relevant strategies and plans. NDC Implementation Plan timeframes should consider national and international budgetary cycles to maximize opportunities for securing NDC resources. For example, the Canada LTS⁵³ emphasizes supporting low-carbon technologies by improving access to climate finance investments by Canadian companies. A review of NDC planning and status would begin with analysis of the NDC Implementation Plan, which will vary in content by country but can include the following components:³³

Section 1: Information on the NDC

- NDC implementation period
- Summary of NDC mitigation goals
- Summary of NDC adaptation goals
- Summary of SDGs and other sustainable development benefits

⁵³ Government of Canada. (2016). Canada's Mid-Century Long-Term Low-Greenhouse Gas Development Strategy.

- Responsible body(ies) for the overall NDC implementation oversight and coordination
- Key institutional arrangements for the overall NDC implementation

Section 2: Information on the mitigation policies and climate actions, and adaptation measures where included

- Description of policies and measures to achieve the NDC targets and measures
- Key activities related to their implementation
- Identification of specific projects that can deliver on these policies
- Responsible entity for implementation of policy, action or measure
- Key stakeholders and institutional arrangements
- Total costs and breakdown of financing sources for each policy and measure, including strategies for the use of market mechanisms
- Implementation period and milestones for policies and measures
- Mitigation and/or adaptation impacts and contribution to the SDGs
- Expected outcomes and relationships to the NDC goals
- Risks related to failure of achieving the targeted impacts and risk mitigation strategies

Note: Section 2 would be repeated for each policy or measure intended to contribute to national NDC goals.

Section 3: Monitoring progress of NDC implementation and achievement of NDC goals

- Responsible entity for the overall NDC monitoring
- List of key indicators and parameters for monitoring progress in NDC implementation (including definition of the indicators and parameters for GHG impacts and SDGs, frequency of measurement, responsible entity for data collection, sources of information, and linkages with national development and SDG indicators)
- Description of the institutional arrangements for monitoring and reporting
- Data archiving policy

For a discussion on key performance indicators (e.g., types of indicators, examples of data to be monitored), the Greenhouse Gas Protocol Policy and Action Standard⁵⁴ is a useful resource. Where possible, there should be clarity on the sequencing of policies and climate actions, including key milestones to track progress and support reporting obligations. Detailed, project-level information on individual actions can be provided separately. Further, public engagement will be crucial throughout the process and can include a series of workshops convened by the NDC coordination body to discuss the NDC process and information needed to build the NDC Implementation Plan.

How to Align NDC Implementation with Long-Term Strategies

The attributes and prioritization of the NDC implementation strategy policies and measures discussed in this chapter will reflect on the capacity to deliver on LTS, and ideally form five-year stepping stones

⁵⁴ Policy and Action Standard. (2014). Greenhouse Gas Protocol.

towards an LTS vision (see Chapter 2 for discussion on how LTS design can help deliver NDCs). The NDC Implementation Plan should be designed in alignment with the LTS as well. NDC implementation alignment can consider the following:

- Selection of policies and measures would be selected based on delivery of LTS targets (and to avoid lock in of emissions intensive and unresilient infrastructure and land use) for GHG mitigation, support to climate resilience and adaptation, and sustainable development co-benefits such as those underpinning SDG targets.
- Clearly defined NDC processes, including the roles and responsibilities attached to NDC implementation, will allow for political greater ownership, efficiency, and strengthened institutional knowledge across agencies. Over time, continuity in the system will facilitate greater understanding of capacity gaps and opportunities among laws, regulations, and implementing agencies and help provide greater long-term certainty.
- To maximize the cross-sectoral nature, national ownership, and efficiency of NDC implementation, an integrated approach that aligns NDC to related priorities such as the 2030 Agenda is advised, and similar alignment structures are recommended for the LTS to encourage consistency and awareness.
- Facilitating NDC finance goes beyond short- and medium-term planning as catalyzing private investment and access to national budgets should be approached with consistent policy, regulatory, and market signals that exhibit stability and political support progressing from the short to long term. Capacity building for local partners to ensure informational symmetry is critical as well.
- Integrated data management between NDC and priority targets such as SDGs strengthens opportunities for efficiency and improved data quality and access, and such cross-sectoral linkages require long-term planning and incorporation in LTS.

Due to the need for coherence and overlapping content, LTS and NDC implementation strategies should inform one another. As organic documents that change over time, mechanisms for LTS and NDC strategic planning to account for changes in priorities and approaches would help secure political support and buy in to the process and potential access to finance while remaining focused on delivering practical outputs on the ground. Ensuring the aforementioned aspects of NDC implementation (policies and measures, institutional arrangements, policy alignment, finance, MRV, and an official strategy) are embedded in LTS will help to ensure uptake and positioning as a national priority.

