DEPARTMENT OF
ECONOMIC AND
SOCIAL AFFAIRS

United Nations
Climate Change

GLOBAL CONFERENCE ON STRENGTHENING SYNERGIES

BETWEEN THE PARIS AGREEMENT ON CLIMATE CHANGE AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Maximizing Co-benefits by Linking Implementation of the Sustainable Development Goals and Climate Action

Conference Summary

UN City, Copenhagen, Denmark

1-3 April 2019

Published by the United Nations

Table of Contents

Foreword

The adoption of the 2030 Agenda for Sustainable Development and the Paris Agreement in 2015 established a strong foundation for the coherent implementation of climate action and sustainable development objectives across all levels and sectors. The multiple interlinkages between the 2030 Agenda and the Paris Agreement indicate that integrated and synergistic implementation of both would lead to many benefits. Such an approach would considerably enhance the effectiveness and quality of outcomes, and contribute to the efficient use of resources, coherence across sectors and among actors, and the formation of novel partnerships.

It is in this context that the United Nations Department of Economic and Social Affairs and the United Nations Framework Convention on Climate Change secretariat teamed up, in collaboration with other partners, to organize a global conference on strengthening synergies between the 2030 Agenda and the Paris Agreement. The conference took place from 1 to 3 April 2019 at UN City in Copenhagen, and brought together practitioners, experts and policymakers from both developing and developed countries; international resource persons from academia, think tanks, the private sector and non-governmental organizations; and representatives of relevant United Nations organizations.

The focus of the conference was promoting coordinated implementation at the global, regional and country level. Participants identified examples that specifically illustrate the potential of synergistic and interlinked approaches to realizing the objectives of the 2030 Agenda and the Paris Agreement (including through analyses of, for example, national development plans, nationally determined contributions, national adaptation plans and national risk reduction strategies). Participants also analysed gaps and challenges (including trade-offs), and in the conference outcome summary (see annex 3), made recommendations for strengthening synergy, increasing ambition, advancing implementation action, maximizing co-benefits and stimulating multi-stakeholder partnerships, including directing means of implementation to more coordinated action; scaling up and enhancing the mobilization of resources that could benefit sustainable development at large, including climate action; and ensuring the effective use of resources while avoiding duplication of effort.

We sincerely hope that the conference and this detailed summary will contribute to the better understanding and more effective promotion of synergy between climate action and sustainable development.

LIU Zhenmin

Under-Secretary-General
Department of Economic and Social Affairs
United Nations

Patricia Espinosa

Executive Secretary
United Nations Framework Convention on
Climate Change

Acknowledgements

This document was prepared as a summary of the Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development, held in Copenhagen, Denmark, 1–3 April 2019. The summary was compiled by David Koranyi (UNDESA) and Livia Hollins (UNFCCC), with support from Ariel Alexovich, Bo Fu, Isabel Raya and Nadine Salame (UNDESA), under the overall guidance of Shantanu Mukherjee, Minoru Takada (UNDESA) and Daniele Violetti (UNFCCC).

Co-organized by UNDESA and UNFCCC secretariat, the Conference was supported by many organizations and individuals.

Special thanks go to the Ministry of Foreign Affairs, the Ministry of Climate, Energy and Utilities, and the Ministry of Finance of Denmark for their support for hosting this conference.

UNEP DTU Partnership and the United Nations Office for Project Services (UNOPS) provided excellent organisational and logistical support, which is gratefully acknowledged.

The Conference was generously supported by China through the United Nations sub-trust fund for the 2030 Agenda for Sustainable Development, Norway, the European Commission, the UN Office for Sustainable Development, and the ITAIPU Binacional.

This summary report has benefited from two technical papers commissioned by UN DESA and compiled by the World Resources Institute and the TERI School of Advanced Studies. Their efforts are greatly acknowledged.

UN DESA and UNFCCC secretariat would like to thank all the organizations and individuals for their active participation and engagement during the conference, including the Office of the President of the UNFCCC COP 24, the Alliance of Small Island States, UN Forum on Forest, the Office of the UN Secretary-General's Special Envoy for the 2019 Climate Summit, UN Office for Disaster Risk Reduction, Food and Agriculture Organization, International Labour Organization, United Nations Development Programme, Office of the High Commissioner for Human Rights, Directorate-General for International Cooperation and Development of European Commission, Green Climate Fund, Climate Technology Centre and Network, German Development Institute, Stockholm Environment Institute, Initiative for Climate Action Transparency, International Science Council, Institute for Global Environmental Strategies of Japan, and CONCITO of Denmark.

The support for graphic design by Tamas Kenessey and printing production by the Department for General Assembly and Conference Management (UN DGACM) is greatly appreciated.

1

KEY MESSAGES

1. The adoption of the 2030 Agenda and the Paris Agreement in 2015 established a strong foundation for coherent implementation of climate action and sustainable development objectives across all levels and sectors. Exploiting synergies and co-benefits and making collaborative and coordinated efforts to both achieve the SDGs and implement the Paris Agreement is critical.

2. The implementation of certain SDGs within the sustainable development agenda would significantly contribute to achieving the purpose and goals of the Paris Agreement. The energy transitions envisaged in SDG 7 are vital to lowering GHG emissions relative to 'business as usual' pathways. Similarly, sustainable industrialization (SDG 9), sustainable food production systems and resilient agricultural practices (SDG 2), responsible consumption and production (SDG 12), and sustainable management of forests and other terrestrial ecosystems (SDG 15) as well as of oceans (SDG 14) can all contribute to low-emissions pathways, the creation of decent work and quality jobs and long-term progress in eradicating poverty and other deprivations.

3. If sustainably managed, forests could absorb up to 30 per cent of carbon emissions – more than any other sector or ecosystem. Forests play a key role in enhancing the resilience of rural communities throughout the world. The implementation of the United Nations Strategic Plan for Forests 2017–2030 and forest-related SDGs, including SDG 15, would therefore make a significant contribution to combating climate change, particularly through the integrated implementation of NDCs under the Paris Agreement and the voluntary national contributions under the Strategic Plan for Forests. A significant opportunity exists in scaling up forest-based solutions and increasing policy coherence with a view to accelerating progress towards achieving shared goals and commitments.

4. Progress in limiting the global temperature increase would significantly ease the path to achieving many of the SDGs, such as those related to poverty, hunger, access to water, terrestrial and ocean ecosystems, forests, health, and gender equality and the empowerment of women and girls. Many of the goals and targets can be achieved in ways that would enable adaptive responses to climate change, for example targets related to resilience and disaster risk reduction in SDG 1 (poverty eradication), SDG 9 (infrastructure) and SDG 11 (urban settlements). By addressing the underlying drivers of risk, the enhancement of mitigation and adaptation to climate change can also help achieve the targets of the Sendai Framework for Disaster Risk Reduction 2015–2030. These considerations are particularly relevant for small island developing States, the least developed countries and other countries in special circumstances. Scaling up coherent adaptation and disaster risk reduction action in countries that are already feeling the impacts of climate change is an urgent matter.

5. The challenge of simultaneously addressing climate change and sustainable development demands a decentralized multilevel approach, recognizing the key role of subnational and local governments, local communities and indigenous peoples. In order to avoid silos, national governments need to work with other levels of government on the comprehensive vertical integration and alignment of climate policies at the national, subnational and local level, and on the mainstreaming of climate action in all public policy sectors. Governments are encouraged to provide greater space in decision-making processes at all levels for non-State actors, including communities and other local-level actors, youth, women, workers and the private sector. Only through full participation by all actors and effective social dialogue will a strong social consensus emerge to enable transformational change.

6. When taking action to address climate change, all stakeholders should respect, promote and consider their respective obligations regarding human rights; the right to health; the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations; the right to development; and gender equality, empowerment of women and intergenerational equity. Human rights based approaches to climate action are critical given that the impacts of climate change are already directly and indirectly affecting a broad range of human rights. Member States of the United Nations have obligations under international human rights law to urgently mitigate climate change; build the capacity of all persons to adapt to climate change; and foster learning and cooperation across countries.

A better understanding of how to exploit the synergies and co-benefits of implementing climate action and the SDGs together at the local, national, regional and global scale can catalyse focused action and inclusive collaboration. A bottom-up inclusive approach, engaging the most vulnerable people and communities, can drive policy coherence solutions. Inclusive engagement should encompass all levels of policy creation, implementation, follow-up and review. Particular attention should be paid to groups that face discrimination because of gender identity, race, ethnicity, religion, disability, age or other forms of social, economic or political disadvantage, as well as to groups in small, rural or impoverished urban communities. Non-governmental organizations (NGOs) and the private sector dominate the current stakeholder consultation. Vulnerable groups should also be included.

7. The role of gender is unmapped in many sectors; emphasis should be placed on mainstreaming gender considerations in all action. A cross-cutting indicator addressing gender and vulnerable groups is necessary to ensure the integration of human rights obligations into the implementation of State plans.

8. Youth must be involved in all levels of climate decision-making. Youth need to have systematic access to national and international climate change processes, and should be empowered to act as climate and sustainable development pioneers for all.

9. Climate change is already increasing natural variability and the frequency and intensity of extreme weather events, leading to large human and socioeconomic costs and reversing development gains across various sectors. Building the resilience of people, livelihoods, communities, societies, economies and ecosystems to the impacts of climate change is essential for achieving all post-2015 development agendas. Actions identified in NDCs, national adaptation plans (NAPs) and disaster risk reduction strategies reveal linkages across all SDGs and show that governments are integrating climate action into socioeconomic development and sustainable development strategies, all of which are integral to achieving sustainable development. Progress in integrated plans and strategies, joint monitoring and reporting on common indicators, and shared data sets has already been observed and can be further supported by strengthening governance mechanisms, regulations, capacities and innovative financing instruments, particularly for the least developed countries and small island developing States, with the goal being to integrate climate action and disaster risk reduction into policies, programmes and budgets across all sectors of sustainable development.

Integrated sustainable development and disaster risk reduction that considers urban–rural linkages can be embedded in NDC implementation. A fundamental disconnect exists between the high ambition set at the global level and the status of implementation and action at the national level. While the global debate is about raising ambition, the reality in many countries is that the implementation of commitments previously made (e.g. regarding climate change mitigation) has barely started or is proceeding slowly.

10. GHG emission levels are increasing. Parties may be able to fulfil their Cancun pledges and achieve their NDCs but current efforts are not in line with keeping global warming well below 2 or 1.5 °C. In 2016, global GHG emissions reached 31.2 per cent above the 1990 level, with an average annual increase of 0.9 per cent since 2010. The sectors contributing the largest shares of the emissions are energy supply (34 per cent), industry (22 per cent) and transport (14 per cent), which have also contributed the most to the emission increase since 2010.

In aggregate, Parties are on track to fulfilling the Cancun pledges and can achieve their NDCs with some extra effort. However, current emission trajectories and planned efforts are not in line with meeting the 2 and 1.5 °C goals, which would require the peaking of global emissions well before 2030, followed by a global annual emission reduction of between at least 1.3 and 2.8 per cent. Moreover, between one sixth and one third of the carbon budget consistent with these goals has already been consumed.

11. Parties' reporting provides a clear picture of climate-related impacts and hazards across the globe. Observed atmospheric GHG concentrations reached record highs in 2017, well above the levels observed in nature over the last 800,000 years, and the global mean temperature in 2018 was estimated to be 0.99 ± 0.13 °C above the pre-industrial baseline. At the same time, Parties are reporting significant changes in temperature, rainfall, sea level rise and other indicators, accompanied by increasing (in number and intensity) climate risks and hazards, such as floods, drought, extreme weather events, changing seasonal patterns, changes in the distribution of species and diseases, and glacier and permafrost melting. Such hazards, together with other factors, create a pattern of vulnerability expected to affect all economic sectors, in particular water resources, agriculture, ecosystems, health and forestry.

12. Parties are transitioning towards low-carbon, climate-resilient societies and economies, including through enhanced participatory processes. Progress is visible, but the pace remains slow. The portfolio of actions to reduce emissions and adapt to climate change is expanding as new instruments are adopted, actions proven effective are replicated, existing policies are reformulated and less effective policies are discontinued.

13. With the submission of, among others, 183 NDCs, 10 low-emission development strategies, 13 NAPs and 51 NAPAs, Parties have outlined their vision for low-carbon and climate-resilient development. The relevant international processes benefited from increased stakeholder engagement representing all sectors of society, including the private sector, civil society and academia.
Low-emission development requires deep structural changes to energy, transport and food production, with the challenge of addressing immediate counteracting factors resulting from the increase in energy demand in certain regions. As regards climate change adaptation, more than 90 countries have launched their process to formulate and implement a NAP; however, significant scientific, political, technological, investment and public support related challenges need to be overcome before countries can be considered to be fully prepared for the expected global temperature increase.

The portfolio of measures to address climate change is growing and diversifying from discrete stand-alone projects to comprehensive integrated national programmes. Countries' portfolios are becoming more comprehensive in terms of sectors addressed and also more impactful with respect to climate action.

The measures most commonly used to reduce GHG emissions in developed countries are regulatory economic, fiscal and informational instruments. A mixture of regulatory and economic instruments are used in most developing countries, with innovative policy approaches such as renewable energy auctions being introduced in recent years. Countries are also adopting carbon pricing mechanisms such as trading schemes and taxation. Most measures target the energy sector, followed by the transport sector in developed countries and the forestry sector in developing countries. Adaptation measures include formulating and implementing NAPs; sector-specific pre-emptive interventions; integrating adaptation into strategies, policies, plans and investments; enhancing the information basis; strengthening national institutions and building institutional capacity; and identifying contingency measures to facilitate recovery from unavoidable impacts.

14. The increasing establishment of institutional arrangements for planning, funding, implementing, monitoring and evaluating climate action reflects the growing awareness of the need to address climate change.

Climate change adaptation and mitigation are becoming more deeply embedded in governmental structures in line with the increasing profile of climate action in national political agendas. Countries are establishing inter-ministerial committees to oversee climate action and comprehensive national systems to monitor, evaluate and report on progress.

The transparency framework established under the Convention and enhanced under the Paris Agreement has led countries to enhance their institutional arrangements and improve the quality of their reporting. However, there are still gaps in individual and institutional capacity in government ministries and agencies in many developing countries. Reliance on external assistance and lack of permanent institutional arrangements for and integrated approaches to capacity-building at the national level are barriers to building and retaining capacity in these countries.

15. Support for and cooperation on climate action are central to achieving mitigation and adaptation objectives and increasing ambition as countries face more and more political, technical, socioeconomic and other barriers.

a. Improving the availability, volume and coverage of and access to international financial sources could facilitate the implementation of climate action at the scale and speed necessary to meet the global climate goals. According to the Standing Committee on Finance, global total climate finance flows increased by 17 per cent between 2013–2014 and 2015–2016, reaching USD 681 billion in 2016. Parties have identified finance needs related to capacity and technology, and needs by economic sector, with a few identifying finance needs by activity, including information on preferred financial instrument and priority level. To leverage climate finance and meet the goal of raising USD 100 billion per year by 2020, secure adequate finance for action, effective financial mechanisms for implementation, and enhanced capacity and coordination among stakeholders are necessary.

b. More effective technology development and transfer is key to increasing ambition. Countries require support for implementing and diffusing prioritized technologies, mostly in the energy, agriculture, forestry and other land use, and water sectors. More effective technology development and transfer is contingent upon simultaneously tackling financial, technical, policy, legal and regulatory challenges.

c. For developing countries to mitigate and adapt to climate change, they need to build and retain capacity. Gaps in individual and institutional capacity in government ministries and agencies remain. Stable institutional arrangements for and integrated approaches to capacity-building at the international and national level can help to increase developing countries' ownership and retention of capacity gains.

16. Accelerating the energy transition is crucial to achieving climate objectives and the SDGs alike. There is an urgent need to focus on internalizing climate costs through carbon pricing and on assisting governments in developing better fiscal and regulatory environments in order to close the investment gap at scale. Currently about USD 300 billion is wasted on fossil fuel subsidies, which do not help the poor and which impede renewable energy and energy efficiency efforts.

17. Greater efforts to shift to restoring forests while sustainably providing food, water and energy in order to eradicate extreme poverty and achieve sustainable economic growth are essential. A growing body of evidence suggests that – through afforestation and reforestation, sustainable forest management and reduced deforestation – forests constitute one of the most cost-effective, proven mitigation and adaptation options for addressing climate change. The full potential of forests in this function has, however, yet to be harnessed in many parts of the world.

18. Reducing air pollution for public health reasons is a powerful driver of climate action in major emerging markets such as China and India. In some regions, governments need to define incentives for systemic changes in city planning and financing for clean energy and transportation.

19. Reporting processes and mechanisms shall be approved across the board. At the national level, the consultative process and institutional responsibilities for information collection and synthesis for the voluntary national reviews (VNRs), biennial update reports (BURs) and national communications (NCs) are recommended to be unified. Guidelines for VNRs should be conducive to highlighting institutional synergies and trade-offs between the SDGs and climate action. In particular, countries should

be encouraged to provide a matrix for measurement of progress in the SDGs. NDC processes should follow the example of SDG processes in inclusiveness. Regarding reporting, stakeholder engagement platforms can be developed to integrate the real world with the virtual world. Countries should be encouraged to report best practices as well as institutional challenges through a common multi-stakeholder platform so that they can benefit all countries.

2 CONTEXT

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 with the objective of stabilizing greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system. For more than 20 years, it has served as the main avenue for action and cooperation to address climate change.

The Convention has witnessed several milestones on its journey. The Kyoto Protocol, which sets internationally binding emission reduction commitments for industrialized countries, was adopted in 1997 and entered into force in 2005. In 2012, the Doha Amendment, which includes new commitments in a second commitment period up to 2020, was adopted.

More recently, with the Paris Agreement, governments from all over the world agreed to work towards limiting global warming to well below 2 °C above pre-industrial levels and pursue further efforts to limit warming to 1.5 °C; to increase the ability to adapt to the adverse impacts of climate change and enhance climate resilience; and to ensure finance flows consistent with a pathway to low GHG emissions and climate-resilient development. Delivering on the Paris Agreement implies that global GHG emissions peak as soon as possible and are subsequently phased out by the middle of this century.

Adoption of the Convention and its instruments not only has served to raise awareness of the importance of addressing climate change and to elevate climate action at the highest political level, it also has triggered an unprecedented response in terms of policies, projects and programmes.

The 2030 Agenda for Sustainable Development and the Paris Agreement on climate change were negotiated in parallel and adopted within a few months of each other in 2015. Both the Sustainable Development Goals (SDGs) within the framework of the 2030 Agenda and the Paris Agreement have voluntary actions; in the case of the Paris Agreement, these are based on nationally determined targets. The SDGs are a call to action endorsed by the world's leaders at the United Nations Sustainable Development Summit 2015, while the Paris Agreement is an agreement reached by Parties to the Convention. The climate change commitments that countries have made in the context of the Paris Agreement (nationally determined contributions (NDCs)) are not themselves legally binding, though countries are required to maintain their NDCs and monitor and report on progress in meeting them, as well as to scale up ambition over time.

The Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5 °C (IPCC, 2018) compares the impacts of a 2 °C scenario with those of a 1.5 °C scenario, and while pointing to the possibility of limiting warming to 1.5 °C, highlights the absolute necessity

of doing so. To this end, urgent and unprecedented transitions across all aspects of society – including energy, agricultural, urban and industrial systems – are required, along with multi-stakeholder participation (including that of non-State actors) and integration of climate action into broader public policy imperatives relating to, for example, jobs security and technological advancement. The Special Report on Global Warming of 1.5°C points to the necessity of inclusive, collaborative and synergistic action in achieving the 1.5 °C goal. With the adoption of the Katowice climate package at the twenty-fourth session of the Conference of the Parties, the world entered a new era, focusing its efforts on implementation and the need for increased ambition. Parties emphasized that the next round of new or updated NDCs, to be communicated by 2020, would be crucial to achieving climate goals and would need to reflect increased ambition.

The SDGs are the crux of the 2030 Agenda, and one of the Goals, SDG 13, relates to tackling climate change and its impacts. While this SDG makes reference to the leading role of the Convention in the domain of negotiating international climate policy, it also embeds action to tackle climate change firmly in the 2030 Agenda. Similarly, several targets in other SDGs bear upon climate change mitigation, adaptation and resilience-building. This reflects the recognition by United Nations negotiators that many global goals, from poverty eradication and ending hunger to conserving biodiversity and protecting the planet's oceans, will be unattainable if climate change is left unchecked. It also reflects the recognition that going forward, actions to achieve social and economic objectives need to align with climate change objectives.

In this context, the first Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development addressed the following questions relating to maximizing co-benefits by linking implementation across SDGs and climate action:

- How would unmitigated climate change impact the prospects for achieving sustainable development objectives?

- How far can actions to achieve one or more of the SDGs other than SDG 13 be designed to attain climate benefits simultaneously with SDG 13 and the Paris Agreement and therefore cost-effectively?

- How far can actions to address climate change – whether mitigation or adaptation – advance progress in other SDGs?

- Can the 2030 Agenda provide a framework for climate policies and actions that ensures no one is left behind and vulnerable groups are protected?

- What lessons have governments and other stakeholders learned to date about the benefits and challenges of more closely aligning implementation of the two agendas?

This detailed conference summary builds on the recent analysis of data provided by Parties to the Convention, the Kyoto Protocol and the Paris Agreement through the UNFCCC process; two input papers commissioned by the United Nations Department of Economic and Social Affairs (UN DESA) from the World Resources Institute (WRI) (see chap. 4) and The Energy and Resources Institute (TERI) School of Advanced Studies (see chap. 5); and the discussions at the conference itself. The summary is intended to help advance synergy in implementation of the SDGs and climate action in the context of the in-depth review of SDG 13 at the United Nations High-level Political Forum on Sustainable Development (HLPF) under the auspices of the United Nations Economic and Social Council in July 2019 and the review of all SDGs at the HLPF under the auspices of the United Nations General Assembly at the Heads of State and Government level in September 2019, the High-Level Review of the SAMOA Pathway in September 2019, the sixth session of the Global Platform for Disaster Risk Reduction in May 2019 and the twenty-fifth session of the Conference of the Parties in Santiago, Chile, in December 2019.

3

TRENDS IN GLOBAL GREENHOUSE GAS EMISSIONS

In December 2015, the 21st Session of the Conference of the Parties (COP21/CMP1) convened in Paris, France, and adopted the Paris Agreement, a universal agreement which aims to keep a global temperature rise for this century well below 2 degrees Celsius, with the goal of driving efforts to limit the temperature rise to 1.5 degrees Celsius above pre-industrial levels. However, GHG emission levels are increasing. Parties may be able to fulfil their Cancun pledges and achieve their NDCs but current efforts are not in line with keeping global warming well below 2 or 1.5 °C.

Figure 3.1. Trends in global aggregate greenhouse gas emissions with and without forests and other land use, 2000–2016

Figure 3.1 shows the evolution of aggregate annual GHG emissions from 2000 to 2016 against the 1990 emission level. The increasing emission trend can be divided into three distinct periods in which the rate of emission growth was markedly different:

a. 2000–2007: rapid emission growth, averaging 2.4 and 3.1 per cent per year with and without forests and other land use, respectively;

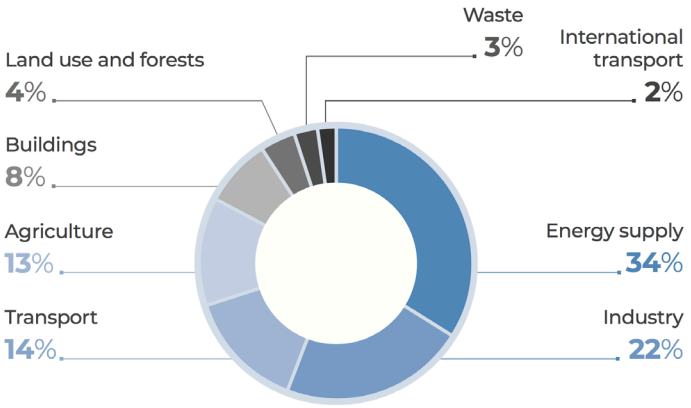
b. 2008–2009: stabilization of emissions, with close to zero growth;

c. 2010–2016: resumed emission growth, but at a slower rate than prior to 2007, with a gradual slowdown in the increase since 2010 (on average, emissions grew by 0.9 and 1.4 per cent per year in 2010–2016, with and without forests and other land use, respectively, but in 2014–2016 this slowed to 0.5 per cent per year).

Currently, the energy supply, industry, transport and agriculture sectors are the dominant sectoral emissions sources (see figure 2). Of the 50.8 Gt CO2 eq emissions in

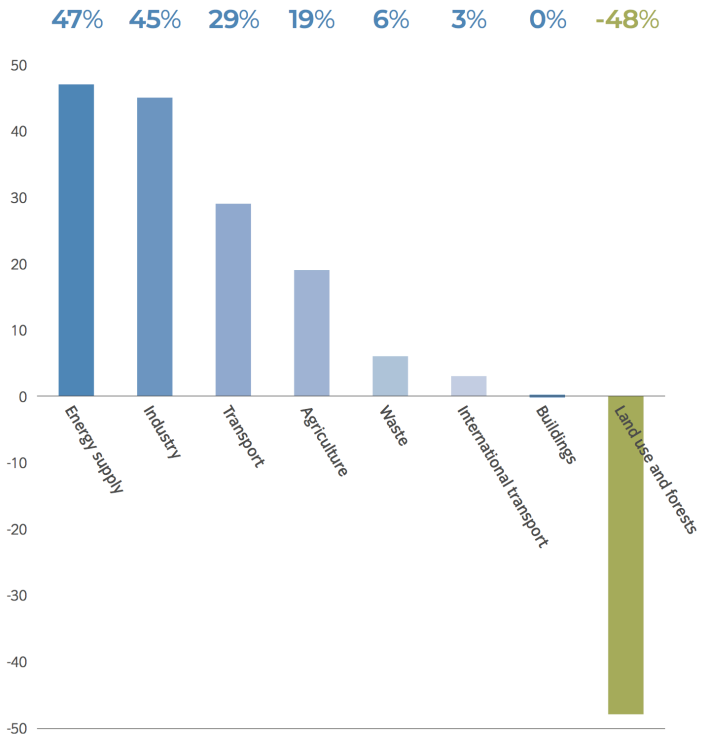
2016, 17.3 Gt came from the energy supply sector, 11.4 Gt from combustion and processes in industry (including use of fluorinated gases) and 7.0 Gt from transport (excluding international transport).

Figure 3.2. Global greenhouse gas emissions by sector in 2016



Energy supply and industry accounted for the largest share of the emission increase between 2010 and 2016. GHG emissions grew in all sectors except forests and other land use, where emissions decreased and compensated for some of the increase in other sectors (see figure 3.3). While most sectors made similar percentage contributions to the GHG emission growth in 2010 and 2016, global transport emissions experienced disproportionate growth, meaning that the sector had a larger share in global emissions in 2016 than in 2010.

Figure 3.3. Contribution to global emission growth in 2010–2016 by sector



Box 3.1.

Atmospheric greenhouse gas concentrations

Greenhouse gases like carbon dioxide or methane absorb infrared radiation in the atmosphere and prevent heat from the earth escaping into space, causing the greenhouse effect. Their increasing concentration in the atmosphere is the primary cause of the observed increase in global average temperatures. According to the World Meteorological Organization, the estimated global mean temperature in 2018 was 0.99 ± 0.13 °C above the pre-industrial baseline. The atmospheric concentrations of three key GHGs reached record highs in 2017: 405.5 ± 0.1 ppm for CO2, 1,859.0 ± 2 ppb for methane and 329.9 ± 0.1 ppb for nitrous oxide, bringing the concentrations of those three GHGs alone to about 460 ppm and currently well above the levels observed in nature over the last 800,000 years. Current atmospheric CO2 concentration specifically is almost twice as high as the historical naturally occurring range (180–280 ppm).

In the AR5 it is argued that staying on course towards the 2 °C target is contingent upon stabilizing GHG concentrations in the range of 430–480 ppm by 2100, but current GHG concentrations are already close to the upper limit of that range.

Sources: World Meteorological Organization. WMO Statement on the State of the Global Climate 2017 and 2018; Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

ENABLING SUCCESS

Parties have identified several challenges in the way of implementing climate action at the scale and speed necessary to meet global climate goals. Successfully addressing the challenges often revolves around improving socioeconomic and behavioural aspects; technology, market and trade conditions; financial, regulatory and institutional frameworks; and financial support. In many instances, suboptimal situations are underpinned by challenges in multiple areas, as well as pervasive gaps in

capacity at the individual, institutional and systemic level.

Socioeconomic and behavioural changes leading to more conducive environments depend on promoting a shift towards more sustainable and less resource-intensive consumer choices, increasing climate awareness and literacy among the general population, and generally overcoming poverty and economic inequality. Understanding the essential driving forces of consumption is seen as crucial to devising strategies for overcoming social, informational and behavioural barriers.

Action to address administrative, institutional and regulatory challenges depends on improving the coordination and clarity of the mandates across different government departments that pursue different or potentially conflicting policy goals (e.g. energy security versus sustainability, mainstreaming of climate change) and across different economic sectors, between national and subnational authorities and between public sector and private actors. Other administrative, institutional and regulatory challenges can be addressed through increased policy certainty, an optimal level of regulation, increasing public awareness of climate change and increasing the public's trust in the public sector.

Better market and trading conditions can be created by establishing pricing mechanisms to incorporate the costs of climate change, moving away from monopolies, promoting economic competition, removing market distortions, changing production patterns and taming adverse macroeconomic policies and trends. Relevant action includes enabling new entrants to supply goods and services and reforming the tax and subsidy systems for better alignment with green growth; for instance, turning carbon subsidies into carbon taxation may lead to a more level playing field for green technologies.

Resolving technical challenges depends on filling data and data capacity gaps, in relation, for example, to evaluating and projecting GHG emission trends or downscaled climate data; on securing the technical knowledge and capacity required for assessing mitigation potential, vulnerability and adaptation approaches; and on putting in place research and development institutions dedicated to climate change.

On capacity-building, more stable institutional arrangements for capacity-building at the international and national level and more integrated and coordinated approaches are effective ways of increasing developing country ownership and retention of capacity gains. Institutional strengthening and capacity-building are required at the local level, as well as strengthened networking, partnerships and sharing of experience.

More effective technology development and transfer is contingent upon simultaneously tackling challenges of a financial, technical, policy, legal and regulatory nature. A possible solution is to introduce or expand financial incentives and ensure that they are aligned with technology objectives. Increased financial resources available for technology would clearly act as an enabler and could be delivered, for instance, through new or increased allocation in national budgets or by identifying and creating financial schemes, funds, mechanisms or policies. Barriers to technology development could be reduced by increasing institutional capacity to develop and deploy the necessary technologies.

Finally, on finance, it is necessary to improve availability, volume, coverage and access to financial sources, especially international sources; secure adequate finance for adaptation and mitigation plans (e.g. vulnerability assessment, adaptation planning and implementation, NDCs); and put in place effective financial mechanisms for programme implementation. Efforts stand a better chance of succeeding when coordination among stakeholders (development banks, multilateral funds, national funds, aid agencies, private companies) and capacity are both enhanced. Finally, more policy certainty and enhanced national arrangements and coordination systems are necessary for boosting private investment.

