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COVID-19
RESPONSE

HARNESSING CLIMATE AND SDGS SYNERGIES

Raising Ambition in the Era of Paris+5 and Pandemic Recovery

*Synthesis Report of Climate and SDGs
Synergies Learning Series*

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Commitments on combatting climate change have increased in an encouraging way in recent months across the world, but at the global level they still fall way short of what is needed to achieve the goals of the Paris Agreement.

Policy makers need to urgently address the interrelated major challenges of poverty, inequality, climate change, and the recovery from COVID-19 pandemic simultaneously. Today, synergistic and integrated policy making and action is more important than ever before.

Between December 2020 and February 2021, the United Nations Department of Economic and Social Affairs and the secretariat to the United Nations Framework Convention on Climate Change and the United Nations Institute for Training and Research co-convoked a series of three webinars on the theme of 'Harnessing Climate and SDGs Synergies'. The webinars explained the benefits of integrated climate and SDG action. The webinars pointed to a variety of options for synergistic policy interventions in different sectors using an integrated nexus approach. Ways to overcome constraints in implementation, including issues related to capacity development, financing strategies, as well as challenges in monitoring and reporting.

This *Synthesis Report* provides a summary of the deliberations made during the above-mentioned learning series. It also provides conceptual and methodological information on how to achieve better synergies and overcome constraints. Harnessing synergies is particularly critical in the context of institutional constraints and limited financial resources.

Policy makers need to define and pursue climate and sustainable development policies that are well coordinated across the whole of government and with genuine social inclusion and public participation to ensure a just transition. Resources need to be used in a targeted, effective, and efficient way, and deliver multiple co-benefits. Policies need to strike a balance between development priorities and climate risk management and leave no one behind in the transition from a "grey" to a "green" economy.

We sincerely hope that concerned readers may find this report useful as input to the continuing consultative processes on climate change and SDGs, and for the preparation of periodical reports on nationally determined contributions (NDCs) to the UNFCCC, and voluntary national reports (VNRs) to the High-level Political Forum (HLPF) on Sustainable Development.

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Commitments on combatting climate change have increased in an encouraging way in recent months in some countries, but at the global level they still fall far short of what is needed to achieve the goals of the Paris Agreement. The Synthesis Report on Climate and SDG Synergies provides conceptual and methodological information on how to achieve better synergies and overcome constraints. The world community faces three major crises at the same time. Poverty continues in many developing countries. High levels of global greenhouse gas emissions increase the threat of climate change. In addition, the (COVID-19) pandemic causes terrible loss of human life, human suffering, and unprecedented economic and social stress. Policy makers need to address these three interrelated challenges with urgency. Hence, synergistic policy making is more important today than it ever was before. Development policies and projects need to be well coordinated across ministerial portfolios, be based on genuine public participation, and deliver co-benefits beyond their main objectives. Resources need to be used in a targeted and effective manner and advance a fair transition from a “grey” economy to a “green” economy, leaving no one behind.

Policy makers seeking to advance climate action will need to identify the most economically feasible and socially acceptable solutions that also generate SDG co-benefits. Similarly, stakeholders seeking to advance economic and social progress towards one or the other SDG will need to anticipate the impacts of such action on future climate emissions. Pursuing climate and SDG synergies is not only a guideline for national or local policy makers, but also for industrialists, investors, service providers, and private consumers. Today, taking climate and SDG action and maximizing synergies and co-benefits is a must, rather than an option.

In April 2019, the UN Climate and SDGs Synergies Conference held in Copenhagen, Denmark, emphasized

that taking climate and SDG development action simultaneously and in an integrated way is not a theoretical concept, but a practical guideline for all forms of decision making. Based on the inputs received from the Copenhagen Conference, the UN DESA and UNFCCC Secretariats initiated the building of a global knowledge platform to continually disseminate knowledge and good practice to help promote climate and SDGs synergies more effectively.

A series of virtual learning webinars themed Harnessing Climate and SDGs Synergies was organized between December 2020 and February 2021. Webinar 1 provided information on tools and evidence policy makers may use to advocate climate and SDG synergies at national levels. Webinar 2 focused on the questions of how to maximize climate and SDG synergies and benefits. Webinar 3 explored practical issues of how to overcome constraints in implementation, including inadequate capacity, lack of financing, and data collection.

This Synthesis Report on Climate and SDG Synergies is based on concepts and materials presented at the webinars, but also goes beyond and attempts a broader introduction to the subject. The report addresses the interests of climate and SDG policy makers, including those entrusted with preparing periodical national or sectoral reports for the HLPF or the UNFCCC.

Each country will have to decide on its own which sustainable development policies are the most suitable, and which national or local measures should be implemented with priority. Part 2 of the report proposes an integrated nexus approach which may help to determine options for policy interventions. Suggested “nexus clusters” include the agriculture, food and climate nexus; the energy, water and climate nexus; the air pollution, health, and climate nexus; the urban development, transport, construction, and climate nexus; the sustainable consumption, production,

waste and climate nexus; and the forestry, desertification, biodiversity, and climate nexus. The report indicates policy options and possible synergies in all of these six areas. It also draws attention to the availability of selected modelling tools that can facilitate and support better and more transparent climate and SDG development planning.

Climate and SDG policy and decision-making needs institutional and individual leadership and a clear and convincing narrative based on evidence. It should be based on inclusive multi-stakeholder participation, including representatives of all concerned groups. Balanced decision making needs to respond to the concerns of both urban and rural population, women and men, young and old, indigenous people and migrants, and anticipate the various social, ethnic, religious, or cultural dimensions. Wherever possible, decisions should be based on win-win solutions. As case studies, the report features important elements of selected recently updated reports on Nationally Determined Contributions shared and presented by representatives from Costa Rica, the Dominican Republic, Kenya, Nepal, and South Africa.

The report shows that in spite of the constraints and additional burden imposed by the global pandemic many of the developing countries have in fact raised their level of ambition and increased their efforts and financial resources on mitigation and adaptation programmes.

Part 3 reflects on the importance of means of implementation, including capacity building and domestic and international financing. The report highlights the role of non-governmental organizations and private sectors in climate and SDG action. However, mitigation and adaptation action in developing countries requires resources beyond the technical and financial means available, in particular in least developed and in low-income land-locked and small island developing States.

Many countries are presently reviewing their climate and sustainable development policies, also in view of the upcoming intergovernmental consultations at the HPLF and COP 26. It is hoped that the background information and the conceptual and methodological reflections presented in this Synthesis Report can inform and inspire greater consideration of climate and SDG synergies in future policy making.



1 INTRODUCTION

I. Context

The Global Challenges: Poverty, Climate Change, and Pandemic

The world community faces three crises at the same time. First, there is continued poverty in many of the developing countries, mainly in least developed and land-locked developing countries, and in many of the low-income Small Island Developing States. Socio-economic disparities have widened in many countries, threatening to leave destitute and vulnerable communities behind.

Secondly, recent reports on continued growth in global greenhouse gas (GHG) emissions are alarming scientists and development policy makers. Without more ambitious climate action, the world community may not be able to reach the main goals of the Paris Agreement on keeping climate change and global temperature increases in check.

And thirdly, the global COVID-19 public health crisis is worsening in many countries, causing terrible loss of life, human suffering, and economic and social stress. By the end of February 2021, the World Health Organization¹ had reported more than 110 million infections and 2.4 million deaths worldwide. Many countries enforced strict economic lockdowns and border closures to prevent the spread of the virus. In addition to the immediate costs in the health sector, there were widespread economic

¹ World Health Organization Coronavirus Disease Dashboard (25 February 2021): <https://covid19.who.int/>

losses in 2020, and prospects for 2021 and beyond remain uncertain.

Around the world, COVID-19 responses and relief efforts have demanded large amounts of financial resources, causing reduced liquidity and increased debt. The full impact of the pandemic is still unknown, yet it has already made climate action much more difficult.

The Universally Agreed Global Vision: Agenda 2030 and the Paris Agreement

Since 2015, the world community has had a common vision for sustainable development. At the United Nations Sustainable Development Summit held in September 2015, world leaders adopted Agenda 2030, including its 17 Sustainable Development Goals (SDGs)². In December of the same year, 196 State Parties to the United Nations Framework Convention on Climate Change adopted the UNFCCC Paris Agreement, with the goal of “holding the increase in the global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C”, recognizing that this would significantly reduce the risks and impacts of climate change.³

Agenda 2030 includes Sustainable Development Goal

² United Nations General Assembly Resolution A/RES/70/1 “Transforming our world: the 2030 Agenda for Sustainable Development”

³ United Nations Framework Convention on Climate Change, Document FCCC/CP/20/2015/L.9/Rev.1: Adoption of the Paris Agreement

13, which calls for “urgent action to combat climate change and its impacts”. Article 2 of the UNFCCC Paris Agreement, in turn, aims for collaborative climate action “within the framework of sustainable development and poverty eradication”. Clearly, sustainable development and combatting climate change are seen as inextricably linked. Lowering the risk and impact of climate change is a precondition for sustainable development, whereas sustainable development is needed to mobilize the human, technical, and financial resources necessary to master the transition to a low-carbon future.

Need to increase the level of ambition on climate change
There is an urgent need to increase the level of ambition on climate change. Measurements published by the United States National Oceanic and Atmospheric Administration (NOAA) on 14 January 2021, suggest that 2020 was the second hottest year on record, and that the seven hottest years ever recorded were all between 2014 and 2020.⁴

Since the adoption of the Paris Agreement, some 190 State Parties to the Convention have formulated and communicated their first Nationally Determined Contributions (NDCs).⁵ According to the NDC Global Outlook Report published by UNDP and UNFCCC in 2019, the first round of NDCs prepared since 2015 would set the world on track for a rise in global GHG emissions of about 10.7% above 2016 levels by 2030.⁶ This is far too high and will not enable the world community to reach the Paris Agreement’s climate protection targets.

Although there has since been some significant momentum and engagement, the current level of commitments and contributions is still seen as greatly insufficient. As mandated by the State Parties to the Convention, the UNFCCC secretariat more recently published an interim Synthesis Report reflecting the status of NDCs as of 31 December 2020.⁷ Although the report provides

⁴ NOAA: <https://www.noaa.gov/news/2020-was-earth-s-2nd-hottest-year-just-behind-2016>

⁵ UNFCCC Interim NDC registry: <https://www4.unfccc.int/sites/NDC-Staging/Pages/All.aspx>

⁶ UNDP/UNFCCC NDC Report (September 2019): “The Heat is On”

⁷ United Nations Framework Convention on Climate Change (UNFCCC), Bonn (Advance version, 26 February 2021): Nationally determined contributions under the Paris Agreement, Synthesis Report by the secretariat (Document FCCC/PA/CMA/2021/2) https://unfccc.int/sites/default/files/resource/cma2021_02_adv_0.pdf

only an interim snapshot and is based on only NDC communications from 75 countries representing 30 per cent of global GHG emissions, it also shows that according to current commitments the world community would only achieve a global emission reduction of 1 per cent below 2010 levels by 2030, whereas the International Panel on Climate Change (IPCC) had indicated that a reduction of 45 per cent by 2030 was needed to achieve the Paris 1.5°C temperature goal.

On 12 December 2020, the United Nations, United Kingdom, and France, in partnership with Chile and Italy, co-convened a virtual Climate Action Summit to mobilize additional commitments for addressing the global climate challenge. This summit brought together more than 70 Heads of State, as well as many other leaders from business, the finance community, and civil society. Forty-five countries announced stronger national climate commitments and new NDC Reports, eleven countries announced new net-zero emission targets for the year 2050, and twenty countries announced accelerating efforts on adaptation. Many leaders of cities, local governments and businesses, as well as representatives of other stakeholders, also committed to increased ambitions on climate action.⁸

Forthcoming intergovernmental conferences on climate and SDGs in 2021

In accordance with the Paris Agreement, State Parties have committed to a process of step-by-step increases in ambition and commitment every five years. A second global round of updated NDC Reports is due for the by 2020-2021 period, in time for the 26th Conference of the Parties to the UNFCCC, which is to be held in Glasgow, Scotland, under the Presidency of the United Kingdom. In many countries, updates and new NDC Reports are currently under preparation and COP-26 is expected to assess the most recent trends and determine additional climate action that may still be needed.

Global progress on achieving the SDGs, including SDG 13 on climate action, will also be reviewed at the 2021 session of the High-level Political Forum (HLPF) on Sustainable Development, scheduled to be held 6-15 July 2021.