4. Communicating New and Updated Nationally Determined Contributions

How New and Updated NDCs Can Help Deliver the Paris Agreement's Goals

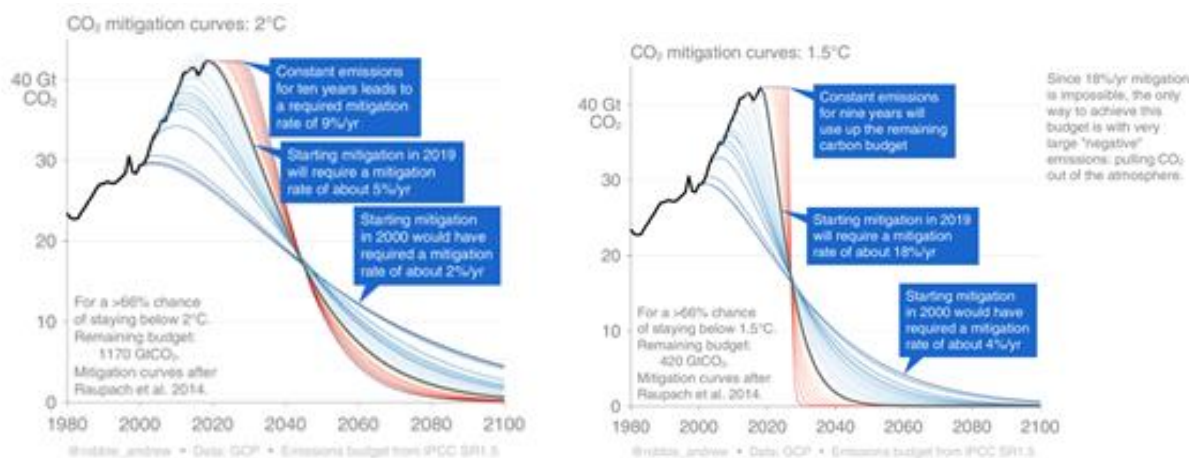
Building on the initial NDCs, and in the context of its long-term goal, the Paris Agreement established a mechanism for enhancing the ambition of climate action over time. Article 4 requires each Party to prepare and communicate a successive NDC every five years, each of which will reflect progression beyond the Party's existing NDC, represent its highest possible ambition, and reflect "its common but

differentiated responsibilities and respective capabilities in the light of different national circumstances.”

In addition, the Paris decision text requested that by 2020, Parties whose NDC included a 2025 target communicate a new NDC and that Parties with a 2030 target either communicate or update their existing NDC. The 2018 decision at COP24 in Katowice, Poland, reiterated this request.⁵⁵ The Talanoa Dialogue, concluded in 2018, was intended to inform NDC preparation.

Several recent studies underscore the importance of the 2020 timeframe for updating NDCs, the need to enhance mitigation ambition, and the relationship between commitments in the 2030 timeframe and the long-term trajectories addressed in LTS. The IPCC’s 2018 report on global warming of 1.5°C underscored that major, immediate transformation is required to achieve the Paris goals.⁵⁶ In particular, the report finds that global GHG emissions in 2030 – the target year for most NDCs – must be halved relative to current projections. Likewise, the latest Emissions Gap Report⁶ found that under the current NDCs, 2030 emissions would be approximately 36% higher than the level consistent with limiting warming to 2°C, and more than double the level needed to limit it to 1.5°C. Moreover, global emissions are not expected to peak by 2030 even under the current NDCs⁹. The longer the global peak is delayed, the more radical future emissions reductions will need to be, in order to achieve the Paris Agreement goals (Figure 2).

Figure 2: CO₂ Mitigation Curves Associated with 2°C and 1.5°C⁵⁷



Delaying action can “lock in” future emissions from infrastructure with long lifespans, such as buildings and power plants, making steep emission reductions more expensive and technically

⁵⁵ <https://unfccc.int/katowice>

⁵⁶ Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, Maycock, M. Tignor, and T. Waterfield (eds.). 2018. *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*

⁵⁷ Global Carbon Project. (2018). Global Carbon Project. (2018). Global Carbon Project. (2018). <http://folk.uio.no/roberan/GCB2018.shtml>. Global Carbon Project. (2018). Global Carbon Project. (2018).

difficult to achieve. This relationship between current ambition and future options highlights the importance of developing and LTS that can inform decisions around 2020 NDC updates.

Since the initial NDCs were developed, key factors have changed – in international climate policy, domestic policies and plans, technology, and our understanding of the relationship between climate action and economic development – in ways that can provide Parties with increased confidence for enhanced ambition. On the international level, the Paris Agreement is now in force, with major components of its modalities and guidance governing NDCs now finalized, and the Kigali Amendment to the Montreal Protocol has entered into force, laying out a schedule for the phase-down of HFC emissions. At the national level, many countries have made significant progress implementing their NDCs, and some are already on track to exceed the targets in their existing NDCs. This progress reflects in part the advances in institutions, partnerships, and data achieved since 2015. In parallel, a growing number of countries have developed LTS, which serve as an important benchmark against which Parties can compare their NDCs and align them as needed. In terms of technology, the cost of renewable energy has declined significantly since the initial NDCs were developed, and technological innovation has continued to progress. The modeling assumptions on which initial NDCs were based are therefore, in many cases, outdated and do not reflect the full, current potential of such technologies. Finally, as noted in Section 1, our understanding of the socioeconomic benefits of climate action has expanded – it is now estimated that ambitious climate action could generate US\$ 26 trillion in economic benefits between now and 2030⁵⁸, create 65 million new jobs in 2030, and avoid 700,000 premature deaths from air pollution.

Finally, Parties may also wish to consider the opportunities presented by an NDC enhancement process - to rally stakeholders around climate action and enhance stakeholder buy-in to implementation, to send long-term signals to the private/investment sector and development partners to inform investment decisions, and to kick-start the Paris “ambition mechanism,” helping to induce greater ambition from additional Parties .