4

ALIGNING IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS AND THE PARIS AGREEMENT: MACRO AND SECTORAL PERSPECTIVES

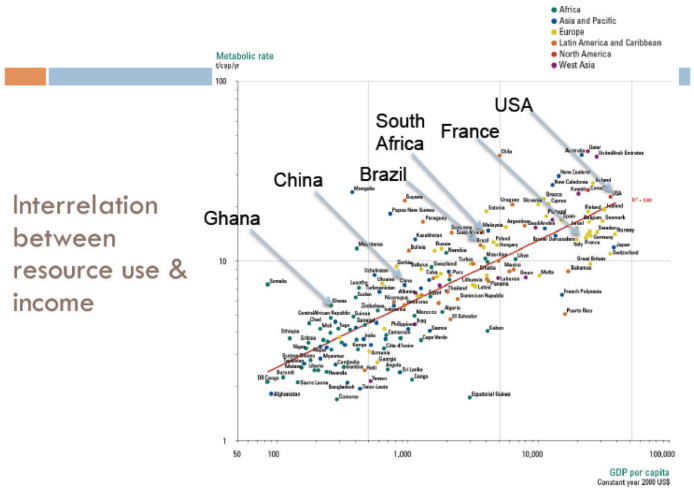
Governments are concerned above all with improving the well-being of their nations' people and to that end, with providing enabling conditions, services and opportunities. A healthy environment and a stable climate system are increasingly understood as being essential conditions for realizing this objective, as evidenced by the universal endorsement of the 2030 Agenda for Sustainable Development and the interlinked targets of its SDGs.

BROAD CONSIDERATIONS

Perhaps the biggest challenge facing governments in coming years is to reconcile policy agendas aimed at achieving and sustaining high standards of well-being for their people with the need to move swiftly and decisively to decarbonize their economies and take other measures to protect the health of the planet in the interest of future generations. At the same time, they will need to factor the necessity of climate change adaptation into future development plans.

The magnitude of the challenge is suggested by Figure 4.1, which shows the rather strong association between a country's per capita income and its resource use. As the figure shows, with few exceptions, developed countries have not made attractive role models for decoupling economic growth and rising living standards from environmental degradation and rising GHG emissions.

Figure 4.1. Global interrelation between resource use and income, 2000



Source: UNEP (2011).

If the link connecting growth, carbon, pollution and resource degradation is to be severed, countries need to have confidence in the viability and sustainability of new low-carbon, climate-resilient and socially equitable paths to growth. These paths need to be not only mapped out, but also successfully pursued. Recent analytical work (notably the work of the New Climate Economy initiative[1]) has sought to demonstrate the viability and superiority of such growth paths in achieving sustainable development outcomes. Meanwhile, technology trends and cost trajectories – for example, for renewable energy, carbon storage and other technologies – point to a future where a low-carbon economic transition is driven increasingly by economic factors, with a diminishing need for government subsidies, mandates and other support measures. To the extent that these cost reductions and technological improvements continue at somewhere near historical rates, the costs of transition should remain relatively low in relation to gross domestic product and total investment.

Infrastructure planning and investment, given its long-term perspective and strong lock-in effects, will be crucial to the pursuit of new development paths. In the next 15 years the world will build infrastructure worth around USD 90 trillion, more than the entire current stock. Seventy per cent of that investment will be made in developing countries and emerging markets. The investment choices they make will be crucial to determining whether the infrastructure of the future is sustainable or not. Low-carbon and climate-resilient infrastructure is critical to achieving many of the SDGs (Figure 4.2).

Figure 4.2. Sustainable infrastructure is the essential foundation for achieving the Sustainable Development Goals

Planning and investment decisions made today must consider whether the infrastructure installed now will be viable in 20, 30 or 40 years. In the case of energy-generating and -using infrastructure, this means anticipating whether fossil fuel dependent infrastructure will become stranded assets under more stringent government climate policies. In the case of climate-resilient infrastructure, the questions relate to location – for example, whether to build infrastructure in low-lying coastal regions – and to the stringency of specifications – that is, whether to build in redundancy or other features now to withstand extreme weather and other climate-related events in the future. Natural infrastructure is now more widely considered an attractive low-cost option for certain infrastructure needs, including water supply and coastal protection.

Sustainable infrastructure planning and investment presents the interdependencies of the climate action and sustainable development agendas in the clearest terms, in part because the nature of infrastructure forces governments and other decision makers to take the long view. As the New Climate Economy report of 2016 explains: "Boosting investment in sustainable infrastructure can stimulate demand at a time when many economies are struggling. For inclusive development: Infrastructure is key to the delivery of a number of essential services. It provides a foundation for much of the SDGs' vision for inclusive development. For the climate: Infrastructure underpins all the major sources of greenhouse gas emissions: our energy

1 https://newclimateeconomy.net/.

systems, transport systems, buildings, industrial operations and land use." (NCE, 2016)

Dialogues on climate and development

The Swedish International Development Cooperation Agency, in cooperation with Swedish embassies in several countries, convened stakeholder dialogues to discuss the alignment between the 2030 Agenda and climate action (Shine, 2017). The discussions addressed the pursuit of climate-compatible development policies, the development benefits of implementing NDCs, the priorities and challenges of adapting to climate change, and strategies for addressing trade-offs between climate and development agendas. While some dialogue participants expressed the view that development should be prioritized over environmental impacts in the short term, others underscored the potentially high costs of waiting to address climate change and other environmental issues.[2]

Maltais (2019) contains a summary of the dialogues that took place in Cambodia, Uganda, United Republic of Tanzania, Viet Nam and Zambia. The discussions in Cambodia highlighted the dilemmas faced by many developing countries: "Given Cambodia's ambition of becoming an upper middle income country by 2030, more understanding was called for on trade-offs between sustainability and development agendas. Policies for managing trade-offs are required, and questions about how Cambodia can best combine industrialisation policies with the SDGs need to be addressed." (p.12)

The global SDGs were conceived as indivisible precisely to discourage focus on progress towards one goal or target while neglecting others, with a risk to sustainable development. Thus, for example, SDG target 8.1, with its emphasis on strong economic growth performance, if pursued without regard for other targets under SDG 8, would most likely drive increased carbon emissions. SDG target 8.4, on the other hand, calls for decoupling growth from environmental degradation, which would moderate if not neutralize emission growth.

SECTORAL PLANS AND POLICIES

An analysis of the SDG targets and indicators suggests that, in most cases, progress towards specific socioeconomic goals reinforces progress towards climate goals, and vice versa; in some cases, however, difficult trade-offs may need to be addressed (e.g. providing universal, affordable energy access while transitioning rapidly away from carbon-based energy; expanding transportation infrastructure without increasing GHG emissions apace).

Sustainable energy (SDG 7)

The Sustainable Energy for All (SEforAll) initiative launched by former United Nations Secretary-General Ban Ki-moon has brought to the fore of development discussions the imperative of providing clean and affordable energy to the many poor people who still lack access to electricity and clean cooking fuels and technologies. This initiative and the growing recognition of energy's centrality to raising living standards and economic development inspired and informed the formulation of SDG 7.

The goal and its targets weds social equity with climate action. The dramatic reductions in renewable energy costs of the past two decades have brought this association ever closer. Off-grid renewable energy can, in many locations, provide cost-competitive electricity to remote rural populations, which form the bulk of the 1.2 billion people without access to energy. The market for off-grid renewable energy is growing rapidly, with off-grid solar recording annual growth of about 60 per cent since 2010. By the end of 2017, off-grid solar had reached roughly 73 million households, or more than 360 million people (NCE, 2018a).

Scaling up affordable, clean, efficient and culturally appropriate alternatives to traditional biomass cookstoves remains a major challenge in many developing countries. Where liquefied petroleum gas or natural gas are not feasible options, advanced biomass cookstoves may offer some improvement in indoor air quality and reduction in black carbon emissions. The International Energy Agency estimates that universal access to clean cooking alone could avoid 1.8 million premature deaths per year in 2030, free up billions of hours and improve the livelihoods for hundreds of millions of women (IEA, 2017). A switch to cleaner cooking options would also significantly reduce GHG emissions and the ambient temperature during this century (Lacey et al., 2017).

2 For more information on the dialogues, see https://sdg.iisd.org/news-swedish-dialogue-series-addresses-ndc-sdg-alignment/.

Food security through sustainable and resilient agriculture (SDG 2)

As the world's agriculture expands to feed a growing population, pressures on forests, fertile lands and fisheries are expected to continue apace. So too will the GHG emissions associated with forest conversion and agricultural production. Potential trade-offs exist between different SDG 2 targets; for instance, unsustainable agricultural productivity improvements (target 2.3) may constrain the maintenance of ecosystems (target 2.4). Negative interactions of this type can be exacerbated by biofuel production, which depends on feedstock, as a means of increasing the share of renewable energy in the energy mix (target 7.2), which in turn may threaten food security (target 2.1) (ICS, 2017, p.228).

With scientific and technological developments and a renewed appreciation of traditional knowledge and of crop genetic diversity, more sustainable approaches to feeding a growing population have become available and are increasingly being deployed, though there is still a tremendous need for scaling them up. Climate change is intensifying pressures on food and other crop production, and agriculture, especially in the most vulnerable agricultural regions, will need to adapt if the world's population is to avoid future food insecurity and hunger.

The shift to more sustainable forms of agriculture combined with strong forest protection could deliver, by 2030, more than USD 2 trillion per year in economic benefits and generate more than 70 million jobs, mainly in developing countries (BSDC, 2017). It could also improve food security, for example by reducing food loss and waste (one third of all food produced is lost or wasted along the food chain), and deliver roughly one third of the mitigation needed to stay within a 2 °C temperature rise (Griscom et al., 2017). At the same time, the restoration of forests, degraded lands and coastal zones will strengthen defences and boost adaptation to climate change impacts such as more extreme weather and sea level rise (NCE, 2018b).

Sustainable cities (SDG 11)

Urbanization continues at a rapid rate in many developing countries. As existing cities expand and new cities emerge, their spatial planning will make a tremendous difference to their social inclusiveness and environmental sustainability. Cities that have developed with weak urban planning and zoning regulations and with rapid growth of the private vehicle stock have paid a heavy price in terms of air pollution and traffic congestion.

Where the elements of physical infrastructure, namely roads and transport networks, have not yet been laid in concrete or steel, there is an opportunity to avoid a lock-in to car-based urban transport systems and to opt instead for other transport modes, including a mix of public transport and non-motorized transport (NCE, 2018b). To the extent that private vehicles remain a part of the transport mix, greater reliance on ride-sharing and an eventual transition to electric vehicles are likely, especially, in the case of the latter, as storage options improve, as electric vehicle costs decline with scale and with the increasing prevalence of learning economies, and as charging infrastructure is more widely deployed.

The densification of cities with decent, affordable housing and mixed zoning to facilitate short commutes is one key element of smart city design. Planning cities with a view to improving not just social inclusion (SDG targets 11.1, 11.2 and 11.3) but also environmental sustainability (11.6 and 11.b) holds the prospect of realizing sizeable local health, employment and productivity benefits while also minimizing cities' carbon footprints per dollar of gross domestic product and per resident.

Harnessing SDG and climate synergies while minimizing trade-offs across key sectors of the economy can deliver multiple co-benefits. These co-benefits enhance the attractiveness of the investments from a social perspective. The policy environment will be critical to ensuring that these social benefits are internalized so as to drive private investment decisions.

SITUATING CLIMATE ACTION IN THE 2030 AGENDA

IPCC (2018) examines synergies and trade-offs between climate action (both mitigation and adaptation) and sustainable development outcomes[3]. With respect to mitigation, the report finds that "the number of synergies between mitigation response options and sustainable

3 Dodwell et al. (2016) includes examples in which mechanisms – whether related to governance, financing, or monitoring and review – for delivering NDCs also contribute to achieving SDGs other than SDG 13.

development exceeds the number of trade-offs in energy demand and supply sectors; agriculture, forestry and other land use (AFOLU); and for oceans (very high confidence)… The 1.5 °C pathways indicate robust synergies, particularly for the SDGs 3 (health), 7 (energy), 12 (responsible consumption and production) and 14 (oceans) (very high confidence)…For SDGs 1 (poverty), 2 (hunger), 6 (water) and 7 (energy), there is a risk of trade-offs or negative side effects from stringent mitigation actions compatible with 1.5 °C of warming (medium evidence, high agreement)" (pp.447 and 448).

While only a few countries' NDCs under the Paris Agreement explicitly reference the SDGs,[4] many recognize the links between climate action and social and economic development. "Some countries include concrete examples of specific co-benefits of their intended climate actions, such as health benefits from reduced air pollution; improved energy access and security; improved water quality and management; social progress, including poverty reduction, increased well-being and job creation; economic diversification; and synergies between adaptation and mitigation actions towards building resilience, particularly in areas of agriculture and forestry, as well as relating to food security." (United Nations Climate Partnerships for the Global South and United Nations Climate Change Secretariat 2017, p.44.)

Beyond lingering concerns over growth performance under tight carbon constraints, many developing countries still confront the 'fierce urgency of now' with respect to lifting their people out of extreme poverty. The IPCC Special Report on Global Warming of 1.5 °C is a reminder of the urgency of strong climate action and the window of barely more than a decade in which to contain the risk of severe climate consequences. The dilemma faced is that the poor (and especially the poorest) are apt to be the most vulnerable to climate change, and at the same time there is a risk that they may bear too heavy a burden from forceful climate action.

Leaving no one behind

'Leave no one behind' is one of the key commitments of the 2030 Agenda. It is therefore imperative that it be considered in relation to climate policies, insofar as they impact the poorest and most vulnerable people. While some climate policies could, if not properly designed, adversely impact the poor, climate policies can also be explicitly designed with a view to providing benefits to them. For instance, the poor and other vulnerable groups could be targeted for training to qualify for job opportunities in, for example, the renewable energy industry.

How, practically, can climate policies and actions adhere to the commitment to leave no one behind? How can they be designed and implemented in such a way that they at least do not impose a heavy burden on poor people or other vulnerable groups (e.g. workers in 'sunset' industries such as coal), and at best, yield income, health and other benefits for them?

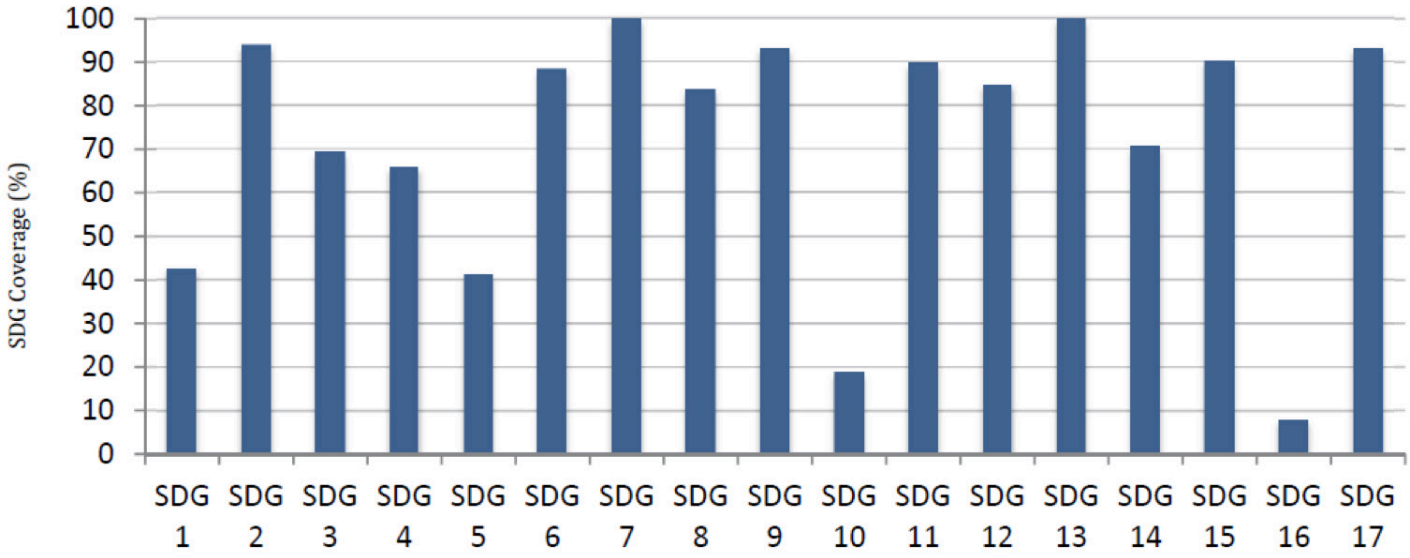
In the light of the critical need for countries to raise the ambition of their NDCs, assurance that climate action can be made compatible with the commitment to leave no one behind is crucial to mobilizing broad political support for strong action. In this regard, designing and implementing climate actions may include:

- Addressing the potential negative effects of climate efforts on the poor and other vulnerable groups;
- Paying close attention to where climate policy (including adaptation) needs to be directed to realize benefits for the poor;
- Seizing opportunities for addressing equity and poverty in climate-cum-development policy design.

Although a number of NDCs highlight the need to contribute to reducing inequality and to adopt a gender perspective to climate action and sustainable development, few include concrete measures for doing so.

4 See, for example, the NDCs or intended nationally determined contributions (INDCs) of Bolivia (Plurinational State of), Cuba, Egypt, Eswatini, Guatemala, Indonesia, Jordan, South Sudan and Uganda. It is not surprising that few countries reference the SDGs given that many INDCs were issued before the SDGs were formally adopted by Heads of State and Government at the United Nations Sustainable Development Summit in September 2015.

Figure 4.3. Percentage of nationally determined contributions of developing countries that address each Sustainable Development Goal



Source: UNFCCC secretariat analysis of developing country Party nationally determined contributions.

Figure 4.3 shows the percentage of developing country NDCs that include links to each SDG. The high percentages of NDCs addressing Goals 2 (zero hunger), 7 (affordable and clean energy), 9 (industry, innovation and infrastructure), 11 (sustainable cities and communities), 13 (climate action) and 17 (partnerships for the Goals) are as expected. What is noteworthy are the low percentages of NDCs referencing Goals 1 (no poverty), 10 (reduced inequalities) and 16 (peace, justice and strong institutions). Climate actions, as spelled out in NDCs, are not yet widely understood to be integral to the policy objectives of these Goals. This observation is corroborated by data from Climate Watch, which show that the NDCs of the first round have addressed key SDG targets related to the 2030 Agenda commitment to leave no one behind in a limited and uneven fashion (Figure 4.4)

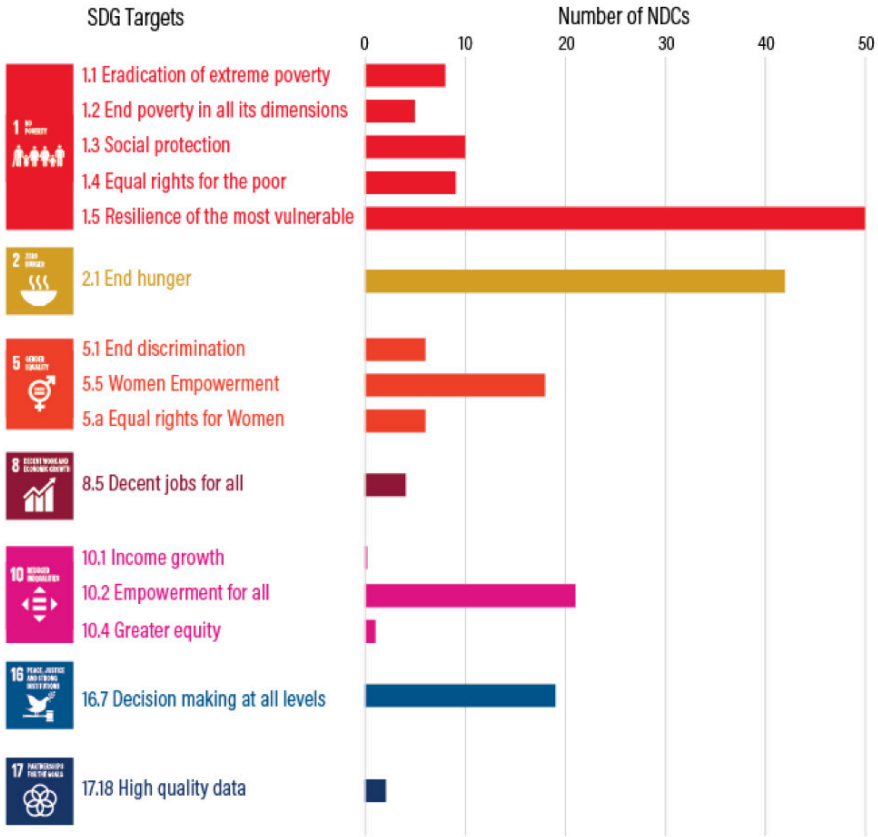


Figure 4.4. Alignment of nationally determined contributions with Sustainable Development Goal targets relevant to the 2030 Agenda for Sustainable Development commitment to leave no one behind

Source: Climate Watch (n.d.).

Just transition

Net carbon neutrality by mid-century can be achieved only through a major transformation of energy systems and major structural changes in economies. We know from history – the industrial revolution, the information technology revolution – that structural changes can be disruptive and can require adjustments, and that some members

of society are better able to adjust to the changes than others. The coming adjustments in economies around the world will lie in the sectoral composition of gross domestic product, the sectoral allocation of capital and labour, and the skills required by workers in emerging versus declining sectors. 'Sectors' here should be fairly narrowly defined, as many shifts will occur within a broad sector; for example, in the energy sector there will be shifts from fossil fuel powered electricity to zero-carbon sources, from internal combustion engine vehicles to electric vehicles, and from cement and steel to other building materials. Some jobs will be destroyed and others created. The net effect these changes will have on employment is unknown. One critical concern is the transferability of skills from jobs phased out to those phased in; for example, from jobs in the operation and maintenance of fossil fuel power plants to those in the operation and maintenance of renewable energy plants.

Concern over fostering a just transition of the workforce to a zero-carbon future, a transition that provides adequate social protection, reskilling and productive redeployment for impacted workers, as well as adjustment assistance for their communities, was prominent during the twenty-fourth session of the Conference of the Parties in Katowice, Poland, in 2018. A number of countries have established commissions, undertaken studies and formulated measures to foster a just transition as part of their national climate change strategies (NCE, 2018a). Measures to foster a just transition are one way in which governments are aiming to leave no one behind in the context of climate action.

Viewing climate policy through the lens of leaving no one behind should remind policymakers that, among the criteria they need to consider when deciding on the desirability of a particular policy, distributional impacts – especially on the poor and other vulnerable groups – need to be considered, along with effectiveness in achieving the objective or target, political feasibility, cost-effectiveness and administrative simplicity.

Whether specific attention needs to be given in climate policy design to the impacts on the poorest or other vulnerable populations will depend on the circumstances. Bearing in mind the intent of SDG target 16.7 to provide a voice to the voiceless (that is, to ensure responsive, inclusive, participatory and representative decision-making at all levels), and in the spirit of leaving no one behind, countries may wish to consider incorporating legal provisions for a just transition in future climate change legislation or amendments to current legislation and implementing regulations.

A number of countries have already begun to reflect just transition considerations in national institutions and policies (NCE, 2018a). For instance, in 2019, Germany's 'coal commission' – a committee established by the Government and made up of coal sector stakeholders tasked to explore the terms for a fair and feasible German coal exit – came to a landmark compromise agreement (Egenter and Wehrmann, 2019) on a full exit from coal production by 2035–2038 (Sartor, 2019). Uruguay has implemented International Labour Organization guidelines for a just transition; Canada has established a federal task force on just transition, including social dialogue and union participation; and China has created a USD 15 billion fund for retraining, reallocating and enabling the early retirement of some 5–6 million people adversely affected by reducing coal and steel overcapacity. In its NDC, South Africa refers to the need for an "inclusive and just transition to a climate-resilient economy and society" without referring to any specifics of national policies. Worrall et al. (2018) observe that, although the South African Government has put in place employment policies to develop skills in renewable energy, a national reskilling programme is not in place and there has been no analysis of the distributional impacts of the energy transition or the socioeconomic impacts of phasing out coal. The National Planning Commission of South Africa has, however, been leading a stakeholder consultation process (Joubert, 2018) to gain consensus on what a just transition to a low-carbon society means for South Africans (Elliott, 2019).

There are other examples[5] of initiatives by non-State actors and of governments; for example, the Just Transition Fund in the Appalachian region of the United States of America, and the pension funds of the Governments of the United Kingdom of Great Britain and Northern Ireland and of France, which have factored just transition into their climate policies and engagement priorities (Robins et al., 2018). In Port Augusta, Australia, workers and unions at a coal-fired power plant being shut down lobbied successfully to have a solar thermal plant built in its place, enabling workers to transfer their skills and keep their jobs.

Leaving no one behind in climate policy extends beyond addressing the displacement of workers in declining

5 See http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/01/world-map_v4.jpg.

industries. Other difficult questions governments may confront include: What would phaseout of coal-fired power generation mean for the affordability of electricity by the poor? How can affordable access be ensured?

GOVERNMENT EFFORTS TO ADDRESS THE LINKAGES BETWEEN CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT

How have the linkages between NDCs and SDGs been addressed by governments so far? What are the different approaches and entry points for governments in aligning climate policies and actions with the broader sustainable development objectives more closely in practice?

Figure 4.5. Entry points for governments in aligning nationally determined contributions and Sustainable Development Goals

Source: UNDP (2017b).

The United Nations Development Programme (UNDP) has been advising national governments on their implementation of both the 2030 Agenda and climate commitments since 2015. UNDP recognizes the value of more closely aligning the implementation efforts of these two agendas, and has identified a number of entry points for working to achieve such alignment (UNDP, 2017b) (Figure 4.5).

Despite the growing recognition of the opportunities for realizing synergies between the sustainable development and climate change agendas, many countries report that linking them is challenging because each agenda has its own history, community of actors and political dynamics. National-level implementation of the 2030 Agenda and the Paris Agreement generally proceeds on different tracks – with distinct institutional, policy and monitoring frameworks for each. In most countries, environment ministries steer the climate change agenda while more central cabinet-level institutions, such as offices of the president or prime minister or planning or finance ministries, are entrusted with coordinating SDG implementation. Limited coordination among the institutions reduces the ability of policymakers to identify linkages and opportunities for jointly pursuing national climate action and sustainable development targets (Bouyé et al., 2018).

A growing number of countries, however, aim to foster the alignment of implementation and synergies between the sustainable development and climate action agendas. Drawing on WRI and German Agency for International Cooperation (GIZ) research, the following section captures key entry points that early movers have used to address sustainable development and climate action linkages both in planning climate actions and in setting their national targets and priorities to advance the global SDGs at the national level.

ANALYSIS OF LINKAGES WITH THE SUSTAINABLE DEVELOPMENT GOALS IN CLIMATE POLICY PLANNING

Many countries have highlighted the main sustainable development benefits of their NDC, with some referencing specific SDGs. Only a few, though, have systematically assessed the impact of climate actions on the SDGs in order to foster SDG–NDC integration and build a stronger

case for advancing climate action.

Ex ante Sustainable Development Goal assessment of new climate policies and actions

A few countries have taken into account the impact of proposed climate policies on the SDGs in formulating their climate plans. Indonesia was a pioneer in considering benefits for the SDGs when selecting actions for its NDC. More recently, with the support of WRI, Kenya undertook an SDG impact assessment of the actions proposed for its National Climate Change Action Plan 2018–2022. The assessment was carried out in close collaboration with both climate change and SDG focal points in sector-based ministries and identified SDG and climate synergies and trade-offs that would inform the selection of key low-carbon, climate-resilient development opportunities. The assessment also called for specific measures for reducing inequality and increasing gender equality.

Ex post Sustainable Development Goal impact assessment of nationally determined contributions

Some countries have undertaken an assessment of the impacts of their existing NDC on the implementation of the 2030 Agenda. Mexico's experience shows that the active involvement of sector-based ministries in such an assessment builds understanding of climate action and sustainable development linkages, enables the identification of existing incoherence of policies within and across sectors, and helps gain buy-in across the government to advance the NDC in synergy with the SDGs (Box 4.1).

Regular assessment of climate and Sustainable Development Goal synergies in nationally determined contributions and long-term strategy implementation

Some countries plan to closely monitor the impacts and expected benefits that climate actions have for sustainable development priorities. For instance, Germany's Climate Action Plan 2050 calls for aligning with the SDGs while advancing the objective of GHG neutrality and requires periodic economic and social impact assessments of climate sectoral targets.

Indicators for tracking climate and Sustainable Development Goal synergies and trade-offs

Countries can set indicators for monitoring the evolution of the impacts of their climate actions on national SDG priorities. Kenya's National Climate Change Action Plan 2013–2017 included indicators for climate action and sustainable development synergies and trade-offs. For instance, one indicator measured the average cost of public transportation per journey in order to monitor whether improvements in energy efficiency of the vehicle fleet resulted in higher ticket prices.

Box 4.1.

Mexico's analysis of the co-benefits of its nationally determined contribution for the national implementation of the Sustainable Development Goals

In 2018, the Office of the President of Mexico and the Secretariat of Environment and Natural Resources released a study proposing a co-benefits approach to the integrated implementation of the 2030 Agenda for Sustainable Development and the Paris Agreement, with support from the German Agency for International Cooperation on behalf of the German Federal Ministry of Economic Cooperation and Development.

Drawing on a review of the literature on common sustainable development co-benefits of climate action, the study maps the intersections between the nationally determined contribution (NDC) and the Sustainable Development Goals (SDGs) and provides options for fostering SDG benefits from climate actions. These options were identified in an interministerial and multi-stakeholder process.

The analysis shows that all climate actions under the NDC can generate sizeable co-benefits for SDG implementation, with the greatest synergies lying in the agriculture and the land use, land-use change and forestry sectors. NDC actions with the greatest benefits were proposed as priority "development accelerators".

Underscored in the study was the lack of concrete ways of realizing potential co-benefits for poverty eradication (SDG 1), gender equality (SDG 5) and inequality reduction (SDG 10).

This study has helped develop a compelling case for NDC implementation and has secured greater buy-in from line ministries for NDC mainstreaming in policy planning.

CONSIDERATION OF LINKAGES WITH THE NATIONALLY DETERMINED CONTRIBUTION IN SETTING PRIORITIES FOR THE NATIONAL IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS

Countries have considered climate commitments in various ways when formulating nationally relevant SDG targets and setting policy priorities.

Alignment of nationally adapted Sustainable Development Goal targets with climate commitments

The national commitments defined in NDCs, which often have a 2030 timeline, are particularly useful in translating climate-related SDGs at the national level, given that SDG targets were quantified only at the global level or remain unspecific. A few countries, including Ethiopia, Finland and Sweden, have embedded the Paris Agreement goals of climate resilience and carbon neutrality in their national SDG targets. The carbon neutrality goal is one of the two overarching priorities in Finland's National Implementation Plan for the 2030 Agenda.

Measures fostering climate and Sustainable Development Goal synergies highlighted in nationally determined contributions

The formulation of national SDG targets is an opportunity to tackle sustainable development challenges that are identified in NDCs as a condition for moving climate action forward. For example, Uganda's NDC underscores the importance of SDG 7 given the country's need for greater access to modern energy sources in order to reduce reliance on fuelwood and decrease deforestation. In turn, SDG 7-related targets embedded in Uganda's national development plan aim at increasing electricity access from 14 to 30 per cent of the population through the provision of renewable energy sources and liquefied petroleum gas, which will replace firewood and charcoal in rural areas.

ANALYSIS OF CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT LINKAGES IN DEVELOPMENT POLICY PLANNING

Efforts at embedding the two sets of goals in national, sectoral and local development plans often lack an integrated approach. The issuance of different guidance for mainstreaming SDGs and the NDC tends to overload planning processes and does not help policymakers to identify linkages between these agendas. Early country experiences suggest that the following three elements are among those that can provide incentives and support for policy and project planners to address climate action and sustainable development policy linkages.

Guidance enabling integrated planning for the climate action and sustainable development agendas

Updates of standard planning guidance, to be followed by all institutions, can spur and support sectoral and local planners in identifying linkages and selecting priorities on the basis of benefits for the two agendas. Two examples of best practice are the requirement in Bangladesh's Seventh Five Year Plan FY2016–FY2020 for mainstreaming the poverty–environment–climate disaster nexus in project design and in budgetary and monitoring processes; and Mexico's Planning Law and Climate Change Act, which have been revised in the past two years to align the national development plan with the SDGs and the Paris Agreement goals.

Capacity-building to identify and address policy linkages

Given that the formulation of national development plans typically engages a wide range of governmental, parliamentary and non-State actors, several countries, including Colombia, Ethiopia, Indonesia and Togo, have

used this planning process to build understanding of the implications of both agendas for national development.