⁸ IISD: <https://sdg.iisd.org/news/75-leaders-announce-new-commitments-during-climate-ambition-summit/>

Thematic discussions at the HLPF will focus on the theme of 'Sustainable and resilient recovery from the COVID-19 pandemic that promotes the economic, social and environmental dimensions of sustainable development: building an inclusive and effective path for the achievement of Agenda 2030 in the context of the decade of action and delivery for sustainable development'. It will include thematic reviews of Sustainable Development Goals 1, 2, 3, 8, 10, 12, 13, 16 and 17, and voluntary national reviews (VNRs) to be conducted by Member States. A number of countries have announced plans for preparation and submission of their VNRs in 2021.⁹

II. Focus and objectives of this report

In April 2019, the UN Climate and SDGs Synergies Conference, held in Copenhagen, Denmark, emphasized the importance of inclusive, sustainable, and resilient societies, and pointed out the urgency, opportunities, and advantages of swift and integrated climate and SDG action. Advancing progress towards interconnected SDGs appears to provide the best framework for tackling the climate emergency in ways that leave no one behind. Based on the inputs received from the Copenhagen Conference, the UN DESA and UNFCCC Secretariats initiated the establishment of a global knowledge platform in order to help promote climate and SDGs synergies more effectively. In May and June 2020, the UN DESA and UNFCCC Secretariats organized a series of three virtual engagement webinars in preparation for the upcoming High-level Political Forum (HLPF) on Sustainable Development. The objectives were to take stock of advances in knowledge and practices in implementing synergies, and to explore how to maximize SDG and climate co-benefits, particularly in the context of COVID-19 recovery measures. At these webinars, participants identified concrete examples illustrating synergistic approaches to achieving Agenda 2030 and Paris Agreement objectives, and pointed out ways in which updated and enhanced Nationally Determined Contributions could be presented in greater detail and with more ambition, including new ways to attain integrated climate-SDG co-benefits.

Between December 2020 and February 2021, a second series of three additional virtual learning webinars was

⁹ For detailed information on HLPF please see <https://sustainabledevelopment.un.org/hlpf/2021#>

organized on the theme of 'Harnessing Climate and SDGs Synergies'. The main objective was to compile materials for information sharing and self-training options for interested climate and SDGs policy makers. Webinar 1 provided information on tools and evidence policy makers can use to advocate for climate and SDG synergies at the national level. Webinar 2 focused on how to maximize climate and SDG synergies and benefits. Webinar 3 explored ways to overcome constraints in implementation, including issues related to inadequate capacity, lack of financing, and challenges in monitoring.

The complete set of video documentaries and presentations by speakers during the three webinars on 'Harnessing Climate and SDG Synergies' is accessible online at the UN DESA and UNFCCC Climate and SDGs Knowledge Platform.¹⁰ The materials presented will also form the basis for an e-learning course on this subject, which will be offered by UNITAR.

This report summarizes the information presented in the December 2020-February 2021 series of webinars on 'Harnessing Climate and SDG Synergies'. In addition, it provides a general introduction to the subject, together with additional relevant background information. Interested readers may find this report useful when identifying the climate and SDG synergies that matter to them the most.

In addition, this report presents a set of key messages intended to promote action on achieving climate-SDG synergies, and to provide essential conceptual and methodological information on climate and SDG synergies as input to the continuing consultative processes. It specifically addresses the interests of climate and SDG policy makers, including those entrusted with preparing periodical NDC or VNR reports.

¹⁰ UNDESA UNFCCC Climate and SDGs Knowledge Platform: <https://sustainabledevelopment.un.org/climate-sdgs-synergies2020> and <https://sustainabledevelopment.un.org/climate-sdgs-synergies2019>



2

PART 1:

The 'why' question: Making the case for integrated climate and SDG action

The broad ambitions of Agenda 2030 for Sustainable Development and the Paris Agreement require collaboration and innovative incentive systems that facilitate cross-sectoral action and shared accountability across different ministries, agencies, levels of government and non-governmental stakeholders.

There is considerable variation in extent to which different countries have been able to create synergies across these two global agendas. There is no universal blueprint or model for the most suitable national arrangements to align sustainable development plans and climate policies, especially as institutional arrangements differ substantially from one country to the next.

However, this section highlights a number of contributing factors to support policy makers in making the case for the importance of synergistic action, and in creating the conditions necessary to enable synergies across the global agendas.

I. Recognizing the importance of integrated solutions to address interlinked global challenges

Synergistic action is of particular importance in the current context of the global challenges because these complex challenges – climate change, SDGs, and building back better from the global pandemic – are closely interconnected.

Failure in addressing one process could undermine the success of the others. At the same time, addressing one goal effectively can make progress on the others easier. Understanding this is essential to motivating coherent policy planning and increasing implementation efficiency. Harnessing synergies is particularly critical in a context of institutional constraints and limited financial resources. Policy makers need to pursue policies that co-deliver, striking a balance between development priorities and climate risk management.

There is no time to lose in advancing policy options and proven feasible solutions that can simultaneously enhance achievement of one or more of the SDGs and also curb climate emissions and/or facilitate adaptation.

Sustainable development calls for integrated policy decision making. The world community can no longer afford business-as-usual and expansion of a 'gray' resource-intensive, consumption-oriented economies, with the hope of cleaning up environmental damages in the future.

Accelerating progress towards greater sustainability, addressing climate change, and meeting public health challenges all require national and global transitioning to a more socially equitable low-carbon economic development path. The world community needs to hasten the transition to a truly 'green' economy now, leaving no country, no community, and indeed no person behind.

II. A nexus approach enabled by facts and a clear narrative based on evidence

Demonstrating the impacts of interlinkages between the current global challenges based on evidence and facts will enable policy makers to arrive at more convincing arguments in support of integrated action. It is useful to look at existing global assessments that provide important information about the links between climate change and other critical socio-economic issues such as economic growth and income inequality, jobs, health and well-being, and food security.

For example, the Global Commission on the Economy and Climate has examined how countries can best achieve economic growth while dealing with the risks posed by climate change. They describe a 'New Climate Economy' in which climate action is consistent with desired economic objectives, drawing on evidence that climate and economic objectives can, in fact, be mutually reinforcing and co-dependent. Their 2018 New Climate Economy report found that bold actions could yield a direct economic gain of US\$26 trillion through to 2030 compared with business-as-usual. And this is likely to be a conservative estimate.¹ The NCE work joins a growing body of empirical evidence showcased by a number of global and national institutions demonstrating that climate action can deliver tangible social, environmental and economic benefits.

The World Health Organization has drawn attention to the critical nexus between climate change, health and air pollution. Air pollution is a major and increasing threat to human health; according to WHO, exposure to fine particulate matter from indoor and outdoor air pollution results in approximately 7 million premature deaths per year.² The issues of climate change and air pollution are closely linked because many major sources of air pollution are also major sources of GHGs. If the progression in climate change is not halted, there may be new, more frequent, and more severe climate-related illnesses, adding to the already high burden of health care providers, and adding significantly to future health care costs. Even if transitioning to a low-carbon and low-pollution energy and transport future appears costly, some estimates

¹ The Global Commission on the Economy and Climate: <http://newclimateeconomy.net/publications>

² WHO website: <https://www.who.int/data/gho/data/themes/theme-details/GHO/air-pollution>

suggest that those costs may well be much lower than future health care costs in a warming world.³

III. Getting the whole government onboard

With their legislative, budgetary and oversight functions, national parliaments are critical for overall sustainable development and climate-related policy making. However, in many countries, sector ministries have distinct budgets and communication channels, and independent monitoring systems. This creates challenges for integrated action among various ministries and agencies on climate action and the SDGs. For instance, addressing poverty also requires addressing inequalities, empowering women, and sustainably managing the environment.

The traditional 'silo' approach to development taken by many countries in the past can be counterproductive. Institutional coordination requires complementary policies and programmes across ministries to ensure that a country's development strategies, plans, and roadmaps align with the SDGs. Coherence among different planning frameworks is also essential.

Since 2015, some countries have established new institutional mechanisms and coordination structures for SDG and climate policy implementation.

- Colombia has created an inter-ministerial commission and aligned SDG efforts with the President's Office to ensure the highest level of commitment.
- Several African developing countries, including Ghana and Kenya, established high-level inter-ministerial committees that bring together sectoral working groups across ministries.
- China has created an inter-ministerial coordination mechanism led by its Ministry of Finance, comprising more than 40 ministries and agencies, with work on specific SDG targets assigned to individual designated authorities.
- Mexico has assigned each SDG indicator to a specific ministry for follow-up after consultation with the various

³ International Monetary Fund (IMF) (December 2019): Economics of Climate Change, in Finance & Development, Vol 56, No.4; <https://www.imf.org/external/pubs/ft/fandd/2019/12/pdf/fd1219.pdf>

ministries and agencies represented in its Specialized Technical Committee on Sustainable Development Goals (CTEODS).⁴

Thus far, only few countries have established ministerial-level institutions dedicated to climate change.

- Mexico established the Climate Change Inter-Ministerial Commission, composed of several working groups, to coordinate the formulation and implementation of federal national strategies on mitigation and adaptation to climate change.
- India set up a Prime Minister's Council on Climate Change, which has key representation from government, the private sector, and civil society.
- In China, the government established the National Leading Group on Climate Change, which includes representation from ministries and government sectors involved in addressing climate change concerns.

In most developing countries, ministries of environment have the designated role of coordinating and helping in the implementation of activities related to climate change. Some countries have also established a special climate change unit under their ministries of environment to coordinate and, in some cases, to implement climate change activities.

For example, in El Salvador, the Climate Change Unit established under the Ministry of Environment is in charge of climate change negotiations, development of a national climate change plan, implementation of adaptation and mitigation projects, and mobilization of resources. In Sri Lanka, the Climate Change Secretariat established under the Ministry of Environment is responsible for coordination of climate change activities and serves as a dedicated focal point for climate change work.

In the context of NDC preparations, countries can explore additional options to go beyond institutional 'silos', and to expand the focus on climate change beyond environment ministries to other key sectors, such as energy, health, transportation, agriculture, water, urban development,

⁴ United Nations Development Programme (UNDP), (2017): Institutional and Coordination Mechanisms – Guidance Note on Facilitating Integration and Coherence for SDG Implementation, https://sustainabledevelopment.un.org/content/documents/2478Institutional_Coordination_Mechanisms_GuidanceNote.pdf

or waste management, as well as central planning and finance. In this manner, climate change activities can become an integral component of all aspects of policy making.

Climate and SDG synergies and co-benefits can only be sufficiently realized if policy makers of all sectors accord these issues high political priority. More and more developing countries, including Kenya⁵, Nepal⁶, and the Dominican Republic⁷, are undertaking efforts to get the whole government on board in NDC formulation and in the national approval process of updated NDC submissions.

Successful achievement of the SDGs will also require enhanced vertical coherence. Sub-national and local governments are critical for delivering essential public services, as well as the economic, social, and environmental transformations required to achieve Agenda 2030. Many SDG targets will not be reached without proper engagement of, and coordination with, local authorities and sub-national governments. Sub-national governments also account for a large portion of total public investment, especially in areas such as education, health, social infrastructure, water and sanitation, waste management, transport, and housing.

Sub-national governments and local authorities are also at the forefront of climate action and SDG implementation. However, many sub-national governments and local authorities feel that their share in the necessary means of implementation is insufficient and not equitably distributed. An effective transition to a more sustainable, circular, low-carbon economy and a future low-emission society will necessitate full engagement of sub-national governments and local authorities, and adequate allocation of public funding resources to support them. It is essential to avoid any gaps between increased commitments at high political levels and a very limited ability for implementation at the local level.⁸

⁵ Kenya Updated NDC (28 December 2020) [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kenya%20First/Kenya's%20First%20NDC%20\(updated%20version\).pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kenya%20First/Kenya's%20First%20NDC%20(updated%20version).pdf)

⁶ Nepal Second NDC (8 December 2020) [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nepal%20Second/Second%20Nationally%20Determined%20Contribution%20\(NDC\)%20-%202020.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nepal%20Second/Second%20Nationally%20Determined%20Contribution%20(NDC)%20-%202020.pdf)

⁷ Dominican Republic Updated NDC (29 December 2020) [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Dominican%20Republic%20First/Dominican%20Republic%20First%20NDC%20\(Updated%20Submission\).pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Dominican%20Republic%20First/Dominican%20Republic%20First%20NDC%20(Updated%20Submission).pdf)

⁸ United Cities and Local Governments (UCLG) Report to the 2019

IV. Leading the way in ensuring a just transition and leaving no one behind

SDG 16, and its related target 16.7, call for responsive, inclusive, participatory, and representative decision making at all levels. Civil society engagement is key to achieving sustainable development goals, including climate protection. Increased public participation builds a more engaged citizenry. It increases the legitimacy of decisions and helps ensure that policy makers are aware of potentially cost-effective and publicly accepted local mitigation or adaptation options.

In the course of the webinars, several experts from developing countries shared their experiences on challenges and successes in participatory climate policy decision making.

Public participation processes need to be organized in a truly transparent and fair manner to produce genuinely accepted solutions. Public participation does not improve democratic practice if it is not inclusive. Allowing impacted communities, representatives of all major groups, and other stakeholders to take part in decision making is a basic component of democracy.⁹

Engaging the public in decision making can help prevent local distrust or lack of faith in public agencies. And decision making processes will be trusted more if they are based on objective facts and information that is collected, analyzed, and shared without political bias.

Multistakeholder participation is also important for NDCs to become truly “nationally determined”. In the intermediate and longer term, NDCs are only likely to be implemented if the envisioned action plan has the necessary local public support.