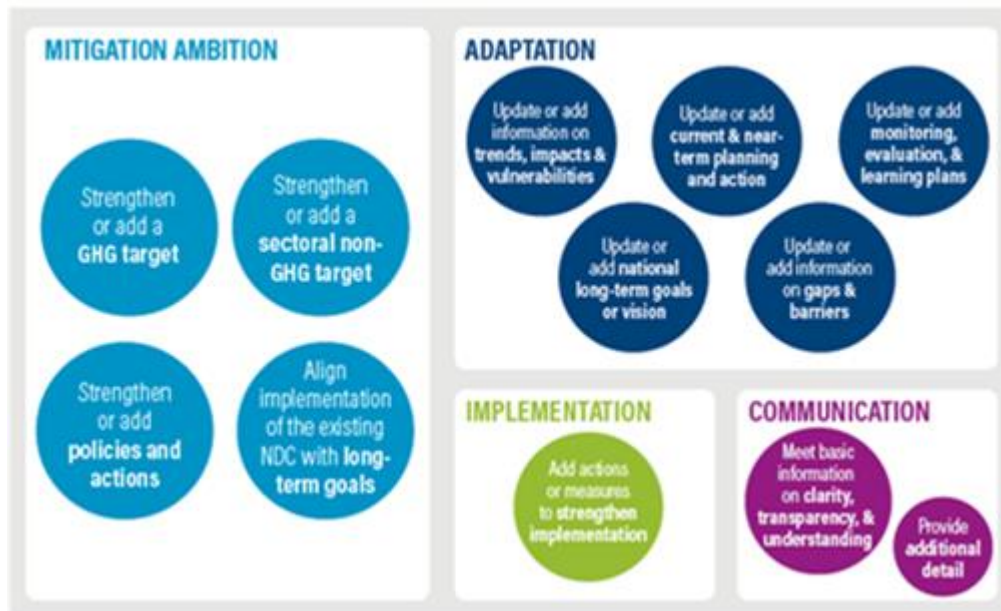
Processes and Approaches for NDC Enhancement

In considering options for communicating new and updated NDCs, Parties can consider various factors including updated technical information, such as GHG inventories, emission scenarios, and assessments of abatement potential and cost. Additionally, new developments in national policies and plans, including climate policies, long-term climate strategies, development plans, synergies with the Sustainable Development Goals, and others may be relevant. This is not an exhaustive list. UNDP, UN Environment, UNEP DTU, UNFCCC, and WRI are in the process of developing more detailed guidance to assist countries in developing enhanced NDCs; the forthcoming guidance will address these and other factors in greater detail.

A number of options are available to express enhanced ambition, adaptation, implementation, and communication in a new or updated NDC, as shown in Figure 3.

⁵⁸ Global Commission on the Economy and Climate. 2018. *Unlocking the Inclusive Growth Strategy of the 21st Century: Accelerating Climate Action in Urgent Times*. Washington, DC: New Climate Economy, c/o World Resources Institute. https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_FULL-REPORT.pdf

Figure 3: Menu of Options for Enhancing NDCs⁵⁹



Indicative NDC Enhancement Opportunities by Sector

Opportunities for NDC enhancement vary significantly by national context, but a number of promising possibilities are outlined in Table 2. These can be reflected through strengthened or enhanced GHG targets, non-GHG targets, and/or policies and actions that align with long-term goals.

Some of these opportunities strongly align with SDG targets, as indicated in parentheses in the table. Several global SDG targets with strong mitigation and adaptation potential, such as the targets to halt deforestation by 2020 and halve food loss and waste by 2030, have not been fully reflected in the first iteration of NDCs. In many countries, the domestication of global SDG targets after 2015 led to the adoption of mitigation and adaptation targets that could be incorporated in new or updated NDCs.⁶⁰

⁵⁹ Fransen, T., E. Northrop, K. Mogelgaard, and K. Levin. (2017). Enhancing NDCs by 2020: Achieving the Goals of the Paris Agreement. Working Paper. Washington, DC. World Resources Institute. Available online at <http://www.wri.org/publication/NDC-enhancement-by-2020>.

⁶⁰ Northrop, E., Biru, H., Lima, S., Bouye, m., & Song, R. (2016). *Examining the Alignment between the Intended Nationally Determined Contributions and Sustainable Development Goals*. Working Paper. Washington, DC: World Resources Institute.

Table 2: Indicative Sectoral Content for New or Updated NDCs^{61, 62}

Sector	GHG targets	Non-GHG targets	Policies
Buildings	Establish or strengthen an existing GHG reduction target for energy efficiency in the building sector, or specifically for building or appliance efficiency. (SDG 7.2)	Establish or strengthen an existing quantitative non-GHG target for sector-wide efficiency and/or building/appliance efficiency .	<ul style="list-style-type: none"> • Increase building energy performance and increase the uptake of efficient, low-carbon appliances and equipment in buildings • Provide incentives for companies and consumers to replace high global warming potential (GWP) HFC commercial equipment or appliances with low-GWP alternatives • Replace high GWP HFCs with low-impact alternatives in specific classes of appliances and equipment, such as using R-290 instead of HFC-410a in room air conditioners • Introduce a policy requiring all new high-efficiency cooling equipment to use either a low-GWP HFC or an HFC alternative
Energy	Establish or strengthen a GHG reduction target for the energy sector	<ul style="list-style-type: none"> • Establish or strengthen quantitative targets to increase the capacity/and or generation of RE • Establish or strengthen quantitative targets for energy storage capacity linked to RE sources • Establish or strengthen quantitative targets to increase energy access through the use of renewable energy 	<ul style="list-style-type: none"> • Support an increase in the share of renewable energy in the national energy mix. (SDG. 7.1) • Incorporate policies to improve grid integration of renewable energy • Pursue policies to derisk private investment in renewable energy • Promote policies to reduce fugitive emissions during energy production
Food and Agriculture	Establish or strengthen a GHG	Establish a national non-GHG reduction target to	<ul style="list-style-type: none"> • Promote the intermittent aeration of continuously flooded rice paddies

⁶¹ Adapted from Northrop, E., D. Waskow, K. Ross, R. Gasper, A. Wu, and A. Tankou. (2018). Leading on Ambition: Opportunities for the Enhancement of Nationally Determined Contributions by the Climate Vulnerable Forum,” Working Paper, Washington, DC: World Resources Institute. , and Ross, K.,, <http://www.wri.org/publication/leading-on-ambition>, and Ross, K.,, T. Damassa, E. Northrop, A. Light, D. Waskow, T. Fransen, and A. Tankou. (2018), Strengthening Nationally Determined Contributions to Catalyze Actions That Reduce Short-Lived Climate Pollutants. Working Paper, Washington, DC: World Resources Institute. www.wri.org/publications/reducing-SLCPs.