Monitoring of the joint integration of Sustainable Development Goals and nationally determined contributions in policy planning

In some countries, planning and finance ministries have started to assess the alignment of national and sectoral development plans and budgets with both the NDC and the SDGs. In 2019, Uganda updated its evaluation of annual budgets with this in mind. Assessments of this kind could look at how to address trade-offs and missed opportunities for synergies.

DEVELOPMENT COOPERATION SUPPORT TO ADDRESS SUSTAINABLE DEVELOPMENT AND CLIMATE ACTION LINKAGES

National efforts to address SDG–climate linkages need to be supported by a more integrated approach to capacity-building and technical assistance for NDC and SDG implementation. Donor support has tended to focus on climate action and the SDGs as relatively separate issues but a number of initiatives are starting to link the two. They include UNDP's mainstreaming, acceleration and policy support and its NDC Support Programme, which help address SDG–climate linkages and monitor benefits from climate actions for the SDGs; the 2030 implementation initiative implemented by GIZ on behalf of the German Federal Ministry of Economic Cooperation and Development, which, for example, supports the Office of the President in Mexico (which is responsible for SDG implementation) in fostering joint implementation with the Paris Agreement; and WRI technical assistance, which helps countries carry out SDG impact assessments of climate actions and embed an integrated planning approach to SDG and climate actions in planning guidelines and tools for sectoral and local development strategies and projects.

TOOLS FOR MAPPING THE INTERCONNECTIONS BETWEEN THE SUSTAINABLE DEVELOPMENT GOALS AND CLIMATE COMMITMENTS

Several exercises have developed tools for mapping climate commitments (normally but not always as reflected in NDCs) against the SDGs; for example, those by WRI, GIZ, TERI, the German Development Institute (DIE), the Stockholm Environment Institute (SEI), Climate Analytics, the Environmental Change Network (ECN) and the NewClimate Institute. This section reviews the main findings and the limitations of this work. Several tools are qualitative in nature, with little quantified evidence. Quantification varies from rough scalar ratings to specific estimates of the different impacts of climate actions on other sustainable development outcomes such as employment, health and access to energy. The tools that rely on NDC language face the challenge that many NDCs make, at best, general references to sustainable development objectives.

Many countries and regional groupings (e.g. the European Union) had climate policies in place well before the adoption of the Paris Agreement in 2015. The intended nationally determined contributions (INDCs) submitted by countries in the lead-up to or soon after the adoption of the Paris Agreement provide an indication of the initial ambition of individual countries' efforts to reduce GHG emissions (with GHG targets set for 2025 or 2030), and in many cases, to adapt to climate change and build resilience. They also describe in greater or lesser detail the policies and other measures designed to achieve the stated emission, renewable energy and other targets. Many developing countries' NDCs contain two sets of targets – the first unconditional and the second conditional on the provision of enhanced international finance and other support for decarbonization.

One task governments have faced after adopting the Paris Agreement is aligning their NDCs with existing national climate plans and policies to increase the likelihood of delivering on the NDCs. Delivering on climate commitments implicates multiple economic sectors, so better integrating climate planning and policy into mainstream economic development planning has also been imperative. In the light of the prevalent concern that vigorous climate mitigation measures could constrain economic growth, there is a growing recognition of the need to map and as far as possible quantify links between climate action and social and economic outcomes as reflected in various SDGs and their targets. At the same time, it is increasingly appreciated that by no means do all links between climate action and the economy involve trade-offs; indeed, well-designed and executed climate policies can yield significant co-benefits for the economy, society

and the environment. This growing body of evidence on the positive economic opportunities for ambitious climate action is well documented in the various reports of the New Climate Economy initiative.

What follows is a review of a number of mapping and analytical tools for looking at the interrelationships, whether positive or negative, between climate actions and various dimensions of sustainable development.

Mapping linkages among Sustainable Development Goals

The SDGs themselves are interlinked through targets by design. Interlinking was one of the principle ways by which United Nations negotiators ensured that the three dimensions of sustainable development – economic, social and environmental – were adequately balanced throughout the goal set. The linkages were mapped originally by UN DESA in a 2015 working paper (Le Blanc, 2015).[6] That paper draws on a textual analysis of the wording in the targets to make connections among the Goals. Figure 4.6 contains a map, generated from the software used in that paper, of the connection of SDG 13 (climate action) to seven other SDGs. Science suggests several other connections that are not well captured in the language of the Goals and their targets themselves (e.g. the implications of climate actions for health (SDG 3)).

Figure 4.6. Linkages between Sustainable Development (action) and other Sustainable Development Goals, as ca language

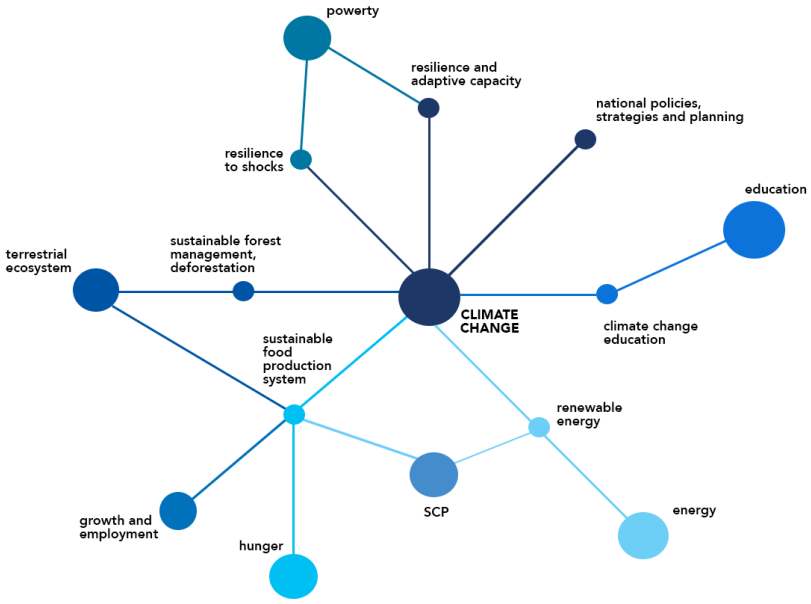
Source: Based on the database from Le Blanc (2015).

This pioneering work led to a number of studie the linkage analysis, for example by indicating and intensity of the interaction between any under different SDGs (cff. Nilsson et al., 2016 This subsequent analysis went beyond the te Le Blanc in that scientific evidence informe and data and indicators were invoked to de direction and intensity of the interactions.

Systematic study of Sustainable Development Goal interactions

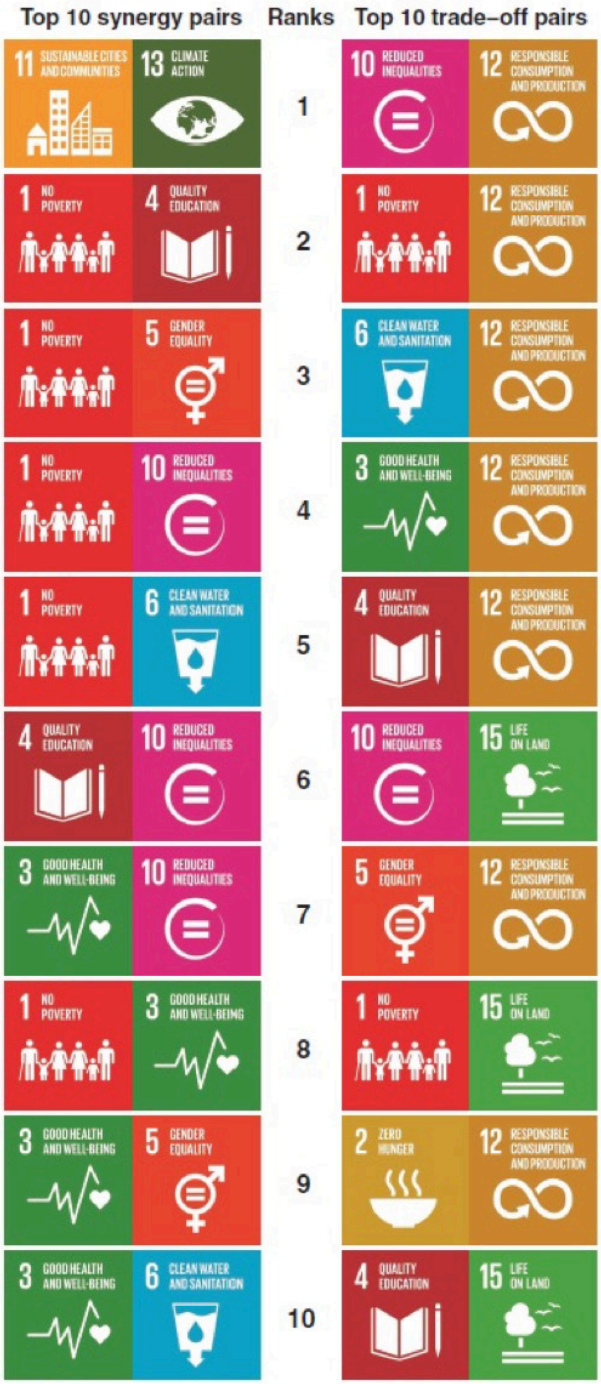
Pradhan et al. (2017) performed a statistical analysis on the United Nations Statistics Division's indicator data sets for tracking progress of the SDGs. The objective of the analysis was to identify the extent and strength of synergies (strong positive correlation between two indicators) and trade-offs (strong negative correlation) across pairs of SDG indicators. Their analysis shows that SDG 3 (good health and well-being) is mostly associated with synergistic co-benefits and SDG 12 (responsible consumption and production) is largely linked with trade-offs (Figure 4.7).

More generally, SDG 12 and SDG 15 (life on land) are found to be associated with a large number of trade-offs with other SDGs. This is not surprising given the historical association between growth on the one hand and natural resource use, environmental degradation and biodiversity loss on the other. What this suggests is that, at least to date, growth and the environment have not been substantially decoupled, with perhaps a few exceptions (Figure 4.1).



6 There is no reference to NDCs in this paper; the analysis was purely on the SDGs and their interlinkages. The NDCs had not yet been adopted or in many cases even published.

Figure 4.7. Top synergies and trade-offs between Sustainable Development Goals based on correlations



Source: Pradhan et al. (2017), op. cit. Figure 4.3.

LINKING NATIONALLY DETERMINED CONTRIBUTIONS AND THE SUSTAINABLE DEVELOPMENT GOALS

The following tools each had as its explicit objective to map and analyse the links between climate actions and policies and sustainable development objectives as reflected in the SDGs and their targets.

World Resources Institute and Climate Watch

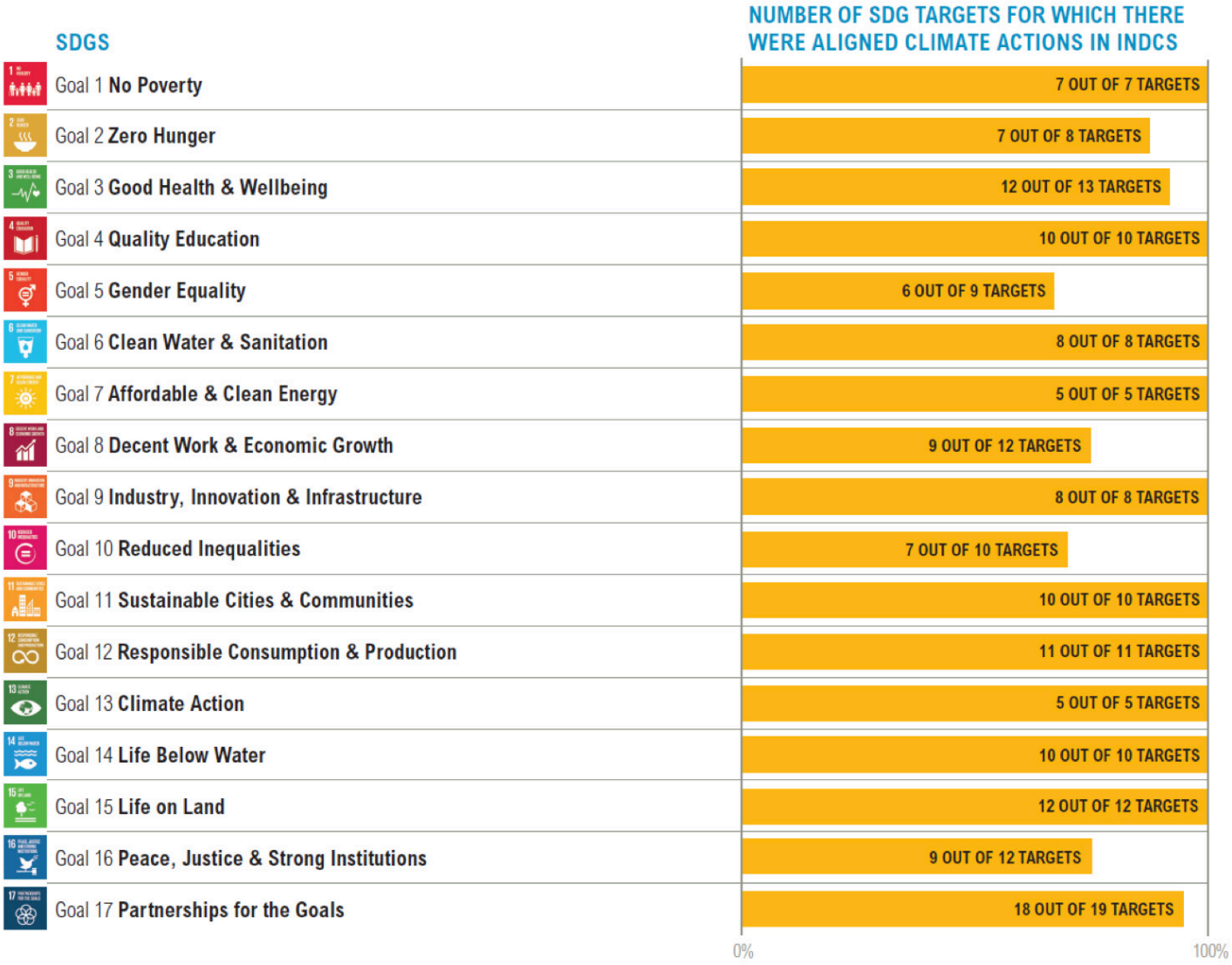
WRI was the first to perform a textual analysis of countries' INDCs against SDG targets (Northrop et al., 2016). The initial analysis found that climate actions in a near universal sample of INDCs align with 154 of the 169 targets of the SDGs.

Figure 4.8 shows that, for 10 of the 17 SDGs, all their targets are addressed by at least one country's NDC. For the other seven Goals, at least two thirds of their targets are addressed by at least one country's NDC. The analysis behind this figure is global, which is one reason why the coverage of the SDG targets by NDCs is so extensive. An analysis done for an individual country shows that SDG target coverage is more limited to SDGs and targets that relate to priorities for that specific country (e.g. see Figure 4.9(a) for Colombia and Figure 4.9(b) for Uganda).

WRI constructed a searchable NDC–SDG linkages database that enables users to explore how each country's NDC links with each of the 169 targets of the SDGs. The database is integrated under ClimateWatch,[7] an online platform designed to empower policymakers, researchers, the media and other stakeholders with open climate and development data. The tool is bidirectional as it provides both an SDG and an NDC entry point to visualize the linkages. Upcoming features will include the possibility to filter the linkages by sector and by type of climate action (i.e. mitigation or adaptation).

7 https://www.climatewatchdata.org/.

Figure 4.8. Analysis of the degree of alignment between the Sustainable Development Goals and intended nationally determined contributions



Source: Climate Watch (n.d.), elaborated by Northrop et al. (2016).

Figure 4.9(a). Alignment of Colombia's nationally determined contribution with Sustainable Development Goal targets

Source: Climate Watch (n.d.), elaborated by Northrop et al. (2016).

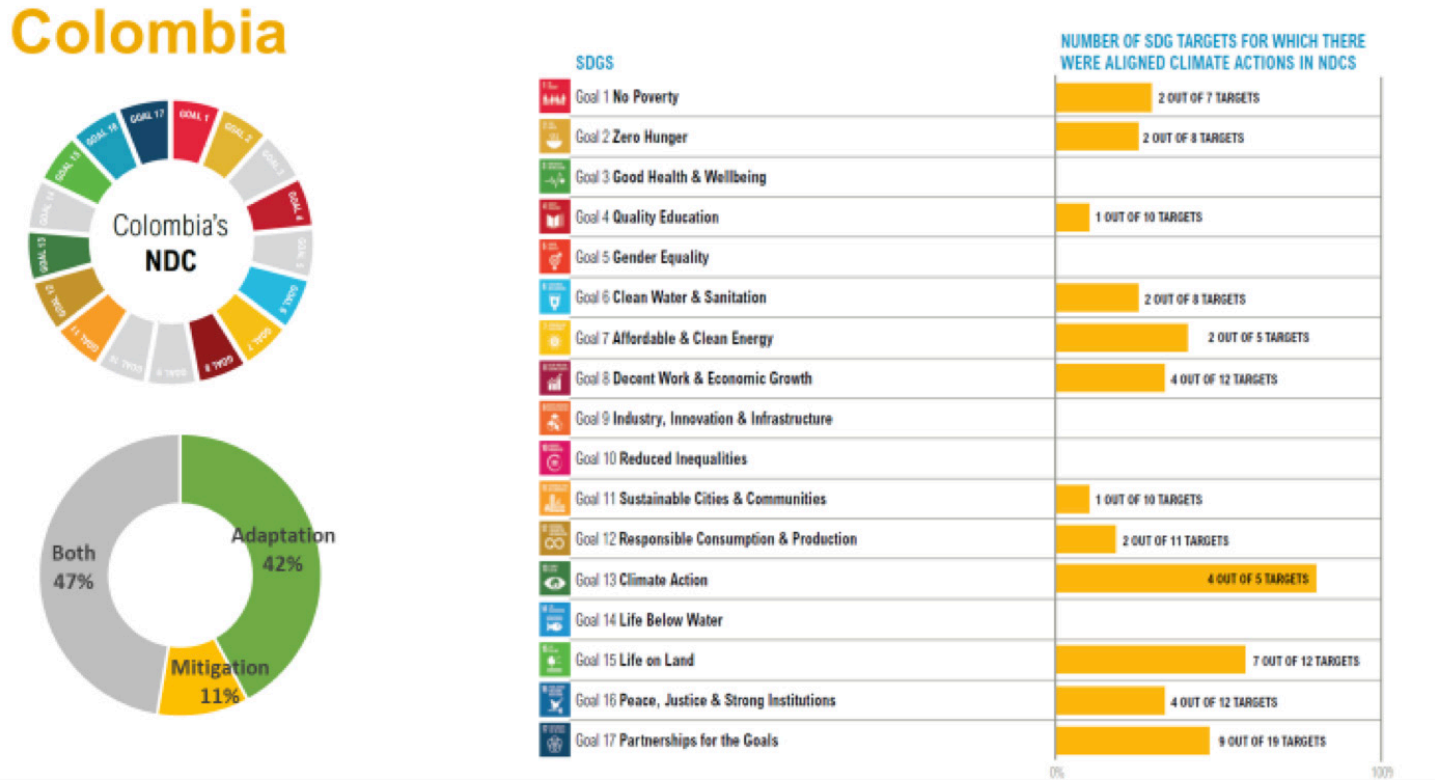
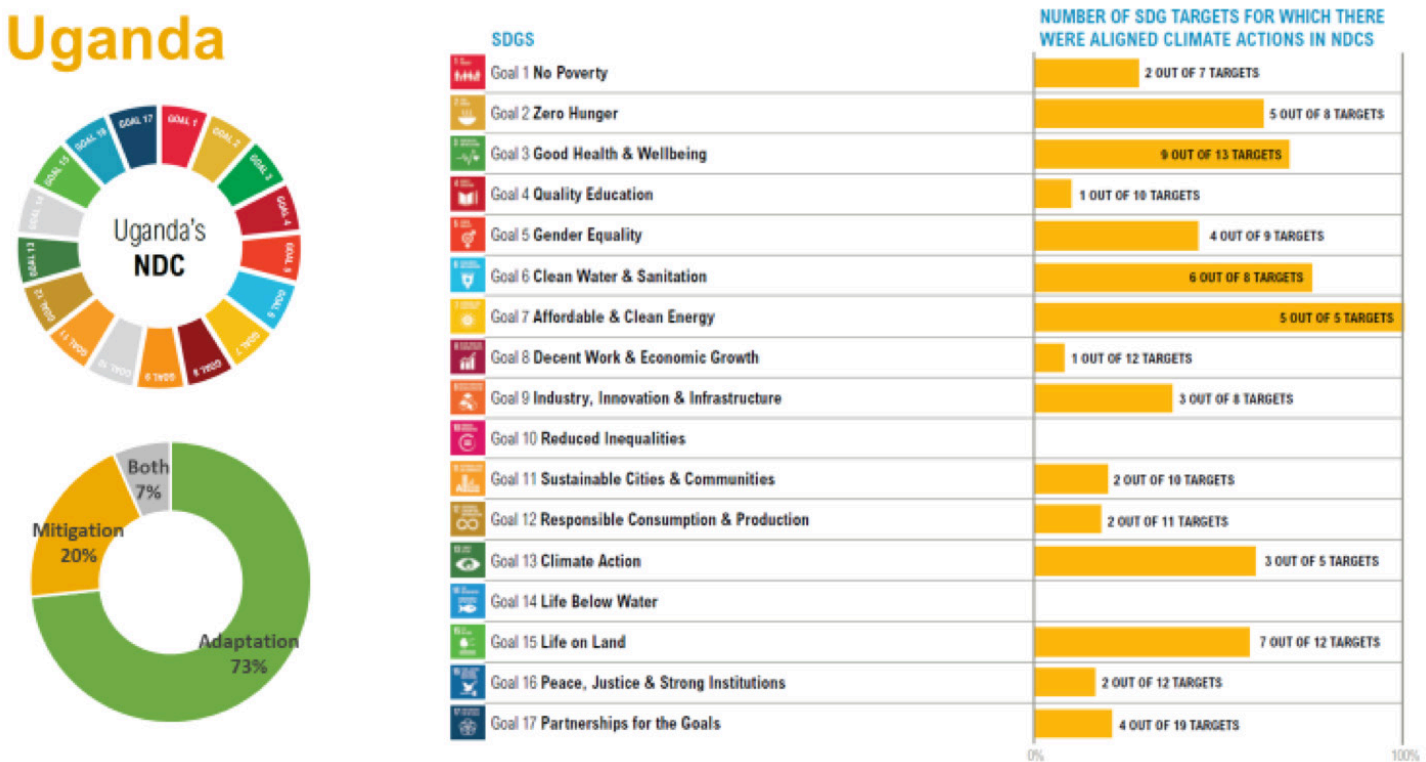


Figure 4.9(b). Alignment of Uganda's nationally determined contribution with Sustainable Development Goal targets

Source: Climate Watch (n.d.), elaborated by Northrop et al. (2016).



Best Practices

A tool for gaining a systemic and contextual perspective on the Sustainable Development Goals (SDGs)

The Stockholm Environment Institute and the International Council for Science have developed an assessment tool for gaining a systemic and contextual perspective on the SDGs. The tool enables a detailed assessment of interactions among SDGs using a seven-point scale in a cross-impact matrix. The tool is based on a systematic assessment of interactions and on network analysis techniques, and has the potential to bridge sectors, highlighting shared interests and building ownership among stakeholders, and to enable analysis that goes beyond direct interactions among indicators. The tool has been applied in Colombia and Sri Lanka, where it has assisted policymakers and practitioners in prioritizing action and identifying stakeholders and necessary collaborations.

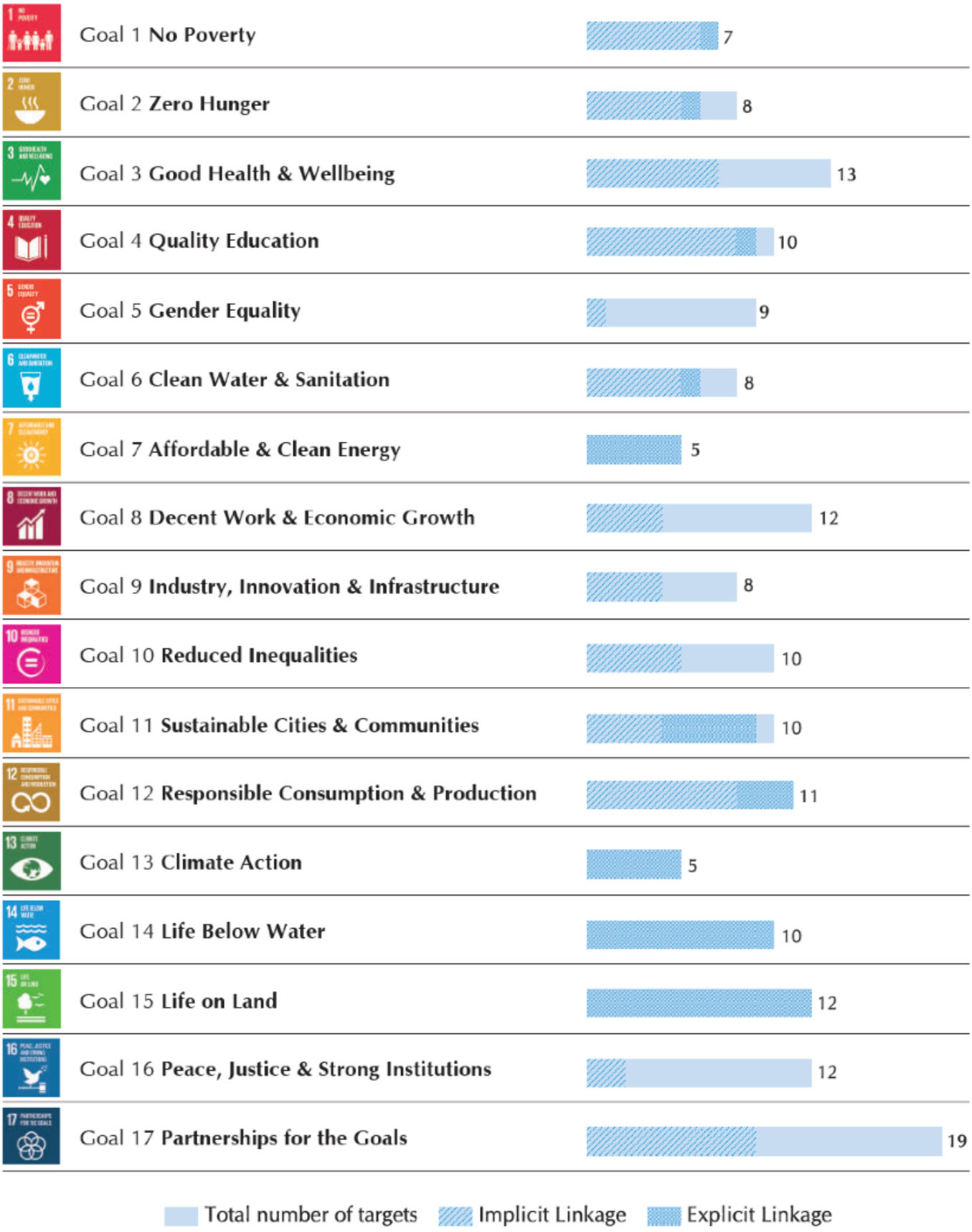
For more information, see https://www.sei.org/projects-and-tools/projects/disentangling-interactions-sustainable-development-goals/.

The Energy and Resources Institute

The TERI study on the SDG footprint of NDCs looks both at how targets of the SDGs treat climate change and at how NDC language links to language in the SDG targets (Pahuja and Raj, 2017). For example, Figure 4.10, reproduced from the TERI study on the SDG footprint of the NDCs of Asian countries, shows how starting with SDG targets, explicit or implicit references to climate change actions or concerns can be identified.

With regard to links from NDC language to SDGs, the TERI analysis is broadly consistent with the United Nations analysis of South-South cooperation (United Nations Climate Partnerships for the Global South and United Nations Climate Change Secretariat, 2017) (see Figure 4.3), namely in that it also finds few references in NDCs to SDGs 4, 5, 10 and 16. It notes that "there are only 4 mentions of mainstreaming gender concerns in the NDCs whereas SDGs envisage mainstreaming gender in national policies" (Pahuja and Raj, 2017, p.20).

Figure 4.10. Recognition of climate concerns in Sustainable Development Goal targets *Source: Pahuja and Raj (2017).*



While considering 'implicit linkage' of an SDG target to a climate change action or concern allows the flexibility to go beyond precise language references, it also introduces the requirement for a significant degree of discretion.
The TERI study calculated an index of the strength of the linkage of a country's NDC to a given SDG target by considering a number of criteria and assigning scores for each. The criteria are whether SDGs and linkages are mentioned in the NDC; whether there is a keyword match between the NDC and the SDGs, and whether the matching keyword is in the NDC's background or context section or in its goals; and whether the matching keyword in the NDC is qualitative or quantitative. The last criterion provides perhaps the strongest indication of close alignment; that is, the NDC goal quantifies the SDG target.

German Development Institute and Stockholm Environment Institute

The SDG-NDC Connections tool developed by DIE and SEI permits a somewhat more refined analysis of interlinkages between SDGs and NDCs.[8] One important innovation of this tool is that it classifies NDC climate actions under a number of thematic headings and then links those action types to the SDG targets. Thus, rather than simply searching for 'agriculture' or 'food' language in NDCs and then relating the findings to SDG 2 targets, this tool groups 'agriculture'-related NDC measures into a number of categories of action – for example crop diversification, soil management and agroforestry – and then calculates the percentage of all climate actions relevant to SDG 2 that fall under each of these categories. The tool can determine, for instance, whether agroforestry is a more frequent agricultural intervention mentioned in NDCs than are soil management or crop diversification.

Best Practices

The Ambition to Action project of the NewClimate Institute and the Environmental Change Network (ECN)

The NDC Update Report of 2018 prepared by the NewClimate Institute and ECN (van Tilburg et al., 2018) has a special focus on linking nationally determined contributions (NDCs) and Sustainable Development Goals (SDGs). It uses the SDG Climate Action Nexus (SCAN) tool developed together with the German Agency for International Cooperation and Climate Analytics to examine linkages between the climate action and sustainable development agendas.

The tool is intended for addressing a perceived limitation of purely language-based analyses of NDC–SDG linkages. As the report states, it is designed to help policymakers assess "whether the climate actions they are considering to achieve their NDC targets are likely to reinforce or undermine the SDGs". It notes that the NDCs were not systematically developed across countries and sectors with a consideration of the development co-benefits that could result from specific policies and measures contained within them. Therefore, tools that rely on the wording in NDCs are likely to miss important connections between climate actions and the SDGs.

The SCAN tool has been developed in two variants – one looking at mitigation actions and one looking at adaptation actions. It draws heavily on the peer reviewed literature on the impacts of climate actions on social, economic and environmental variables – as summarized, for example, in the assessment reports of the Intergovernmental Panel on Climate Change. Rather than mapping language in NDCs against SDGs and their targets, the tool groups climate actions into broad categories; for example, in the case of mitigation, actions that reduce fossil fuel combustion (renewable energy initiatives and energy efficiency improvements). Links from these action types to various SDG targets, such as those relating to air pollution and health, can be positive or negative, or both. The tool includes a brief explanation of the nature of a linkage but does not rate its strength, as that is thought to be context-specific.

The tool details more than 500 potential linkages between specific climate actions and SDG targets, of which more than 80 per cent represent situations where climate action may positively impact development (Gonzales-Zuñiga et al., 2018). Those positive impacts are most heavily concentrated in five areas: growth and employment (SDG 7), industry, infrastructure and innovation (SDG 8), sustainable cities (SDG 11), sustainable consumption and production (SDG 12) and

8 For more information, see https://klimalog.die-gdi.de/ndc-sdg/.

life on land (SDG 15). One of the strongest messages that has emerged from the tool is that some types of mitigation action lead almost exclusively to positive potential impacts on the SDG targets, while some lead to a mix of positive and negative potential impacts.
The SCAN tool is shown in Figure 4.11.