HLPF: Towards the Localization of the SDGs https://www.uclg.org/sites/default/files/towards_the_localization_of_the_sdgs_0.pdf

⁹ For background information on participation of major groups and other stakeholders (MGoS) in UN Conferences, please see: <https://sustainabledevelopment.un.org/mgos>

Box1 Broad-based public participation in NDC preparation in the Dominican Republic

In the Dominican Republic, the government invited a total of 114 institutions to take part in the NDC preparation, in order to ensure a truly transparent, inclusive, dynamic, multisectoral consultation process. Participants represented the public sector (27%), the private sector (19%), civil society organizations (35%), local governments (1%), and international organizations (8%). Of the individuals involved, 61% were female, and 39% were male. Representatives of all age groups took part in the NDC consultation process.

https://sustainabledevelopment.un.org/content/documents/27141Presentation_NDC_ODS_Sara_Gonzalez.pdf

The transition to a low-carbon future may require some decisions that are initially unpopular and encounter national or local political opposition, especially when influential vested interest groups expect to be negatively affected. In these situations, comprehensive consultations and inclusive decision making processes are particularly important and should aim to identify potential win-win solutions. Proposals for a transition to a greener low-carbon future must seek to avoid scenarios under which affected businesses see themselves as losers, for example if they do not receive adequate compensation for legitimate business opportunities lost.

Public participation will spur just transition processes and enable compromises and success if all parties concerned are eventually better off than they would be without the proposed climate change mitigation or adaptation measure in question. Business-as-usual prevails when perceived complexities and competing interests become obstacles effectively hindering the transition towards a more sustainable climate economy.

As an example, the Just Transition Office at ESKOM has demonstrated how well-managed participatory decision making can lead to shared benefits for all.

Box 2 Enhancing a just transition: The case of South Africa

Like other socio-economic reforms, transitioning from an established 'gray' economy to a future 'green' economy requires strong and competent leadership by individuals and institutions. At the first webinar covered by this report, a representative from Eskom, South Africa's main electric power utility, spoke about her insights and experience with Eskom's Just Transition Office. South Africa relies on coal for 88% of its power generation, and several of its coal power plants are decades old.

Taking into account local, national, and global environmental and climate change concerns, Eskom's leadership undertook the politically challenging task of beginning an accelerated transition to greater use of renewables. The Eskom management showed initiative and leadership and started the necessary consultative processes, involving not only peers and senior policy decision makers from other ministries, but also all the company staff concerned. South Africa's coal mining and power generation complex employs some 120,000 people, for whom transition implies great challenges.¹⁰

The consultation process has required time, patience, understanding, and cooperation from all stakeholders concerned, but – thanks to the champions at Eskom in South Africa – progress towards a lower carbon emission future is now at hand.¹¹ Repeated from above.

The importance of just transitions towards sustainable societies was also highlighted at the 12th International Forum for Sustainable Asia and the Pacific, ISAP2020, organized by the Institute for Global Environmental Strategies (IGES), Japan, in November 2020. The Forum showcased various opportunities to “build back better”, accelerate the recovery from COVID-19, and advance social inclusion by emphasizing just transition processes.¹²

¹⁰ See also recent online media reports: <https://www.bloomberg.com/news/articles/2020-11-04/renewable-energy-drive-threatens-120-000-south-african-jobs>

¹¹ For more background information on Eskom and South Africa's transition to a greener energy future, please see: https://www.eskom.co.za/OurCompany/SustainableDevelopment/Pages/Sustainable_Development.aspx and https://www.eskom.co.za/AboutElectricity/RenewableEnergy/Pages/Renewable_Energy.aspx

¹² <https://www.iges.or.jp/en/news/20201009> and https://isap.iges.or.jp/2020/pdf/PL_Programme_E.pdf



3

PART 2:

The 'how' question: How to maximize climate and SDG synergies and navigate trade-offs

In order to maximize climate and SDG synergies, policy makers must be able to identify where the opportunities lie, and assess the trade-offs associated with various policy options.

Over the course of the past several years, an increasing body of literature points to the interlinkages among different SDGs, including connections with SDG 13 on climate change. A number of institutions have also developed modelling tools and analytical methods that help decision makers identify climate and SDG synergies with the most potential in their locality or country. The same tools could also help planners navigate trade-offs and prioritize policy options and opportunities for climate and SDG co-benefits.

In addition to showing where synergies can be made and applying tools can help identify the most potential, country experiences have demonstrated that national planning processes play a critical role in maximizing synergies between climate and the SDGs.

This section includes a compilation of SDG and climate policy interlinkages, and examples of tools for assessing synergies and co-benefits of integrated policies and actions. Insights from national planning processes are also presented, specifically those related to revisions of NDCs.

I. Identifying key synergies for national climate and SDG: “No one size fits all”

Climate change and SDGs are interlinked in multiple ways. At the Climate-SDG Synergies Webinars, speakers pointed out many ways in which industrialized and developing country stakeholders have already and/or could be stepping up climate action with positive co-benefits for SDGs. Many presentations have also pointed out ways in which action can be taken to advance one or more SDGs and also protect the global climate by avoiding increased GHG emissions.¹

The agriculture, food, and climate nexus

Agriculture and food systems are significant contributors to climate change, and at the same time among the most highly exposed and vulnerable economic sectors already affected by its impacts. The IPCC estimates that between 21% and 37% of total anthropogenic greenhouse gases are attributable to the food system. This includes 9 -14% from crop and livestock activities within the farm gate, 5-14% from land use and land-use change, and 5-10% from supply chain activities.

Without interventions, food system emissions are likely to increase significantly by 2050, due to higher demand resulting from population increases, income growth and dietary changes.² However, as outlined below, there are

¹ The complete set of video documentaries and presentations by speakers during the three webinars is accessible via the UN DESA and UNFCCC Climate and SDGs Knowledge Platform: <https://sustainabledevelopment.un.org/climate-sdgs-synergies2020>

² International Panel on Climate Change (IPCC) (2018): Special Report – Climate Change and Land, Chapter 5 – Food Security

many options to reduce GHG emissions from agriculture and at the same time increase productivity and incomes. It is recommended that measures to combat climate change in agriculture and food systems be included in future NDCs.

Climate smart agriculture (CSA) can help to increase agricultural productivity, promote resilience and reduce emissions from both large commercial farms and small farm holders. CSA may include crop diversification, improved soil management, switching to drought-tolerant plants and seeds, more sustainable rangeland management, rehabilitation of community watercourses, improved irrigation and drainage technologies, or agrometeorological, market, climate, and other advisory services.

The most suitable combination of measures will depend on the locality and will need to be determined on a case-by-case basis. There are many institutions that support CSA and related research and training activities, including governmental bodies, non-governmental organizations, agricultural cooperatives, and international organizations such as the UN Food and Agricultural Organization (FAO), the United Nations Environment Programme (UNEP), and the World Bank Group.³

The Research Programme on Climate Change, Agriculture, and Food Security (CCAFS) run by the intergovernmental Consortium of Agricultural Research Centers (CGIAR) is one of the organizations researching mitigation and adaptation options in agriculture.⁴ Through its advocacy, CCAFS seeks to develop 'climate smart villages and agriculture'. Working with farmers and agricultural firms, CCAFS explores ways to help increase agricultural productivity, overcome poverty, and increase food security. CCAFS and CGIAR support agricultural extension services that help farmers increase their incomes, mitigate GHG emissions, and adapt to emerging risks, including climate change. CGIAR also works to reduce the continuing pressure to

<https://www.ipcc.ch/srcccl/chapter/chapter-5/>

³ Food and Agriculture Organization (FAO) Global Alliance for Climate Smart Agriculture: <http://www.fao.org/gacsa/en/>, UNEP <https://www.unenvironment.org/news-and-stories/story/smart-agriculture-action>, and World Bank: <https://www.worldbank.org/en/topic/climate-smart-agriculture>, and Sova, A., et. al (2018): Bringing the Concept of Climate-Smart Agriculture to Live <http://documents1.worldbank.org/curated/en/917051543938012931/pdf/132672-WP-P168692-PUBLIC-4-12-2018-12-27-47-CSAInsightsfromCSAProfiles.pdf>

⁴ Watch recorded presentation of Deissy Martinez-Baron of CCAFS/ CGIAR (Webinar 1)

expand agricultural activity into high-carbon landscapes. There are currently 11 important global deforestation fronts in Latin America, Africa, and South-East Asia where forests and natural peatlands continue to be lost to the expansion of agricultural land, threatening to further accelerate global climate change.

Sustainable healthy diets are dietary patterns that promote all dimensions of individuals' health and wellbeing, have low environmental pressure and impact, are accessible, affordable, safe and equitable, and are culturally acceptable.⁵ Most advocates of sustainable healthy diets emphasize the importance of increasing consumption of plant foods such as fruits, vegetables, legumes, nuts and whole grains.

A transition to diets that contain a smaller proportion of calories from animal sources, particularly meat from ruminant animals (e.g., cows, goats, and sheep) can reduce GHGs while remaining nutritionally adequate. Making a shift in dietary habits, however, presents significant challenges, for cultural, political and economic reasons. Many public and private organizations are engaged in raising consumer awareness about various health concerns related to the foods people eat, and about the economic, environmental, social, and climate impacts of their food and consumption habits.

The 'Nutrition to Growth Summit 2021' planned for later this year in Tokyo, Japan, is one of the important events expected to reflect on the changes in the global food system needed to achieve the SDGs, especially SDGs 2, 3, 8, 12 and 14, as well as the goals of the Paris Agreement.⁶

Reduction of food waste in the commercial services, retail, and residential sectors is another area of urgent action for climate protection and for achieving SDG target 12.3.

The energy, water, and climate nexus

There are many opportunities to increase sustainable energy and water supply services in urban and rural areas in ways that will also control and limit GHG emissions. However, there are also immense challenges involved in providing adequate water and energy infrastructure

⁵ FAO and World Health Organization (WHO) (2019): Sustainable healthy diets – Guiding principles. Rome <http://www.fao.org/3/ca6640en/CA6640EN.pdf>

⁶ Information on the Nutrition for Growth Summit 2021: <https://nutritionforgrowth.org/events/>

for growing populations and expanding economies. The difficulties are even greater in meeting the needs of underserved poor and socially disadvantaged groups, particularly in the low-income developing and in the least developed countries.

Water and energy are highly interlinked. Water is needed for energy production based on hydropower generation from surface reservoirs, rivers, and geothermal wells,⁷ and –for all water-based cooling systems in thermoelectric power plants. On the other hand, energy is needed to operate all pumps in drinking, industrial, and agricultural water supply and distribution systems, and wastewater collection and treatment. Desalination of (sea)water using renewable sources of energy is increasingly important in water-scarce regions.

Conventional and integrated energy and water systems need to be planned and operated in an integrated manner to realize synergies and co-benefits, and to curb growing emissions of greenhouse gases. Several modelling tools are available to assess existing energy and water systems in a world with climate change, and to optimize integrated systems development planning. These models are described in detail in Part 2, section II.

Adapted renewable energy technologies can significantly increase the zero-emission sustainable energy supply. For example, surfaces of reservoirs can be used in part for floating PV solar farms, and gravity-fed water supply systems can be used to co-generate electricity from small turbines. Seaside cities in the tropics can install water-based air-cooling systems to lower their operational energy costs and emissions. And wastewater treatment systems can capture heat and biogas for emissions reduction and power generation, which may be of particular importance and commercially feasible in large-scale facilities.⁸

Energy and water conservation, efficiency, and demand management are also crucial for attaining synergies in SDGs and climate protection. Saving energy will help save water and saving water will help save energy. In many developing countries, energy and water systems continue

⁷ In its 2nd NDC, the Government of Grenada emphasized the option of expanding sustainable geothermal energy use, subject to availability of conditional support.

⁸ For a detailed overview please refer to the Scoping Paper on Sustainable Water and Energy Solutions, published by the Sustainable Water and Energy Solutions Network, July 2020: https://sustainabledevelopment.un.org/content/documents/2687826632Global_Water_and_Energy_Solutions_Knowledge_Platform_Scoping_Paper_July2020.3.pdf

to suffer from transmission and distribution losses, leakage, and pilferage. Experts suggest future NDC strategies and reports should routinely include expansion, repairs, and modernization in the design and operation of energy and water systems.