⁶² While many of the interventions described in Table 2 will offer adaptation co-benefits, options for adaptation enhancement by sector have not yet been fully detailed. The table therefore focuses on mitigation-related interventions.

Sector	GHG targets	Non-GHG targets	Policies
	reduction target for rice production. Establish or strengthen a GHG reduction target for livestock production. (SDG 2.4)	reduce food loss and waste by 50% by 2030, including post-harvest loss.	<ul style="list-style-type: none"> Promote reduction of enteric fermentation in livestock through dietary supplements and shifts (e.g., from a cellulosic to a starch-based diet) Support farmers to implement livestock anaerobic digestion projects Review national dietary guidelines to promote the consumption of less meat and more plant protein Ban open field burning of agricultural waste
Nature-based solutions	<ul style="list-style-type: none"> Establish or strengthen a GHG reduction target to reduce emissions from deforestation or forest degradation. Establish or strengthen an existing GHG reduction target for coastal ecosystems 	<ul style="list-style-type: none"> Establish or strengthen an existing quantitative non-GHG target for the protection or restoration of forests. (SDG 15.2) Establish or strengthen an existing quantitative non-GHG targets for protection or restoration of coastal ecosystems (SDG 14.2) 	<ul style="list-style-type: none"> Capture the carbon sequestration potential and climate resilience benefits of protecting forest ecosystems (e.g. fiscal policy reforms, landscape approach to limit leakage, biodiverse restoration, community forest restoration) Capture the carbon sequestration potential and climate resilience benefits of blue carbon ecosystems
Transport	Establish or strengthen an existing GHG (and/or black carbon) reduction target for the transport sector.	Establish or strengthen an existing quantitative non-GHG target for the transport sector (e.g. electric vehicle target, modal share target) (SDG 11.2)	<ul style="list-style-type: none"> Reduce emissions from and improve the resilience of the transport sector (e.g., fuel economy standards, improved urban planning) Develop electromobility strategies and/or introduce a policy or legal framework (and associated incentives) to replace internal combustion engine vehicles with electric vehicles Eliminate high-emitting vehicles from road and off-road transport and/or public transportation Develop an integrated and sustainable strategy for transport modes and/or expand toward a greener and more sustainable public transport system

5. Supporting Climate Action in Developing Countries

Beyond advancing LTS and NDCs domestically, there is also a major role that G20 countries play in supporting non-G20 countries to advance their LTS and strengthen NDC implementation and

enhancement. Given the challenges that many countries face in advancing this work, particularly developing countries (including both G20 and non-G20 members), G20 members have the opportunity to provide the necessary capacity and resources to support these countries to advance LTS and NDC implementation and enhancement. This can be done, e.g., through sharing experiences and expertise, and by providing technical or financial support, or human resources.

This commitment, in part, has been grounded in existing G20 agreements, as further elaborated below. At the same time, all countries can also learn from each other on efforts for implementing mitigation and adaptation policies and measures under their NDCs and designing and putting in place LTS. This is an important part of strengthening the international cooperation required to address the complex, multi-dimensional issue of climate change. In addition, cooperation can extend beyond finance and technical support to address, for example, joint RD&D on technology for hard-to-abate sectors.

This chapter reviews the overarching role of G20 in supporting cooperation, including priority areas where G20 support is already and can be further prioritized to maximize added value. It then outlines the specific challenges that developing countries face, strategies and examples of existing support being provided

The Role of the G20 in supporting cooperation with developing countries

Under the Chinese Presidency of the G20 in 2016, several agreements and communications from G20 countries reflect the importance of G20 countries in leveraging international cooperation to advance both the 2030 Agenda and Paris Agreement. Specifically, in the Hangzhou communique, G20 members affirm “the importance of fulfilling the UNFCCC commitment by developed countries in providing means of implementation including financial resources to assist developing countries with respect to both mitigation and adaptation actions in line with Paris outcomes.”⁶³ In addition, the G20 Action Plan on the 2030 Agenda¹³, also adopted in 2016, supports the efforts of G20 countries to work cooperatively to implement the SDGs. The Action Plan makes a specific reference to SDG13 with some linkages between climate change and other SDGs, and also has a specific focus on the importance of climate finance and green finance as a contribution to achieving both the Paris Agreement and 2030 Agenda.

The G20 Climate Finance Study Group, in consideration of how to provide and mobilize public and private financial resources for both adaptation and mitigation, developed a report in 2016 on “mainstreaming climate change considerations in development assistance and climate finance programmes.” The report provided some general guidance on how the G20 can support developing countries to achieve the Paris Agreement goals in a way that is aligned to sustainable development efforts and SDG achievement (see Box 5 below).⁶⁴ Many of these principles align with those to be discussed further in this chapter. Further, in the context of support for non-G20 countries, existing

⁶³ G20 Leaders’ Communique, Hangzhou Summit. (4-5 September 2016). paragraph 43. <http://www.g20.utoronto.ca/2016/160905-communique.html>.