Figure 4.11. SDG Climate Action Nexus (SCAN) tool linkages from climate actions to Sustainable Development Goals

Source: Gonzales-Zuñiga et al. (2018).

Some of the results obtained using the SDG-NDC Connections tool seem counterintuitive and at odds with the findings of the study on SDG interactions by Pradhan et al. (2017) discussed above. The positive associations between various energy- and industry-related climate measures and growth and employment (SDG 8) suggest a decoupling of carbon dioxide emissions from economic growth. This is consistent with the new growth narrative of the New Climate Economy work but not consistent with the historical record.

Other findings of the report include:

• Data issues: The significant amount of resources required to monitor progress on the climate action and sustainable development agendas simultaneously poses a challenge;

• Finance issues: When governments focus on those mitigation actions with significant development impacts, public money can be used to guide climate investments to where they yield the highest social and economic benefits;

• Policy and institutional issues: Coherence between the two agendas remains a challenge in many countries in which institutions governing the 2030 Agenda and climate action are distinct and those in which differing amounts of authority exist within government bureaucracies;

• Sectoral issues: The SDG framework can provide a good starting point for identifying linkages between sectoral actions and development impacts, and can provide a common language that can aid communication and coordination among sectors and with the national government.

The report notes: "Knowledge about these potential synergies, and especially about the trade-offs [between climate actions and development objectives], can help prevent or reduce negative impacts if these are taken into account from the start; the way a mitigation action or policy is planned and implemented can significantly influence its impact on broader development objectives." (p.3)

From a climate policy perspective, the report notes that understanding where mitigation actions can reinforce the achievement of the SDGs may increase countries' confidence and political buy-in to put forward more ambitious NDCs, a process required every five years under the scaling-up ambition mechanism of the Paris Agreement.

Best Practices

The Climate Action Impact Tool (CLIP-Tool) of the United Nations Development Programme (UNDP)

UNDP has developed a tool to assess, at the project level, the social, economic and environmental impacts of specific investments made as part of a country's climate change efforts, particularly as reflected in its nationally determined contribution (NDC).

While the primary assessment using the CLIP-Tool is done at the action or project level, a compilation of data from all ongoing post-2015 NDC and Sustainable Development Goal (SDG) actions allows a review of progress towards the NDC and SDG targets in order to determine whether actual outcomes are meeting the intended objectives and to inform corrective actions, as needed. The tool also permits aggregation to calculate how much the cumulative impacts of multiple climate actions or projects may contribute towards achieving various SDGs. Such an assessment can then inform decision-making regarding scaling up the ambition of climate actions and may also be able to unlock additional sources of climate finance (Soezer et al., 2018).

Table 4.1 provides the results of an application of the tool to a distributed solar power project in Kenya. The table provides both qualitative descriptions and quantitative estimates.

Table 4.1. Overview of qualitative and quantitative impacts of a solar power project (BBOXX) activities in Kenya, assessed by using the Climate Action Impact Tool

Impacted SDG	Qualitative Impact	Quantitative Impact by 2018
SDG 3 – Good Health and Well-Being	The replacement of kerosene lamps with solar home systems (SHS) has a positive impact on consumers' health and it is expected to reduce flu-like symptoms and eye problems which have been reported as key health impacts of indoor air pollution.	300,000 people will get access to clean energy and 206 people will receive health insurance.
SDG 4 – Quality Education	SHS improves children's learning environment at home, whereby children can do their homework and study in the evenings using cleaner, safer and better-quality light. BBOXX 17 [12] was also found to be a suitable system to support digital learning programmes.	An average of two out of five beneficiaries of the BBOXX systems are school-going students. Hence, about 60,000 pupils will be able to study for longer hours.
SDG 5 – Gender Equality	BBOXX hires female employees on both permanent and temporary basis, including female technicians and in key decision-making positions.	57 women will be employed and trained and finance of SHS for up to 75,000 women in rural communities will be provided.
SDG 8 – Decent work and economic growth	BBOXX is expanding its market to the Kakuma Refugee Camp. By supporting refugees to establish enterprises such as solar kiosks or service centres, they will be actively increasing the number of people involved in the clean energy value chains as distributors or technicians.	BBOXX provides decent work conditions and stable income to fix term 147 employees and additional 228 sales agents across the country.
SDG 9 – Industry, Innovation and Infrastructure	Trine is offering an innovative model of raising finance through crowd investing. BBOXX makes their products more affordable through its innovative pay-as-you-go model that utilizes mobile money platforms. BBOXX is also introducing smart solar systems with a remote monitoring system and an energy service fee for repair and maintenance to achieve the maximum lifetime of the technology.	Trine raised € 6 million of impact investment and offered access to affordable finance for BBOXX. Through BBOXX's pay-as-you-go model the costs of SHS will become affordable and accessible to 46,000 rural households in Kenya.
SDG 12 – Responsible Consumption and Production	BBOXX promotes recycling of batteries and other waste such as printed Circuit Board (PCB), metals from written off control units and panels and plastics from TV casing, torches and other appliances as well as cables from bulbs and torches through a partnership with Associated Battery Manufacturers (ABM).	BBOXX ensures appropriate recycling and disposal of 20,789 kg of batteries and 1,586 kg of other E-wastes.
Source: UNDP		

Source: Soezer et al. (2018).

ASSESSMENT

Table 4.2 provides a brief comparative assessment of the strengths and shortcomings of the different tools for mapping interconnections between the SDGs and climate commitments.

Table 4.2. Comparison of the features of the tools for mapping and analysing climate action and Sustainable Development Goal linkages

Tool	Direction	Entry points	Evidence used	Note on methodology	Uses / when is the tool most helpful?
UN-DESA: mapping linkages among SDGs (2015)	SDG → SDG	SDG targets	keywords	Textual analysis of the wording in the targets to establish connections between targets and goals, which are then visually represented using network analysis techniques.	Understand overall interconnections between SDGs through targets.
WRI: NDC-SDG Linkages Database on ClimateWatch (2016)	SDG ↔ NDC	SDG targets, NDCs	keywords and NDC activities	Textual analysis of countries' NDCs using keywords and identifying specific activities within the NDCs. Linkages can be visualized on the Global Linkage Map, through individual Country Pages, and searchable NDC Content pages.	Broad-based overview of how NDCs address specific SDG targets at global and national levels. Identify potential partnerships around specific NDC-SDG linkages.
TERI: SDG Footprint of the NDCs (2017)	SDG ↔ NDC	SDG targets, NDCs	keywords and NDC activities	Calculates an index of the strength of linkage based on: whether SDGs are mentioned in the NDC; whether there is a keyword match and whether the matching keyword is in the NDC's background section or its goals; whether the matching keyword in the NDC is qualitative or quantitative; and whether the NDC goal provides a quantification of an SDG target.	Broad-based overview of the linkages between NDCs and SDG targets at national and regional levels, and linkages between SDGs and climate change.
DIE and SEI: SDG-NDC Connections	NDC → SDG	SDG targets, NDCs, SDG themes	NDC activities, SDG indicators	NDCs were analyzed to identify specific activities, which were then classified using a number of criteria (including relevance to SDG target indicators) to establish linkage to SDG targets.	Broad-based overview of how NDCs address specific SDG targets at global and national levels. Identify potential partnerships around specific NDC-SDG linkages.
New Climate Institute, ECN, TNO, Climate Analytics, GIZ: SDG Climate Action Nexus (SCAN)	Climate actions → SDG	mitigation and adaptation actions, SDG targets	activities, existing literature on climate-development links	Mitigation and adaptation actions were classified by type of activity and sectors and a matrix of activities and linkages to SDG targets was created based on peer-reviewed literature and expert reviews. The linkages are classified as either positive or negative.	Develop deeper understanding of whether specific mitigation or adaptation actions are likely to reinforce or undermine a particular SDG or SDG target.
Pradhan et al. (2017): A Systematic Study of SDG Interactions	SDG → SDG	SDG indicators	SDG indicator datasets from 227 countries	Statistical analysis on the UN Statistics Division's indicator data sets for tracking progress on the SDGs to identify the extent and strength of synergies and trade-offs across pairs of SDG indicators.	Understand interactions between SDG indicators.
UNDP: Climate Action Impact (CLIP) Tool	Climate actions → SDG	climate actions and projects	activities, indicators used to track activities	Activities are classified according to impact categories that are linked to the relevant SDGs. Each category is associated with a set of indicators with descriptive, qualitative and quantitative information requirements. (All information requested from users is voluntary, though at a minimum, it should include all qualitative sections, and it is recommended that they further include quantitative information with indicative targets.) The tool then compiles and visualizes potential sustainable development impacts of the climate action or project.	Guide policy-makers or project implementers in determining likely sustainable development impacts of specific mitigation or adaptation projects and track those impacts over time.

Source: Prepared by the authors.

Taken together, the tools described in the previous section provide a good indication of the most significant of the expected co-benefits from climate action for various SDGs and their targets. Not all linkages from climate action to SDGs will be positive; the tools also enable identification of the significant expected trade-offs that policymakers need to address. The tools vary in methodological approach, but most are similar in their objective; that is, to examine how climate actions are expected to impact social, economic and environmental targets contained in the SDGs. For some of the tools, the direction of analysis can be reversed to indicate how achieving various SDG targets can contribute to climate change mitigation and adaptation objectives.

One study (Pradhan et al., 2017) provides an indicator-level analysis of synergies and trade-offs across all the SDGs, globally and at the country level, using historical and current data for the official global SDG indicators. Causality from climate action to SDGs, or vice versa, is not presumed. The study simply reports evidence of two indicators moving together in the same direction, or moving in opposition directions, and shows how strong the positive or negative correlations are. Positive correlations of at least 0.6 value are classified as synergies and negative correlations of at least –0.6 as trade-offs. The study indicates that, while the preponderance of correlations are positive, there are a number of trade-offs that would need to be addressed if the SDGs and their targets are to be achieved in their entirety and sustainable development advanced with a balance of social, economic and environmental objectives.

Knowing this does not provide specific policy guidance, as these correlations reflect interdependencies among multiple processes and variables. Similarly, there may be multiple leverage points for weakening or even breaking the trade-offs between indicators. For instance, a positive correlation between positive outcomes such as improved population health and life expectancy on the one hand, and negative outcomes such as natural resource depletion on the other hand, are traceable to the fact that, historically, economic development has followed a resource- and energy-intensive path, with the energy largely provided by fossil fuels. If, however, improvements in materials and in energy efficiency can be sustained, and other types of energy can be substituted for fossil fuels at competitive cost, the link between rising prosperity and resource depletion (and its ensuing global, regional and local pollution) can be weakened if not severed.

The Climate Action Impact Tool comes perhaps the closest to allowing a concrete assessment, both ex ante and ex post, of how various projects and related investments for climate mitigation and adaptation contribute to advancing other sustainable development objectives. The ability of the tool to aggregate impacts across projects does in principle permit a national government to examine the macro impact of multiple specific interventions on the 2030 Agenda.

In summary, governments have a growing array of tools to help them map and analyse linkages between climate actions and the SDGs. Which one best suits a particular need is for each government to determine. As governments move forward with implementing the climate action and sustainable development agendas, the existing tools may need to be adapted or complemented by new tools that provide greater granularity in assessing how specific climate policy interventions quantitatively contribute to specific national sustainable development targets elaborated from the global goals and targets. The links from sectoral or broader development policies to climate outcomes, notably GHG emissions, tend in general to be more straightforward to quantify.

This Chapter was prepared by David O'Connor, WRI, and Mathilde Bouyé, WRI, for UN DESA. The authors would like to thank WRI colleagues David Waskow, Alexander Tankou and Delfina Grinspan for valuable inputs to the paper. All interpretations and findings set forth in this background paper are those of the authors and do not necessarily reflect the views of WRI.

5

LEVERAGING SUSTAINABLE DEVELOPMENT GOAL AND CLIMATE ACTION INTERLINKAGES: COUNTRY EXPERIENCES

Under the UNFCCC, the climate change agenda has always been contextualized with the imperatives of sustainable development. The adoption of the 2030 Agenda and the Paris Agreement in 2015 define categorical contours for achieving climate goals in the context of sustainable development. It has been widely recognized that synergistic implementation of the two agendas is necessary, for it will enhance the effectiveness and quality of outcomes, besides contributing to the efficient use of resources, greater coherence across sectors and actors, and the formation of novel partnerships. Accordingly, since 2015, academic researchers have studied the Paris Agreement and the 2030 Agenda in three ways: examining NDC documents of various countries to determine whether the SDGs have been integrated in them; attempting to understand the synergies and trade-offs among SDGs; and identifying options for better institutionalizing interlinkages among SDGs.

Building on the insights of the existing literature, this chapter focuses on the scope for synergies between climate action and the SDGs to be institutionalized. To this end, a synoptic assessment of the literature on the potential synergies – and trade-offs – between the two agendas was conducted to determine the general scientific opinion on the theoretical possibilities for synergies. This general scientific opinion was then contrasted with the experience on the ground of selected countries on the basis of their actions related to SDGs and climate change, as reported in their VNRs, NCs, BURs and NDCs. The analysis is cognizant of the fact that varying country contexts are likely to prioritize different sets of climate and development actions, and accordingly, the opportunities and barriers to leveraging the possible interlinkages would vary.

The literature recognizes the synergies and the trade-offs among SDGs more prominently than those between SDGs and climate actions. These interlinkages have been examined from different perspectives. The United Nations is more concerned about the direction of the combined impact and its reversibility or irreversibility than with the probability of the occurrence of the interaction or its strength (United Nations, 2014, 2015, 2016). Others have focused on the nature of the interaction itself. The International Council for Science, for example, established a framework for characterizing and measuring interactions among SDGs and their targets by means of a scoring system (Nilsson et al., 2016a, 2016b, 2017). The scores are given

on a seven-point scale for a range of interrelationships spanning from completely adverse (impacts cancel each other out) to perfectly synergistic (the achievement of one goal is inextricably linked to the achievement of another) interlinkages among the goals (Table 5.1). Similarly, Coopman et al. (2016) proposed an approach with three categories of interlinkages: supporting, enabling/disenabling and relying. Each interlinkage can be scored on the basis of its strength, with a score of 0 indicating negative or no interlinkage and scores of 1 to 3 highlighting positive interlinkages of increasing strength (Table 5.2).

Table 5.1. Scoring the impact of one Sustainable Development Goal target on another

Type of impact	Explanation	Score
Indivisible	Inextricably linked to the achievement of another goal	3
Reinforcing	Aids the achievement of another goal	2
Enabling	Creates the condition that facilitates another goal	1
Consistent	No significant positive or negative impact	0
Constraining	Limits options on another goal	–1
Counteracting	Clashes with another goal	–2
Cancelling	Makes it impossible to reach another goal	–3

Source: Nilsson et al. (2016).

Table 5.2. Classification of the type and nature of Sustainable Development Goal Interlinkages

Category	Type and definition	Score
Supporting	Both targets contribute to the main objective	1
Mutually supporting	Target A's objective is achieved by Target B's means of implementation	2
Disenabling	Implementing Target A can reverse the implementation of Target B	0
Indirect enabling	Implementing Target B indirectly enables achievement of Target A	1
Direct enabling	Implementing Target B directly enables achievement of Target A	2
Direct enabling in both	Implementing Target B enables achievement of Target A and implementing Target A enables achievement of Target B	3
Partial reliance	Target B is a subcategory of Target A	1
Full reliance	Target B's implementation is necessary for but not intrinsic to target A's achievement	2

Source: Coopman et al. (2016).

Studies on SDG–NDC linkages have mostly focused on the synergies between the two in terms of distilling the thought process while drafting NDCs. In analysing the text of the NDCs, these studies have provided empirical evidence of the extent to which NDC targets can potentially be a vehicle for SDG targets (Pahuja and Raj, 2017, 2019; WRI, 2017). While these studies provide useful insights into the recognition (or lack thereof) of linkages between NDCs and various SDG targets, they are limited in terms of actual practice and institutional processes. For example, these studies do not engage with the UNDP's (2017) suggestion for an interlinked SDG and NDC implementation in terms of (1) a robust national statistical system for collecting data, (2) coordinated stakeholder engagement, (3) inclusive coherent policy implementation and (4) strong institutional coordination mechanisms. Alternatively, they do not engage with the identified need for capacity-building as a key requirement for attaining an interlinked implementation process (Dalkmann, 2018).

The literature nevertheless provides useful ideas on how to go about assessing and improving institutionalized synergies between the SDGs and climate action. On trade-offs, the literature is sparse and at best offers ways of recognizing them. There is almost a vacuum on how one should think about creating institutional processes to avoid or reduce the trade-offs. Deliberative and iterative decision-making after considering all the synergies and trade-offs that could be identified in relation to possible interventions (Shrivastava et al., 2014; Dubash et al., 2014) is a useful recommendation as far as addressing trade-offs is concerned. That recommendation, too, is based on the general understanding of possible synergies and trade-offs among multiple goals rather than on a categorical analysis of the SDGs and climate action.

Given this general trend in the literature, a two-step approach to examining the scope of improving institutionalized synergies was deployed for the analysis described in this chapter. The first step focused on

investigating the available literature regarding the degrees of theoretical synergies between climate action (SDG 13) and other SDGs. It must be recognized that the degrees of synergies in this sense is limited by the content of the current literature, and hence may need revision and refinement at regular intervals. The second step focused on determining the institutionalized empirical evidence for the implementation of the SDGs and climate action, relying on the reporting mechanisms under the 2030 Agenda and the Paris Agreement; that is, examining the VNRs, NCs and BURs submitted after 2015. In this step the synergies and trade-offs between reported institutionalized climate actions and SDG implementation in selected countries were recorded and adjudged. Comparing the findings of the two steps allowed a determination of (1) the gaps between the theory and practice of synergistic implementation, (2) the gaps in the theoretical literature and (3) the scope of improvement in synergistic implementation of the SDGs and NDCs at the national level.

In order to arrive at a manageable number of 8 to 10 case studies, the VNRs (available in English) of 38 countries were reviewed. This review showed that both developed and developing countries have taken the implementation of the 2030 Agenda seriously, creating institutional arrangements and conducting inclusive stakeholder consultations. Some countries have also reported the process of VNR preparation in detail.

As the first step, we identified those countries with well-defined VNRs that had also submitted BURs on their climate mitigation and adaptation actions to the UNFCCC and prepared NAPs. From this longlist, a shortlist of countries was made for the purpose of illustrating the approach to interlinked goals, keeping in mind the following factors:

- Geophysical and economic diversity;
- Comprehensiveness of VNRs, BURs and NAPs;
- Maturity of implementation actions;
- Social, economic and development indicator positions.

Each country case study highlights the SDGs prioritized in the VNRs and BURs of that country (as they emerged from the review) and establishes the corresponding interlinkages of those SDGs with the climate mitigation and adaptation actions in the country.

SUMMARY ASSESSMENT OF CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT GOAL INTERLINKAGES IN SELECTED COUNTRIES

The VNRs, BURs and NCs of each selected country were analysed for interlinkages between the SDGs and climate actions (mitigation and adaptation measures across sectors). In general, it was found that the VNRs and BURs have largely focused on attaining the following process goals in the short, medium and long term:

- Mainstreaming: Countries are making attempts to visualize the SDG and climate action agendas at the national and local level by mainstreaming them in national plans, budgets and strategies. This is being done through mapping exercises at the national and local level;

- Acceleration, assessment and reporting of progress: Efforts to create synergies between agencies at the national and local level by assessing the synergies and trade-offs across sectors have been reported;

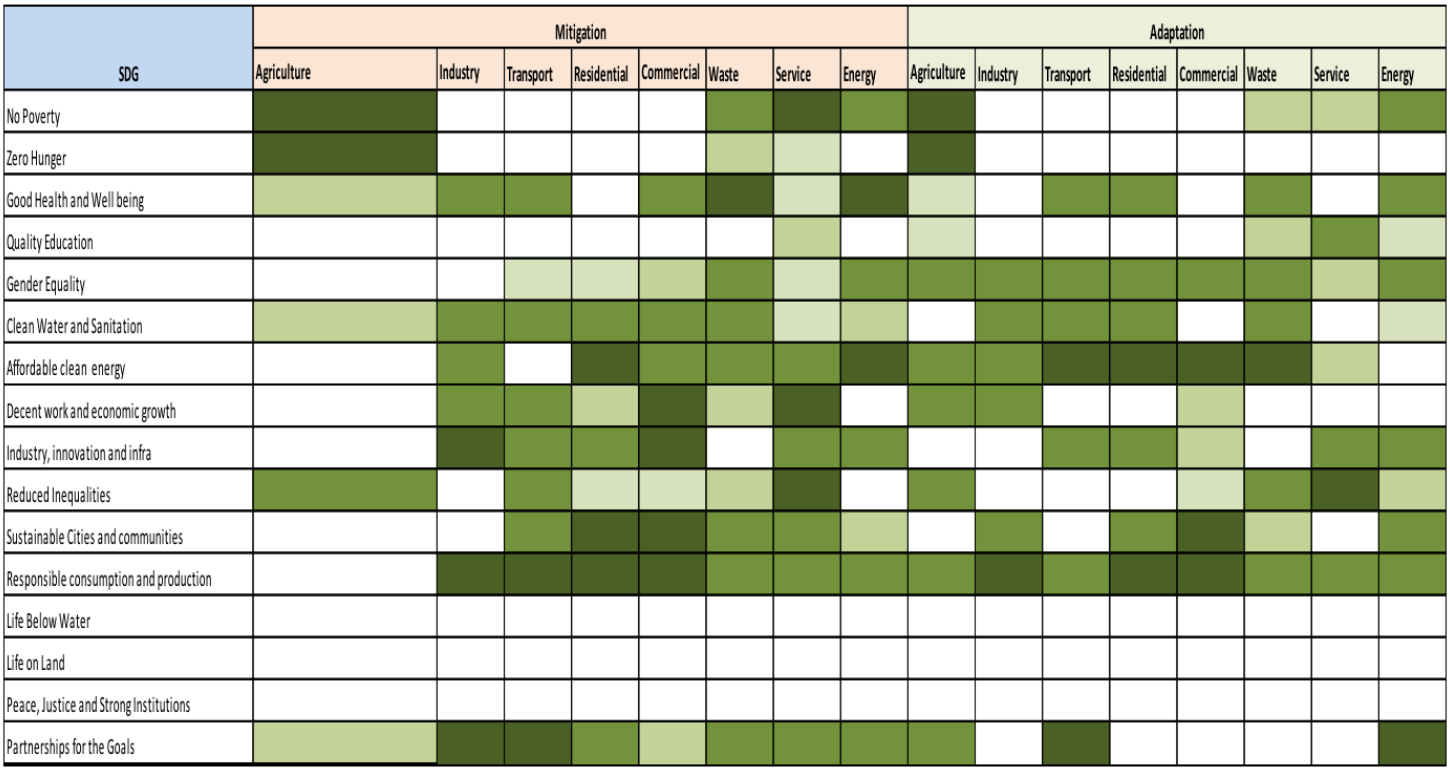
- Policy support with and without mainstreaming: There is a push towards coordinated, pooled policy support in countries for satisfying the demands of making a thematic exercise of the SDG and NDC integration process, and making the support available in an effective and coordinated way.

The theoretical interlinkages between the SDGs and climate actions were drawn from the academic literature. These interlinkages were defined as weak, moderate, strong or very strong. For the country-specific interlinkage identification, a five-grade scale, from –2 to +2, was developed (Table 5.3).

Table 5.3. Nature of the interlinkages and scores

Nature of interlinkage	Score
Conflicting institutions	–2
Recognized trade-offs between institutions	–1
No interlinkage	0
Positive reinforcement between institutions	1
Institutionalized synergy	2

Exhibit 1. Degrees of possible synergies recognized in the academic literature



Colour Codes (Academic Literature)	
Very Strong	
Strong	
Moderate	
Weak	

Source: Authors' compilation based on the sources listed in annex 1.

COUNTRY-WISE SCORING DEFINITIONAL FORMAT

NAMIBIA

The institutional process for Namibia's VNR is well structured. The process has been institutionalized through the 5th National Development Plan, which clearly mentions creating interlinkages across the areas of economic progression, social transformation, environmental sustainability, good governance and climate resilience of the society. The Plan was formulated through a multi-stakeholder consultation process involving the public sector, the private sector, civil society, development partners, the United Nations, academia and other interested groups.

In order to implement the development plan, the government regularly collects on-the-ground data through Namibia Statistics Agency and from qualitative research with the help of key data collectors. The VNRs and BURs mention the importance of these data collection processes as well as of monitoring and reviewing progress as key measures for implementing SDGs and NDCs within Namibia. The data are regularly assessed and monitored at the local community level.

Through campaigns and awareness-raising programmes, local authorities, communities and academics are continuously appraised of the attainment of the SDGs and their interlinkages with the climate mitigation and adaptation measures necessary for generating a climate-resilient society. Radio channels in local languages and communication in vernacular language play an important role in the awareness-raising process.

Education, employment, health, hunger, poverty and inequality come across as priority areas within the SDG targets in Namibia. Within the health domain, Namibia has set the specific targets of reducing stunting to 12 per cent by 2022 and anaemia to 10 per cent by 2022, and completely eradicating HIV. The country has initiated

a zero hunger strategy. People with low incomes spend almost 57 per cent of their subsistence income on food given the high food prices in urban areas. High food prices along with gender inequality in access to food have led to unequal impacts of poverty and hunger on the genders. In order to address these issues, the country has initiated measures such as an emergency food relief scheme, legislation to address malnutrition through breastfeeding, and initiatives relating to the use of iodized salt in households. To address SDG 5 (gender equality), Namibia has updated its National Gender Policy along with developing gender-responsive budget guidelines through its National Gender Mainstreaming Programme of 2003. Article 10 of the Constitution of the Republic of Namibia guarantees gender equality before the law and the right to non-discrimination of any gender. Both the VNRs and BURs clearly spell out the importance of addressing the SDGs related to education, employment, health, hunger, poverty and inequality through interlinkage with the NDC implementation process, which has climate mitigation and adaptation measures related to the promotion of renewable energy, the eradication of poverty and hunger, and the enhancement of food security.

Several ministries are involved in the implementation of the SDGs in Namibia, including Agriculture, Water and Forestry; Finance; Trade and Industry; Works and Transport; and Regional and Local Government, Housing and Rural Development. These Ministries collect data, implement the SDG implementation process and review the mechanism of the process, and report to two focal points: the National Planning Commission and Namibia Statistics Agency. These agencies are responsible for monitoring and evaluation of the progress of the SDGs and their interlinkages with climate change mitigation and adaptation actions in Namibia. At the local level, through the data collection process of Namibia Statistics Agency, GHG inventories are also prepared and they are connected to the SDG implementation process.

All 17 SDGs are mentioned in the 5th National Development Plan, which is implemented through a three-tier mechanism that includes the Development Partners Forum to provide coordination oversight at the highest level; the multi-stakeholder National Steering Committee, which is composed of senior officials from both the government and development partners, to track implementation; and the coordination of all developments pertaining to the SDGs through the National Development Plan, for which the National Planning Commission acts as the secretariat.

The Cabinet of Namibia is responsible for the implementation of the NDC. The National Climate Change Committee oversees the implementation, including the preparation of BURs, and plays an advisory role to the Namibian Government on climate change (both mitigation and adaptation) issues. The Committee comprises representatives of various ministries and stakeholders from the private sector and civil society. The Ministry of Environment and Tourism is the official national focal point for coordinating and implementing activities related to the NDC, including the preparation of NCs and BURs to enable the country to meet its reporting obligations. This is done through the Climate Change Unit of the Department of Environmental Affairs within the Ministry. Being a formalized and multi-sectoral committee, the National Climate Change Committee advises and guides the Climate Change Unit in sector-specific and cross-sector implementation and coordination of climate change activities and interacts with the National Planning Commission and Namibia Statistics Agency to establish synergies between the SDG and NDC implementation processes.

The progress of the NDC is tracked through a strong measurement, reporting and verification (MRV) system implemented under the aegis of the National Planning Commission. The Commission tracks the data and thereby the progress of NDC and SDG targets. GHG inventories are prepared at the local level and feed into the national level NDC mapping process. However, the GHG inventory preparation process has not yet become robust and needs more data-related capacity-building and training for the personnel involved. The local level GHG emission inventories are prepared by small working groups that gather and report data in a very short span of time, which often impacts the quality of the data and their monitoring and verification.

Namibia has established an NDC Partnership Plan to promote international collaboration on mobilizing international resources for climate action in the priority areas of the country. One key focus of the Plan is to access and enhance technical knowledge related to climate action (both adaptation and mitigation) and another is to provide financial support to achieve the NDC targets and the SDGs in an interlinked manner. The Plan contains five-year targets that are closely connected to SDG 1. Some of the NDC targets are also interconnected with the SDG 2 target

of decreasing food insecurity from 25 to 12 per cent by 2022. The NDC also focuses, on its adaptation side, on achieving a 30 per cent increase in food production and on increasing agricultural production – agriculture currently takes place on only 3 per cent of the available fertile land in the country and produces 40 per cent of the cereals required by the population.

The NDC mentions addressing the floods and droughts that can result from climate change. The key mitigation-side measures of the NDC are the promotion of solar energy to reduce fossil fuel dependence and the establishment of a larger hydropower plant, as well as various demand-side management measures that focus on energy security and reducing the fossil fuel import bill for meeting energy demands in the transport, industry, commercial, residential and agriculture sectors. The mitigation actions focus on reducing emissions from household firewood used for cooking; improving the energy efficiency of small and micro enterprises; various aspects of the transport sector; and job creation.

Illustrative explanation of the scoring for Namibia

Gender inequality is an area of concern. Jobs for women in industry and in the commercial sector are very few, mainly because of the trade-offs between various sectors such as industry, commercial and waste, and hence a score of –1 has been given for the functional relationship in the matrix. Policies have been implemented by the Namibian Government to meet the goals of the 2030 Agenda that relate to gender inequality. Namibia is a Party to the Convention on the Elimination of All Forms of Discrimination Against Women. Laws have been implemented to eliminate all forms of gender-based violence.

Currently, the growth of the industrial sector is very poor. Some private companies are emerging in the country and have the potential for creating jobs, especially for youth.
There is scope for improvement in all of Namibia's climate change mitigation and adaptation actions with a bottom-up approach to meet the goals and targets of the 2030 Agenda.

Exhibit 2. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Namibia

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty																
Zero Hunger																
Good Health and Well being						2	0				0					
Quality Education		-1	0	0	1	-1	0	0	0	0	0	0	0	0	0	0
Gender Equality		-1	0	0	-1	-1	0				0	0	1	0	-1	1
Clean Water and Sanitation	0															
Affordable clean energy		0	0	1	0	1	1	0	0	0		0	1	1	0	1
Decent work and economic growth		-1	0	1	0	0(-1)	1	0		0		1	1	1	0	1
Industry, innovation and infra		-1	0	0	0	1	0	0		0	0	1	1	-1	0	1
Reduced Inequalities		0		-1	0	-1	0	0		0		0	-1	0	0	1
Sustainable Cities and communities		0	0	0	1	0	1	0				1	0	1	1	0
Responsible consumption and production			0	1	1	1	0	0		0		0	0	1	1	2
Life Below Water																
Life on Land																
Peace, Justice and Strong Institutions			0	0	0	0	0			0	0		-1	0	1	2
Partnerships for the Goals																

Colour Codes (Academic Literature)	
Very Strong	
Strong	
Moderate	
Weak	
Definitional format (Country Codes)	
-2	Conflicting institutions
-1	trade-offs recognized
0	No interlinkage
1	positive reenforcing recognized
2	Institutionalized synergy

JORDAN

The NDC targets of Jordan in the mitigation and adaptation domains interconnect well with the SDGs. One of the most important mitigation and adaptation strategies in Jordan is related to the waste sector, namely wastewater treatment discharge measures to create new jobs as well as to generate jobs in the waste discharge sector. This measure is linked with SDG 6. As Jordan is a water-poor country, wastewater handling accounts for 9 per cent (142.42 Gg of CO2 eq) of total waste-related emissions. Jordan has severe water scarcity, but more than 94 per cent of Jordanians have access to safe drinking water and 93 per cent have access to improved sanitation through strong measures in waste management and clean sanitation and in water conservation. The conservation measures also fit into the domain of climate change mitigation and adaptation.