Bioenergy production and use continues to grow around the world, but assessments of the (net) impacts of bioenergy on SDGs and climate remain contentious, especially where biofuels are produced from edible feedstocks, or are seen as competing with food production for land and water. Yet biofuel production based on agricultural residues or where fuel crops are grown on degraded and marginal land can be valuable for both SDGs and climate. Bioenergy options are technology and site specific, and their (net) impacts on sustainability and climate need to be carefully assessed on a case-by-case basis.⁹

Direct and indirect fossil fuel subsidies are historic fiscal tools originally intended to ensure national energy security, support overall economic growth, and indirectly subsidize strategic economic sectors, such as agriculture or (public) transport. SDG 12.c calls for “rationalizing inefficient fossil fuel subsidies”, because they are increasingly seen as encouraging wasteful energy consumption, and contradicting climate protection efforts. During recent years, a growing number of countries have considered or agreed on step-by-step subsidy reforms. However, further reforms will be needed to better align their fiscal policies with climate protection objectives.¹⁰

Carbon Taxes and Emissions Trading Systems (ETS) provide fiscal and regulatory tools to internalize external environmental costs associated with fossil-fuel based energy production and consumption. According to the World Bank, there were a total of 61 national and sub-national level carbon pricing initiatives in place or scheduled for implementation, covering about 22% of global GHG emissions.¹¹ Among the developing countries, Argentina, Chile, China, Mexico, Singapore, and South

⁹ International Energy Agency (IEA), International Renewable Energy Agency (IRENA), FAO (2017): Bioenergy for sustainable development https://www.ieabioenergy.com/wp-content/uploads/2017/01/BIOENERGY-AND-SUSTAINABLE-DEVELOPMENT_v20170105-cob-x.pdf

¹⁰ International Institute for Sustainable Development (IISD) (2019): Raising ambition through fossil fuel subsidy reform: Greenhouse gas emission modelling results from 26 countries <https://www.iisd.org/system/files/publications/raising-ambition-through-fossil-fuel-subsidy-reform.pdf>

¹¹ World Bank Group (2020): State and Trends of Carbon Pricing 2020 <https://openknowledge.worldbank.org/handle/10986/33809>

Africa are pioneers in implementing these fiscal tools and mechanisms. Continued national consultations and international exchanges of experiences will be needed to further reduce fossil fuel subsidies, and to expand carbon taxes and emission trading systems with a view to improve the functioning of market mechanisms in the interest of climate protection.

The Sustainable Water and Energy Solutions Network provides a global knowledge-sharing platform featuring case studies and technical background information for integrated planning and sustainable use of water and energy resources in industrialized and developing countries.¹² Achieving the goals of the Paris Agreement will require accelerating decarbonization of the electric power supply by expanding centralized and decentralized power supplies from renewable sources, halting new carbon-intensive investments, accelerating retirement of aging fossil-fuel plants, and expanding systems of carbon offsets. Over the past decade, several countries have already made considerable progress in increasing the share of renewable energy in their overall national energy supply. However, more countries need to join in, and more efforts are needed to move towards 'zero emission' growth paths in the future.

The air pollution, health, and climate nexus

The Climate Change and Health Programme of the World Health Organization seeks to bring public health and environmental policy makers together.¹³

Air pollution is a major and increasing threat to human health. Agenda 2030 addresses air pollution under the SDG targets for Good Health and Well-being (3.9), Sustainable Cities and Communities (11.6), and Responsible Consumption and Production (12.4).

The issues of climate change and air pollution are closely linked because some air pollutants are also potent GHGs. Greenhouse gases include carbon dioxide (CO₂), not directly harmful to human health, but also methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Ambient air pollutants include particulate matter (PM₁₀ and PM_{2.5}), ozone (O₃), nitrogen oxide (NO₂), and sulphur dioxide (SO₂). Particulates include components such as sulphates,

¹² For detailed information: <https://www.un.org/waterenergynetwork>

¹³ Watch presentation of Diarmid Campbell-Ledrum, Coordinator at the Climate Change and Health Programme of the World Health Organization (WHO) (Webinar 1)

nitrates, ammonia, sodium chloride, black carbon, and mineral dust, all materials that are detrimental to human health. For example, ground-level ozone can trigger a variety of respiratory health problems, and it is also of concern as a short-lived climate pollutant with high global warming potential. Methane, too, is a powerful GHG, and methane releases are significant contributors to the formation of ground-level ozone pollution. Black carbon consists of fine particles released due to incomplete combustion of fossil fuels and biomass; it is linked to serious respiratory and cardiovascular diseases, and also warms the atmosphere because of its absorption of solar radiation, although it is not a GHG.¹⁴

There are many synergies between policies and measures that address air pollution and those that address climate change. For example, measures that seek to reduce urban transport emissions and improve local air quality will very likely offer significant co-benefits in terms of also reduced GHG emissions. Options for improving local air quality with significant co-benefits for climate change mitigation include: vehicle emission standards for (new) diesel vehicles requiring best available control technology; elimination of older high-emitting diesel vehicles from the transport fleet; adoption of more efficient fuels and technologies for cooking and heating; replacement of traditional brick kilns with more efficient ones; and elimination of open burning of agricultural residues and other waste.¹⁵

Similarly, measures aimed at mitigating climate change can also offer co-benefits and lead to a reduction of concentrations of harmful particulates in the air. Such measures can include the replacement of fossil fuel-based electricity generation with renewable alternatives.

In many cases policies and measures seek to address climate change, air pollution, health, safety, and other concerns in a synergistic manner. Such programmes can include the introduction of energy efficiency standards for industry, households, transport, and the commercial sector; improvement of public transport systems; - speed limits; increases in walking and cycling; and control

¹⁴ Malley, C., et.al, (2019): Opportunities for Increasing Ambition of Nationally Determined Contributions through Integrated Air Pollution and Climate Change Planning: A Practical Guidance document available at: <https://www.ccacoalition.org/en/resources/opportunities-increasing-ambition-nationally-determined-contributions-through-integrated>

¹⁵ Options for integrated policy making on Transport, Health, and Environment are also explored at the Pan-European Programme (PEP) of the United Nations Economic Commission for Europe (UNECE) <https://thepep.unece.org/pep>

of forest and peatland fires. In the first round of NDC reports, about half of the reports included at least a brief reference to the interlinkages between air pollution, climate change, and health. Given the importance of this nexus, it would be useful for more countries to study and report on this in their next NDCs. The LEAP Model described in the next section provides a tool for modelling cost-effective measures to address both air pollution and climate change.

During the webinar discussions, the WHO also called attention to another aspect of the nexus between air pollution, health services and climate change. The growing health services sector is responsible for significant carbon dioxide emissions and related air pollution. In terms of value added and global employment, the health sector accounts for nearly 10% of the global economy. Options for making the health sector itself operate in more energy-efficient and climate friendly ways should also be considered.

The urban development, transport, buildings, and climate nexus

SDG 11 calls for “making cities and human settlements inclusive, safe, resilient, and sustainable” by 2030, and most measures that will make cities more sustainable also have climate co-benefits. Cities occupy only 2% of the earth’s surface but contain 56% of the world’s population, and account for more than 60% of global GHG emissions. According to the UNFCCC, “The fight against climate change will be won or lost in cities”.¹⁶

As centres of economic activity, cities generate very substantial GHG emissions; at the same time many cities are also highly exposed to potential damage from severe weather events, periodic flooding, and sea level rise.¹⁷ The global vulnerability to sea level rise and coastal flooding as a result of climate change has recently been reassessed by researchers, and is now thought to be triple that of earlier estimates.¹⁸ Eight of the top ten largest world cities are

¹⁶ Patricia Espinoza, Executive Secretary, UNFCCC (2018) quoted in <https://www.reuters.com/article/us-climatechange-un-cities-idUSKBN-1HX2QI>

¹⁷ See also Economic and Social Commission for Asia and the Pacific (UN ESCAP), (2019): Ocean Cities – Regional Policy Guide Delivering Resilient Solutions in Pacific Island Settlements https://www.unescap.org/sites/default/files/Ocean%20Cities%20Policy%20Guide_300519.pdf

¹⁸ Kulp, S.A., Strauss, B.H (2019): New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. Nature Communications, 10, 4844 <https://doi.org/10.1038/s41467-019->

located on or near the coast.

Throughout the developing world, top priorities include upgrading of slums, expansion of low-cost housing, and improvement of public services in energy, water, sanitation, health, and education. In addition, many city mayors, municipalities, and other local authorities are also fully committed to finding ways to mitigate environmental and climate risks when designing and implementing local policies or investment projects. Therefore, local climate mitigation and adaptation initiatives should, where possible, be included in national NDC Reporting. A UN Habitat Review of NDCs in 2017 showed that 79 countries included references to urban development in their NDCs, with 75 countries concerned with adaptation measures, and 21 countries sharing information on mitigation efforts.¹⁹

In many cities, there are urgent traffic congestion and air pollution problems resulting from rapid motorization, growing private motor vehicle use, and high motor fuel consumption. Many countries have adopted the ‘avoid, shift, improve’ approach: avoiding unnecessary transportation activity; shifting journeys to more sustainable modes such as public and non-motorized transport; and improving technologies and infrastructure for all modes of transport. These are all important measures that can move societies towards a more fuel-efficient low-carbon transport future.²⁰

City administrations are using many measures to address the traffic congestion problem, including, among others, increasing vehicle taxation, restricting vehicle registrations, and requiring a minimum vehicle occupancy during rush hours. These measures also reduce air pollution and GHG emissions from vehicles.

Other measures to reduce both air pollution and GHG emissions include:

- introducing vehicle fuel efficiency standards;

¹⁹ UN Habitat, Nairobi (2020): Enhancing Nationally Determined Contributions through Urban Climate Action https://unhabitat.org/sites/default/files/2020/06/ndc_guide_19062020.pdf

²⁰ A detailed assessment of climate change mitigation option in transport is published by Sims, R., Schaeffer, R. et. al, (2014): International Panel on Climate Change (IPCC), Working Group III, Fifth Assessment Report, Chapter 8: Transport https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf

- reducing sulphur content in gasoline and diesel fuels;
- increasing use of compressed natural gas (CNG) in passenger or light-commercial vehicles;
- establishing inner-city clean air zones, tighter vehicle inspections and emission measurements;
- promoting electric vehicles; and
- modernizing and expanding affordable public transport services with bus rapid transit (BRT) and light rail systems.²¹

Regrettably the COVID-19 pandemic currently poses immense unexpected operational and financial challenges for all public transport operators, as social distancing is strictly advised, but entirely impractical on public buses and trains. Promotion of walking and biking in inner cities reduces demand for public transportation, and also exposure to COVID-19. Greater use of IT technologies in taxi, car, and ride sharing systems also provides possibilities for reducing the air pollution and climate impacts of urban transport. Many cities have pledged to expand the local IT infrastructure to enable future 'smart city' development.

The Second United Nations Global Sustainable Transport Conference, planned to be held in Beijing, China, will provide the next opportunity to further explore the best options of advancing implementation of SDG 11 through more efficient transportation measures that can also curb GHG emissions.²²

Several countries have mentioned building codes in their climate related NDCs. Commercial and residential buildings consume large amounts of energy for indoor cooling or heating, lighting, and ventilation. Incentivizing energy efficiency retrofits and promoting green building designs for new construction offer complementary tools to make the urban building stock more resilient to climate change. Planting more trees, improving urban parks and recreational areas, and adding more green roofs are other nature-based solutions that will improve the urban microclimate and local living conditions, and also facilitate adaptation to climate change.

In addition, many cities have stated the importance of integrated land use planning for enhancing future urban resilience to climate change. In many cities, urban zoning is being reviewed with the aim of reducing the distances of local commutes, where possible. In the context of

²¹ Members of the Partnership on Sustainable Low-carbon Transport (SLOCAT) have conducted and published various reports and case studies: <https://slocat.net/>

²² For additional information, please see: <https://www.un.org/en/conferences/transport2020>

NDC preparation, local authorities and decision makers are particularly concerned about practical, cost-effective, and affordable urban climate change mitigation and adaptation measures. Continued networking, additional exchanges of information, and ultimately mobilization of the necessary financing are all important prerequisites for advancing local solutions.²³

The Dominican Republic is one country that has made a point of including detailed information on plans and projects in urban development and transport in its updated NDC submitted in December 2020.²⁴

The sustainable consumption, production, waste, and climate nexus

Fashion trends, changing designs, and planned obsolescence are important drivers of employment generation and economic development. However, they can also perpetuate unsustainable patterns of resource consumption, pollution, and GHG emissions.

SDG 12 calls for ensuring sustainable consumption and production patterns, environmentally sound management of chemical and hazardous waste, increased use of life cycle analysis, and minimization of air, water, and soil pollution in all waste management.

Efforts to advance more sustainable patterns of consumption and production and to reduce or avoid waste will also advance protection of the global climate.

Many countries and several international organizations have adopted a variety of waste minimization, waste separation, resource recycling, and safe landfill deposit strategies, with a view to reduce environmental and climate impacts.²⁵ Important consumer information programmes include advice such as: "Refuse what you don't need, reduce what you do need, reuse what you

²³ The Global Commission on the Economy and Climate has dedicated several working papers and chapters of its NCE reports to the topic of advancing urban economies and reducing GHG emissions: <https://newclimateeconomy.report/workingpapers/>

²⁴ UNFCCC NDC registry: <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>

²⁵ Strengthening the synergies between waste, climate and the SDGs were also comprehensively discussed and are documented as part of the proceedings of the International Forum on Sustainable Asia and the Pacific (ISAP 2019) organized by the Institute of Global Environmental Strategies (IGES) and the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS): <https://isap.iges.or.jp/2019/en/day1/tt3.html>

can't reduce, recycle what you can't reuse, recover what you can't recycle".²⁶ At the global level, the waste management sector itself accounts for approximately 3-5% of anthropogenic GHG emissions.