⁶⁴ Climate Finance Study Group G20 Outlook on Mainstreaming Climate Change Considerations into Development Assistance and Climate Finance Programmes (June 2016). <http://www.g20.utoronto.ca/2016/2016-mainstreaming-climate-change-considerations.pdf>.

platforms such as the NDC Partnership and 2050 Pathways can also be leveraged by G20 partners to advance this cooperation.

Box 5 | Key issues and recommendations examined in the G20 Climate Finance Study Group report (2016)

In the report *G20 Outlook on Mainstreaming Climate Change Considerations into Development Assistance and Climate Finance Programming*, prepared by the Climate Finance Study Group (CFSG) of the G20 in June 2016, the aim was to provide recommendations for how to maximize sustainable development and climate co-benefits.⁶⁴ The following key issues were identified by the CFSG, and further examined throughout the report in terms of suggestions on how they can be pursued:

- Climate action should be in line with development priorities consistent with the SDGs and NDCs
- Support should be client-driven and focused on helping countries achieve their NDCs
- Provision and mobilization of concessional resources is necessary – GCF and GEF and other funds, such as the Climate Investment Funds – play a key role to bridge the viability gap, support innovative approaches, and scale up nascent technologies
- The different contexts and scopes of operation of institutions should be taken into account. Mainstreaming climate change should respect the mandate of each institution and how it contributes to its core objectives
- Relevant experiences should be acknowledged and analyzed to evaluate impacts on operations and gather lessons learned
- Need for clear strategies and plans to address climate change, providing transparency in the provision and mobilization of climate finance for stakeholders and a mandate for management
- Manage climate risks, considering appropriate measures to build resilience to climate change -thereby contributing to poverty reduction

Climate change is a cross-cutting, multi-faceted challenge which does not stop at borders. International cooperation has already been demonstrated under the UNFCCC and is being applied through numerous partnerships and engagements. Nonetheless, scaling this up through sharing experiences and expertise, identifying integrated and collaborative solutions, including with private sector, and providing technical, financial, and human resources, is an effective and cost-efficient way to tackle the urgent global issue of a changing climate at scale in such a small window of time.

Challenges for Advancing NDCs and LTS in Developing Countries

Across developing countries, there is a wide range of climate change impacts being seen, national development priorities agreed, and NDC and LTS implementation strategies underway both at national and sub-national levels. Further, the challenges encountered in advancing NDCs and LTS will ultimately be determined by country-specific conditions including capacity, economic drivers, systems and market trends, stakeholder groups and sectors impacted by climate change, political priorities,

and the level of civil society engagement. Support to developing countries will therefore look different depending on the specific country.

In terms of general trends seen across all countries, a survey was conducted in August and September 2018 as part of The New Climate Institute's NDC Update Report entitled, *Ambition: Taking a Long-Term Perspective*.⁶⁵ This survey analyzed 78 responses from national and sector level experts from across 78 countries, a majority of which were developing countries (15 were considered "high-income" countries). Overall, the survey confirms the results they have seen from previous surveys conducted in 2017, which demonstrate that countries are generally confident in their own progress on national climate action but show there is pessimism about mobilising investments and securing sufficient political support from the private sector.

In addition, the survey asked respondents about the progress their government has made in developing LTS. Out of the 78 respondents, "15 (19%) state that their government has an officially approved strategy, 30 (39%) answered their government is working on it, while 29 (37%) respondents indicated that their country has not begun to develop an LTS but expect to start soon." Only 5% said that they have no plans to initiate an LTS. This demonstrates opportunity for strengthening support in this area to help accelerate progress. Finally, in terms of whether countries plan to increase their ambition in the context of NDC updates, 57% of respondents confirmed that their governments are planning or have already started to plan for increasing ambition. 40% have said they cannot say, and 3% do not plan to increase ambition.

Information has also been gathered on developing countries' challenges through a series of 20 regional NDC Dialogues and three global NDC Dialogues coordinated by UNDP and the UNFCCC Secretariat between 2014 and 2019. These events have engaged over 2,300 participants from 152 developing countries to share experiences, challenges, and lessons learned on NDC design and implementation. This insight is further supported through information gathered from the NDC Partnership (see Box 6) and direct bilateral support to countries. All of this evidence has shown that there are several common characteristics across developing countries with regards to the types of challenges being faced. These can be organized into three broad categories: capacity gaps; prioritization of adaptation; and financing needs.

Capacity and Coordination Gaps: Many developing countries have limited capacity to advance their efforts to implement the Paris Agreement. Understanding the specific nature of these capacity gaps can help further direct and prioritize support. Many developing countries are still in the early stages of NDC implementation, prioritizing development of NDC Implementation Plans, and strengthening the institutions to underpin these plans. According to a recent report by the NDC Partnership,⁶⁶ in the context of requests for support from Partnership member developing countries, "more than half of all requests for support relate to cross-ministry coordination and multi-sector policies to deliver holistic climate action." In addition, one of the top five requests from countries has been on linkages between the 2030 Agenda and Paris Agreement (or NDC and SDG implementation). This report highlights key challenges that NDC Partnership member developing countries face, highlighting limited capacities for mainstreaming NDCs into national and sectoral development plans and

⁶⁵ The New Climate Institute, Van Tilburg, et. al. (2018). NDC Update Report. *Ambition: Taking a long-term perspective*.

⁶⁶ NDC Partnership. (2018). *Partnership in Action 2018: Two Years On*. <http://www.ndcpartnership.report>.

mobilizing sufficient finance. Building policy, legal, and institutional foundations to facilitate the mainstreaming of climate change into national planning processes was also noted by the NDC Partnership to be an area generally requiring considerable assistance as countries transition from planning to implementation of climate action. In fact, many members have explicitly requested support to simultaneously integrate targets from other global and regional agendas alongside NDCs, including SDGs, Sendai Framework and, where relevant, the 2063 Africa Strategy.