Water is used in the agriculture sector, which provides employment, hence the sector's link to SDG 8. According to the GHG inventory of Jordan, 66 per cent of all emissions come from energy industries (gaseous fuels and liquid fuels), road transportation, manufacturing industries and construction (liquid fuels) and other sectors (commercial, institutional and residential – liquid fuels). Strong mitigation measures are being implemented to address emission

reduction in these sectors.

All 17 SDGs are mentioned in the National Development Plan of Jordan. The Plan is implemented through a three-tier mechanism defining the quality of data. The Department of Statistics and other institutions are responsible for disaggregating data and improving data availability and quality, and they report to the higher authority for the implementation of the SDG-related aspects of the National Development Plan. The Ministry of Planning and International Cooperation has prepared a stakeholder engagement strategy to ensure wide participation from all government ministries in SDG implementation and VNR preparation. The strategy focuses on measures to involve large NGOs along with smaller community-based organizations and individuals. In order to ensure enhanced coherence in the policy implementation process of different SDGs, a national development planning institutional system and mechanisms are being implemented through the mainstreaming of SDGs in successive national integrated development plans. The Higher National Committee on Sustainable Development, the body responsible for overseeing the implementation of the 2030 Agenda, is being restructured. This Committee has a coordination committee under it with 18 working groups – including two new groups developed to focus on gender and on human rights and freedom of expression – to ensure coverage of all SDGs. The working groups work on successive national integrated development plans.

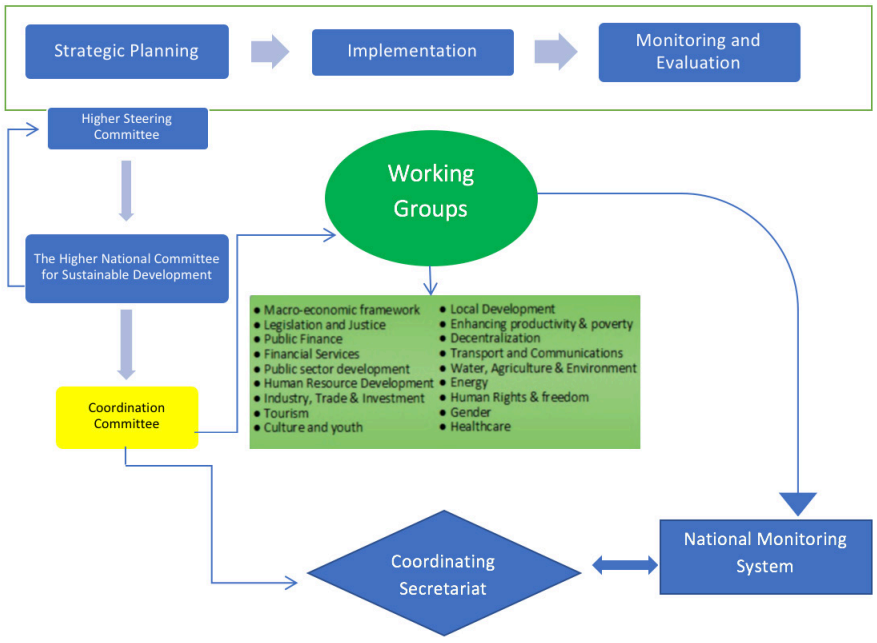
Several ministries are involved in the SDG implementation process, including the Ministry of Finance, Ministry of Health, Ministry of Water and Irrigation and Ministry of Justice. These ministries collect data, implement various SDG-related implementation plans, review the mechanism of the process and report to the focal point, which is the Ministry of Planning and International Cooperation. This Ministry is responsible for monitoring and evaluating progress in achieving the SDGs (through the policy implementation processes) and SDG interlinkages with climate change mitigation and adaptation actions. A Directorate of the Ministry acts as the institutional coordination hub for all climate change activities in Jordan in relation to the Convention. A National Committee on Climate Change has been established following a decision of the Prime Minister. Members of the Committee include stakeholders directly associated with climate change mitigation and adaptation in Jordan, representatives of various ministries, and stakeholders from the private sector and civil society.

There are three MRV systems in Jordan:

1. MRV of GHG emissions, conducted at the national level, which seeks to understand the emission profile and report it in the form of an emissions inventory;
2. MRV of mitigation actions (e.g. policies and projects), which seeks to assess GHG mitigation effects as well as monitor the implementation of mitigation actions;
3. MRV of support (e.g. climate finance, technology transfer and capacity-building), which seeks to track provision and receipt of support and facilitate an enabling environment for addressing climate change mitigation and adaptation actions.

The institutional structure of the NDC implementation process, designed to enhance policy coherence, is presented in Figure 5.1. A close inspection of the interlinked approach to implementing the SDGs and climate action highlights the gap in institutional arrangements in terms of clear roles and responsibilities of the various ministries in regard to climate change and its impact on SDGs and their targets.

Figure 5.1. Institutional structure of the integrated Sustainable Development Goal and nationally determined contribution implementation process of Jordan



Source: XXX.

Insufficient technical processes and systems for identifying and recording climate finance expenditures (e.g. reporting formats and software platforms for storing and sharing information) and mechanisms for integrating climate change into national systems for budgeting, monitoring and reporting can impede the interlinked implementation of the SDG targets and mitigation and adaptation goals, which should be faster than their separate implementation.

Illustrative explanation of the scoring for Jordan

In the matrix, across sectors for the mitigation and adaptation segments, there are very few SDGs for which institutionalized synergy (a score of 2) has been achieved. Most of the scores across sectors are positive reinforcement between institutions (a score of 1) when it comes to the achievement of an integrated SDG and NDC implementation process. Several ministries are involved in the implementation process, but there is a lack of clarity as well as overlaps in their roles and responsibilities; therefore, in the matrix, the score of 2 is not given.

Exhibit 3. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Jordan

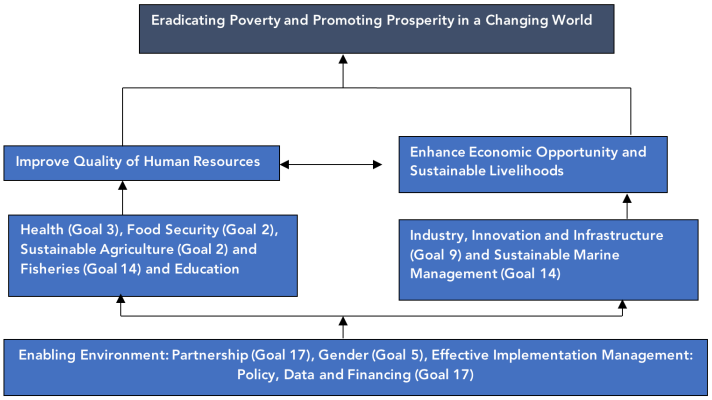
	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	1(-1)	1	1	1	0	1(-1)	1(-1)	1	2	1	1	1(-1)	0	1	0	1
Zero Hunger	1	1	1	1	0	0	0(-1)	1(-1)	2	1	1	1	0	-1	0	1
Good Health and Well being	2	2	1	2	1	2	0	2	2	2	0	2	1	2	1	2
Quality Education	1	0	0	2	1	0	2	1(-1)	1(-1)	1(-1)	2	2	0	0	2	2
Gender Equality	1	1(-1)	1(-1)	-2	-1	-2	2	-2	1	1	0	0	0	0	2	0
Clean Water and Sanitation	2	1	0	1(-1)	0	2	0	1(-1)	2	1	0	2	0	2	0	1(-1)
Affordable clean energy	0	1(-1)	2	1	1	1(-1)	0	2	0	1(-1)	2	1	1(-1)	1	0	2
Decent work and economic growth	1	2	1(-1)	1(-1)	1(-1)	1	1(-1)	1	1	0	1(-1)	1	0	1	1(-1)	0
Industry, innovation and infra	0	2	2	1(-1)	1	1	0	2	0	1(-1)	2	0	1	0	0	1
Reduced Inequalities	1(-1)	0	0	-2	-2	-2	2	-2	1	0	0	0	0	0	2	2
Sustainable Cities and communities	0	2	1(-1)	1	1	1	1	1(-1)	0	0	0	1	0	1	1	-2
Responsible consumption and production	1	1	1	0	1(-1)	1	0	1	1	1	1	0	1	1	0	1(-1)
Life Below Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Life on Land	0	1	1(-1)	1(-1)	0	1(-1)	0	0	0	1	0	0	0	0	0	0
Peace, Justice and Strong Institutions	1	0	1	1	1	1	1(-1)	2	1	0	0	1	0	1	0	2
Partnerships for the Goals	0	1(-1)	0	0	0	0	0	0	0	1	0	0	0	0	1	0

INDONESIA

Indonesia is strongly committed to implementing the SDGs. Their implementation has been merged with implementation of the National Development Plan (which has nine priorities), the National Long-Term Development Plan 2005–2025 and the National Medium Term Development Plan 2015–2019. The 2017 VNR of Indonesia focused on seven SDGs (1, 2, 3, 5, 9, 14 and 17), with a special emphasis on poverty, health and nutrition. The commitment of the 2030 Agenda to leave no one behind is applied in that the VNR is prepared by means of a transparent participatory mechanism and in line with open government policies.

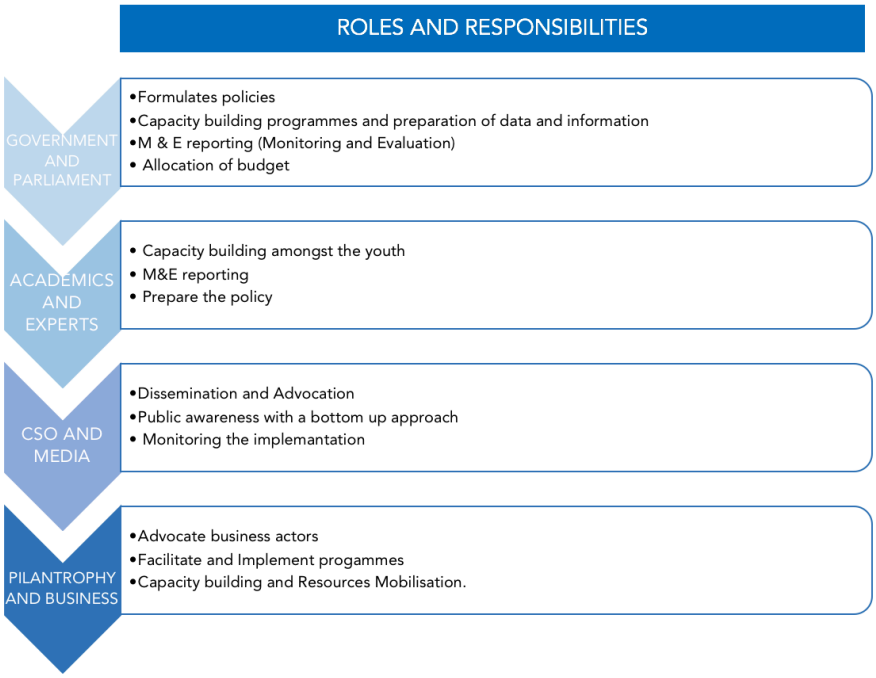
Indonesia's VNR emphasizes two aspects: improving the quality of human resources (via SDGs 2, 3 and 4); and enhancing economic opportunities for sustainable livelihoods (via SDGs 5, 9, 14 and 17) (Figure 5.2).

Figure 5.2. Interconnectedness of the goals of eradicating poverty and improving welfare in Indonesia



In Indonesia, the institutional mechanisms for enabling an integrated SDG and NDC implementation process for policy coherence come under the institutional structure and process shown in Figure 5.3.

Figure 5.3. Institutional structure and process, including roles and responsibilities, for integrated Sustainable Development Goal and nationally determined contribution implementation in Indonesia

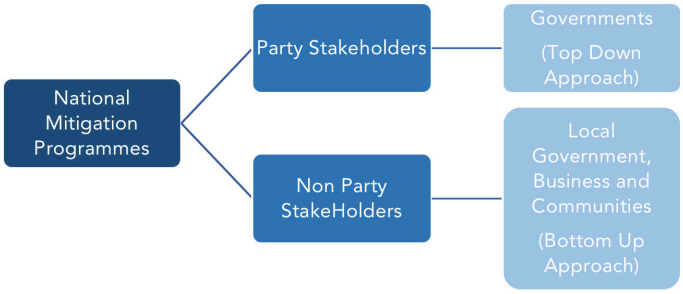


The implementation of prioritized climate change mitigation policies (focusing mostly on land use, land-use change and forestry (LULUCF), peat use and forest fires) and actions follow several stages: planning, implementation, monitoring, reporting and verification and/or registration. The Ministry of Environment and Forestry and other relevant ministries are responsible for climate change mitigation actions. The focal points are the Directorate-General and Secretary-General of those ministries. Mitigation action plans are created by the relevant ministries under the guidance and supervision of the Ministry of Environment and Forestry, and the ministries have implemented these plans as an integral component of the National Development Plan.

Implementation, monitoring and reporting of the mitigation actions are undertaken by relevant ministries and their reports are submitted to the Ministry of National Development Planning, the Ministry of Environment and Forestry and the Ministry of Home Affairs. Institutional arrangements for MRV follow the international guidance for domestic MRV with several adjustments made in accordance with national circumstances. The implementation of the MRV system is coordinated by the Ministry of Environment and Forestry (specifically, the

Directorate-General of Climate Change). The verification process is straightforward. The parties responsible for emissions must provide a detailed report containing the emission data along with a plan and its implementation process for tackling the emissions over a certain time frame. Reports are submitted to the Directorate-General of Climate Change, which is the coordinating agency of the MRV process.

Figure 5.4. Institutional mechanism for consultation on climate change mitigation programmes in Indonesia



The coordination between the ministries and the focal points of Indonesia needs improvement. No new institutional structures are required at this point but the existing ones should be revised. The stakeholders need to be more efficient in their functions so as to enable better results and ease in achieving the national targets.

Illustrative explanation of the scoring for Indonesia

To end poverty, substantial measures have been taken. Programmes such as the national health insurance scheme, Basis Data Terpadu and the Family Hope Program have been implemented to provide social protection in a more comprehensive manner. Access to basic services such as childbirth, immunization, childcare, contraception, birth certificates, primary education, clean water, proper sanitation, quality housing and electricity has been increased at a substantial rate by government measures.

One major implementation focus of the VNR relating to SDG 1 is the provision of basic services to disaster victims to end poverty. This is also connected to climate change adaptation measures. The country is prone to several types of natural calamities and climate-induced hazards; the government is providing basic facilities to the poor households that are most vulnerable to disasters resulting from climate change. There is, however, a lack of synergy among the poverty alleviation programmes at both the national and subnational level.

One of the major SDG challenges in Indonesia is related to the prevalence of child poverty. The VNR recognizes the fact that such poverty relates not only to income and the economy but also to access to basic services required for child growth and development.

Exhibit 4. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Indonesia

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Zero Hunger	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Good Health and Well being	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gender Equality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Water and Sanitation	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Affordable clean energy	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
Decent work and economic growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industry, innovation and infra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Inequalities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sustainable Cities and communities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Responsible consumption and production	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Life Below Water	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Life on Land	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Peace, Justice and Strong Institutions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Partnerships for the Goals	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

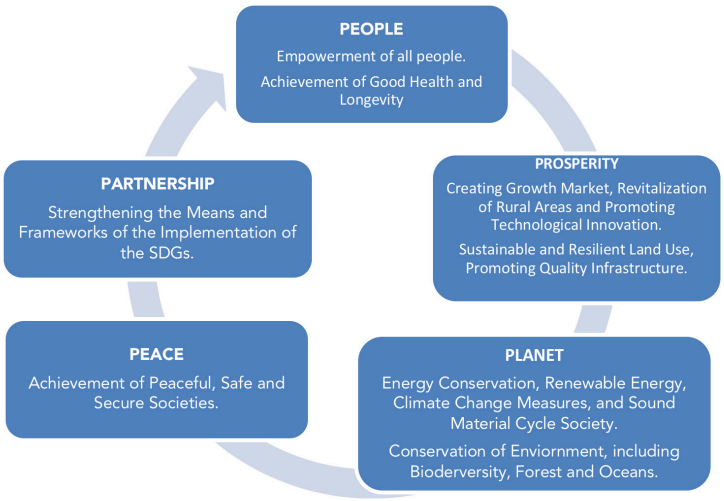
Hunger is an important developmental challenge faced by the poor in rural areas and disaster-prone areas. The number of people with a calorie intake below 1,400 kcal/day decreased between 2012 and 2016. The issue of hunger has been taken up by the government and several programmes and schemes are being introduced to end hunger. Since drought and flood (owing to El Niño/ Southern Oscillation and La Niña) are frequent in Indonesia, sustainable agricultural practices have been adopted to minimize food shortages and enhance production of carbohydrates such as rice, corn and sweet potato. Pulse production has been increased by government initiative, which has resulted in an increase in the Desirable Dietary Pattern score across the country. The introduction of gene banks of crops and livestock to produce High Yielding Variety crops (which links to SDGs 1 and 2 and as well as to climate change adaptation measures) are some of the important measures being taken to address the interlinkage of SDG and climate change adaptation processes in the country.

JAPAN

The institutional process for SDG and NDC implementation in Japan is well structured and integrated. Relevant ministries and government agencies[1] closely cooperate, led by the Global Warming Prevention Headquarters, which is chaired by the Prime Minister and includes all Cabinet Ministers as members, and which holds meetings at the Directorate-General level. A regional committee for promoting energy and global warming countermeasures has been established in each region of the country. Japan has developed the Plan for Global Warming Countermeasures in response to Article 8, paragraph 1, of the Act on Promotion of Global Warming Countermeasures in order to promote global warming countermeasures in a comprehensive and planned manner. The Plan was developed in cooperation with the national government, local governments, business operators and the general public.

The Government of Japan strictly manages the progress of policies and measures. The Government Council conducts an annual review of the progress of national policies and measures and also of voluntary initiatives conducted by business operators (under Japan's Commitment to a Low Carbon Society) in order to ensure the effectiveness of climate change policy. The Government also estimates GHG emission levels biannually (preliminary and definite values) to check the emission trends by sector and by gas. All the ministries and agencies are involved in the SDG and NDC implementation process – they continuously cooperate and report on progress to the Cabinet Office and Cabinet Secretariat. Figure 5.5 shows how Japan views the interconnected targets of the SDGs and goals of the NDC.

Figure 5.5. Interconnected Sustainable Development Goal and nationally determined contribution pillars of Japan



Illustrative explanation of the scoring for Japan

Japan offers a good example of synergies at the top level of decision-making. The institutional processes for SDG and NDC implementation in Japan are well structured and similar in their administrative architecture. Both processes are led by the Global Warming Prevention Headquarters, which is chaired by the Prime Minister and has representatives from all ministries. Separate visionary plans have been developed for the implementation of the SDGs and NDC, but national strategies such as the Fundamental Plan for Establishing a Sound Material-Cycle Society, the National Biodiversity Strategy of Japan 2012–2020 and the Plan for Global Warming Countermeasures together provide the platform for institutional integration of the two

1 Ministry of Defense, Ministry of Environment, Ministry of Land, Infrastructure, Transportation and Tourism, Ministry of Economy, Trade and Industry, Ministry of Agriculture, Forestry and Fisheries, Ministry of Health, Labor and Welfare, Ministry of Education, Culture, Sports Science and Technology, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Justice, Ministry of Internal Affairs and Communications, Reconstruction Agency, Consumers Affairs Agency, Financial Services Agency, National Police Agency, Cabinet Office and Cabinet Secretariat.

processes at the top level. However, the reports reviewed in this study do not provide any detailed indication of the existence of such synergies at the subnational level or information on the stage of implementation.

The guiding principles of universality, inclusiveness, participatory approach, integrated approach, and transparency and accountability for incorporating the SDGs into the national framework, which focuses on people, prosperity, planet, peace and partnership, offer great scope for synergies with the national vision for the SDGs and climate action. While the context of climate change is recognized at the outset of the VNR, concrete examples of synergies at the sectoral level are not mentioned with the exception of the energy sector and international partnerships in the context of mitigation. Japan's leadership in promoting energy efficiency through programmes such as the Top Runner Program and its focus on mitigation of GHGs through project implementation through the Japan International Cooperation Agency and the Joint Crediting Mechanism ensure deep institutionalized synergies between energy sector related SDGs (clean energy; sustainable cities; industry, innovation and infrastructure; responsible consumption; and partnerships) and mitigation imperatives. In the case of adaptation, these linkages are recognized but scattered, and perhaps do not represent the full picture.

What stands out from Japan's VNR is the emphasis on participation of subnational governments, civil society organizations, youth and industry in decision-making. For instance, the Plan for Global Warming Countermeasures was developed in cooperation with the national government, local governments, business operators and the general public.

Both the VNRs and NCs of Japan place strong emphasis on Japan's contribution to official development assistance and its participation in various Organisation for Economic Co-operation and Development initiatives. Under its Development Cooperation Charter, Japan has embedded the pursuit of the SDGs and climate goals in its bilateral cooperation. Whether loans are considered as a measure of international cooperation on the SDGs, particularly on gender and health, in Kenya and Senegal for example, is open for debate.

Exhibit 5. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Japan

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zero Hunger									1					1		
Good Health and Well being		0								0	0				1	
Quality Education	1															
Gender Equality		0								1						
Clean Water and Sanitation																
Affordable clean energy	2															
Decent work and economic growth																
Industry, innovation and infra	1	1	1	2	1	1		2			1	1	1		1	
Reduced Inequalities																
Sustainable Cities and communities		1	1	1	1	1		2								
Responsible consumption and production	1	1	1	1	1	1	1	1						1		
Life Below Water									1					1		
Life on Land								1								
Peace, Justice and Strong Institutions																
Partnerships for the Goals	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1

AUSTRALIA

Australia's response to climate change and sustainable development follows its federal constitutional governance structure. The participation of multiple actors at different levels of government in the process of preparing VNRs and NCs ensures that these reports recognize the synergies and trade-offs in taking forward the sustainable development and climate change agendas. Federal and subnational policies and programmes covering the SDGs and climate action overlap. While it may be assumed that these overlaps represent synergies between the institutional mechanisms that provide the administrative apparatus for implementation, the VNR and NC do not offer enough information to draw a conclusive assessment of institutionalized linkages at the national level, with the exception of interventions related to energy, transport, waste and cities. While the synergies and trade-offs among SDGs are recognized at the outset in the reports, specific details have not been provided. The lack of specific information is further complicated by the organization of Australia's VNR – it provides a comprehensive overview of policies and programmes relevant to various SDGs but lacks details on the metrics for measurement of their impacts and on institutional architecture. Many initiatives by the private sector and by foundations are reported; their integration within the institutional processes is, however, unclear.

The explicit recognition of synergies between the SDGs and climate action are more prominent in the context of adaptation. Many subnational adaptation plans are reported in the VNR and NC. The scope of these plans overlaps with specific SDGs, such as health and water. While there are indications that the synergies might have greater institutional interlinkages than those in the context of mitigation, it is difficult to conclude this from the reports. From the perspective of assessing institutionalized linkages between SDG implementation and climate action, the VNR and NC lack information. The VNR contains actions that address more than one SDG, but overlaps with climate change are not specifically mentioned except where climate change poses a direct risk to the achievement of specific SDGs, for example access to clean water. Here, too, the information submitted in the VNR and NC is divergent.

Australia reports its participation in various multilateral, regional and bilateral initiatives in the context of SDGs and climate change, with illustrative examples of how countries that are not members of the Organisation for Economic Co-operation and Development have benefited from Australian support. While interlinkages between the SDGs and various development assistance initiatives are to be expected, it is difficult to find conclusive instances of increased institutional synergies since the adoption of the SDGs in 2015, except for interventions related to agriculture and energy (mitigation) and agriculture (adaptation).

Exhibit 6. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Australia

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Zero Hunger		0	0	0	0	0	0	1	2	0	0	0	0	1	0	0
Good Health and Well being	0	0	1	1	1	0	0	0	0	0	1	1	1	0	1	0
Quality Education	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0
Gender Equality	1	1	1	0	0	0	1	1	1	2	0	0	0	0	1	0
Clean Water and Sanitation	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1
Affordable clean energy	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1
Decent work and economic growth	1	1	1	0	0	0	1	2	1	1	1	1	1	1	1	1
Industry, innovation and infra	1	0	1	1	1	1	1	2	1	0	1		0	1	0	
Reduced Inequalities												1				1
Sustainable Cities and communities	0	1	1	1	1	1	2	2	1	1	1	0	1	1	2	0
Responsible consumption and production		1	1	1	1	2	1	1	0	0	0	0	0	2	0	0
Life Below Water									1	0	0		0	0	0	
Life on Land																
Peace, Justice and Strong Institutions	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
Partnerships for the Goals	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1

ROMANIA

Romania's strategies relating to the SDGs and to climate change are guided by national concerns and by collective frameworks at the European Union level. Romania is going through a process of streamlining its institutional architecture to align it with the Party's obligations as a member State of the European Union.

At the national level, the SDGs are the responsibility of the Interministerial Committee for the Coordination of the Integration of Environmental Protection into Sectoral Policies and Strategies at the National Level. The National Sustainable Development Strategy is regularly reviewed and integrated into sectoral policies and programmes. Similarly, the National Low Carbon Green Growth Strategy spearheads the integration of climate change objectives into sectoral policies and programmes.

The institutionalization of synergies and coordination across line ministries is effected through a team of experts in every public institution, which acts as a liaison between the public institution and the Department for Sustainable Development. These experts are expected to boost interministerial collaboration. Whether a similar mechanism exists for implementing the National Low Carbon Green Growth Strategy is not evident.

Intuitively, there seems to be a significant level of institutional synergy between the two global agendas in Romania's national context. While at the outset of the VNR Romania recognizes that the pursuit of the SDGs is squarely situated among climate challenges, its BUR of 2017 refers to the SDGs in a rather oblique and incidental manner. In the VNR Romania does recognize the need for breaking the silo approach and states that it aims to establish an effective implementation and review mechanism integrating various ministries and institutions. Yet, owing to the lack of information and the style of reporting in the VNR, it is difficult to determine the degree to which the institutional mechanisms established for implementing the SDGs and the National Low Carbon Green Growth Strategy have been integrated or communicate with each other. The few exceptions include the SDGs focusing on sustainable cities and communities, clean energy, and sustainable consumption and production, for which synergies with GHG mitigation can be inferred to be institutionalized.

Exhibit 7. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Romania

SDG	Mitigation									Adaptation								
	Agriculture	Industry	Transport	Residential	Commercia	Waste	Service	Energy	Other	Agriculture	Industry	Transport	Residential	Commercia	Waste	Service	Energy	Other
No Poverty	0	0	0	0	0	0	0	1	0	0	0	0	0		0	0	0	0
Zero Hunger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Good Health and Well being	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Quality Education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Gender Equality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Water and Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Affordable clean energy	0	2	1	2	2	0	0	2		1	1	1	1	1	1	1	1	
Decent work and economic growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industry, innovation and infra	0		2	0	0	0	0	0		2	2	2	0	0	1	1	2	
Reduced Inequalities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sustainabile Cities and communities																		
Responsible consumption and production	0	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0
Life Below Water																		
Life on Land																		
Peace, Justice and Strong Institutions	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Partnerships for the Goals		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

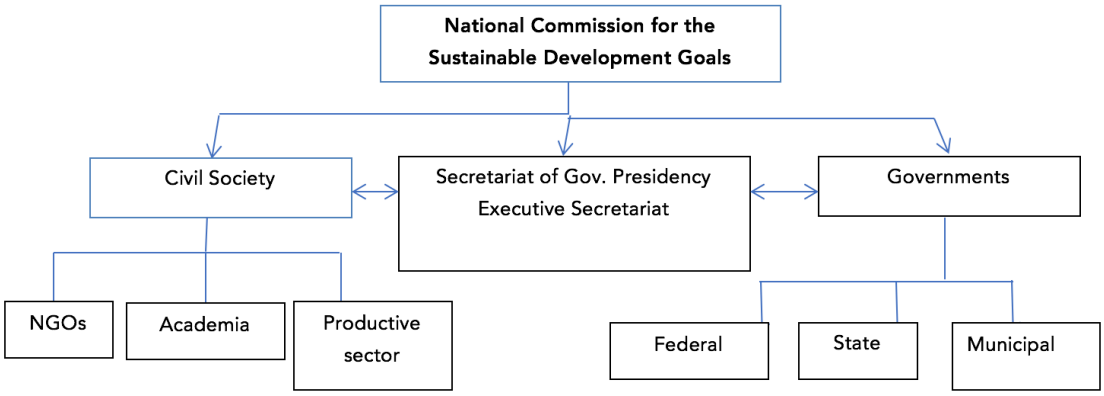
BRAZIL

The main relevant institutional body in Brazil is the National Commission for the Sustainable Development Goals, which is a collegiate body. The body has an advisory nature, and is responsible for integration, engagement and dialogue with federate entities and civil society, aiming to internalize, disseminate and confer transparency to the 2030 Agenda.

Several ministries are involved in the SDG implementation process, including the Ministry of Foreign Affairs, the Ministry of Social Development and Fight Against Hunger, the Ministry of Planning, Development and Management, the Ministry of the Environment, the Ministry of Industry, Foreign Trade and Services, and the Ministry of Mines and Energy.

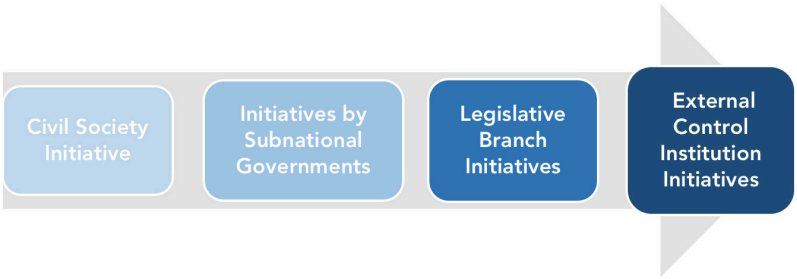
The institutional structure for enabling policy coherence during the SDG and NDC implementation process in Brazil is shown in Figure 5.6.

Figure 5.6. Institutional structure for the integrated Implementation of Sustainable Development Goals and the nationally determined contribution in Brazil



The process for interlinked SDG and NDC implementation has the flow of actions shown in Figure 5.7.

Figure 5.7. Institutional process for the integrated implementation of Sustainable Development Goals and the nationally determined contribution in Brazil



Illustrative explanation of the scoring for Brazil

Brazil had been doing well in terms of poverty reduction until the economic crisis in 2015, which led to an increase in poverty. The commercial sector is doing well owing to institutionalized synergies. Some trade-offs were found in the residential and the waste sectors even though no interlinkages were found. The National Policy for Social Assistance has been implemented for the provision of social and financial assistance.

The nation is doing well in terms of sustainable agriculture; several policies have been implemented to ensure adequate food supply. Because of this, in the matrix, positive reinforcement between institutions has been scored for zero hunger.

The Bolsa Familia programme, linked with several SDGs, has been implemented. Its major objective, apart from eradicating hunger and poverty, is maintaining the good health and well-being of the nation's people. Few other policies with strong institutionalized synergy for health and medical benefits are in place, hence in the matrix no interlinkages were found between health and most sectors of mitigation and adaptation.