Waste prevention through reduction and reuse of products and materials is a fundamental principle of sustainable development. Many OECD countries, as well as many of the high-income developing countries, have already successfully established waste prevention legislation and waste management facilities.²⁷

Waste separation and recovery, including at the household level, is also important for reducing and managing waste streams.

Organic waste is best composted locally and used as fertilizer. However, organic materials decomposing in landfills without oxygen produce methane, which is a major GHG and contributor to climate change. Most of the larger and more recently built landfill sites have installed piping systems to capture the methane for on-site power generation.

Toxic materials must be handled separately because leakage from landfill sites can cause (ground)water and soil pollution and incineration poses serious human health hazards.

Recycling materials before they may go to a landfill can help to reduce GHG emissions by reducing the need for virgin materials. Manufacturing products from recycled materials typically requires less energy than making products from virgin materials.^{28 29}

Plastics are very versatile, useful, durable, and comparatively inexpensive materials, but most of them cannot be recycled. Moreover, their durability creates

²⁶ Secretariat of Pacific Regional Environment Programme (SPREP) Fact Sheet (2009) Waste and climate change, https://www.sprep.org/climate_change/PYCC/documents/ccwaste.pdf

²⁷ e.g., European Union Directive 2008/98/EC

²⁸ For additional information on waste management and climate change, please see Fishedick M., J. Roy, A et.al., International Panel on Climate Change (IPCC), Working Group III, (2014): Annex: Waste https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter10.pdf

²⁹ Improving waste management is also an important component in Kenya's climate change strategy and its updated NDC report submitted in December 2020 (watch presentation by Kenya Climate Change Coordinator of NDC process in Webinar 2)

significant environmental threats; if improperly discarded they can accumulate in ways that are damaging to the health of oceans, ecosystems and wildlife. In addition, they are made from fossil fuels, through extraction and production processes that contribute substantially to GHG emissions. Then, after short-term uses, plastic products are often incinerated as trash, which creates additional GHG emissions and air pollution. Many developed and developing countries are taking steps to reduce the consumption and production of single-use plastics.³⁰

Using wastes as fuel in 'waste to energy plants' produces more CO₂ per megawatt-hour than power plants using coal, natural gas, or oil, and emits dangerous air pollutants. Removing these air pollutants can be costly. Critics of modern, yet unsustainable, waste disposal systems are calling for waste incineration to be reduced or phased out, or at least more strictly controlled, in order to protect air quality and reduce GHG emissions.³¹

Waste management is complex and poses many challenges. However, many city administrations and local authorities around the world have recognized the importance of taking urgent action on waste management. Many countries have included information on their waste management plans and projects in their updated NDCs.³²

The forestry, desertification, biodiversity and climate nexus

Climate change action, sustainable development, and preservation of biodiversity and ecosystems are interdependent challenges.

SDG 15 calls for protection, restoration, and promotion of sustainable use of terrestrial ecosystems, sustainable forest management, combatting desertification, halting and reversing land degradation, and halting biodiversity loss. Effective action on achieving the SDG 15 targets can

³⁰ See innovative river cleaning and plastic recycling initiatives of the Recycled Islands Foundation implemented in the Netherlands, Indonesia, and Viet Nam <https://www.clearrivers.eu/>

³¹ Centre for International Environmental Law (CIEL) (2019): Plastics & Climate - The hidden cost of a plastic planet <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>

³² German Technical Cooperation Agency (GIZ) (October 2017): Briefing on sectoral implementation on nationally determined contributions (NDCs) – Circular economy and solid waste management <https://www.transparency-partnership.net/system/files/document/NDC%20Brief%20-%20Circular%20Economy%20and%20Solid%20Waste%20Management.pdf>

help to slow climate change and reduce the risk of climate impacts on nature and biodiversity.

Forests play important roles as both 'sinks' and sources of carbon dioxide.

Forest vegetation contains about half the planet's terrestrial carbon. Trees and plants take in carbon dioxide (CO₂) to perform photosynthesis – a process through which they combine carbon molecules with water (H₂O) to create the carbohydrate compounds they need to grow and survive. The capacity of a tree to act as a carbon sink increases with its growth and durability. Trees become sources of carbon dioxide when the amount of CO₂ they release through cell respiration exceeds the amount taken in for photosynthesis, and when they decompose or burn. In many countries, both industrialized and developing countries, forests and their function as carbon sinks are under threat. In many industrialized countries, forests have been damaged by acid rains, extended droughts, and pests. In many developing countries, forests are degraded and shrinking, in part due to (mostly illicit) logging, and in part due to extended conversion of land use from forest to agricultural land.

Widespread deforestation and degradation, due to poor logging practices, land clearing for agriculture, and forest fragmentation, diminish the ability of trees to remove carbon dioxide from the air, and also lead to increased releases of carbon dioxide as trees die or are burned. Climate variability also increases the stresses on forests and forest-dependent people, and severe droughts have made forests more prone to fire.

With the 2015 Paris Agreement, countries agreed to conserve and enhance carbon sinks and reservoirs, including forests. In 2017, the United Nations General Assembly adopted the 'United Nations Strategic Plan on Forests (2017-2030)', which included the target to increase the worldwide forest area 3% by 2030.³³ Accordingly, many countries included information on their (re)afforestation and forest protection programmes in their NDC reports.³⁴ However, in many cases, the information provided remains general and thus insufficient to determine the impact

³³ United Nations Forum on Forests (2016): https://www.un.org/esa/forests/wp-content/uploads/2016/12/UNSPF_AdvUnedited.pdf

³⁴ FAO, Climate Smart Agriculture Source Book, Chapter B3-1: Forests and Climate Change, 2017 <http://www.fao.org/climate-smart-agriculture-sourcebook/production-resources/module-b3-forestry/chapter-b3-1/en/>

more accurately.

Desertification and land degradation can be caused by poor land management, including overgrazing, excessive harvesting of fuelwood, and salination. Unfavourable climatic conditions, including prolonged drought, and increased solar radiation and winds, also cause damage to land and natural resources. Over time, soils exposed to degradation due to climate change can become infertile. The United Nations Convention to Combat Desertification (UNCCD) defines desertification as "land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities".

Measures to reduce land degradation, soil erosion and desertification include improved land management and farming techniques, such as zero tillage agro-ecologic farming, or planting shrubs and trees to break the wind and help retain ground water.

China, and African countries of the Sahel region, are investing in efforts to halt desertification, including by planting 'Great Green Walls'.³⁵ The 'Great Green Wall of the Sahara and the Sahel' was first initiated by countries of the African Union in 2007. The project stretches over 21 African countries, from Djibouti in the east to Senegal in the west. It aims to restore 100 million acres of degraded soils, generate 10 million productive jobs, and sequester 2.5 gigatons of carbon. Examples from Zimbabwe³⁶ and Saudi Arabia³⁷ have shown that desertification can be reversed, agricultural income can be generated for local communities even from previously barren lands, and carbon can be sequestered as a co-benefit. Countries may include reporting on desertification-related climate change mitigation and adaptation measures in their NDC Reports.

Biodiversity is declining at an alarming rate – and climate change has become an important driver of this decline. Without addressing the rapid loss of biodiversity, the

³⁵ Global Environment Facility (GEF) (2019) The Great Green Wall Initiative https://www.thegef.org/sites/default/files/publications/gef_great_green_wall_initiative_august_2019_EN_0.pdf

³⁶ Butterfield, J., Bingham, S., Savoury, A. (2019): Holistic Management Handbook: Regenerating your land and growing your profits, Third Edition, Island Press, Washington, D.C.

³⁷ See documentation on Al-Baydha Project, Saudi Arabia, at Permaculture Research Institute website: <https://permacultureglobal.org/projects/286-al-baydha-project>

world will struggle to live up to the Paris Agreement or to achieve the SDGs and the targets of the Convention on Biological Diversity (CBD). Conversely, without halting the progress of climate change, actions to tackle the loss of biodiversity may become even more challenging.

Biodiversity includes ecosystem diversity, species diversity, and genetic diversity. Protected areas are the backbone of global biodiversity conservation. They function by separating designated nature conservation areas from potentially incompatible land uses, such as agriculture, logging, or hunting.

In 2010, the Convention on Biological Diversity (CBD) established an area target of 17% of terrestrial land and inland water areas, and 10% of coastal and marine areas, to be protected areas by 2020 (Aichi target 11). This target includes traditional protected areas, as well as areas conserved “through effectively and equitably managed, ecologically representative and well-connected systems and other effective area-based conservation measures (OECMs)”.

During recent years, parties to the CBD have significantly increased the terrestrial protected areas from 12.7% in 2010 to 15.2% in 2020, and they may indeed achieve Aichi target 11 in the near future. However, some biodiversity experts have raised questions about the effectiveness of the ‘other effective area-based conservation measures’ to stop the ongoing decline of biodiversity (and ecosystem services).

The 15th Conference of the Parties to the Convention on Biological Diversity (COP 15) is planned to be held May 17th-30th, 2021, in Kunming, China, when progress on the implementation of the Convention and the related Cartagena and Nagoya Protocols to the Convention will be reviewed.

Synergies Table 1 - Selected national policies and programmes that can enhance achievement of SDGs and offer climate co-benefits (through mitigation and adaptation measures)



- Establishment of national and local disaster preparedness programmes
- Construction of shelters for natural disasters and other emergency situations
- Relocation of precarious residential placements from areas prone to flooding, landslides, or sea level rise, and ban of settlements in high-risk zones exposed to natural disasters, including extreme weather events



- Policies and programmes to increase agricultural productivity, reduce land use change (e.g., reduce deforestation), and promote climate smart agriculture and food production (Target 2.4)
- Policies and programmes to implement crop rotations, avoid over-application of fertilizers, improve manure management, and reduce on-farm use of fossil fuels
- Policies and programmes to provide sustainable forms of irrigation, where needed and possible



- Policies and programmes to protect public health by reducing air, water and soil pollution and contamination from hazardous chemicals (Target 3.9)
- Installation / improvement of early warning systems and disease surveillance
- Provision of more and better health care facilities and services, with increased resilience to severe weather events
- Public education to eliminate breeding sites of insects carrying vector-borne diseases



- Protection of drinking water resources and reduction of water losses and energy use in water supply and distribution systems
- Policies and programmes to increase water-use efficiency in public and private institutions, and in industrial, commercial, and residential sectors (Target 6.4)
- Policies and regulations to protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes (Target 6.6)
- Use of renewable sources of energy for water desalination
- Capacity building support in water and sanitation related activities and programmes, including water harvesting, desalination, and wastewater treatment (Target 6.a)



- National policies, regulations, and financial incentives to increase power generation from renewable sources of energy, including wind, solar, sustainable conventional and non-conventional hydro and geothermal power generation (Target 7.2)
- Reforms in taxation of fuels, including possible reduction or discontinuation of fossil fuel subsidies (Target 12 c)
- Energy efficiency regulations and incentives for investments in energy efficient processes and products (Target 7.3)
- Reduction of system losses in electric power transmission and distribution, and improved electricity demand side management (DSM)
- Capture and use of methane from landfills, and effective waste-to-energy combustion
- Reduction of routine (methane) gas flaring in oil industries (Target 9.4)

8 DECENT WORK AND ECONOMIC GROWTH



- National policies and programmes to enhance resource efficiency in consumption and production and decouple economic growth from environmental degradation (Target 8.4)
- National and local policies, measures and initiatives to promote more sustainable forms of tourism (Target 8.9)
- Implementation of (labour-intensive) infrastructure refurbishment, including improved sea dikes, water storage, and drainage systems

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



- Policies and programmes that encourage retrofitting industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes (Target 9.4)
- Engagement of Energy Service Companies to identify and realize potential productivity and resource and energy efficiency gains

11 SUSTAINABLE CITIES AND COMMUNITIES



- National and local policies and programmes to provide access to safe, affordable, accessible and sustainable transport systems for all, notably by expanding public transport (Target 11.2)
- National and local policies to protect local air quality (Target 11.6), i.e., through implementation of inner-city clean air zones, improved implementation of regulation on motor vehicle inspections and maintenance, and restrictions on cross-border trade in (depreciated) second-hand vehicles
- Promotion of non-motorized transport, including walking and biking
- Promotion of car-sharing, ride-sharing, and new IT applications for making transport options safe, convenient, resource-efficient, and sustainable
- National and local policies to improve (municipal) waste management (Target 11.6) and reduction of illegal waste incineration

- Provision of urban public and green spaces (Target 11.7)
- Policies and programmes to support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning (Target 11.a)
- Policies and programmes and building codes to promote construction of sustainable and resilient buildings utilizing local building materials (Target 11.c)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- National policies and programmes to promote sustainable consumption and production patterns, including in following six areas: sustainable public procurement, consumer information for SCP, sustainable tourism, sustainable lifestyles and education, sustainable building and construction, sustainable food systems (Target 12.1)
- Implementation of reduce, reuse, and recycle ("3r") principles to make waste management more sustainable
- Reduction of food waste at the retail and consumer level, and along production and supply lines (Target 12.3)

15 LIFE ON LAND



- Policies and programmes to ensure conservation, restoration and sustainable use of inland freshwater ecosystems, including wetlands, mountains, and drylands (Target 15.1)
- Promotion of sustainable management of all types of forest, halting deforestation, and restoring degraded forest (Target 15.2)
- Policies and programmes to combat desertification and restore degraded land and soil (Target 15.3)
- Policies and programmes to conserve mountain ecosystems and their biodiversity in order to enhance their capacity to provide benefits for sustainable development (Target 15.4)
- Establishment and implementation of

local coastal zones management plans; including protection and management of mangrove forests

- Implementation of long-term management and adaptation options in commercial forestry
- Implementation of programmes and measures to protect ecosystems and biodiversity

Source: Ralph Wahnschafft compilation

II. Tools for assessing synergies and co-benefits of integrated policies and actions

In order to ensure accurate and comparable reporting, the UNFCCC standard reporting format urges State Parties to the Convention to prepare their NDC submissions in line with the agreed IPCC GHG emission measurement methodology and formats. At UNFCCC COP 24 in Katowice, Poland, in 2018, State Parties to the Convention also adopted the 'Katowice Rulebook', which established agreed modalities, procedures and guidelines (MPGs) for the Transparency Framework under Article 13 of the Paris Agreement.¹

As countries pursue their development ambitions, and the 17 SDGs with their 169 targets, they are inevitably constrained by limited natural, human, and financial resources. At the same time, they are challenged by the need for interinstitutional, interdisciplinary, intersectoral, and intergenerational cooperation in moving towards a sustainable, equitable, and low-carbon development path.