These findings have also been reiterated through insight gathered at the series of Regional NDC Dialogues referenced above. Of the main gaps and needs discussed during the Dialogues, two main areas were highlighted. The first area of focus was on strengthening institutional arrangements and coordination for NDC implementation. This includes coordination both horizontal, across different Ministries and segments of society, and vertical, across national, sub-national, and local levels. Engagement of non-government stakeholders was also a strong focus, including private sector, donors, civil society, and women's groups. The second area of focus was on identifying the best methodologies and approaches for linking NDCs with key national planning processes and sectoral plans. This reflects a trend seen in NDC Partnership member requests, which demonstrates a strong demand for tools that support integrated planning, that is, considering all targets, goals and objectives in an integrated way to build on linkages.

In terms of LTS, similar capacity needs affect the ability of many countries to pursue this process. While engaging in LTS processes could be seen to contribute to strengthening capacity on NDC implementation, with additional data generation and a vision by which NDCs could provide valuable benchmarks, in many cases finite resources means there can sometimes be a tradeoff between the two. For LTS, additional capacity challenges relate to the need for further evidence for longer timeframes, which may not already be available, and methodologies and approaches for planning processes that may go beyond current development planning cycles. It therefore becomes even more clear that greater support is needed in order to strengthen efforts on NDC implementation and LTS simultaneously, leveraging their coordination and linkages.

Prioritization of Adaptation: While the emphasis around NDCs has primarily been on reducing emissions to meet the Paris Agreement global targets on warming, Parties have consistently highlighted the importance of adaptation, which is also a key part of the Paris Agreement. This came out clearly in the Regional NDC Dialogues as well as through direct bilateral support to countries. Prioritizing adaptation is primarily due to the fact that many of these developing countries are already experiencing intense impacts caused by climate change, from droughts and floods to more intensive storms and rising sea levels. Some countries are in particularly vulnerable situations, such as Small Island Developing States (SIDS) whose entire existence is threatened by climate change, and least-developed countries who are dependent on agricultural livelihoods devastated by changing rainfall patterns and temperature rise. At the same time, many of these countries have limited public resources and capacity to address these impacts, even as impacts grow more devastating. Prioritizing adaptation as part of sustainable development efforts is a trend seen in many developing countries, as they seek international support from partner countries and organizations to help meet their needs. While many of these countries are also working on NAP processes, strengthening the adaptation components of NDCs could help to link NDCs to NAPs and other adaptation and development planning processes, raise the profile of these needs, and demonstrate linkages between adaptation

and mitigation targets as well as SDGs. For this reason, developing countries (particularly SIDS) are now strengthening the adaptation components of their current NDCs.

Support to developing countries to implement adaptation activities could include such measures as strengthening climate data and information systems, conducting vulnerability and risk assessments in key sectors, raising awareness on potential climate impacts and adaptation approaches, mainstreaming adaptation into national and sectoral policies, plans and budgets, strengthening institutional coordination mechanisms to strengthen adaptive planning, and drafting laws and regulations to enhance both adaptation and disaster preparedness to enhance resilience.

Access to Finance: It is no secret that developing countries often lack the financing needed to fully advance NDCs and LTS to their full potential. Most developing countries have specified “conditional” and “non-conditional” targets in their NDCs, and continue to look for international sources, including vertical funds, to support their climate efforts and fund their conditional targets. It is also clear through the analyses on country needs emerging from the NDC Partnership and through the NDC Dialogues, that mobilizing resources to support NDC implementation is the overriding priority for most developing countries. This is evidenced in part by the large number of conditional targets identified in the NDCs, and through expression of other finance-related priorities from countries, including aligning country budgets to NDC targets and assessing private sector investment needs and opportunities. There is also a strong interest from countries on strengthening innovative financing mechanisms, engaging the private sector, and maximizing blended finance to de-risk private sector investments.

While this need for financing is clear, there are several challenges to successfully accessing and mobilizing these funds. For example, international public climate finance is difficult for many countries to access due to the complex application processes, the need for detailed evidence and support documentation, which often requires some additional investment, and the high level of scrutiny. At the same time, review times for many funds, such as international vertical funds, are very long, making it difficult for many countries requiring urgent action. At the same time, several middle-income countries have difficulty accessing public climate finance when they are “competing” with countries with less capacity and resources. Non-grant instruments are also a challenge for many countries who face fiscal deficits. Similarly, accessing private sector finance can also be a challenge. Unique technical capacity is required to frame needs in a way that attracts investment. There are also many policy and regulation obstacles that can get in the way, and countries are unable to always assess risks and find opportunities for shifting these policies and regulations to allow for greater private investment. Many private sector partners are also not familiar with climate risk and opportunities, which makes it difficult to make the case for their engagement.

Existing Support for Developing Countries

Support is currently being provided to developing countries to help advance NDCs and LTS. In the context of NDCs, current support crosses all stages of NDC implementation, from initial consultations and developing an NDC Implementation Plan, to providing assistance to attract and access public and private finance to implement these plans, and establishing monitoring and reporting systems to track progress. Support is also being provided to address institutional capacity needs, through strengthening arrangements and coordination mechanisms. Beyond current NDC implementation,

support is also beginning to emerge for NDC updates, including strengthening information and data to underpin current NDC targets, updating to incorporate recent development in knowledge and evidence, and encouraging greater ambition, e.g., by highlighting sectors that may not be already considered in some NDCs such as nature-based solutions. NDC update support is still in its initial stages given the recent COP24 agreement on NDC implementation guidelines and the upcoming deadline of 2020.