Brazil has a greater number of women than men in the population and gender equality is an issue across the nation. Many polices have been implemented to meet the gender objectives of the 2030 Agenda. The National Policy

for Fighting All Forms of Violence against Women aims to reduce all forms of violence against women. In the matrix, positive reinforcing was found for all sectors, with some trade-offs identified for gender equality and the residential sector in the literature review.

From the matrix it emerges that the industrial sector's performance regarding the objectives of the 2030 Agenda has been very good and the concept of smart and sustainable cities is being implemented in the country.

LULUCF is a prominent sector and there is a push to reduce deforestation and degradation of native vegetation by promoting the maintenance of ecosystem services in this sector through the sustainable use of forest resources and the promotion of sustainable agricultural practices.

processes and energy, which is aiming for an emission reduction of 79–99 million t CO2 eq by 2020. In the NDC submitted by Brazil in 2016, the country committed to adopting mitigation measures for reducing GHG emissions by 37 per cent below the 2005 level in 2025, with an indicative effort to achieve a 43 per cent reduction compared with the 2005 level in 2030. Brazil uses an inventory approach for estimating GHG emissions.

The main problems faced by the country in terms of meeting the goals of the 2030 Agenda are the lack of knowledge in and lack of synergy between the various government ministries, and the lack of institutional capacity across the country. The matrix cannot be filled in with the maximum score of numeric functional relationship.

Exhibit 8. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Brazil

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	1	0	0	0(-1)	2	0(-1)	1	2	1	0	1	0	2	1	2	1
Zero Hunger	1	1		0	1		2	1	2	1	1	1	0(-1)	1		
Good Health and Well being	1															
Quality Education		0	0	0	1	0	1	1	1	1	0	0	0	0	0	1
Gender Equality		1	1	-1	0	1	1	2	1	2	0	1	0	1	1	1
Clean Water and Sanitation																
Affordable clean energy		1	1	1	1	1	2	1	1	1	0	1	1	1	1	1
Decent work and economic growth		1	0	1	1	0(-1)	1	1	1	1	2	1	1	1	2	1
Industry, innovation and infra																
Reduced Inequalities		1	0	0	0	1	1	1	1	1	2	1	-2	1	1	0
Sustainable Cities and communities																
Responsible consumption and production		0	1	0	0	0	1	1	1	1	0	1	0	1	1	2
Life Below Water																
Life on Land																
Peace, Justice and Strong Institutions																
Partnerships for the Goals																

The LULUCF sector had positive results, including that 28.5 per cent of the Amazon biome was protected; there was a decrease of 84 per cent in deforested areas inside conservation units between 2004 and 2017; and there was a 50 per cent decrease in forested areas affected by wildfires.

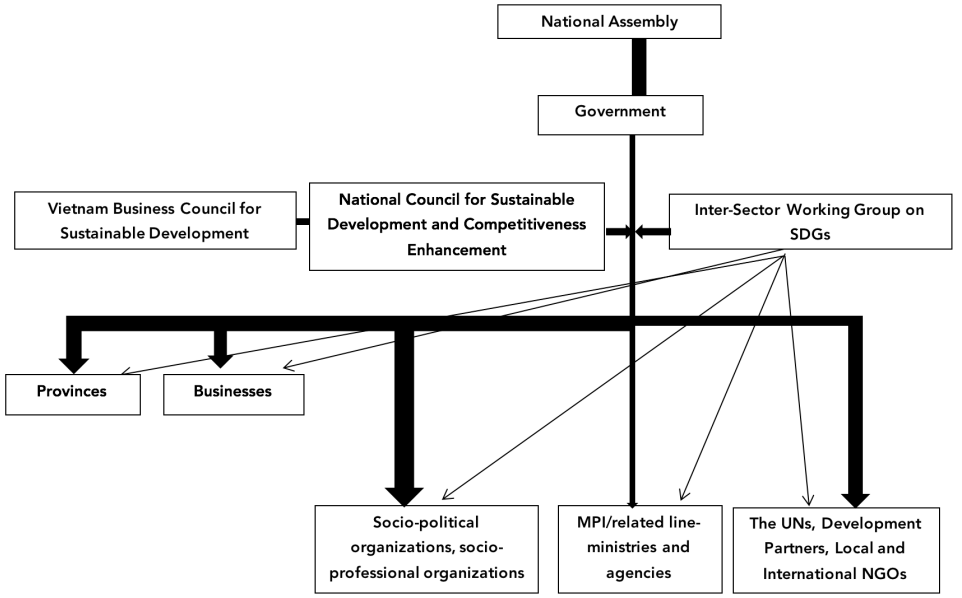
Another important sector in the country is industrial

VIET NAM

Viet Nam has been analysed in this study to gain an understanding of how middle income countries – which are slowly being integrated into the global economy, are exposed to the future impacts of climate change, and face domestic economic, social and environmental challenges – should undertake an interlinked SDG and NDC implementation process.

The institutional structure and process for integrated SDG and NDC implementation in Viet Nam is shown in Figure 5.8.

Figure 5.8. Institutional structure and process for integrated Sustainable Development Goal and nationally determined contribution Implementation in Viet Nam



In order to create coherence between the SDG and NDC implementation processes, Viet Nam has nationalized the 2030 Agenda in its NAP, which includes all 17 SDGs and 115 specific targets that are appropriate to national conditions and development priorities. The steps for SDG implementation are shown in Figure 5.9.

Figure 5.9. Process flow of Sustainable Development Goal implementation in Viet Nam

Viet Nam is one of the Asia-Pacific countries that has completed gender mainstreaming, particularly in the Law on State Budget in 2015. Through its low-carbon green growth strategy, Viet Nam has implemented strong mitigation measures in the waste sector. These mitigation measures are well linked to renewable energy promotion and job creation. The institutional process for implementing the mitigation actions in a coordinated manner with the nationally appropriate mitigation actions is shown in Figure 5.10.

The case study of Viet Nam as a case study from the Asia-Pacific shows that integrating SDG and NDC implementation will help to meet the goals of the 2030 Agenda. Viet Nam is highly vulnerable to climate change and therefore an institutional framework for integrating SDG and NDC implementation processes is required; such a framework is working very well for Viet Nam. Coordination among the ministries and the focal points is very strong and is helping to achieve the SDGs.

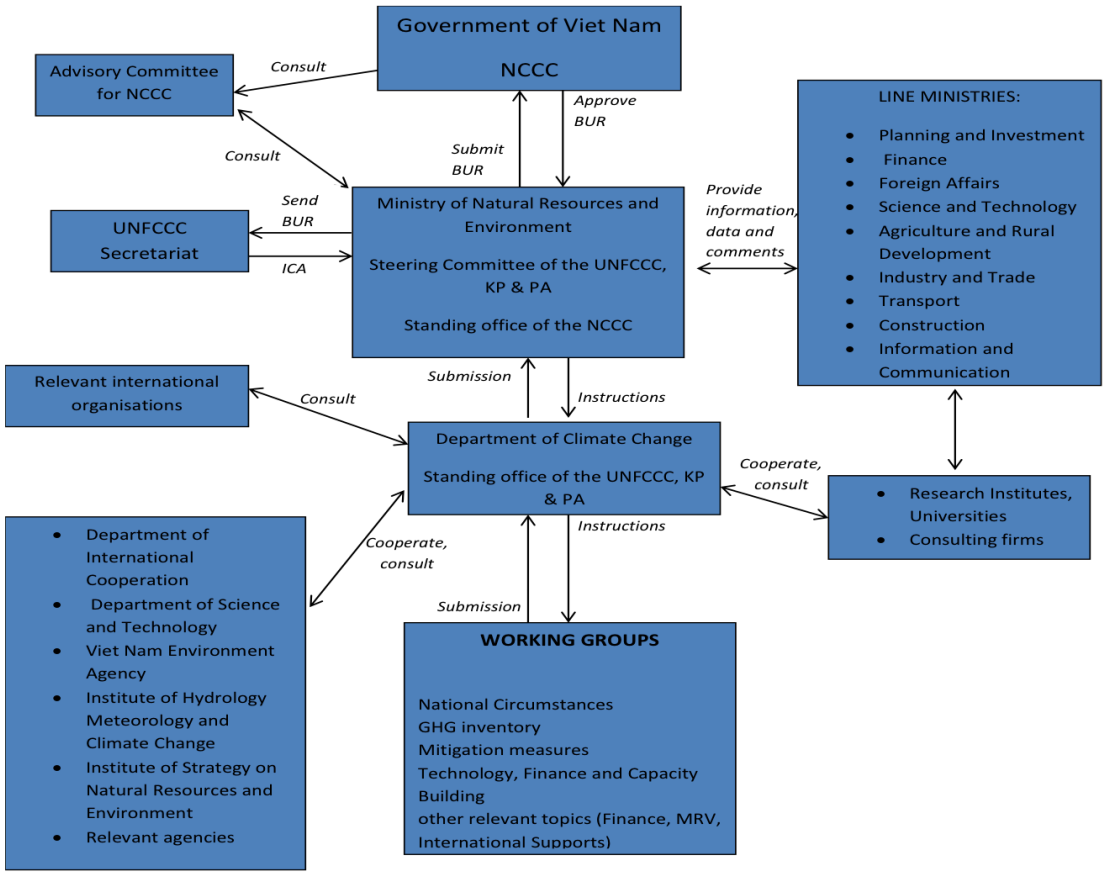
Illustrative explanation of the scoring for Viet Nam

In the agriculture sector, the MARD programme has been implemented, which has good institutional arrangements and is helping to achieve most of the SDGs, though education is not covered. The programme has, however, resulted in conflicting institutional overlaps in the SDG implementation process. For some SDGs, it has also led to trade-offs owing to the lack of effective institutional mechanisms and implementation processes, meaning that the achievement of one goal may lead to trade-offs for another. For example, for the SDGs for sustainable communities, no poverty and zero hunger, improvements for the community are expected through programmes targeting agriculture, but in the short term, communities can suffer great loss, in turn harming their well-being, owing to the lack of institutional synergies.

Within the transportation sector of the mitigation segment, the nationally appropriate mitigation action of a low-carbon bus system has been implemented. This action has institutionalized synergies (a score of 2) with

the SDGs for good health and well-being, sustainable cities and communities, and responsible consumption and production. The initiative is also helping achieve other SDGs.

Figure 5.10. Institutional process for coordinating mitigation actions in Viet Nam



In the industrial sector, programmes run by the Ministry of Industry and Trade and the Department of Industry and Trade have implemented the Green Growth Action Plan. These two programmes have very strong institutionalized synergy (a score of 2) and have helped to achieve most SDGs relating to mitigation and adaptation.

In the waste sector, the Waste to Resource project was implemented by the Ministry of Natural Resources and Environment for reducing GHG emissions (mitigation) and for adaptation. This project has helped achieve the SDGs relating to affordable and clean energy, decent work and economic growth, and responsible consumption and production, but it has had negative impacts on health and does not cover equality.

The energy sector in Viet Nam is under the responsibility of the Ministry of Industry and Trade, which has initiatives such as the National Target Program on Energy Efficiency and Conservation and the Renewable Energy Development Strategy. This sector contributes greatly, through various projects, in achieving the SDGs in the mitigation segment of the industrial and services sectors. These projects are helping to promote energy efficiency, energy conservation and renewable energy sources in the agriculture, industrial and services sectors.

The services and commercial sector does not have any direct policies but has indirect interlinkages with SDGs.

After looking at the linkages of each sector in the matrix it can be concluded that Viet Nam is a successful case study in terms of integrated SDG and NDC implementation. The key focus areas of SDGs are SDGs 1, 2, 3 and 7, and they interlink with the promotion of agricultural production, food security and job creation in the waste sector. The country has also aimed at increasing its renewable energy share to more than 5 per cent by 2020 and at increasing its job creation efforts. The energy, agriculture, waste and LULUCF sectors have prioritized interventions through which Viet Nam has been aiming to achieve SDGs 1, 2, 3 and 7. The country is also addressing the mitigation need of clean energy promotion and the adaptation needs of job creation, waste reduction, poverty reduction and income inequality through the interlinked process of SDG and NDC implementation. The analysis indicates that strong coordination among ministries and focal points exists for achieving the SDGs and the NDC in an interlinked manner in Viet Nam.

Exhibit 9. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Viet Nam

SDG	Mitigation								Adaptation							
	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	2	2	1	1	1		1	2	2	2	1	1	1	1	1	2
Zero Hunger	2	1	0	2	2	0	-2	1	2		-2	2	1	0	-2	0
Good Health and Well being		2	2	2	2	-2	-2		0	2		2	2	-2	-2	1
Quality Education	2	0	0	0	0	1	2	0	-2	0	0	0	0		2	0
Gender Equality	0	2	1	1	1	0	-1	2	0	2	1	1	1	0	-1	2
Clean Water and Sanitation	2	2	0	2	2		0	1		2	0	2	2	0	0	0
Affordable clean energy	0		0	2	2		0	2	0		0	2	2		0	2
Decent work and economic growth		2		0	0	2	1		1		1	0	0	2	1	1
Industry, innovation and infra	0	2				2	0	2	0	2	1	2		2	0	
Reduced Inequalities	1	1	1	2	2	-2	-1	0	1	0	0		2	-2		1
Sustainable Cities and communities			2	2	2		0	2			2	2	1	1	0	2
Responsible consumption and production	2	2		0	0	2	0		2	2	0	1	0	1	0	0
Life Below Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Life on Land			0	2	2		0	0	1	-1	0	1	2	0	0	0
Peace, Justice and Strong Institutions	1	1			1	0	0	1	0	1	1		1	0	1	0
Partnerships for the Goals	0		0	0	2	0	0	1	0		0	0	2	0	0	0

Best Practices

The Long-range Energy Alternatives Planning System (LEAP)

Developed at the Stockholm Environment Institute, LEAP is a software tool for energy policy analysis and climate change mitigation assessment, widely applied for country reporting to the UNFCCC (e.g. intended nationally determined contributions, national communications, biennial update reports and nationally appropriate mitigation actions). The model, which is based on a demand-driven structure, can be used with sparse data, and is used by planners and practitioners to analyse policies in the energy sector.

With the Integrated Benefits Calculator (IBC) add-on, LEAP can be used to identify and calculate synergies between mitigation action and air pollution benefits. In Ghana, LEAP-IBC was adopted by Ghana's Energy Commission. An analysis showed how a reduction in emissions would benefit avoided number of deaths and temperature responses.

The tool is particularly useful for examining the multiple benefits of taking action on long-lived and short-lived climate pollutants and local air pollutants. Nigeria has successfully implemented LEAP-IBC in support of its National Action Planning initiative, which aims to promote the rapid and large-scale reduction of short-lived climate pollutants.

For more information about LEAP, see https://www.energycommunity.org/default.asp?action=home.

SINGAPORE

Singapore is a small island developing State. The NDC proposed by the country aims to reduce its emission intensity by 36 per cent from the 2005 level by 2030 and to stabilize its emissions by 2030. A core strategy of Singapore to mitigate its GHG emissions is to improve energy efficiency across the sectors of its economy. Several adaptation strategies opted for by Singapore are highlighted in its NDC; initiatives undertaken to promote food security, infrastructure resilience, public health, flood risk management, water security, biodiversity conservation and climate modelling are emphasized. A high level of synergy was observed in the BURs and VNRs of the country. Steps have been taken by Singapore to use a cleaner fuel mix for electricity generation by switching from fuel oil to natural gas and renewable energy sources. A carbon tax will be charged to meet the climate pledge taken by the country under the Paris Agreement.

The integrated SDG and NDC implementation process has a strong emphasis on sustainable production and consumption measures. Measures focus on the '3 Rs' (reuse, reduce and recycle) and particularly on increasing the recycling rate from the current 61 per cent to 70 per cent by 2030. The sustainable production and consumption measures interlink with the mitigation actions and measures shown in Figure 5.11.

Figure 5.11. Inferences from Singapore's integrated Sustainable Development Goal and nationally determined contribution implementation process

In Singapore, a multi-agency Resilience Working Group, led by the Ministry of the Environment and Water Resources and the Ministry of National Development, was set up in 2010 under the auspices of the Inter-Ministerial Committee on Climate Change. The working group aims to assess

Singapore's physical vulnerabilities to climate change on the basis of a resilience framework developed for guiding the formulation of adaptation plans for safeguarding Singapore against potential climate change impacts up to the year 2100.

Singapore is undertaking a well-structured integrated SDG–NDC implementation process. The institutional arrangements for this process are compact. An interministerial committee co-chaired by the Ministry of Foreign Affairs and the Ministry of the Environment and Water Resources is the sole authority for the implementation of the VNRs and the BURs. Along with this

Shifting to Cleaner Energy Sources

- Switched from fuel oil to natural gas, rised its use from 26% to 95%,
- Increased use of solar energy,
- Launched a floating solar PV testbed.
- These measures shifted to cleaner energy sources (projected to achieve 4.18 Mt of CO2 by 2020).

Greening Buildings

- The mitigation measures in the building sector are projected to achieve 0.87 – 1.55 Mt of CO2e abatement by 2020.

Improving Industrial Energy Efficiency

- An Industry is the largest energy-consuming sector.
- Except to achieve 1.43 MT of CO2e abatement by 2020.

Shifting Travel Demand to Low-Emission and Reducing Vehicular Emissions

- Public transport is the most energy efficient mode of powered transport. Singapore's target is for the public transport modal share during the morning and evening peak hours to reach 70% by 2020 and 75% by 2030.

Improving Energy Performance Standards of Household Appliances and Promoting Energy Efficiency to Households

- Household sector accounts about 16% of total electricity consumption.
- They organised 'The Energy Saving Challenge' to encourge to be more energy efficient and practice energy saving habits.

Reducing Emissions from Waste and Wastewater Treatment

- Apart from incinerating waste and wastewater sludge reduces methae emissions from landfills but also increase recycling rate to 70% by 2030.
- Mitigation measures in waste and water sector to achieve 0.15Mt of CO2e abatment by 2020.

committee, government bodies, civil society organizations, relevant governmental organizations and NGOs, and other stakeholders are the main pillars of the strong institutional arrangements for the integrated implementation process. Youth, philanthropists and business operators also play an important role in the institutional arrangements for mitigation actions. In the context of the BUR, more ministries – the Ministry of Trade and Industry, the Ministry of Finance and the Ministry of Transport – are included in the arrangements.

The long-term mitigation actions of Singapore are implemented by the Long Term Emissions and Mitigation Working Group, which also studies how Singapore can stabilize long-term emissions by identifying the sectoral capabilities, opportunities, infrastructure needs and integrated policies required for long-term mitigation actions aligned with the SDGs. An MRV Task Force under the working group has been established and tasked with coordinating inter-agency MRV efforts.

Illustrative explanation of the scoring for Singapore

Most of the sectors of Singapore received a good score owing to strong institutional synergies and a well-coordinated institutional structure. The majority of the sectors, through both the mitigation and the adaptation lens, received a high score of 1 or 2.

Exhibit 10. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in Singapore

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	2								2	2	2					
Zero Hunger	2								2							
Good Health and Well being	2						2	2	2	2	2	2	2	2	2	
Quality Education																
Gender Equality		2	2	2										2		
Clean Water and Sanitation	2	2	2	2	2	2	2	2								
Affordable clean energy		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Decent work and economic growth		1	2	2	2	2			2	2	2	2	2	2		
Industry, innovation and infra		2	2	2	2	2		1								
Reduced Inequalities	2	2	2	2	2	2			2		2	2	2	2	2	2
Sustainable Cities and communities	1		2	2	2					2						
Responsible consumption and production	2		2	2	2											
Life Below Water																
Life on Land																
Peace, Justice and Strong Institutions	2	1	1	2	2	2	2	2								2
Partnerships for the Goals																

INDIA

On the basis of the review of the VNR, BUR and NDC of India, Goal 13 (climate action) is closely interrelated with all other SDGs with the exception of SDG 8 and SDG 16.

In the context of climate action, SDG 1 (no poverty) aims to build resilience and reduce the exposure of the poor and most vulnerable people in society to climate-related extreme events and environmental shocks and disasters. Various poverty alleviation schemes have been launched in this regard, for example the Public Distribution System, the Midday Meal Scheme, the Mahatma Gandhi National Rural Employment Guarantee Act, Housing for All, Atal Pension Yojana, Sansad Adarsh Gram Yojana and Deendayal Antyodaya Yojana.

Measures related to SDG 2 (zero hunger) aim to implement resilient agricultural practices that increase production and to help maintain ecosystems that strengthen the capacity for adaptation to climate change impacts such as extreme weather and droughts, floods and other disasters. In this regard, some of the government schemes launched are the National Mission for Sustainable Agriculture, the National Food Security Mission, National Innovations in Climate Resilient Agriculture, the Soil Health Card Scheme, Paramparagat Krishi Vikas Yojana, the System of Rice Intensification and crop diversification.

To attain SDG 3 (good health and well-being) the government has implemented Pradhan Mantri Suraksha Bima Yojana and Pradhan Mantri Jeevan Jyoti Bima Yojana. Various environment education, awareness and training, disaster education, and energy clinics have been set up by the government to achieve SDG 4 (quality education). The clinics aim to improve the awareness, knowledge and skills needed to promote sustainable development and sustainable lifestyles.

India has adopted various mitigation and adaptation strategies to combat climate change. These strategies contribute to achieving not only SDG 13 but also SDGs 6, 7, 9, 11, 12, 15 and 17.

The core sectors contributing to GHG emissions in India are energy (73.2 per cent), agriculture (16 per cent), industrial processes (7.8 per cent) and waste (3 per cent). Given that most GHG emissions come from the energy sector, specific focus has been given to SDG 7 (affordable and clean energy). The key initiatives aiming at substantially increasing the share of renewable energy in the global energy mix are the Jawaharlal Nehru National Solar Mission, the Renewable Purchase Obligation mechanism (2010), the Renewable Energy Certificate mechanism (2010) and the National Offshore Wind Energy Policy (2015). The International Solar Alliance, initiated by India, facilitates access to clean energy research and technology by enhancing international cooperation.

Clean transport initiatives aim to reduce GHG emissions from the transportation sector. These include the electrification of railways, dedicated freight corridors for Indian railways, metro systems, emission standards, an auto fuel policy, the Ethanol Blended Petrol Programme, the National Policy on Biofuels, public transport and mass transit, and the National Electric Mobility Mission Plan 2020.

Norms for green buildings, such as the Buildings Star Rating System, GRIHA, LEEDs - Energy Conservation Building Code and NBC, are gaining importance. The Perform Achieve Trade scheme has been launched for promoting energy efficiency in the industrial sector and other energy-intensive sectors. Schemes such as UJALA, the Domestic Efficient Lighting Programme, Rajiv Gandhi Grameen Vidyutikaran Yojana and a standards and labelling programme have been initiated for promoting the effective and efficient use of energy in the residential and commercial sectors. The Clean India Mission and the Atal Mission for Rejuvenation and Urban Transformation have been launched aiming to improve water quality and sanitation facilities and restore water-related ecosystems. The Smart Cities Mission and the National Mission on Sustainable Habitat aim at promoting sustainable urbanization.

As a part of the case study analysis, interviews were conducted with experts working on the interlinked SDG and NDC implementation process in the two key implementation agencies – Ministry of Environment, Forest and Climate Change and NITI Aayog (a policy think tank of the Government of India) – as well as various nodal State agencies. The interview-based analysis indicates that the interlinked areas of SDG and NDC implementation have focused on SDGs 1, 2, 3, 5, 7, 9, 12, 13 and 17. SDG 1 is being addressed through the target of creating jobs equivalent to 2 billion person-days. SDG 2 is being achieved by means of the Midday Meal Scheme for 100 million children and the enhancement of food security

through 62 million soil health cards. Universal health care for poor families is being targeted through an insurance coverage of 1,00,000 Indian rupees.

The empowerment of women in India has been targeted by promoting the education of girls through the Beti Bachao Beti Padao campaign, by maternal health benefit programmes and by programmes to promote the participation of women in paid work.

Clean energy access is being implemented through the Ujjwala Programme, which promotes SDG 7 and a climate-resilient infrastructure through the installation of renewable energy power generation with a focus on small-scale industrial growth and job creation. Various climate change mitigation measures are being promoted and they are interlinked with SDGs 1, 7 and 9. The climate change adaptation measures of enhancing food security through the provision of soil health cards, enhancing soil and agricultural productivity, and conserving forests are interlinked to SDGs 2 and 3.

The institutional process for SDG implementation in India started in 2015. As a part of that process, international indicators were analysed and contextualized into a national indicator framework. The data regarding the indicators are collected by State-specific agencies that collate the data and report to the Ministry of Statistics and Programme Implementation, which has the responsibility to study, assess and synthesize the data and continue a review, reporting and assessment of them. In order to achieve the SDGs, targets have been set for each one and respective ministries have been mandated to achieve the targets. NITI Aayog has created four working groups on six SDGs. Various ministries have been invited to the consultation for addressing the SDGs. Each ministry has a particular theme and implements the SDG targets through the schemes. The schemes are implemented at the State level by means of consultation between the State and the Central government. NITI Aayog created a mapping process for all programmes and schemes, including both Central and State schemes, after identifying the linkages of the schemes with specific SDGs. The State departments report the progress of State-specific schemes to the respective ministries, which report to the Ministry of Environment, Forest and Climate Change. Respective ministries have been assigned roles and responsibilities regarding linking their Central schemes to the respective SDGs by linking it to the State departments, coordinating by means of State consultation. The progress of the schemes is monitored at the State level by the departments using statistical indicators. Progress is reported to the Ministry of Statistics and Programme Implementation. NITI Aayog largely plays a facilitating role in the SDG implementation process with the Central and State ministries playing intrinsic roles.

Exhibit 11. Assessment of institutional synergies between the Sustainable Development Goals and the nationally determined contribution in India

	Mitigation								Adaptation							
SDG	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy	Agriculture	Industry	Transport	Residential	Commercial	Waste	Service	Energy
No Poverty	0	1	0		0	0	1	0	2	0	0	0	0	0	2	0
Zero Hunger	0	0	0	0	0	0	0	0	2	0				0	0	
Good Health and Well being	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Quality Education	0	1	0	0	0	0	0	0	1	0	0	0	0		0	
Gender Equality	0	0	0		2	0	0	0	0	0	0	0	1	0		0
Clean Water and Sanitation	1	1	0	0	0	1	1	1	1	0	0	0	0	0		0
Affordable clean energy	0	1	2	2	1	1	1	2	1	0	0	0	0	1	0	1
Decent work and economic growth	0	1	0	0	0	0	0	0	0	0			0	0	0	0
Industry, innovation and infra	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Reduced Inequalities	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
Sustainable Cities and communities	0	0	1	0	0	1	1	0	1	0			0	1	1	1
Responsible consumption and production	1	1	1	0	0	0	0	0	0	0	0	0	0			1
Life Below Water	0	1	0	0	0	0	0	0								
Life on Land		0	1	0	0	0	0	0	0							
Peace, Justice and Strong Institutions	1	1	1	1	1	1	1	1	1							
Partnerships for the Goals	0	1	0	0	0	0	1	1	1		0	0	0	0	0	

There is a need to review the degree and nature of the SDG implementation process by integrating it into the NDC implementation process. Gaps and challenges exist in the integration process. NITI Aayog has prepared a list of 62 indicators; the progress of achievement against these indicators of the State-specific schemes is checked at six-month intervals. Capacity-building has been an issue in this regard, as has the challenge of creating a common understanding of the integrated SDG and NDC implementation process. To pursue this integration, apex committees are being formed at the Ministry of Environment, Forest and Climate Change. Each ministry responsible for the implementation of SDG-integrated climate change mitigation and adaptation programmes works with the State nodal agencies and reports to the nodal apex committee. While this integrated implementation process is being developed, India's National Action Plan on Climate Change remains in the background.

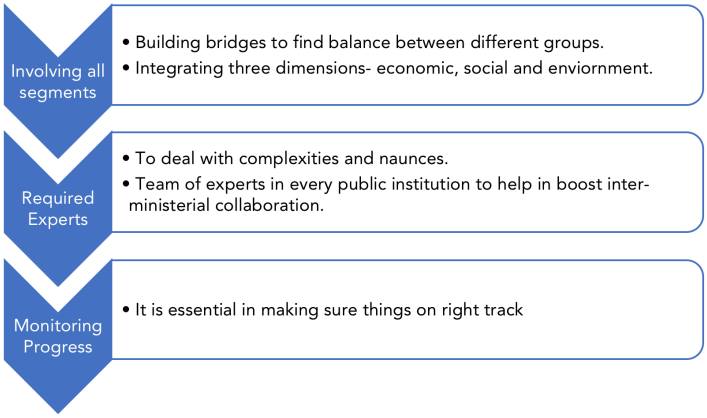
INFERENCES FROM THE COUNTRY-SPECIFIC PRIORITIZATION AREAS OF AND INTERLINKAGES BETWEEN THE SUSTAINABLE DEVELOPMENT GOAL AND NATIONALLY DETERMINED CONTRIBUTION IMPLEMENTATION PROCESSES

The case study of Namibia shows that an integrated SDG and NDC implementation process will benefit the country in its attainment of:

- SDGs 1, 2 and 10, through greater food security; better income distribution, education and health outcomes; and job creation through renewable energy promotion and demand-side management measures;
- SDGs 5 and 7, through gender equality and climate mitigation measures for rural households and clean energy access by rural women for cooking;
- SDG 12, through energy efficiency measures for small, medium-sized and micro enterprises and in the transport and industrial sectors.

For Jordan, the key focus areas are SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (good health and well-being), SDG 5 (gender equality), SDG 9 (industry, innovation and infrastructure), SDG 4 (quality education), SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 13 (climate action) and SDG 16 (peace, justice and strong institutions). Within the climate change mitigation and adaptation domains, these SDGs are linked to the agriculture sector, energy industries (gaseous fuels and liquid fuels), road transportation, manufacturing industries and construction (liquid fuels), and other sectors (commercial/institutional and residential – liquid fuels).

Figure 5.12. Inferences from country-specific integrated Sustainable Development Goal and nationally determined contribution implementation



For Indonesia, the SDG focus areas are poverty, health and nutrition, clean energy, energy access, clean water and sanitation, and these areas are connected to the climate change mitigation and adaptation measures of peat management, effective land use and spatial planning, sustainable forest management (including a social forestry programme), restoration of degraded ecosystem functions (including in wetlands to improve the productivity of agriculture and fisheries), enhancement of energy conservation, promotion of clean and renewable energy sources, improvement of industrial processes and product use, and improvement of waste management nationwide using landscape and ecosystem management approaches for both adaptation and mitigation efforts.

Some of the prioritized areas of interlinkages for Brazil relate to SDG 1 through its National Policy for Social Assistance, implemented through the Unified Social Assistance System, and include the provision of social assistance benefits, services, programmes and projects nationwide aimed at reducing poverty and improving the living conditions of the most vulnerable members of the population. Health, education, gender equality and social assistance are also prioritized areas for Brazil. The reduction

of poverty and hunger through enhanced agricultural production, to be achieved by reducing the future impacts of climate change on agricultural production, is another key area of intervention in Brazil. Focus is hence being placed on land and forest conservation measures along with measures to reduce emissions in the agriculture sector. Specific actions to enhance agricultural productivity for enhancing food security and reducing poverty and hunger are a key component of an interlinked SDG and NDC implementation process in Brazil.

For Viet Nam, the key focus areas are SDGs 1, 2 and 3, and these interlink with the promotion of agricultural production, food security and job creation in the waste sector. The country also aims at increasing its renewable energy share to more than 5 per cent by 2020 along with job creation. Interventions in the energy, agriculture, waste and LULUCF sectors are some of the key prioritized areas through which Viet Nam has been aiming to achieve SDGs 1, 2, 3 and 7. Viet Nam is also addressing the mitigation need of clean energy promotion and the adaptation needs of job creation, waste reduction, poverty reduction and income equality through an interlinked SDG and NDC implementation mechanism.

Box 5.1.