In the light of these challenges, international development organizations have created and offer various climate and SDG modelling tools that are meant to enable planners and policy makers to make complex decisions in a rational and transparent manner.

This section presents selected tools in three different

¹ <https://unfccc.int/process-and-meetings/the-paris-agreement/katowice-climate-package>

categories, including:

- (i) methods to facilitate dialogue, decision making, and political compromises through better human interaction;
- (ii) tools that enable identification and qualitative assessment of potential synergies and trade-offs; and
- (iii) more comprehensive and demanding quantitative modelling tools that allow projecting the impact of today's decisions into the intermediate and longer-term future.

Social simulation games as tools for climate-SDG decision making

The Centre for Systems Solutions (CSS) based in Wroclaw, Poland, and the International Institute of Applied Systems Analysis (IIASA) have developed several games that can be used as social tools for simulating complex decision-making processes, including decision making on SDGs and climate change mitigation and adaptation.

The "Nexus Game" and "The World's Future" are two of the more widely used social simulation games. Participants assume certain positions and functions and have to interact with the other players to develop feasible compromises. The games have been found to be more effective than many other teaching or training methods during which participants typically remain passive. The games can in principle be made accessible by CSS/IIASA at no cost for non-commercial users, including for country teams working on climate-SDG synergies.² Social simulation games can be very useful, but generally require in-person human interactions, which are currently limited by the COVID-19 pandemic.

SDG Climate Action Nexus (SCAN) tool

The SDG Climate Action Nexus (SCAN) tool was developed by the New Climate Initiative and counterparts under the 'Ambition to Action Project' supported by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU). The SCAN-tool is designed to provide background information on how mitigation or adaptation actions can support (and/or negatively impact) achievement of the SDGs. The tool is meant to assist policy makers in making qualitative assessments and preparing their own NDC plans. The SCAN-tool is based on a thorough literature review.³

² Watch the presentation and documentation on Social Solutions Games by CCS/IIASA expert (Webinar 2)

³ Watch recorded presentation of Sofia Gonzales-Zuñiga (Webinar 2), or see Gonzales-Zuñiga, S., et al (2018): SCAN (SDG & Climate Action

This tool covers both mitigation and adaptation action. The SCAN-tool for mitigation can help policy makers analyse the impacts of optional actions across seven sectors: electricity and heat, transport, buildings, industry, waste, agriculture and forestry. The SCAN-tool for adaptation enables analysis of possible actions across eight sectors: agriculture, coastal zones, forestry, ecosystem management, energy, health, transport and urban development.

In general, synergies tend to outweigh negative trade-offs for most of the SDGs. In fact, in the SCAN-tool, two-thirds of linkages identified were positive. However, each country will have to assess its own technology and policy options, resource requirements, and positive co-benefits or negative external effects.

Climate Action Impact Tool

UNDP has developed its Climate Impact Action Tool as a self-guided online app that can help policy makers, organizations and practitioners assess the likely impacts of a specific sustainable development project or intervention. The application is best used at an early stage in the planning process, but can be applied during project implementation, too, to identify possible corrections or improvements.

The tool guides the user to systematically assess all intended (and unintended) impacts of a mitigation and/or adaptation policy or project. Thus, the tool can be applied to all types of climate actions that could be part of an NDC, whether national, regional, sectoral or local in nature. The app follows a bottom-up approach, providing the planner with a series of questions and prompts in order to initiate discussion, collect and review relevant information, and perhaps amend or modify a planned intervention or project.

The app can help the user to identify any significant potential risks, through user-friendly navigation and interaction. It covers information on both quantitative and qualitative impacts and allows data to be exported into a common reporting format with self-explanatory graphs for subsequent editing and sharing. The corresponding UNDP website also provides users with a compendium of

Nexus) Tool: Linking Climate Action and the Sustainable Development Goals (Key Findings Note) https://www.international-climate-initiative.com/fileadmin/Dokumente/2018/20181114_Tool_Key_Findings_NDC_Cluster_Template.pdf

good/best practice examples for potential replication.⁴

Integrated Sustainable Development Goals (iSDG)

The Millennium Institute (MI), a non-profit non-governmental organization based in Washington, D.C., has designed an 'Integrated Sustainable Development Goals' (iSDG) model as a policy simulation tool that can assist policy makers and other stakeholders in making sense of the complex web of interconnections among the SDGs. MI aims to help decision makers in government and civil society apply 'systems thinking' to sustainable development challenges, using processes based on multi stakeholder consultations.

Unlike databases and indexes that provide a measure of where a country stands, iSDG focuses on the dynamic interactions within the SDG system to reveal the best paths and progression towards achieving the SDGs. Assessing synergies is an integral part of the iSDG model.

Over the years, MI has provided advisory services to more than 40 countries and multilateral institutions to identify strategies that can offer people access to food, water, health care, education, and equal opportunities for women and men. The iSDG model can be used to support the development of a broad variety of national sustainable development policy documents. The iSDG process and model has been applied to planning studies in Cote d'Ivoire, Malawi, Nigeria, and Senegal, with the respective reports published on the MI iSDG website.⁵

Low Emission Analysis Platform (LEAP) and its climate-SDG expansion

LEAP is one of the most widely used energy planning and modelling tools for quantitative projection and analysis. It was first developed in the 1980s by the Stockholm Environment Institute (SEI). It enables energy planners to develop least-cost optimization tools to balance energy and electricity supply and demand.

LEAP models can be tailored to specific situations, countries, needs, and interests. The models are typically based on country data, including the available energy

⁴ United Nations Development Programme (UNDP): Climate Action Impact Tool (online tutorial) <https://sdgintegration.undp.org/climate-action-impact-tool>

⁵ Millennium Institute iSDG website: <https://www.millennium-institute.org/isdg>

sources and supply infrastructure, and the stock of equipment and appliances in use in households, industries, or transportation. LEAP can help identify the most feasible interventions to enhance energy efficiency on the demand side. It can also be used to optimize the integration of variable renewable energy sources on the supply side.

LEAP can be used to calculate load curves, and analyse seasonal, time-of-day, or regional fluctuations in energy demand, thereby helping to identify options on how best to balance systems. The models can include air pollution and GHG emission parameters and be used to make projections using assumptions and scenarios, including business-as-usual, as well as modelling alternative policy interventions. LEAP model projections can be used to rationalize options for investments in energy infrastructure, taking into account intermediate and long-run operational cost and emissions.

Since 2020, LEAP software has been paired with Next Energy Modelling and Optimization (NEMO) Systems, to make the programme even more flexible for users, e.g., by including energy storage options.

The Stockholm Environment Institute has developed and disseminated the LEAP Programme over many years. There are also many training opportunities and expert communities of practice that can help newcomers to get acquainted and effectively use the software and its many features.⁶ LEAP is not open source, but its software licenses are free of charge for students and governments, NGOs and academia in low-income and lower-middle income countries. Licenses are also substantially discounted for users in upper-middle income countries. SEI has also developed a Water Evaluation and Planning (WEAP) system as a modelling and planning tool for integrated water demand and supply management. WEAP models have a user-friendly interface and can enable stakeholder participation in the simulation of policy scenarios addressing competing uses of water systems. WEAP uses water data including runoff, flows, and storage, crop irrigation requirements, or sources of pollution.

Combining LEAP and WEAP enables water and energy nexus studies to assess potential scarcities or threats associated with infrastructure or production or consumption systems with impacts that cross systems, such as hydropower, irrigation, or biofuels. WEAP can also

⁶ For general introduction please see Video: Introducing LEAP 2020, www.youtube.com/watch?v=stQdJgBGPTg

be used to assess potential impacts of climate change on rainfed agriculture.⁷

In the context of the expanded discussion on climate and SDG synergies, SEI has further developed the LEAP model and now offers an expanded SDSs Synergies Analysis and Modelling tool that can be used to make decision making processes more inclusive, more transparent, and thus more robust.⁸

The SEI SDGs Synergies tool starts with national, regional, or local customization and selection number of SDG priority targets, typically less than 30 or 40 national SDG targets. The second step of the analysis involves the development of a cross-impact matrix among the selected targets to identify positive or negative interlinkages. Based on the matrix analysis, policy options and interventions and their impacts can be assessed, prioritized, and optimized.

The updated and expanded LEAP Model can help quantify interlinkages between energy, air pollution, and GHG emissions. It can also be expanded to include gender disaggregated data. New developments in 2021 will enable the inclusion of additional factors, such as diets, agriculture, waste and wastewater, and macro-economics. The SDGs Synergies Tool has been used in a series of recent national SDG policy workshops, including in Mongolia, Sri Lanka, and Colombia (<https://www.sdgsynergies.org/>) as well as in studies for Bangladesh, Nigeria, and the ASEAN region.

Climate, Land (Food), Energy, Water Systems (CLEWs)

The climate, land (food), energy and water systems (CLEWs) approach was first introduced in 2009 by experts of the International Atomic Energy Agency (IAEA) and the KTH Royal Institute of Technology.⁹ It was initially developed as a global model, and subsequently applied in selected countries, including Mauritius¹⁰, as well as several regions, and cities.

⁷ For further information: www.weap21.org

⁸ Watch presentation by SEI expert on the use of LEAP for climate-SDG synergy analysis at Webinar 2

⁹ <https://www.iaea.org/topics/economics/energy-economic-and-environmental-analysis/climate-land-energy-water-strategies>

¹⁰ Manuel Welsch, et. al, (2014): Adding value with CLEWs – Modelling the energy system and its interdependencies for Mauritius, in Applied Energy, 113, pp 1434-1445 https://www.researchgate.net/publication/260034988_Adding_value_with_CLEWs_-_Modelling_the_energy_system_and_its_interdependencies_for_Mauritius

CLEWs models provide tools for governments and policy makers to undertake simultaneous consideration of food, energy and water security plans. The models are designed to assess how production and use of these resources can contribute to climate change, and how climate change might affect resource systems. By comparing different technologies and value chains, the models can identify pressure points, and indicate synergies and trade-offs to reach development goals. CLEWs can be used to analyze the impact of policy decisions such as the promotion of clean energy, competition for water, and agricultural modernization. Policy makers, planners, and experts interested in more information or training on CLEWs may apply to participate in one of the periodical training events.¹¹ In 2019, UN DESA prepared and/or conducted workshops related to CLEWs in Bolivia, Cameroon, Ethiopia, Indonesia, and Viet Nam.

At the request of the Mayor of Mexico City, the United Nations Department of Economic and Social Affairs (N DESA) and the United Nations Development Programme (UNDP) are presently assisting the city administration with integrated analyses that will inform the city's 20-year development plan. Like many other cities, Mexico City faces considerable sustainability challenges. Securing access to water, good air quality, reliable and efficient transport and dignified livelihoods will require well-designed, holistic plans and policies. Using CLEWs, the objective is to frame alternative scenarios for the management of water, land-use, renewable energy, and the expansion of transportation, as well as economic growth and structural transformation. Preliminary results will be available by the first quarter of 2021.¹² Applying CLEWs for integrated planning studies may also be of interest to other cities and local authorities.

Selecting the most appropriate decision-making tools

In addition to the selected models and tools presented at the webinar, there are various other sources of information and advice on policy decision making. On a case-by-case basis, interested participants can compare the various options. Most models allow adjustments to meet differing needs, expectations, and preferences. Games and social

simulations are complementary to quantitative modelling tools such as LEAP or CLEWs.