One of the primary mechanisms for coordinating and advancing this support to countries is through the NDC Partnership, which is elaborated in Box 5 below. This global network of country and institutional partners supports NDC advancement through peer-to-peer learning, while providing a network of knowledge and resources to support climate action in-country. Several major programmes are specifically aligned with the NDC Partnership, including the UNDP [NDC Support Programme](#), the World Bank [NDC Support Facility](#), [NDC Assist](#) led by the German government, and the Inter-American Development Bank's [NDC Invest](#). All of these programmes provide direct support to address specific needs identified by countries to accelerate NDC implementation and updates.

In addition to existing support on NDCs, there is also increasing support to developing countries on LTS. While not all countries have elected to initiate an LTS process, the benefits of these strategies are clear, and resources are emerging to support those interested in embarking on the process. Specifically, a WRI-UNDP initiative on LTS, in cooperation with UNFCCC, has developed a suite of resources to help policy makers integrate long-term climate strategies into national policy-making, including expert perspectives⁶⁷. The initiative is undertaken in collaboration with the NDC Partnership and contributes to the 2050 Pathways Platform. The 2050 Pathways Platform is also a valuable mechanism for supporting countries to plan for mid-century and support LTS processes. This Platform provides a series of resources, learning opportunities, and support to countries to address the issue of planning for the 2050 horizon.

This being said, while support is being provided to countries, this is not currently sufficient to meet the needs and challenges identified in the section above. Support for NDC implementation and LTS is evolving as new experience and lessons emerge, and as the details under the Paris Agreement become further defined and refined. As such, there are several strategies that can be explored to further strengthen the support needed in meeting countries' needs. The following section outlines some of these strategies and provides examples where countries have managed to apply these strategies successfully with international support.

⁶⁷ "Long-Term Climate Strategies". WRI. <https://www.wri.org/climate/long-term-strategies>.

Box 6 | NDC Partnership

The NDC Partnership was launched at COP22 in Marrakesh as a platform for countries to access technical knowledge and financial support to help meet their climate and sustainable development targets. As of January 2019, the Partnership is made up of 91 developing and developed countries as well as 21 international and nine associate organizations, and its Support Unit is hosted by WRI and the UNFCCC Secretariat. The Partnership aims to do three things: 1) *Facilitate technical assistance and knowledge sharing*: advances NDC implementation, and facilitate greater collaboration across sectors; 2) *Create and Disseminate Knowledge Products*: to raise awareness of and enhance access to climate support initiatives, recommended practices, tools, and resources that address NDC implementation; and 3) *Promote enhanced financial support for NDC implementation*: to work with governments to understand and address constraints to accessing bilateral and international support programmes, while aligning development finance initiatives to NDC implementation.

To meet these aims, the NDC Partnership supports a country-driven model through two areas of support. The first is in-country engagement, where the Partnership engages directly with Ministries and other stakeholders to assess needs and identify opportunities for collaboration across sectors, regions, and international partners. Partnership Plans are developed based on consultations with local governments on their needs and priorities with regards to NDC implementation to map existing and planned support and leverage existing skills and resources from partners towards the common, government-driven objective. Secondly, the NDC Partnership develops global knowledge products to help countries access information, address gaps and establish a community of learning and practice to share experiences. Two online Navigators provide searchable databases of financial and technical assistance programs, tools, and resources. The [Climate Finance Explorer](#) is an interactive database that includes information on funds and support mechanisms for adaptation and mitigation activities. [Climate Watch](#) offers comprehensive information on climate and NDC-related data.

Strategies and Examples of Support for Advancing NDCs and LTS

Diving a bit deeper into the specific types of climate assistance available, there is a broad range of support being provided to developing countries through over 100 different funds, programmes, and mechanisms. As discussed, while this support is broad it is not fully sufficient to meet the needs of developing countries. The strategies outlined in this section, therefore, provide ideas and examples of where further support can be strengthened and focused. At the same time, the examples included refer to experiences in developing countries where international support has successfully applied these strategies to advance NDC implementation and LTS. This directly aligns with the approaches discussed in Chapter 3.

These strategies and examples can be divided into three categories: (i) institutional capacity, coordination, and governance; (ii) policy and planning; and (iii) financing.

Institutional capacity, coordination and governance: This category of support focuses on addressing the underlying capacities, systems, and structures that help to govern the planning and implementation of NDCs and LTS. The strategies to advance this support relate to addressing many of the capacity gaps highlighted above. Specifically, this includes strengthening leadership and engagement on climate change through advocacy and facilitating stakeholder involvement. Efforts also support strengthened coordination across government institutions, given the cross-cutting nature of climate-related planning and implementation. This relates to setting up coordination bodies and processes, climate change committees within the government, and information sharing across Ministries and other agencies. In addition, a large area of support is focused on establishing or strengthening systems for monitoring and reporting climate change actions, including MRV systems related to both mitigation, adaptation, SDGs, and finance.

For example, in Zambia, through direct country support funded by international grants, the government has developed a draft NDC implementation framework. This framework aims to strengthen the institutional arrangements defined by the National Climate Change Policy and build national capacity for NDC planning, design, and implementation. This framework will be incorporated into the existing climate change structure. At the same time, a comprehensive mainstreaming process has been supported through separate funding, which looks to integrate NDC targets linked to the implementation framework and SDG targets (along with reference to the Sendai Framework for Action and the Africa Agenda 2063) into national development planning.