Key inferences

The key inferences that can be drawn from the country case studies are as follows:

- While the reporting framework for biennial update reports (BURs) and national communications (NCs) is relatively standardized, voluntary national reviews (VNRs) do not follow a pattern. This makes assessing complementarity between the documents difficult and poses a challenge in any meaningful tracking of progress in achieving the Sustainable Development Goals (SDGs). This is an important area for institutionalized synergies at global level.
- There are greater synergies between VNRs and adaptation-centric reporting in the BURs and NCs of Australia and Japan. These countries have more cross-cutting institutional processes than other countries, which makes sectoral assessment difficult.
- The VNRs give an impression that the already existing programmes are in line with the SDGs. While this is to be expected given the political nature of SDG negotiations, it makes the exercise of self-reflective critical assessment of efforts very difficult.
- The manner of reporting by some of the countries does not provide us with sufficient information to effectively use our established normative matrix. However, it does give us an indication of the fragmented institutional responses and approach to reporting in some countries.

IDENTIFICATION OF THE POTENTIAL BENEFITS AND CHALLENGES OF AN INTEGRATED SUSTAINABLE DEVELOPMENT GOAL AND NATIONALLY DETERMINED CONTRIBUTION IMPLEMENTATION PROCESS

The challenges relate to improving existing institutional structures and building statistical capacity for data collection, assessment, verification and reporting. One specific challenge in regard to data monitoring and evaluation is building human capacity and skills in data storage and organization, and upgrading skills as technology evolves.

Countries need to create more synergies exploiting interlinkages between the two agendas, as well as intralinkages and cross-sectoral interlinkages, on their path to an integrated SDG and NDC implementation process, and also develop proper action plans and enable effective functioning of the institutions involved. The inadequacy of funds is another major challenge in creating an interlinked SDG and NDC implementation process; integrating the process creates a demand for funds for enabling existing and generating new capacities through both concrete bottom-up and top-down action plans. Interdepartmental coordination and institutional capacity-building also emerge as major challenges from most of the case studies.

RESULTS AND DISCUSSION

Viet Nam

From the case study analysis, it emerges that the approach of Viet Nam in integrating SDG and NDC implementation is working well. Viet Nam has established a National Council for Sustainable Development and Competitiveness Enhancement, and working groups of the Council are being created that will coordinate with ministries, civil society organizations, the business sector and partner organizations to address the most easily achievable SDG and climate change Interlinkages. Further, the Council and the working groups report in a coordinated manner to the government all these issues, and a report is then taken to the National Assembly. In order to address the most easily achievable interlinkages, Viet Nam is undertaking specific measures relating to SDGs and climate change.

Regarding mitigation, the departments and working groups coordinate their work and report to the Ministry of Natural Resources and Environment through a steering committee, which then reports to the government. The line ministries responsible for mitigation actions that are interconnected with the SDGs work together to report to the steering committee. Continuous feedback and stakeholder (e.g. research institute, civil society) views are taken into account by the respective departments of those line ministries responsible for integrated mitigation action. The feedback is reported to the steering committee, which then reports it to the government. The key factor in Viet Nam's success is continual monitoring and review of the institutional mechanism in parallel with the design and implementation of SDG policies and actions. Review of the lessons learned and progress in SDG-related policies and programmes is continuously monitored and reported to the government through the steering committee of the Ministry of Natural Resources and Environment.

Japan

Japan is an example of a country that has successfully established an organized, coordinated SDG and NDC implementation process. Relevant government ministries and agencies closely cooperate with each other, led by the Global Warming Prevention Headquarters. A centralized, organized institutional structure complemented by constant coordination with the regional committees for promoting energy and global warming countermeasures and a focus on SDG implementation have played key roles in Japan's success.

COMMONALITY OF BARRIERS

The main barrier to integrating SDG and NDC implementation faced by most countries is interdepartmental and interministerial or inter-institutional coordination.

Funding and capacity-building for monitoring data regarding implementation as well as for decision-making based on that monitoring have also been a challenge. These barriers have persisted mostly because of the high degree of capacity required for collecting, assessing, monitoring and archiving (at an appropriate location) data in order to enable future decision-making. Institutional and managerial capacity-building for long-term implementation of an integrated SDG–NDC implementation process based on these data has also been a common barrier across countries.

REGIONAL-LEVEL INTEGRATED SUSTAINABLE DEVELOPMENT GOAL AND NATIONALLY DETERMINED CONTRIBUTION IMPLEMENTATION

The importance of decentralized local governance in facilitating the implementation of integrated climate action and SDG agendas complemented by coordination structures and mechanisms through a region-specific approach has clearly emerged in the case of Japan. The regions continuously coordinate with the meetings, at Directorate-General level, of the Global Warming Prevention Headquarters to establish and implement an integrated SDG–NDC implementation process. Each region has a regional committee for promoting energy and global warming countermeasures. Japan has also developed a national Plan for Global Warming Countermeasures in order to promote global warming countermeasures in a comprehensive and planned manner. The Plan was developed in cooperation with the national government, local governments, business operators and the general public.

This Chapter was prepared by the TERI School of Advanced Studies for UN DESA.

6

MAXIMIZING SYNERGIES AND MINIMIZING TRADE-OFFS BETWEEN THE SUSTAINABLE DEVELOPMENT AND CLIMATE ACTION AGENDAS

We live in a world increasingly affected by climate change, and if we fail to take decisive mitigation measures, the temperature rise will continue and soon exceed the Paris Agreement targets of 1.5 °C and even 2 °C.

It becomes ever less useful to talk about development plans and policies in a vacuum. These plans must factor in climate change. And given the increasingly ambitious actions that will be needed by governments to reduce their countries' GHG emissions and to adapt to climate change, climate action must increasingly take into account social and economic impacts, both negative and positive. Linking the two agendas of climate action and sustainable development is thus imperative.

Development strategies and investment plans must increasingly integrate climate considerations such as their impacts on GHG emissions and implications for climate change adaptation. As countries build or renovate the infrastructure needed to sustain inclusive social and economic progress throughout this century, no country can afford to ignore how infrastructure investments will impact climate change mitigation and adaptation.

The ever-tighter interdependencies between climate actions and development plans and policies suggest that governments should consider what adjustments they could make to planning and policymaking processes such that they facilitate the realization of synergies and minimization of trade-offs between the two agendas. Adjustments may include changes to institutional arrangements; for example, changes to lines of responsibility and requirements for collaboration among relevant government offices, ministries and agencies.

To enhance the coordination and coherence of planning and policymaking processes linking these two agendas, governments will want to be able to identify where the benefits of more closely aligning the two agendas are likely to be the greatest in number and scope. The mapping and analytical tools described in chapter 4 of this conference summary can assist in this identification. Governments will also want to quantify, as far as possible, the co-benefits of climate policies for other sustainable development objectives, and conversely the co-benefits of other sustainable development policies for climate change mitigation and/or adaptation.

Insofar as governments succeed in capturing synergies from more closely aligning climate action and the SDGs, doing so should augment the public benefits from government policy efforts and investments. Higher social returns on investment yielding both climate and non-climate benefits not only should serve to attract additional public financial support, but also, where private returns from such co-benefit-oriented investments are also high, may serve to attract additional private finance.

From a climate policy perspective, understanding where mitigation actions can reinforce the achievement of the SDGs may increase countries' confidence and political buy-in to put forward more ambitious NDCs when they are required to revisit them every five years under the scaling-up ambition mechanism of the Paris Agreement (van Tilburg et al., 2018).

There may be economies in resources and efforts to be realized from more closely aligning the monitoring and reporting of progress on the two agendas, although they will no doubt have distinct features and processes given the especially critical role of transparency and accountability under the Paris Agreement. As the implementation of the two agendas is increasingly coordinated, if not fully integrated, at the national level, it makes perfect sense to find ways of streamlining the monitoring and reporting of progress in achieving both the goals of the Paris Agreement and the SDGs. Indeed, one positive spillover from the Paris Agreement to the SDGs could be a more rigorous review of SDG progress and systematic follow-up to support accelerated implementation of the 2030 Agenda.

The country case studies described in chapter 5 highlight the different approaches being taken by developed and developing countries in the prioritization of interlinkages of the 16 SDGs (i.e. excluding SDG 13, climate action) across the sectors. Most developed countries are prioritizing direct interlinkages through a mitigation lens, whereas for developing countries, an adaptation-centric approach is the focus. In many cases, however, there are both direct and indirect linkages among the SDGs across sectors within the mitigation and adaptation domains. Hence there are institutional overlaps, and the need for well-defined institutional synergy – backed up by well-defined policy and institutional mechanisms – becomes clear. For Viet Nam, institutional synergy is indeed well defined. However, for some other developed and developing countries, there is scope for improvement in this regard.

The case study findings are largely based on the secondary literature and government policy documents. Broadly speaking, wherever institutional synergies currently exist, they follow a well-defined vertical structure of roles and responsibilities across sectors as well as have a clear monitoring, evaluation and reporting framework. In most cases, reporting moves along the vertical chain to a centralized body. In some cases, where there are cross-sectoral horizontal overlaps, a greater importance is attached to decentralized decision-making and its tracking, monitoring and evaluation process. Some countries have a high degree of scope for improvement in connecting the tracking of progress of decentralized outcomes through a vertical institutional framework in order to enhance synergies across sectors.

References

Bouyé M, Harmeling S and Schulz N-S. 2018. Connecting the Dots: Elements for a Joined-up Implementation of the 2030 Agenda and Paris Agreement. Bonn: German Agency for International Cooperation/Washington DC: World Resources Institute. Available at https://www.wri.org/publication/connectingthedots-ndc-sdg.

BSDC (Business and Sustainable Development Commission). 2017. Better Business, Better World. London: BSDC. Available at http://report.businesscommission.org/reports.

Cleary, J. 2009. Life cycle assessments of municipal solid waste management systems: A comparative analysis of selected peer-reviewed literature. Environment international, 35(8), 1256-1266.

Climate Watch. n.d. NDC-SDG Linkages online database. Washington DC: World Resources Institute. Available at https://www.climatewatchdata.org/ndcs-sdg.

Coopman A, Osborn D, Ullah F, et al. 2016. Seeing the Whole: Implementing the SDGs in an Integrated and Coherent Way. Stakeholder Forum for a Sustainable Future/Bioregional/Newcastle University. Available at https://sf.stakeholderforum.org/index.php/our-publications-sp-1224407103/reports-in-our-publications/625-seeing-the-whole-implementing-the-sdgs-in-the-an-integrated-and-coherent-way.

Dalkmann H. 2018. "Lessons from VNR/NDC reporting (2016–2018)." Presentation for the Eleventh Intergovernmental Regional Environmentally Sustainable Transport Forum in Asia. Ulaanbaatar, Mongolia. Available at http://www.uncrd.or.jp/content/documents/7203Presentation%201_Session8_VNR_Dalkmann.pdf.

Dodwell C, Harries J, Holdaway E, et al. 2016. Planning for NDC Implementation: Quick Start Guide and Reference Manual. Climate and Development Knowledge Network/Ricardo Energy and Environment. Available at https://www.cdkn.org/ndc-guide/.

Egenter S and Wehrmann B for Clean Energy Wire. 2019. Germany to quit coal by 2038, under commission proposal. Climate Home News. 26 January. Available at https://www.climatechangenews.com/2019/01/26/german-quit-coal-2038-commission-proposal/.

Elliott C. 2019. Planning for a 'just transition': leaving no worker behind in shifting to a low carbon future. Insights: WRI's blog. 25 March. Available at https://www.wri.org/blog/2019/03/planning-just-transition-leaving-no-worker-behind-shifting-low-carbon-future.

Gomez-Echeverri, L. 2018. Climate and development: enhancing impact through stronger linkages in the implementation of the Paris Agreement and the Sustainable Development Goals (SDGs). Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 376(2119), 20160444.

Gonzales-Zuñiga S, Roeser F, Rawlins J, et al. 2018. SCAN (SDG and Climate Action Nexus) Tool: Linking Climate Action and the Sustainable Development Goals. NewClimate Institute/ECN part of TNO/Climate Analytics. Available at http://ambitiontoaction.net/wp-content/uploads/2018/10/Key_findings_final.pdf.

Griscom BW, Adams J, Ellis PW, et al. 2017. Natural climate solutions. PNAS. 114(44): pp.11 645–11 650. Available at https://doi.org/10.1073/pnas.1710465114.

ICS (International Council for Science). 2017. A Guide to SDG Interactions: From Science to Implementation. Paris: ICS. Available at https://council.science/cms/2017/05/SDGs-Guide-to-Interactions.pdf.

IEA (International Energy Agency). 2017. Energy Access Outlook 2017: From Poverty to Prosperity. World Energy Outlook Special Report. Paris: Organisation for Economic Development and Co-operation/IEA. Available at https://www.iea.org/publications/freepublications/publication/WEO2017SpecialReport_EnergyAccessOutlook.pdf.

IPCC (Intergovernmental Panel on Climate Change). 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. Geneva: IPCC. Available at http://ipcc.ch/report/sr15/.

IPCC. 2018. Sustainable development, poverty eradication and reducing inequalities. 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. Geneva: IPCC. pp.445–538. Available at http://ipcc.ch/report/sr15/.

Jordan, A., & Lenschow, A. 2010. Environmental policy integration: a state of the art review. Environmental policy and governance, 20(3), 147-158.

Joubert L. 2018. South African cities: battleground for a just transition. Energy Transition blog. 17 September. Available at https://energytransition.org/2018/09/south-african-cities-battleground-for-a-just-transition/.

Kamau, M., et al. 2018. Transforming Multilateral Diplomacy: The Inside Story of the SDGs, Taylor and Francis.

Kosolapova, E. 2016. National Reporting under the International Climate Regime: Towards Implementation of the Sustainable Development Goals. IISD Climate Change Policy & Practice.

Lacey FG, Henze DK, Lee CJ, et al. 2017. Transient climate and ambient health impacts due to national solid fuel cookstove emissions. PNAS. 114(6): pp.1269–1274. Available at https://doi.org/10.1073/pnas.1612430114.

Le Blanc D. 2015. Towards integration at last? The sustainable development goals as a network of targets. Sustainable Development. 23(3): pp.176–187.

Maltais A. 2019. The Swedish Dialogue Forum Series on NDC and SDG Alignment: Final Report to the NDC Partnership on the Events Delivered in Vietnam, Tanzania, Cambodia, Zambia, and Uganda in 2018. SEI Report. Stockholm: Stockholm Environment Institute. Available at https://www.sei.org/publications/the-swedish-dialogue-forum-series-on-ndc-and-sdg-alignment/.

McCollum, D. L., Echeverri, L. G., Busch, S., Pachauri, S., Parkinson, S., Rogelj, J., ...& Riahi, K. 2018. Connecting the sustainable development goals by their energy interlinkages. Environmental Research Letters, 13(3), 033006.

Moinuddin, M. (Ed.). (2017). Sustainable Development Goals Interlinkages and Network Analysis: A practical tool for SDG integration and policy coherence. Institute for Global Environmental Strategies.

NCE (New Climate Economy). 2016. The Sustainable Infrastructure Imperative. Washington DC: World Resources Institute. Available at https://newclimateeconomy.report/2016/misc/downloads/.

NCE. 2018a. Climate Solutions: Ensuring a Just Transition. Fact sheet. Washington DC: World Resources Institute. Available at https://newclimateeconomy.net/sites/default/files/nce_facts_sheet_just_transition.pdf.

NCE. 2018b. Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times. Washington DC: World Resources Institute. Available at https://newclimateeconomy.report/2018/executive-summary/.

Nerini, F. F., Tomei, J., To, L. S., Bisaga, I., Parikh, P., Black, M., ...& Milligan, B. 2018. Mapping synergies fand trade-offs between energy and the Sustainable Development Goals. Nature Energy, 3(1), 10.

Niaz Asadullah, M and Savoia, A. 2017. Poverty reduction during 1990-2013: Did Millennium Development Goals adoption and state capacity matter? ESID Working Paper No. 93. Manchester, UK: The University of Manchester.

Nilsson M. 2017. Important Interactions Among the Sustainable Development Goals Under Review at the High-Level Political Forum 2017. SEI Working Paper 2017-06. Stockholm: Stockholm Environment Institute. Available at https://www.sei.org/publications/sdg-interactions-framework/.

Nilsson M, Griggs D and Visbeck M. 2016. Map the interactions between Sustainable Development Goals. Policy Comment. Nature. 534(7 607): 15 June.

Available at https://www.nature.com/news/policy-map-the-interactions-between-sustainable-development-goals-1.20075.

Northrop E, Biru H, Lima S, et al. 2016. Examining the Alignment Between the Intended Nationally Determined Contributions and Sustainable Development Goals. Working Paper. Washington DC: World Resources Institute. Available at https://www.wri.org/publication/examining-alignment-between-intended-nationally-determined-contributions-and-sustainable

Obersteiner, M., et al. 2016. Assessing the land resource – food price nexus of the Sustainable Development Goals, Sci. Adv. 2016:2 (Environmental Engineering).

Pahuja N and Raj A. 2017. SDG Footprint of Asian NDCs. New Delhi: The Energy and Resources Institute. Available at http://www.ndcfootprints.org/pdf/asiareport_july.pdf.

Persson, A. 2004. Environmental policy integration: an introduction.

Pradhan P, Costa L, Rybski D, et al. 2017. A systematic study of Sustainable Development Goal (SDG) interactions. Earth's Future. 5(11): pp.1169–1179. Available at https://doi.org/10.1002/2017EF000632.

Rich, D., Olsen, K. H., Soezer, A., Campbell-Duruflé, C., Desgain, D. D., Bakhtiari, F., ...& Song, R. 2018. Sustainable Development Guidance.Guidance for assessing the environmental, social and economic impacts of policies and actions.

Robins N, Brunsting V and Wood D. 2018. Climate Change and the Just Transition: A Guide for Investor Action. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science. Available at http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/12/Climate-change-and-the-just-transition_Guide-for-investor-action.pdf.

Rockström, J. et al. 20009. Nature 461, 472–475.

Santika, W. G., Anisuzzaman, M., Bahri, P. A., Shafiullah, G. M., Rupf, G. V., &Urmee, T. 2019. From goals to joules: A quantitative approach of interlinkages between energy and the Sustainable Development Goals. Energy Research & Social Science, 50, 201-214.

Santika, W.G., T. Urmee, M. Anisuzzaman, G. Shafiuallah, P.A. Bahri. 2018. Sustainable Energy for All.Impacts of Sustainable Developmental Goals implementation on household sector energy demand in Indonesia.Presented at the 2018 International Conference on Smart Green Technology in Electrical and Informational Systems.

Sartor, O. 2019. Just transitions for the coal sector are going mainstream, but policies also need to strengthened. IDDRI Blog. 5 March. Available at https://www.iddri.org/en/publications-and-events/blog-post/just-transitions-coal-sector-are-going-mainstream-policies-also.

Shindell, D. et al. 2012. Science 335, 183–189.

Shine T. 2017. Integrating Climate Action into National Development Planning: Coherent Implementation of the Paris Agreement and Agenda 2030. A Guide to Support Implementation of The Paris Agreement, Part Three. Stockholm: Swedish International Development Cooperation Agency. Available at https://www.sida.se/contentassets/d69702947cb241d1ab77c414af6f9bcd/integrating_climate_action_into_national_development_planning_webb.pdf.

Smakhtin, V. U. & Batchelor, A. L. 2005. Hydrol. Process. 19, 1293–1305.

Soezer, A., Warui H, Nyokabi Y, et al. 2018. Tracking the impacts: quantifying significant SDG impacts of NDC actions. Carbon Mechanisms Review. Special Issue Innovate4Climate: pp.26–31. Available at https://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/CMR/CMR_2018_02_I4C_Special_eng_bf.pdf.

Sutton, M. A. et al. 2013. Our Nutrient World (Centre for Ecology and Hydrology).

UNDP (United Nations Development Programme). 2017a. Voluntary National Reviews and National SDG Reports: Overview Report to Guide their Preparation. New York: UNDP.

UNDP. 2017b. Aligning Nationally Determined Contributions and Sustainable Development Goals: Lessons Learned and Practical Guidance. New York: UNDP.

UNEP (United Nations Environment Programme). 2011. Decoupling Natural Resource Use and Environmental Impacts from Economic Growth. A Report of the Working Group on Decoupling to the International Resource Panel. Fischer-Kowalski M, Swilling M, von Weizsäcker EU, et al. UNEP/International Resource Panel. Available at http://www.resourcepanel.org/reports/decoupling-natural-resource-use-and-environmental-impacts-economic-growth.

THE SECOND BIENNIAL UPDATE REPORT OF VIET NAM TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE.Retrieved March 23, 2019, from https://unfccc.int/sites/default/files/resource/97620135_Viet%20Nam-BUR2-1-Viet%20Nam%20-%20BUR2.pdf
2017. BRAZIL'S VOLUNTARY NATIONAL REVIEW ON THE SUSTAINABLE DEVELOPMENT GOALS.. Retrieved March 23, 2019, from https://sustainabledevelopment.un.org/content/documents/15806Brazil_English.pdf

UNFCCC. 2018. Progress in the process to formulate and implement national adaptation plans. Note by the secretariat. Katowice.

UNFCCC. 2018. Romania's Third Biennial Report under the UNFCCC. Retrieved March 23, 2019, from http://unfccc.int/files/adaptation/application/pdf/3178045_romania-br3-1-br3-romania.pdf

ROMANIA'S VOLUNTARY NATIONAL REVIEW Retrieved March 23, 2019, from https://sustainabledevelopment.un.org/content/documents/19952Voluntary_National_Review_ROMANIA_with_Cover.pdf

UNFCCC. 2018. VIET NAM'S VOLUNTARY NATIONAL REVIEW ON THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS. Retrieved March 23, 2019, from https://sustainabledevelopment.un.org/content/documents/19967VNR_of_Viet_Nam.pdf

UNFCCC. 2019. BRAZIL'S THIRD BIENNIAL UPDATE REPORT TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE. Retrieved March 23, 2019, from https://unfccc.int/sites/default/files/resource/2018-02-28_BRA-BUR3_ENG_FINAL.pdf

United Nations. 2012. The Millennium Development Goals Report 2012.

United Nations. 2017. Voluntary National Review Report (2017), On The Implementation of Sustainable Development Goals, United Nations High Level Political Forum. Report to be presented at New York.

United Nations Climate Partnerships for the Global South and United Nations Climate Change Secretariat. 2017. Catalysing the Implementation of Nationally Determined Contributions in the Context of the 2030 Agenda through South-South Cooperation. New York: United Nations. Available at https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Download-Report.pdf.

van Tilburg X, Rawlins J, Luijten J, et al. 2018. NDC Update Report Special Edition: Linking NDCs and SDGs. Environmental Change Network/NewClimate Institute. Available at https://newclimate.org/2018/05/07/ndc-update-report-special-edition-linking-ndcs-and-sdgs/.

Von Stechow, C., et al. 2016. 2° C and SDGs: united they stand, divided they fall? Environmental Research Letters, 11.

Weitz, N., Nilsson, M., & Davis, M. 2014. A nexus approach to the post-2015 agenda: Formulating integrated water, energy, and food SDGs. SAIS Review of International Affairs, 34(2), 37-50.

WMO (World Meteorological Organization). 2017. WMO Statement on the State of the Global Climate 2017. Geneva: WMO. Available at https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate.

WMO. 2018. WMO Statement on the State of the Global Climate 2018. Geneva: WMO. Available at https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate.

Worrall L, Roberts L and Whitley S. 2018. Enabling a Just Transition to a Low-Carbon Economy in the Energy Sector: Progress and Lessons in Emerging Markets. A report prepared for the HSBC Centre of Sustainable Finance by the Overseas Development Institute. Available at https://www.sustainablefinance.hsbc.com/reports/enabling-a-just-transition-to-a-low-carbon-economy-in-the-energy-sector.

Further reading

https://sustainabledevelopment.un.org/vnrs/

https://sustainabledevelopment.un.org/content/documents/20872VNR_hanbook_2019_Edition_v4.pdf

https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-convention/biennial-update-reports-0

https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-convention/biennial-update-reports-0

https://sustainabledevelopment.un.org/vnrs/index.php?str=namibia#results_area

https://unfccc.int/sites/default/files/resource/Namibia%20BUR3%20FINAL.pdf

https://sustainabledevelopment.un.org/content/documents/19880New_Version_Full_Voluntary_National_Review_2018_single_1_Report.pdf

https://sustainabledevelopment.un.org/content/documents/15705Indonesia.pdf

https://unfccc.int/sites/default/files/resource/Indonesia-2nd_BUR.pdf

https://royalsocietypublishing.org/doi/full/10.1098/rsta.2016.0444

http://www.ndcpartnership.org/sites/default/files/NDCP_Expert_Perspectives_NDC_NAP-SDG_full.pdf

https://sustainabledevelopment.un.org/memberstates/japan

https://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/japan_br2_revised.pdf

https://www.mofa.go.jp/files/000287390.pdf

https://sustainabledevelopment.un.org/content/documents/16289Jordan.pdf

https://unfccc.int/sites/default/files/resource/Jordan%20BUR1.pdf

https://www.climatewatchdata.org/ndcs-sdg?goal=1

https://klimalog.die-gdi.de/ndc-sdg/

https://sustainabledevelopment.un.org/content/documents/20470VNR_final_approved_version.pdf

https://unfccc.int/sites/default/files/resource/0512739_Australia-NC7-BR3-3-Aus%20NC7%20BR3.pdf

https://www.msn.com/en-us/weather/topstories/extreme-weather-events-in-australias-history/ss-BBTFr8c

Annex1 Conference concept note

CONTEXT

The adoption of the 2030 Agenda for Sustainable Development and the Paris Agreement in 2015 has established a firm foundation for the coherent implementation of climate action and sustainable development objectives at all levels. Climate action features explicitly in the 2030 Agenda as Sustainable Development Goal (SDG) 13; however, it is deeply interconnected with many of the other Goals and their targets.

For example, the energy transitions envisaged in SDG 7 can be expected to contribute significantly to lowering greenhouse gas emissions relative to 'business as usual' pathways, thereby contributing to the goals of the Paris Agreement. Similarly, more sustainable industrialization under SDG 9, sustainable food production systems and resilient agricultural practices under SDG 2, and changing patterns of consumption and production in line with SDG 12 can all contribute to low-emissions pathways, the creation of new kinds of jobs and long-term progress towards eradicating poverty and other deprivations.

At the same time, progress made towards limiting global temperature increase would significantly ease the path to many other SDGs, such as those related to poverty, hunger, access to water, and terrestrial and marine ecosystems. Many of the SDGs and their targets can also be achieved in ways that would enable adaptive responses to climate change, for example those related to resilience in SDGs 9 and 11, respectively relating to infrastructure and urban settlements.

The relative strength of these interlinkages between climate impacts and the SDGs varies across countries and regions, as do the actions needed to ensure that co-benefits are maximized at all levels. A better understanding (including their quantification, wherever possible) of these co-benefits in national, regional and global contexts can spur more deliberate action and collaboration towards realizing them. Such actions and collaborations could result in, for example, improving the design and implementation of policies, directing finance and resources to critical nexuses, supporting specific private sector initiatives and promoting well-identified science, technology and innovation initiatives.

Such actions are urgently needed. The Special Report on Global Warming of 1.5 °C from the Intergovernmental-Governmental Panel on Climate Change on the impacts of global warming at 1.5 ?C above pre-industrial levels identifies the critical consequences of such a temperature rise, as well as the coming decade as being the only window within which actions to stay within this limit can succeed. Hence the second round of nationally determined contributions (NDCs) covering 2025 to 2030 or 2035, to be prepared for submission in 2019, will be crucial in this regard.

This is also the window within which the SDGs themselves stand to be achieved, and the year 2019 holds special significance in this regard. The global review process for the SDGs will complete its first quadrennial cycle in 2019, with SDG 13 itself set for in-depth review at the High-level Political Forum on Sustainable Development (HLPF) in July 2019. Focusing on concrete measures for synergistic implementation at all levels would help inform the HLPF and stimulate corresponding action across multiple stakeholders.

STRENGTHENING WIN–WIN OUTCOMES FOR CLIMATE ACTION AND THE SUSTAINABLE DEVELOPMENT GOALS

At the national level, the scope of such convergence has been examined through a number of studies that compare NDCs – countries' own commitments to action under the Paris Agreement – to the SDGs. For example, Brandi et al. (2017) and Dzebo et al. (2017) have noted the potential for climate-related actions from the NDCs to contribute to all of the SDGs. They also observed that the most frequent links were to the SDGs related to food, water, energy, cities and life on land; links to other SDGs such as health, education and gender equality were relatively less common. Strong links to SDG 17, especially through those

NDCs for which implementation is conditional to receiving financial support, were also apparent.

The full potential of such synergistic outcomes could, however, be difficult to realize unless deliberate action is taken. For example, Northrop et al. (2016) studied 162 intended nationally determined contributions (INDCs) and found that the potential plans, policies, targets or other measures contained in them were aligned to 154 of the 169 SDG targets. However, they also found that most countries did not refer to the SDGs, or to their national planning priorities and objectives, in communicating their INDCs, leading to an apprehension that many of the potential mutual benefits could remain unrealized during the implementation process.

Some of the voluntary national reviews (VNRs) presented at the HLPF in 2016 and 2017 noted the links between climate action and the SDGs. Arguably this represents a higher level of political awareness of the linkages between the SDGs and climate action; however, details were not presented on how to benefit from these links during implementation.

In this context, there is a strong case to be made for examining how best to leverage advocacy, policies, programmes, implementation mechanisms, multi-stakeholder action and partnerships for both the SDGs and for climate action so that co-benefits are maximized and trade-offs minimized at all levels. The conference aims to make a contribution in this regard.

RATIONALE FOR ORGANIZING A GLOBAL CONFERENCE

The multiple interlinkages between the 2030 Agenda and the Paris Agreement indicate that integrated and synergistic implementation of both would lead to many benefits. Such an approach would considerably enhance the effectiveness and the quality of outcomes, besides contributing to more efficient use of resources, greater coherence across sectors and actors, and the formation of novel partnerships.

The details of such an approach would vary, depending on the context. In some contexts, there may be limited awareness of how 2030 Agenda and the Paris Agreement are linked; in such cases, there may be a need for greater advocacy and research. In others, where such awareness is well established, there may instead be a greater need for practical guidance to support implementation in ways that would make the most of these linkages.

At the national level, more work may be needed to connect NDCs, the primary implementing instruments under the Paris Agreement, with national development plans, the primary implementing instruments of the SDGs.

Actions taken at the global and regional levels may also need to be revisited. In particular, several of the 'means of implementation' identified in SDG 17 – such as finance, technology, capacity-building, policy and institutional coherence, multi-stakeholder partnerships, and data, monitoring and accountability – can provide, if properly directed, cross-cutting support across both climate action and other SDGs.

A diversity of implementation experience and research from different parts of the world is fuelling a greater understanding of these issues, as well as bringing to the fore good practices, gaps, challenges and opportunities for joining the implementation of both agendas.

It is in this context that the United Nations Department of Economic and Social Affairs (UN DESA), working closely with the United Nations Framework Convention on Climate Change (UNFCCC) secretariat and other partners, proposes to organize a global conference to strengthen synergies between the 2030 Agenda and the Paris Agreement. To this end, the conference, planned for April 1-3 2019, will bring together experts from both developing and developed countries; international resource persons from academia, think tanks, the private sector and non-governmental organizations; and representatives of relevant United Nations organizations.

OBJECTIVES OF THE GLOBAL CONFERENCE

The participants in the global conference will identify potential synergies and interlinkages between the 2030 Agenda and the Paris Agreement (including through analyses of VNRs and NDCs), analyse gaps and challenges, including trade-offs, and make a set of concrete recommendations for strengthening synergies; directing the means of implementation towards more joined-up

action; and stimulating multi-stakeholder partnerships. The conference will promote dialogue on the SDGs, considered in the HLPF, and linkages with climate action, considered under the UNFCCC.

The focus of the discussions will be on implementation at the global, regional and country level. The conference will also provide a unique opportunity for peer-to-peer exchange of information and experience. It is anticipated that implementing partners will be motivated to translate these into concrete results on the ground, and follow-up events could also be held to continue peer-to-peer learning and exchanges.