III. Developing country efforts and experiences with integration of SDGs and climate action

Many developing countries are increasing their levels of ambition in 2020-2021

During the course of the webinar series, representatives and experts from a number of institutions and countries provided insights on country-level experiences, including in Kenya, Nepal, the Dominican Republic, India, and Costa Rica. The respective formal NDC update reports are publicly accessible on the UNFCCC NDC registry website. All countries that updated their NDCs in 2020 encountered extra challenges due to the pandemic, which has made national consultation processes difficult. Special arrangements were needed to conduct consultation meetings online. In some rural areas, the pandemic made it impossible to conduct the local consultations that had been planned.

However, in spite of the challenges there is already a clear and positive emerging trend. The updated NDC reports available so far suggest that many developing countries are in fact increasing their ambitions on climate and SDGs. The Dominican Republic increased its ambition to reduce GHG emissions to 27% below business-as-usual by 2030. Kenya increased its ambition to reduce GHG emissions to 32%. Nepal even adopted a long-term low GHG emission development strategy, aimed at achieving net-zero GHG emissions by 2050. All of these countries have increased their human and financial resources invested in the process.

¹¹ Periodical UNDESA / UNDP training events / summer school on CLEWs applications: <https://www.un.org/development/desa/dpad/2017/summer-school-on-modelling-tools-for-sustainable-development/>

¹² <https://sdgintegration.undp.org/climate-land-use-energy-and-water-systems-clews-models>

Box 3: Ambitious GHG mitigation plans as part of Nepal second NDC

The Government of Nepal submitted its second NDC Report on 08 December 2020. The NDC Report outlines in detail the country's long-term low GHG emission strategy, including the various mitigation and adaptation components. Nepal submitted a particularly ambitious plan of reducing its energy-related GHG emissions during the period 2021-2030 by 23 % below BAU. This ambitious plan is particularly notable, given the fact that Nepal is one of Asia's least-developed and land-locked developing countries, and also seriously affected and constrained by the COVID-19 pandemic. As highlighted in the NDC Report, the Government of Nepal is seeking to achieve its GHG emission reduction by a three-pronged approach. One of the most important components is a rapid and significant increase of grid-connected and decentralized power generation from renewable sources, including hydro-, solar-, and wind-, and bioenergy. The second component is a planned significant increase of battery-powered electric mobility in public and private transportation, including for 2-wheelers and public transport mini-buses. Increased use of electric mobility based on renewable sources will also help to reduce the reliance on imported fossil fuels and help to improve local air quality. The third component is the accelerated dissemination of up to 500,000 more fuel-efficient cooking stoves, the installation of up to 200,000 household level biogas plants, and 500 large-scale community- or industry-based biogas facilities.

UNFCCC NDC Registry: <https://www4.unfccc.int/sites/ndcstaging/Pages/LatestSubmissions.aspx>

Many developing countries are showing greater unconditional commitments, and the number and volume of conditional commitments and proposals for international cooperation is also increasing.

With their updated or second NDCs, more developing countries are identifying specific economic sectors, including energy, industry, agriculture, waste management, forestry and land use change, as priority areas for intended national mitigation action.

NDC reports submitted by developing countries in 2020-2021 regularly include listings of specific project proposals,

including unconditional and conditional commitments on climate mitigation and adaptation. Climate action is increasingly being conceived as an integral part of sustainable development planning.

This emerging trend is very encouraging. However, in relative terms the smaller developing countries contribute only very limited amounts to global GHG emissions. It will require greater commitments on the part of the developed countries to see a real change in trends for the better.

Contributions of the private sector and non-governmental organizations to synergistic climate and SDG development action

Most NDC reports primarily reflect government and public sector programmes, and thus may not always include all private sector investments, or climate actions initiated and implemented by non-governmental organizations. For example, the SELCO Foundation in Bangalore, India, is responsible for a number of local and national initiatives and projects. The work of the foundation is focused on providing decentralized sustainable energy and water solutions to improve productivity in agricultural production and animal husbandry, and to improve energy and water supply for rural clinics and other services.¹³ SELCO provides important contributions towards achieving the SDGs in rural India without increases in GHG emissions, but its work might not be included in the national NDC report. Similarly, the work of other private and non-governmental actors needs to be fully recognized, in India as in all other countries.

Non-governmental organizations also play an important role in capacity building and training activities, as well as in advocacy work and public awareness creation. Prominent examples of relevant projects were presented by representatives of the Climate and Development Knowledge Network (CDKN) and the Sustain-Plus Company, based in India.¹⁴

National Adaptation Plans: Growing urgency and projected rising costs

Countries are increasingly aware of the options and the

¹³ Watch recorded presentation of representative of SELCO Foundation at Webinar 1. A detailed listing of SELCO activities is also included in the Foundation's Annual Reports: <http://www.selcofoundation.org/wp-content/uploads/2020/05/SF-Annual-Report-18-19-3.pdf>

¹⁴ Watch presentations by speakers in Webinar 3

urgency of climate adaptation measures. Updated and new NDCs, including those from Kenya, Nepal, and the Dominican Republic, already include more references to new policies, initiatives and projects on adaptation. Some countries have more recently undertaken assessments of climate change risks (also reported as “Loss and Damages”) and drawn up National or (sub)national Climate Change Adaptation Plans.

Box 4: Comprehensive national climate change adaptation plans as part of Kenya’s updated NDC

The Government of Kenya submitted its updated NDC Report on 24 December 2020. As Kenya’s rural economy is highly dependent on agriculture, the Government has been placing particular emphasis on achieving greater climate resilience. Kenya’s national climate change adaptation programme includes the following priorities: (i) mainstreaming climate smart agriculture towards increased productivity; (ii) more sustainable management of land, soil, water and other natural resources for greater resilience of crops, livestock, and fisheries systems; (iii) expanded insurance and safety nets, and extension services; (iv) rehabilitation and conservation of degraded forests; (v) increased commercial private forest plantations, and (vi) greening of public lands along major infrastructure such as roads, railway lines, and dams. Furthermore, the adaptation programme includes upgrades of the energy, transport, water supply, and sanitation infrastructure. Tourism establishments and private industries are encouraged to undertake the necessary vulnerability assessments and investments on their own. The programme also includes significant measures dedicated to and involving selected vulnerable social groups, including women, youth, and (sub)regional rural communities. In Kenya, the adaptation component is very significant, accounting for 71 % of the entire NDC budget (estimated at 43.9 billion US\$ over the 10-year period 2021-2030). With the NDC update, Kenya has also increased its own financial commitment from zero to 13.2 % of the projected cost.

UNFCCC NDC Registry: <https://www4.unfccc.int/sites/ndcstaging/Pages/LatestSubmissions.aspx>

As adaptation plans are designed to reduce potential losses and damages due to climate change, they also support resilience and sustainable development. Many countries and regions are already constrained by insufficient water

supplies, and therefore hedging against the increasing risks of water shortages is a priority in many climate change adaptation plans. Relevant adaptation measures include strengthening early warning systems, making new infrastructure more resilient, improving dryland agriculture and crop production, protecting mangroves, and making water resources management more resilient.

However, most adaptation plans or programmes would require very significant investments, which are often beyond the budgetary means available in developing countries.

The Global Commission on Adaptation (GCA) was initiated by the former United Nations Secretary-General Ban Ki Moon and the Government of the Netherlands in 2018.¹⁵ In early 2021, GCA had 17 co-convening countries and 28 commissioners representing various governmental departments, concerned local authorities, private sector corporations, and international organizations.

In 2019, the Global Commission on Adaptation and the World Resources Institute (WRI) issued ‘Adapt Now: A Global Call for Leadership on Climate Resilience’.¹⁶ This report emphasizes the global economics of climate adaptation, which may have high costs, but will avoid future losses and damages, and can generate long-term co-benefits that exceed the initial costs by a factor of 4, if not higher.

The (virtual) ‘Climate Adaptation Summit 2021’, hosted by the Government of the Netherlands, January 25 and 26, 2021, underlined the urgency, the options, and the (co) benefits of adaptation measures, both large and small.¹⁷

Gender mainstreaming and inclusion of social groups, including youth, indigenous people and minorities in NDC planning and implementation

SDG 5 calls for greater efforts to achieve gender equality and empower all women and girls. While climate change threatens livelihoods and security for everyone, women and girls, particularly those who are living in poverty, often

¹⁵ For additional information: <https://bankimooncentre.org/tag/global-commission-on-adaptation>

¹⁶ Global Commission on Adaptation (2019): Global Report and Call for Action: https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf

¹⁷ See complete proceedings of Climate Adaptation Summit 2021: <https://www.cas2021.com/>

face higher risks and greater burdens from climate change. Participation of women in the formulation and implementation of Nationally Determined Contributions is critical. Women's experiences and opinions need to be solicited to ensure the effectiveness and inclusivity of measures to change energy-intensive forms of consumption, reduce emissions, mitigate climate change, facilitate adaptation, and the reduce risks of adverse impacts from climate change.

In 2020, UN Women published a 'Guide on Gender, Climate, and Security: Sustaining inclusive peace on the frontlines of climate change'.¹⁸ Women need equal opportunities to participate in needs assessments and in the prioritization of initiatives for climate action implementation. Women also need to be given equal rights, e.g., in terms of access to land titles, loans, and business opportunities, in order to more fully participate in climate and sustainable development action. Women can be important as agents of change. However, in some cases, education is a limiting factor. Although some women are highly educated, there are many others those who are in need of additional support and equal opportunities for learning. For all women (and men), quality education should include environmental education, including on climate change.

In recent years, several countries have shown good progress in SDG-related policy making and gender mainstreaming. However, some countries have national policies and strategies on climate change, and also have national policies on gender equality, but these policies may lack horizontal or vertical linkages across sectors and institutions. Gender mainstreaming is important, but just one dimension of social inclusion. Youth and indigenous people also need to be engaged in the formulation of integrated NDC concepts. Several developing countries, including Nepal, emphasized the participation of younger people and academic institutions in NDC-related preparatory research. Other developing countries and their NDCs included local employment and entrepreneurship development focused on youth. In the example of Costa Rica, also showcased in 5 below, the NDC concept focused on forest and biodiversity protection efforts largely involving women and indigenous people. NDC planning and implementation can greatly advance, and benefit from, social inclusion.

18 UN Women (2020): Gender, climate, and security: Sustaining inclusive peace on the frontlines of climate change
<https://www.unwomen.org/en/digital-library/publications/2020/06/gender-climate-and-security>



4

PART 3:

The 'what' question: What barriers need to be overcome to realize synergies

Despite the progress made in many countries on creating synergies in design of policy and programmes with co-benefits across Agenda 2030 and the Paris Agreement, many countries continue to face barriers to implementation of joint action. This section provides insight on some of the main challenges of realizing climate and SDG synergies in practice as highlighted by experts during the webinar series, including issues on finance, capacity building, and access to data, technology, and innovation.

I. Financing the climate and SDG synergies

Climate finance refers to local, national or transnational financing, which can be drawn from public, private and alternative sources. Climate finance is needed for mitigation, because large-scale investments are required to significantly reduce emissions. Climate finance is equally important for adaptation, as substantial resources are needed to reduce and adapt to the adverse effects of a changing climate.

Domestic policy measures and national and local climate finance

In most developing countries, public funding is the main source of finance for public sector projects, including projects aimed at climate mitigation and adaptation, whereas the private sector finances its own investments, which may or may not address climate issues. Consolidated reporting on national (domestic) climate finance is

important but typically not easily available. Therefore, the Climate Policy Initiative (CPI), a private non-governmental think tank organization that publishes annual reports on global climate finance¹, also advocates building a national landscape of climate finance.²

The CPI Initiative is already working with a growing number of developing country partners, including Brazil, China, India, Indonesia, Kenya, and South Africa, on development of their respective national climate finance concepts and reports. These countries, and others, have initiated, designed and implemented a variety of fiscal interventions that seek to protect the climate and advance SDGs at the same time.

Effective financial measures can include fiscal disincentives to discourage wasteful energy, water, or other resource consumption, as well as regulatory and financial incentives to encourage climate protection or adaptation measures and investments. As an example, reduction and phasing out fossil fuel subsidies and re-prioritization of domestic resources can generate financial resources for financing national and local programmes with climate and SDGs co-benefits. Innovative financial instruments, such as ecosystem services payment programmes, have also been developed in a number of countries.

¹ Climate Policy Initiative (CPI): <https://www.climatepolicyinitiative.org/>

² Climate Policy Initiative (CPI): <https://www.climatepolicyinitiative.org/publication/guidelines-for-building-a-national-landscape-of-climate-finance/>

Box 5: Domestic climate financing in Costa Rica: Levies on fossil fuels generating domestic funding for environment services programmes

Ecosystem services payment programmes can offer useful financial mechanisms to achieve synergies and advance environmental goals, including SDG 15 and climate protection. These programmes reward the provision of ecosystem services and compensate farmers and rural communities foregoing other potential income opportunities.