Policy and planning: A core strategy for implementing NDCs and LTS is to integrate the pledges, targets, and priorities into national and sectoral development policy, planning, and budgeting. This is done in many countries by first translating LTS and NDC contributions into concrete actions, which can begin through developing NDC Implementation Plans as described in Chapter 3. These Plans define specific actions, which can be integrated into existing development and sectoral plans, contribute to climate change mainstreaming and forging synergies between climate and development outcomes. For example, through international support Trinidad and Tobago was able to develop an NDC Implementation Plan using a combination of qualitative and quantitative approaches for data collection and analysis.⁶⁸ The primary components of the NDC Implementation Plan were recommendations made to strengthen institutional arrangements and capacity, and to mainstream climate change issues into existing policy and legislative frameworks to create the enabling environment for NDC implementation. Also included were sectoral plans for three target sectors, a Climate Finance Plan, and a Capacity Building Action Plan.

Financing: One of the critical challenges faced by many developing countries is accessing and mobilizing the finance needed to deliver on LTS visions and NDC targets. Strategies to address this challenge draw upon some of the approaches discussed in the previous section on strengthening the landscape for NDC finance. Specifically, in terms of public finance, domestic public finance is limited in many developing countries, but it can play a key role in integrating climate action into national, sub-national and sectoral development planning, as well as de-risking private sector finance, blending finance, and presenting to potential financiers that there is significant government buy-in to support and implement climate actions. Strategies have been put in place to help countries better

⁶⁸ http://ledsgp.org/wp-content/uploads/2017/05/Session-2-Essential-Building-Blocks-for-NDC-Implementation_Trinidad-and-Tobago.pdf

assess their current public expenditures, inflows, and budget revenue where it is related to climate change finance, while also identifying additional funding requirements and financing gaps. This in turn helps countries make effective planning and budgeting decisions related to climate finance, identify national resources while better tracking public climate finance, and attracts international investment through better budgeting and greater transparency.⁶⁹

For example, in Bhutan international assistance has been used to undertake a Climate Public Expenditure and Institutional Review (CPEIR), contributing to the review of eight policies and 16 laws. These reviews will provide a breakdown of expenditures related to climate and biodiversity and help in developing climate and biodiversity investment plans. These efforts will lead to a new policy approach that guides implementation for biodiversity, climate, and poverty reduction with a focus on NDC implementation.

At the same time, developing countries are also being supported to access international public funds, including vertical funds such as the Green Climate Fund and Global Environment Facility, to finance mitigation and adaptation action that help meet NDC targets. Many of these funds involve complex project development and application procedures that require extensive technical, human, and financial capacity to undertake. In many developing countries, support is also needed to design and deliver these funds towards concrete adaptation and mitigation actions. The design stage generally includes the policy/planning process and mobilizing resources, while project implementation considers technical support, expertise, and fund management and oversight. Some multilateral organizations, for instance, support large-scale procurement processes. In other cases, international experts implement certain elements of projects to deliver the funds mobilized.

Finally, given that public finance for climate change is relatively limited compared to the scale needed to fully implement NDCs and meet the Paris Agreement goals, private sector sources will need to be scaled up to meet this need. Strategies for supporting an increased access to scaling-up private sector investment can focus on greater engagement of and collaboration with private sector partners by government and establishing public-private partnerships for climate actions. This also includes setting up the right public policies and conditions to de-risk and further incentivize private investment. For example, in Ghana an initiative supported by the Foundation for Climate Protection and Carbon Offset KliK has utilized innovative financing mechanisms under Article 6 of the Paris Agreement to strengthen clean energy access to households and businesses, a specific focus under the NDCs. This mechanism allows banks to provide affordable credit to consumers to fund installations of solar home systems and improved cooking systems across the country. This finance mechanism is dependent on the availability of carbon finance through the international cooperation mechanisms under Article 6, another opportunity for partnership between G20 and developing countries. In this case, this mechanism further enables engagement of private local banks to support climate action.

⁶⁹ More information on UNDP's work in this area, related to climate fiscal frameworks and climate governance, can be found at <https://climatefinance-developmenteffectiveness.org/>.

6. Conclusion

Climate action guided by ambitious NDCs and LTS offers an unprecedented opportunity to reduce GHG emissions, enhance GHG removal by sinks, increase adaptation and resilience to climate change, and strengthen sustainable development benefits in sync with growing national and global economies. This paper has highlighted some key considerations for G20 members when pursuing LTS, NDC implementation and NDC updates, as well as the provision of support for non-G20 and developing countries. It is clear that the G20 stands as a critical forum that can be leveraged to help advance LTS and NDCs and achieve the goals of the Paris Agreement. This applies to strengthening G20 countries' domestic actions, enhancing G20 cooperation with low income and developing countries, as well as advancing cooperation among G20 members themselves.

In line with existing G20 agreements and ongoing efforts, the G20 forum can be further leveraged to help increase cooperation, provide direct bilateral support, facilitate learning, and share expertise on NDCs and LTS. The Hangzhou Summit Communique reiterates the belief of G20 countries that “closer partnership and joint action by G20 members will boost confidence in, foster driving forces for and intensify cooperation on global economic growth, contributing to shared prosperity and better well-being of the world.”⁵⁶ This is already being demonstrated in the context of the 2030 Agenda, with an intent to “make use of the comparative advantage of the G20 as a global economic forum” to advance the SDGs.¹³ Ambitious climate action can also be further advanced through this forum, building on the work being done on the 2030 Agenda. Designing long-term economic development visions that align to the Paris agreement, and reflecting these in LTS and enhanced NDCs by 2020, is a particularly critical focus. Whether it is through coordinating climate and development plans; sharing experiences that help advance NDC planning, implementation, and updates; or designing and supporting new, bold, and innovative ideas that could help trigger the transformation economic transformation needed within and across sectors, the G20 is a powerful forum that can strengthen international cooperation in the fight against climate change.