PARTICIPANTS

A total of 200 participants are envisaged, including from countries that have conducted VNRs; have substantially advanced implementation of their NDCs; or have deployed win–win solutions for climate action and the SDGs at scale through multi-stakeholder partnerships. UN DESA, in consultation with its partners, will identify knowledgeable and experienced experts and resource persons and will fund the participation of about 40 participants from developing countries. Representatives of developed countries and those of international organizations will be responsible for their own participation.

EXPECTED OUTCOMES

The outcomes of the symposium will consist of:

1. A publication containing selected expert papers on key topics discussed at the conference (drafts will be presented as background material);
2. A policy-relevant summary reflecting the highlights of discussions;
3. A set of concrete recommendations for strengthening the linkages between climate action and the SDGs.

It is expected that these outcomes will help inform ongoing and future discussions on relevant issues at the HLPF, the UNFCCC Conference of the Parties and other relevant platforms.

Annex 2
Conference programme

DAY 1_ 1 APRIL, MONDAY

08:00–09:00 REGISTRATION

09:00–09:30 **SETTING THE SCENE**

Welcoming remarks

Mr. Ditlev Engel, Special Envoy for Climate and Energy, Denmark

Ms. Grete Faremo, Executive Director, UNOPS

Special remarks

Ms. Annisa Triyanti, United Nations Major Group for Children and Youth and representative of HLPF Major Groups and other Stakeholders Coordination Mechanism

Co-organizers' remarks

Mr. Minoru Takada, Team Leader (Sustainable Energy), UN DESA

Mr. Daniele Violetti, Director, UNFCCC

09:30–10:00 BREAK

10:00–11:15 **IDENTIFYING SYNERGIES AND MAXIMIZING CO-BENEFITS: CONCEPTUAL AND PRACTICAL APPROACHES**

The session will explore, through technical presentations and interactive panel discussions, policies and strategies that have realized co-benefits; tools and approaches available for analysing interlinkages and supporting synergistic implementation of climate action – the state of the art; and the means of implementation towards joined-up action.

Moderator: Mr. Daniele Violetti, Director, UNFCCC

Presentation: Mr. Nebojsa Nakicenovic, Acting Deputy Director-General and CEO, International Institute for Applied Systems Analysis; Lead Author of Fifth Assessment Report of the IPCC

Panel:
Mr. Poonpat Leesombatpiboon, Executive Director, International Energy Cooperation Office, Ministry of Energy, Thailand
Ms. Flavia Schlegel, Special Envoy for Science in Global Policy, International Science Council
Ms. Hindou Ibrahim, Co-Chair, International Indigenous Peoples Forum on Climate Change
Mr. Ayman Cherkaoui, Coordinator, Mohammed VI Foundation for Environmental Protection

11:15–12:30 ——— **SUSTAINABLE DEVELOPMENT GOALS AND CLIMATE ACTION: PROMOTING SYNERGIES ON THE GROUND BASED ON VOLUNTARY NATIONAL REVIEWS AND NATIONALLY DETERMINED CONTRIBUTIONS**

This session will share findings from desk studies focused on providing HLPF/SDG context including VNRs and how they could help promote synergies with climate action both in adaptation and in mitigation including through NDCs at the country level.

Moderator: Shantanu Mukherjee, Chief, Integrated Policy Analysis Branch, UN DESA

Presentation:
Mr. David O'Connor, Sustainable Economist, SDG Delivery Team, WRI
Ms. Leena Srivastava, Vice Chancellor, TERI School of Advanced Studies

Panel:
H.E. Mr. Ian Fry, Ambassador for Climate Change and Environment, Tuvalu
Mr. Carlos Fuller, International and Regional Liaison Officer, Caribbean Community Climate Change Centre
Mr. Alexis Munungi Leki, Head, Division for Sustainable Development, Democratic Republic of the Congo
Ms. Khin Thida Tin, Director, Yangon Regional Environmental Conservation Department, Secretary of Yangon Region Environmental Conservation and Climate Change Supervision Committee, Myanmar
Mr. Zafar Makhmudov, Head, Project Implementation Unit, Committee for Environment Protection, Tajikistan

12:30–13:45 ——— SIDE EVENTS / LUNCH

13:45–15:15 ——— **SYNERGIES IN ACTION (I): MEANS OF IMPLEMENTATION TO SUPPORT SYNERGISTIC ACTIONS, INCLUDING FINANCE; SCIENCE, TECHNOLOGY AND INNOVATION; AND CAPACITY-BUILDING (PARALLEL SESSIONS)**

// Finance

Interactive dialogues on measures and actions on finance that promote integration of climate objectives and a range of SDGs.

Moderator: Mr. Pa Ousman Jarju, Director, Division of Country Programming. Green Climate Fund

Panel:
Mr. Ditlev Engel, Special Envoy for Climate and Energy, Denmark
Mr. Sohel Ahmed, Managing Director, Grameen Shakti, Bangladesh
Mr. Rohit Khanna, Practice Manager, World Bank
Mr. Jens Sedemund, Senior Advisor on Development Finance, OECD
Mr. Nicolai Boserup, General Counsel and Senior Vice-President, Investment Fund for Developing Countries
Ms. Monica Perez dos Santos, Financial Director, Itaipu Binacional

// STI

Interactive dialogues on measures and actions on science, technology and innovation (STI) that promote integration of climate objectives and a range of SDGs.

Moderator: Ms. Flavia Schlegel, Special Envoy for Science in Global Policy, International Science Council

Panel:
Ms. Katherine Richardson, Professor of Biological Oceanography and Leader of the Sustainability Science Center, University of Copenhagen
Jean-Pascal van Ypersele, Former IPCC Vice-Chair, Professor, Climate and Environmental Sciences, Catholic University of Louvain, Belgium
Professor Kazuhiko Takeuchi, President, Institute for Global Environmental Strategies, Japan
Ms. Gyorgyi Gurban, Senior Maritime Policy Advisor, Executive Office of the Secretary-General, International Maritime Organization
Ms. Sheila Watson, Deputy Director, FIA Foundation
Mr. Hongyu Lin, Director-General, Cooperation Bureau, GEIDCO

// Capacity-building

Interactive dialogues on measures and actions on capacity-building that promote integration of climate objectives and a range of SDGs.

Moderator: Mr. Måns Nilsson, Executive Director, Stockholm Environment Institute

Presentation:
Ms. Gabriela Iacobuta, researcher, German Development Institute
Ms. Nina Weitz, research fellow, Stockholm Environment Institute
Mr. Chris Malley, researcher, York University

Panel:
Ms. Doljinsuren Jambal, Development Policy and Planning Department, National Development Agency, Government of Mongolia

Mr. Jairo Neira, National Planning Department, Government of Colombia
Mr. Bala Bappa, National Coordinator for the Clean Air and Climate Coalition, Ministry of Climate Change, Agriculture and Environment, Nigeria

15:15–15:30 BREAK

15:30–17:00 **SYNERGIES IN ACTION (II): PROMOTING CROSS-SECTORAL INTEGRATED RESPONSE FOR A JUST TRANSITION (PARALLEL SESSIONS)**

// Leave no one behind

Discussions and interactive dialogues on how the principle of 'leave no one behind' is being mainstreamed into national development plans, institutional structures and coordination mechanisms related to the SDGs, NDCs and Sendai Framework.

Moderator: Ms. Hannah Janetschek, researcher, German Development Institute

Presentation:
Mr. Adis Dzebo, research fellow, Stockholm Environment Institute
Ms. Joan Carling, Co-Convenor, Indigenous Peoples Major Group for Sustainable Development

Panel / round-table discussion:
Mr. Frederik Moch, Head of Department for Structural Policy, Industry and Services, The German Trade Union Confederation
Ms. Andrea Hurtado-Epstein, Ministry of Foreign Affairs, Mexico
Ms. Karen Holm Olsen, Technical University of Denmark
Mr. Benjamin Schachter, Climate Change and the Environment, Office of the United Nations High Commissioner for Human Rights
Mr. Prabhat Uphadyaya, Senior Policy Analyst, WWF South Africa (video message)

// Promoting prosperity

Discussions and interactive dialogues on promoting prosperity through national development plans, institutional structures and coordination mechanisms related to the SDGs, NDCs and Sendai Framework.

Moderator: Mr. Moustapha Kamal Gueye, Coordinator, Green Jobs Programme, Enterprises Department, International Labour Organization

Panel:
Mr. Karma Sonam Tshosar, Deputy Permanent Representative, Permanent Mission of Bhutan to the United Nations
Mr. Farrukh Khan, Director, Ministry of Foreign Affairs, Pakistan
Mr. Eco Matser, Global Coordinator for Climate Change, Energy and Development, HIVOS
Mr. Richard Taylor, Executive Director, International Hydropower Association
Ms. Deniese Sealey, Assistant Director, Economic Affairs Department, Ministry of Foreign Affairs, Jamaica

Mr. Wei Huang, Director, Division of Planning, Information and Knowledge Management, Department of Nuclear Energy, IAEA

// Partnerships and stakeholder action

Discussions and interactive dialogues on mobilizing cross-sectoral partnerships and multi-stakeholder actions thorough national development plans, institutional structures and coordination mechanisms related to the SDGs, NDCs and Sendai Framework.

Moderator: Mr. Jukka Uosukainen, Director, Climate Technology Centre and Network

Panel:
Mr. Franz Breitwieser, Director, Ministry of Foreign Affairs, Austria
Mr. Tatsuya Yoshioka, Founder and Director, Peace Boat
Ms. Maruxa Cardama, Secretary-General, Partnership on Sustainable, Low Carbon Transport (SLoCaT)
Mr. Ian de Cruz, Global Director, P4G
Mr. Gonzalo Saenz de Miera, Climate Change Director, Iberdrola
Ms. Mathilde Bouyé, Policy Lead, Climate and SDG Linkages, WRI
Mr. Flemming Lynge Nielsen, Sustainability Director, Danfoss

DAY 2_ 2 APRIL, TUESDAY

08:00–09:00 SIDE EVENTS

09:15–10:15 **OPENING OF THE HIGH-LEVEL SEGMENT**

Special messages
Mr. António Guterres, Secretary-General, United Nations (video message)
H.E. Ms. María Fernanda Espinosa, President, United Nations General Assembly (video message)

Opening remarks
Mr. Liu Zhenmin, Under-Secretary-General, UN DESA
Mr. Ovais Sarmad, Deputy Executive Secretary, UNFCCC
H.E. Mr. Kristian Jensen, Minister of Finance, Denmark

Special address
Mr. Luis Alfonso de Alba, United Nations Secretary-General's Special Envoy for the 2019 Climate Summit

10:15–10:45 COFFEE BREAK / PRESS CONFERENCE

H.E. Mr. Kristian Jensen, Minister of Finance, Denmark
Mr. Liu Zhenmin, Under-Secretary-General, UN DESA
Mr. Luis Alfonso de Alba, United Nations Secretary-General's Special Envoy for the 2019 Climate Summit
Mr. Ovais Sarmad, Deputy Executive Secretary, UNFCCC
Ms. Mami Mizutori, Assistant Secretary-General and Special Representative of the Secretary-General for Disaster Risk Reduction, United Nations

10:45–11:45 **MINISTERIAL ROUND TABLE (I)**

Moderator: Ms. Connie Hedegaard, Chairman of the Board, CONCITO

Special address:
H.E. Mr. Michał Kurtyka, Secretary of State, Ministry of Energy, Poland, COP 24 President

High-level panel:
H.E. Ms. Trine Rask Thygesen, State Secretary for Development Policy, Ministry of Foreign Affairs, Denmark
H.E. Mr. Yacov Hadas-Handelsman, Special Envoy for Sustainability and Climate Change, Israel
H.E. Ms. Lois Michele Young, Ambassador, Permanent Representative, Permanent Mission of Belize to the United Nations
H.E. Mr. Sukhbold Sukhee, Ambassador, Permanent Representative of Mongolia to the United Nations

11:45–12:45 MINISTERIAL ROUND TABLE (II)

Moderator: Mr. Peter Thomson, United Nations Secretary-General's Special Envoy for the Ocean

Special Address:
Ms. Marjeta Jager, Deputy Director-General, Directorate-General for International Cooperation and Development, European Commission

High-level panel:
H.E. Mr. Yoo Jechul, Deputy Minister for Environment, Republic of Korea
Ms. Mami Mizutori, Assistant Secretary-General and Special Representative of the Secretary-General for Disaster Risk Reduction, United Nations
H.E. Mr. Robert Sisilo, Ambassador, Permanent Representative of the Solomon Islands to the United Nations
Ms. Rookayah Aumeer, educator, Ministry of Education and Human Resources, Tertiary Education and Scientific Research and SIDS Youth Aims Hub, Mauritius

12:45–14:15 LUNCH / SPECIAL EVENT: CLIMATE SUMMIT

To support efforts to implement the Paris Agreement and to increase ambition and climate action, United Nations Secretary-General António Guterres will bring world leaders from government, finance, business and civil society together at the Climate Action Summit on 23 September 2019. At this special event panellists will share the vision for the Climate Summit and discuss the actions needed and the opportunities available for raising ambition.

Welcome: Mr. Liu Zhenmin, Under-Secretary-General, UN DESA

Moderator: Mr. Jarl Krausing, International Director, CONCITO

Panel:
Mr. Luis Alfonso de Alba, United Nations Secretary-General's Special Envoy for the 2019 Climate Summit
Ms. Trine Rask Thygesen, State Secretary for Development Policy, Ministry of Foreign Affairs, Denmark
Mr. Ovais Sarmad, Deputy Executive Secretary, UNFCCC
Ms. Susan Gardner, Director, Ecosystems Division, UN Environment

14:15–15:45 SHARING COUNTRY EXPERIENCES (I) (PARALLEL SESSIONS)

// Leveraging SDGs to advance climate action: country experiences and lessons learned

Interactive discussions on country cases showcasing integration of climate objectives and a range of SDGs through national policies, strategies and programmes.

Moderator: Ms. Camilla Bruckner, Director of UNDP Representative Office, Copenhagen

Panel:
Mr. Mulele Maketo Mulele, Director, Development Planning and Administration, Ministry of National Development Planning, Zambia
Ms. Teodora Grncarovska Obradovic, State Advisor on Climate Change, Ministry of Environment, North Macedonia
Ms. Jeniffer Hanna Collado, Head of Planning and International Cooperation, National Council for Climate Change and the Clean Development Mechanism, Dominican Republic
Mr. Wisdom Adongo, Private Enterprises Foundation, Private Enterprise Foundation, Ghana
Mr. Khachatur Khachatryan, Head of Legal Department, Ministry of Nature Protection, Armenia

// Synergistic implementation and lessons learned

Interactive discussions on country cases showcasing integration of climate objectives and a range of SDGs through national policies, strategies and programmes.

Moderator: Mr. Zitouni Ould-Dada, Deputy Director, Climate and Environment Division, FAO

Panel:
Mr. Jerome Evangelio Ilagan, Chief, Policy Research and Development, Climate Change Commission, Philippines
Ms. Stineke Oenema, Coordinator, United Nations System Standing Committee on Nutrition
Mr. Nicolas Costa, Technical Assistant of the Agricultural Unit for Sustainability and Climate Change, Ministry of Livestock, Agriculture and Fisheries, Uruguay
Mr. Boris Greguška, Chair, 14th session of the United Nations Forum on Forests; Chief State Counsellor, Ministry of Agriculture and Rural Development, Slovakia
Ms. Livia Hollins, SDGs and Interagency Relations, UNFCCC
Ms. Hanne Søndergaard, Executive Vice-President, Arla Foods

// Strengthening reporting and tracking of progress

Interactive discussions showcasing experiences by countries and technical support providers for integrated NDC–SDG assessment to strengthen reporting and tracking progress of implementation.

Moderator: Mr. Henning Wuester, Director, Initiative for Climate Action Transparency

Panel:
Ms. Susan Gardner, Director, Ecosystems Division, UN Environment
Ms. Karen Holm Olsen, senior researcher, UNEP DTU Partnership
Mr. Daniele Violetti, Director, UNFCCC
Ms. Andrea Meza, Director, Climate Change Directorate, Ministry of Environment and

Energy, Costa Rica
Ms. Pacifica Achieng, Director Climate Change Mitigation and Adaptation Programmes Coordination, Directorate of Climate Change, State Department of Environment, Ministry of Environment and Natural Resources, Kenya

15:45–16:00 BREAK

16:00–17:30 **SHARING COUNTRY EXPERIENCES (II) (PARALLEL SESSIONS)**

// Supporting vulnerable countries and populations

Interactive discussions on the challenges and opportunities for vulnerable countries and contexts, such as small island developing States, the least developed countries, and local communities and indigenous peoples.

Moderator: Ms. Sharon Lindo, Lead Negotiator, Sustainable Development, Alliance of Small Island States

Panel:
Ms. Tamanda Chibwana, First Secretary, Permanent Mission of Malawi to the United Nations, Chair, Coordination Bureau for the LDC Group
Mr. Muhammad Saidam, Water and Environmental Engineering senior researcher, Executive Director, Member, Independent Group of Scientists for the Global Sustainable Development Report
Ms. Achala Abeysinghe, Legal Advisor to the Chair of the Least Developed Countries Expert Group under the UNFCCC
Ms. Kirsi Madi, Director, UNISDR

// Connecting the local and the global

Interactive discussions on the integration of climate change and the SDGs in rural and urban areas and other subnational contexts.

Moderator: Mr. Felice Zaccheo, Head of Unit, Sustainable Energy and Climate Change, Directorate-General for International Cooperation and Development, European Commission

Panel:
Mr. Junichi Fujino, Principal Researcher/ Program Director, City Taskforce, Institute for Global Environmental Strategies, Japan
Mr. Michael Williamson, Section Chief, Energy Division, UNESCAP
Mr. Sandeep Sengupta, Global Coordinator, Climate Change, IUCN
Ms. Annisa Tryianti, Representative of the HLPF Major Groups and other Stakeholders Coordination Mechanism and PhD researcher, University of Amsterdam

// Scaling up momentum

Interactive discussions on building momentum and awareness about the existing processes and their linkages between climate change and SDGs.

Moderator: Prof. Kazuhiko Takeuchi, President, Institute for Global Environmental Strategies, Japan

Panel:
Mr. Mattias Frumerie, Deputy Director-General, Ministry for Foreign Affairs, Sweden
Ms. Rana Adib, Executive Secretary, REN21
Mr. Martin Krause, Director, Division of Programme Support and Coordination, Department of Technical Cooperation, IAEA
Ms. Marianne Toftgaard, Programme Manager, Climate Action and Ambition, Climate Action Network International
Ms. Helena Molin Valdes, Head of Climate and Clean Air Coalition Secretariat, CCAC Secretariat, UNEP
Mr. Justin Perrettson, Head of Global Engagements, Novozymes

17:45–19:45 _____ RECEPTION (ALL PARTICIPANTS)

DAY 3_ 3 APRIL, WEDNESDAY

08:00–09:00 NETWORKING

09:00–10:30

RAISING AMBITION ON SUSTAINABLE DEVELOPMENT GOALS AND CLIMATE ACTION

This session will take stock of the parallel sessions held on the previous days. Moderators of the parallel sessions held on Day 1 and Day 2 will be invited to share the summaries of their sessions.

Moderator: Mr. Minoru Takada, Team Leader (Sustainable Energy), Division for Sustainable Development Goals, UN DESA

Panel:
Mr. Pa Ousman Jarju, Director, Division of Country Programming. Green Climate Fund
Ms. Flavia Schlegel, Special Envoy for Science in Global Policy, International Science Council
Mr. Måns Nilsson, Executive Director, Stockholm Environment Institute
Ms. Hannah Janetschek, researcher, German Development Institute
Mr. Moustapha Kamal Gueye, Coordinator, Green Jobs Programme, Enterprises Department, International Labour Organization
Mr. Jukka Uosukainen, Director, Climate Technology Centre and Network
Ms. Camilla Bruckner, Director of UNDP Representative Office, Copenhagen
Mr. Zitouni Ould-Dada, Deputy Director, Climate and Environment Division, FAO
Mr. Henning Wuester, Director, Initiative for Climate Action Transparency
Ms. Sharon Lindo, Lead Negotiator, Sustainable Development, Alliance of Small Island States
Mr. Felice Zaccheo, Head of Unit, Sustainable Energy and Climate Change, Directorate-General for International Cooperation and Development, European Commission
Prof. Kazuhiko Takeuchi, President, Institute for Global Environmental Strategies, Japan

10:30–11:00 BREAK

11:00–11:45

CONCLUSION AND WAY FORWARD

Presentation of conference summary
Ms. Livia Hollins, UNFCCC
Mr. David Koranyi, UN DESA

Closing remarks
H.E. Mr. Lars Christian Lilleholt, Minister for Energy, Utilities and Climate, Denmark

Annex 3
Conference outcome summary

1. The adoption of the 2030 Agenda for Sustainable Development and the Paris Agreement in 2015 established a strong foundation for coherent implementation of climate action and sustainable development objectives across all levels and sectors. Exploiting synergies and co-benefits and taking collaborative and coordinated efforts to both achieve the Sustainable Development Goals (SDGs) and implement the Paris Agreement is critical. Bringing the United Nations system together and taking forward the outcomes of this conference is vital to increasing ambition, taking urgent action and ensuring inclusive multi-stakeholder partnership processes.

2. The 2030 Agenda is a plan of action for people, planet and prosperity. The 17 SDGs and their 169 targets, including SDG 13 on climate action, demonstrate the scale and ambition of this universal agenda. Since the adoption in 2015 of the 2030 Agenda, there have been advances in the implementation of the SDGs. Yet, to achieve the Goals and targets by 2030, progress needs to be made more quickly and more evenly across countries and regions. The annual High-level Political Forum on Sustainable Development (HLPF) reviews progress of the implementation of the 2030 Agenda, informed by country-led and country-owned voluntary national reviews (VNRs) and thematic reviews of progress on the SDGs, including cross-cutting issues and interlinkages. The first in-depth review of SDG 13 will be held at the HLPF in July 2019. A special edition of the United Nations Secretary-General's SDG Report this year will present the current status and trends and provide an analysis to inform the HLPF.

3. The Paris Agreement's central purpose is to strengthen the global response to climate change by keeping a global average temperature rise this century well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C. In addition, the Agreement aims to strengthen the ability of countries to adapt and build resilience to the impacts of climate change and make finance flows consistent with a pathway to low greenhouse gas (GHG) emissions and climate-resilient development. Scaling up countries' efforts to strengthen the response to climate change and making the most of co-benefits and synergistic action is vital for the aim of achieving the temperature goal of the Agreement while at the same time building countries' resilience to the adverse effects of climate change.

4. Participants noted that according to the Special Report on Global Warming of 1.5 °C of the Intergovernmental Panel on Climate Change, limiting warming to 1.5 °C is possible, but urgent and unprecedented transitions across all aspects of society to, over the next 10 to 20 years, transform energy, agricultural, urban and industrial systems, engage non-State actors, and integrate climate action into the broader public policy framework that also addresses jobs, security and technology are necessary. The Special Report on Global Warming of 1.5 °C points to the necessity and importance of inclusive, collaborative and synergistic action in achieving the 1.5 °C goal. With the adoption of the Katowice climate package at the twenty-fourth session of the Conference of the Parties, the world entered a new era, focusing efforts on implementation and the need for increased ambition. Participants emphasized that the next round of new or updated nationally determined contributions (NDCs), to be communicated by 2020, would be crucial and need to reflect increased ambition.

5. The period to 2030 is also the window within which the SDGs are to be achieved to leave no one behind. Participants stressed that accelerating the implementation of the 2030 Agenda is critical for more effective climate action. The energy transitions envisaged in SDG 7 on sustainable energy for all in particular will contribute significantly to lowering GHG emissions relative to 'business as usual' pathways, thereby contributing to the objectives of the Paris Agreement. Similarly, more sustainable industrialization under SDG 9, sustainable food

production systems and resilient agricultural practices under SDG 2, and changing patterns of consumption and production in line with SDG 12 can all contribute to low-emissions pathways, the creation of new kinds of jobs and making long-term progress in eradicating poverty.

6. Progress made in limiting global temperature increase would significantly ease the path to achieving many of the SDGs, such as those related to poverty, hunger, access to water, terrestrial and ocean ecosystems, forests, health, and gender equality and the empowerment of women and girls. Many of the goals and targets can also be achieved in ways that would enable adaptive responses to climate change, for example those related to resilience and disaster risk reduction in SDGs 1, 9 and 11, respectively relating to poverty eradication, infrastructure and urban settlements. By addressing the underlying drivers of risk, enhancing mitigation and adaptation to climate change can also help achieve the targets of the Sendai Framework for Disaster Risk Reduction 2015–2030. These considerations are particularly relevant for small island developing States, the least developed countries and other countries in special circumstances. The urgency of scaling up coherent adaptation and disaster risk reduction action in countries that are already feeling the impacts of climate change was underlined.

7. Participants underscored the importance of ensuring that developing countries and the most vulnerable get the support they need, including finance, science, technology and innovation, and capacity-building support.

8. Participants noted that climate change is already increasing natural variability and the frequency and intensity of extreme weather events, leading to large human and socioeconomic costs and reversing development gains across various sectors. Building the resilience of people, livelihoods, communities, societies, economies and ecosystems to the impacts of climate change is essential for achieving all post-2015 development agendas.

9. Participants highlighted opportunities, advantages and gains being made through the synergistic implementation of climate action, sustainable development and disaster risk reduction, including through NDCs, the process to formulate and implement national adaptation plans (NAPs), VNRs, and national and local disaster risk reduction strategies as per target (e) of the Sendai Framework. Participants emphasized the importance of incorporating national planning priorities and objectives in communicating NDCs to ensure the realization of potential mutual benefits during the implementation process. Participants also underlined the need for better inclusion of links across climate action, disaster risk reduction and the SDGs in their VNRs presented at the HLPF.

10. Participants noted that actions identified in NDCs, NAPs and disaster risk reduction strategies submitted so far reveal linkages across all SDGs and show that governments are integrating climate action into socioeconomic development and sustainable development strategies, with all integral to achieving sustainable development. Progress in integrated plans and strategies, joint monitoring and reporting on common indicators, and shared data sets has already been observed and can be further supported by strengthened governance mechanisms, regulation capacities and innovative financing instruments, particularly for the least developed countries and small island developing States, to integrate climate action and disaster risk reduction into policies, programme implementation and budgets across all sectors of sustainable development.

11. Participants underscored that the challenge of simultaneously addressing climate change and sustainable development demands a decentralized multi-level approach, recognizing the key role of subnational and local governments, local communities and indigenous peoples. National governments need to work with other levels of government on comprehensive vertical integration and alignment of climate policies at the national, subnational and local level, as well as on mainstreaming climate action into all public policy sectors in order to avoid silos. Integrated sustainable development and disaster risk reduction that considers urban–rural linkages can be embedded in NDC implementation.

12. The Paris Agreement acknowledges that climate change is a common concern of humankind. Parties should, when taking action to address climate change, respect, promote and consider their respective obligations regarding human rights; the right to health; the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations; the right to development; and gender equality, empowerment of women and intergenerational equity. Participants discussed the importance of human rights based approaches to climate action given that impacts are already, directly and indirectly, affecting a broad

range of human rights. It was acknowledged that Member States of the United Nations have obligations, under international human rights law, to urgently mitigate climate change; build the capacity of all persons to adapt to climate change; and foster learning and cooperation across countries. A better understanding of how to exploit synergies and co-benefits in implementing climate action and SDGs on local, national, regional and global scales can catalyse more focused action and inclusive collaboration. A bottom-up inclusive approach, engaging the most vulnerable people and communities, can drive these policy coherence solutions. This inclusive engagement should be within policy creation, implementation, follow-up and review at all levels. Special attention should be paid to groups who face discrimination by gender identity, race, ethnicity, religion, disability, age or other forms of a social, economic and political disadvantage as well as those who live in small, rural or impoverished urban communities.

13. Participants shared many examples of how collaboration can improve the design and implementation of policy, directing finance and resources to critical nexuses, enabling private sector action, and advancing linked science, technology and innovation initiatives. Stronger science–technology–policy interfaces for synergistic actions are needed, including through instruments such as the Global Sustainable Development Report and the Technology Facilitation Mechanism. Participants noted that it is of critical importance to examine how best to leverage advocacy, policies, programmes, implementation mechanisms, inclusive multi-stakeholder action, resources and partnerships for both the SDGs and climate action so that co-benefits are maximized and trade-offs are minimized at all levels.

14. Participants noted that the action needed to mitigate climate change will necessarily have a transformative impact on the world of work. Millions of new jobs can be created with the adoption of sustainable practices and clean technologies but other jobs will disappear as countries scale back their carbon- and resource-intensive industries. The scale of disruption to businesses and workers that this transformation will cause should not be underestimated. But carefully designed and coherent response strategies hold the potential to ensure net gains and a just transition for all.

15. Participants acknowledged that although there are multiple synergies, in the cases where there are direct trade-offs the management of the transition will be crucial. This may include changes to institutional arrangements, for example lines of responsibility and requirements for collaboration among relevant government offices, ministries and agencies. To facilitate more coordinated and coherent planning and policymaking linking the two agendas, identifying where the benefits from more closely aligning the two agendas are likely to be greatest will be needed to inform decision-making and policy development. Mapping and analytical tools can assist in that identification.

16. Participants emphasized the utility of the SDGs Action Database as the United Nations system's repository of actions, initiatives and plans on the implementation of the 2030 Agenda and the SDGs – a searchable and regularly updated online database, it serves as a useful reference tool for learning about the activities of United Nations system entities. It was stressed that only coordinated, inclusive and synergistic efforts across organizations, levels and sectors and throughout the United Nations system to address both climate change and the SDGs will make a difference.

17. Participants underscored the value in integrated monitoring and reporting of progress through the Katowice climate package, including the enhanced transparency framework and the global stocktake, in understanding progress on climate action as well as the SDGs. This would enable accelerated implementation of not just the Paris Agreement, but also the 2030 Agenda.

18. Participants concluded that the interlinked relationship between implementation of climate action and achieving the SDGs also provides our biggest opportunity for positive, systemic change that will ensure a resilient, productive and healthy environment for present and future generations.

19. This year offers an unprecedented opportunity to address both climate change ambition and the 2030 Agenda. Welcoming the Global Climate Action Summit to be convened by the United Nations Secretary-General on 23 September 2019, participants urged all Member States of the United Nations and stakeholders to raise their ambitions in policies, plans, actions and investments and to establish transformative partnerships at the Summit. Participants discussed bold ideas for scaling up actions and partnerships, including the Clean Energy Investment

Coalition and the Cool Coalition.

20. Participants stressed the need for leveraging the in-depth review of SDG 13 at the HLPF under the auspices of the United Nations Economic and Social Council in July 2019 and the review of all SDGs at the HLPF under the auspices of the United Nations General Assembly at the Heads of State and Government level in September 2019, the High-Level Review of the SAMOA Pathway in September 2019, the sixth session of the Global Platform for Disaster Risk Reduction in May 2019 and the twenty-fifth session of the Conference of the Parties in Santiago, Chile, in December 2019, and in this respect, called upon the co-organizers, namely the United Nations Department of Economic and Social Affairs (UN DESA) and the United Nations Framework Convention on Climate Change (UNFCCC) secretariat, to ensure that the outcomes of this conference be fed into these processes, as appropriate.

21. Participants expressed their gratitude to the co-organizers of the conference (UN DESA and UNFCCC) and encouraged them to continue to carry this effort forward to strengthen synergies between climate action and sustainable development towards 2030 and beyond. They expressed special appreciation to the Ministry of Foreign Affairs, Ministry of Climate, Energy and Utilities and Ministry of Finance of Denmark, the United Nations Environment Programme and Technical University of Denmark (UNEP DTU) Partnership, the United Nations Office for Project Services, the European Union, the 2030 Agenda for Sustainable Development Sub-Fund, and other partners for their support and contributions.