Starting in the 1990s, Costa Rica has successfully established a forest and biodiversity conservation programme, financed in part by levies on fossil fuels, and supported by the World Bank. In order to reduce deforestation and advance forest conservation, Costa Rica's National Forest Finance Fund (FONAFIFO) pioneered a comprehensive Environmental Services Payment Programme (ESPP). This programme, together with the National Conservation Areas System (SINAC) and 1996 Forestry Law No. 7575, enabled the country to increase its forest coverage to more than 50%, thereby also significantly increasing the country's carbon dioxide sequestration.

The ESPP programme has also recognized the important roles of women, and indigenous communities, in (re) afforestation and forest protection efforts. It has been shown that lack of access to legal land titles impedes the full participation of indigenous people and women in the ESPP programme. In cooperation with the World Bank, measures have been taken to address and solve these issues.³ Through the ESPP, Costa Rica has greatly advanced the social inclusion on women and indigenous people, and at the same time increased environmental, forest, and biodiversity protection.

Information on the ESPP can be obtained from Costa Rica's first NDC report and from the websites of Costa Rica's Ministry of Environment and Energy (www.minaret.go.cr) or FONAFIFO (www.fonafifo.go.cr).⁴ Costa Rica's Environmental Services Payment Programme has been widely recognized and was awarded the UNFCCC Global

Climate Action Award 2020.⁵ Countries may consider launching similar programmes tailored to their own situations, and reporting on them in their future NDC report updates.

International climate finance: More efforts are needed to match to Paris financial goal

The Paris Agreement calls for financial assistance from Parties with more financial resources to assist those that are less endowed and more vulnerable. In accordance with Article 9, paragraph 3 of the Paris Agreement "...developed countries ... shall set a new collective quantified goal from a floor of US\$100 billion per year, taking into account the needs and priorities of developing countries". This recognizes that the contributions of countries to climate change vary enormously, along with their capacities to prevent or cope with it.

Financial Mechanisms under the UNFCCC Convention include the Global Environment Facility (since 1994), the Green Climate Fund (since 2011), and several other separate funding windows, such as the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), and the Adaptation Fund. The UNFCCC offers a publicly accessible Climate Finance Data Portal (<https://unfccc.int/climatefinance?home>). Financial flows from Annex II Parties to non-Annex I Parties of the Convention are reported in biennial UNFCCC reports.

Since the adoption of the 2015 Paris Agreement, global mobilization of financial resources for the protection of the climate has increased significantly. According to data collected and analyzed by the CPI, aggregate global climate finance from all sources and in all countries rose annually by about 25% (US\$116 billion) from 2015/2016, reaching US\$579 billion, on annual average, in 2017/2018. For 2019, CPI's initial estimates suggest this trend will continue, with a further increase to between US\$608 and 622 billion.

The analysis of global climate finance suggests two main conclusions:

First, in spite of the increases, overall global investment in climate-related infrastructure and projects has remained far below of what is needed to achieve a 1.5 °C scenario.

³ For relevant background information please see: <https://www.worldbank.org/en/news/feature/2020/10/07/for-costa-rica-the-future-of-for-ests-hangs-in-the-gender-balance>

⁴ Watch presentation by Hector Arce Benavides, Director at FONAFIFO, Costa Rica (Webinar 3)

⁵ UNFCCC www.globalclimateactionawards2020.org

Estimates of the investment levels required to achieve a global low-carbon transition range from US\$1.6 trillion to US\$3.8 trillion annually between 2016 and 2050, for supply-side energy system investments alone (IPCC 2018). In addition, the Global Commission on Adaptation (GCA 2019) estimates the investments required to meet global adaptation needs to be about US\$180 billion annually from 2020 to 2030.⁶

Second, most climate finance – 76% of the total tracked by CPI – is still invested in the same country in which it is sourced. Hence, in spite of the reported increases in climate finance between 2015 and 2019, the main financial goal of the Paris Agreement – collective mobilization from developed countries of US\$100 billion per year for the benefit of developing countries – has not as yet materialized.⁷ As has been repeatedly emphasized by the UN Secretary-General, much greater international solidarity and financial cooperation is needed, and urgently, if greater progress is to be achieved on global climate mitigation and adaptation in the developing world.

Leveraging private sector financing

Studies by the Climate Policy Initiative have shown the importance of private sector investment financing, in particular in renewable energy development. The increases in climate finance reported above reflect financing and projects across nearly all types of investors, including within the private sector.⁸ In the 2017-2018 period, private finance accounted for 56% of total climate finance, with 85% of that amount for renewable energy, 14% for low-carbon transport, and under 1% for all other subsectors.

Advancing the climate and SDG agenda in a synergistic and integrated manner requires greater active participation and investment by the private sector. Therefore, it is critical to create an enabling environment to ensure that conditions for doing businesses in the climate-related fields are sufficiently attractive to established and potential investors from home and abroad. In many countries,

⁶ Climate Policy Initiative (CPI): Global Landscape of Climate Finance 2019 <https://www.climatepolicyinitiative.org/wp-content/uploads/2019/11/2019-Global-Landscape-of-Climate-Finance.pdf>

⁷ See also Williams, M., (2019): The State of Play of Climate Finance – UNFCCC Funds and the \$100 Billion Question, South Centre Climate Policy Brief, No. 21, December 2019: https://www.southcentre.int/wp-content/uploads/2019/12/CPB21_The-State-of-Play-of-Climate-Finance-UNFCCC-Funds-and-the-100-Billion-Question_EN-1.pdf

⁸ See presentation of Baysa Naran of CPI on the topic of Global Climate Finance at Webinar 3

socially and environmentally motivated entrepreneurship is growing rapidly and contributing innovative solutions to advance local and national sustainable development.

Possibilities for increased private sector engagement need to be explored more vigorously. It is essential to further intensify the technical and political dialogue with all leading national and international oil, gas, and electricity companies, so as to maintain trust, to mobilize greater investments in new areas, including climate-relevant service sectors beyond renewable energy, and to create a platform for just transitions to new solutions.⁹ Private Energy Service Companies (ESCOs) are also important actors that can advance energy efficiency investments in industries, businesses, and homes.

II. Capacity development for enabling the climate and SDGs synergies

International cooperation in knowledge sharing and capacity building for climate and SDGs

At Webinar 3, experts from the Climate and Development Knowledge Network (CDKN), which is based in Cape Town, South Africa, and the Sustain-Plus Initiative, from Pune, India, shared their experience and insights on organizing knowledge management and capacity building on climate and SDGs.

For CDKN, local co-ownership, co-creation, and co-production are important pre-conditions for a successful local or national capacity development campaign. CDKN relies on local champions and South-South or South-South-North cooperation to ensure full participation and trust on the part the participating beneficiaries. For CDKN, delivering capacity building in a collaborative and participatory way is at least as important for success as the quality of the content.

During many years of practical, local advisory services and development cooperation, Sustain-Plus gained valuable experience in the design and management of rural development projects in India, including on decentralized rural water and renewable energy supply systems, and

⁹ Information on present levels of investments of multinational oil companies in renewable energy can be found in: <https://www.nsenergybusiness.com/features/oil-companies-renewable-energy/>

basic health services. Sustain-Plus emphasizes locally integrated solutions that bring together relevant local stakeholders, and initiatives that advance multiple SDG objectives, such as protecting the local environment and the global climate at the same time. Sustain-Plus interacts with the local authorities, mobilizes locally available technical experts, assists in identifying possible sources of project finance, and supports the coordination of the local collaborative efforts for better livelihoods. CDKN and Sustain-Plus will be available to share further information and their expertise upon request.¹⁰

The NDC Partnership

The NDC Partnership facilitates professional knowledge sharing and networking among experts and government representatives of more than 100 countries. Experts and policy decision makers who are new to the climate and SDG policy making can find guidance and advice at no cost from expert sources among the Partnership.

The NDC Partnership was formed in 2017. It is co-chaired by representatives of the Governments of Jamaica and the United Kingdom and is guided by a Steering Committee comprised of representatives of developing and developed countries and international institutions. The partnership's Secretariat Unit is co-hosted by the World Resources Institute (WRI) and UNFCCC.¹¹

Support for climate and SDG capacity building by the United Nations

Some sources of advice on climate-SDG synergies provided by UN organizations and associated partners are listed here below:¹²

UNFCCC: In 2020, a series of virtual training sessions were launched under the auspices of UNFCCC to help developing countries prepare and submit updated and new NDCs. The virtual training is designed to facilitate clarity, transparency and understanding of NDCs. The aim is to make application of the Katowice Climate Package easier and better understood among policy makers engaged in

¹⁰ Please see presentations of representatives of CDKN and Sustain-Plus during Webinar 3.

¹¹ https://ndcpartnership.org/sites/default/files/NDCP_Brochure_Online.pdf

¹² A complete online database on implementation of the SGSs by the UN System is administered by DESA: <https://sustainabledevelopment.un.org/content/unsurvey/index.html>

national NDC reporting. The training can also serve as a platform to facilitate exchanges of lessons learned and experiences from different countries.¹³

The *United Nations Development Programme (UNDP)* assists developing countries, upon request, with capacity development activities and projects to strengthen national development planning, including climate and SDG policies. UNDP also periodically publishes handbooks and guidelines for national policy makers.

The *United Nations Environment Programme (UNEP)* offers a variety of technical training and capacity development courses related to climate and SDG policy options. Detailed information on upcoming programmes can be obtained from the UNEP website.¹⁴

The *Food and Agricultural Organization (FAO)* of the United Nations supports developing countries in the formulation and implementation of agricultural policies and programmes intended to increase food production, improve food security, and raise agricultural incomes, and to also reduce climate damage and other environmental impacts in horticulture, animal husbandry, forestry, and fisheries.¹⁵

The *Human Settlements Programme of the United Nations (UN-Habitat)* offers various training courses to advance managerial skills on local participatory policy and decision making, to help advance the climate and SDG agenda at the local level.

The *World Health Organization (WHO)* plays a particularly important role in supporting member countries as they confront the COVID-19 pandemic. WHO also draws international attention to the likely adverse impacts of climate change on public health, and offers advisory services and capacity building to strengthen health services in all related areas.¹⁶

The *World Bank Group*, in cooperation with the Ministry

¹³ UNFCCC Press Release: <https://unfccc.int/news/virtual-training-on-ndc-preparation-launched>

¹⁴ UNEP Technical training and capacity development related to climate change and SDGs: <https://www.unenvironment.org/explore-topics/disasters-conflicts/what-we-do/risk-reduction/extractive-resources-and-fragile-2>

¹⁵ FAO (2019): FAO's work on climate change www.fao.org/3/ca7126en/CA7126EN.pdf

¹⁶ World Health Organization (WHO), 2019: Healthy environments for healthier population: Why do they matter, and what can we do? <https://www.who.int/publications/i/item/WHO-CED-PHE-DO-19.01>

of Economy and Finance of the Republic of Korea, has established an online Climate Change Knowledge Platform, including coursework on Climate Finance: Innovative Approaches in Supporting Climate Action (<https://olc.worldbank.org/content/climate-change-knowledge-portal>).

The *United Nations Institute for Training and Research (UNITAR)* and its Climate Change Programme (CCP) are involved in building and developing capacity at country and regional levels to deal with the impacts of climate change, both on adaptation and mitigation. For detailed information and the current catalogue of training activities please refer to the UNITAR website.¹⁷

In a joint initiative, UN DESA, UNFCCC, and UNITAR will be launching an online curriculum and capacity development programme, which will include materials from the recent webinars, and guide interested participants through self-learning exercises providing a systematic assessment of climate and SDG synergies. The programme will support participants in the formulation and review of climate and SDG policies and projects.¹⁸

III. Data, technology, and innovation

Access to data to enable monitoring, tracking and reporting

Rational integrated policy decision making requires reliable, current, and sufficiently detailed data to assess challenges, monitor progress, and ensure accountability in implementation. Addressing gender, poverty, and other issues of social inclusion can greatly benefit from relevant disaggregated data – where they are available. Informed decision making on advancing climate and SDG synergies also needs to be based on adequate data, modelling, and analysis of projections. However, many organizations and businesses are obliged to, or prefer to, treat their data as confidential. Hence, some of the available data may not be accessible, even for legitimate research purposes.

The United Nations and its Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) developed a

¹⁷ <https://www.unitar.org/event/full-catalog/climate-change-diplomacy>

¹⁸ See video of Webinar 3 for further information

global framework of 231 SDG indicators and is assisting members states with SDG data collection and analysis. Considerable progress has been made in recent years in compiling relevant data sets at local, regional, national, and international levels. However, many developing countries are still facing great challenges, as data collection can be costly and may require considerable training and expertise. Developed countries have a marked advantage over developing countries because, in general, they have robust institutions that collect, interpret and manage the aggregated and disaggregated data that are indispensable for effective use of modelling tools and for assessing future scenarios.

The digital divide exposed by the pandemic

Processes for integrated decision making increasingly rely on access to information and communications technology. In recent years, digital services have expanded rapidly, but very significant gaps remain. According to reports of the International Telecommunication Union, internet penetration is, on average, 87% in the developed world, but just 47% in developing countries, and only 19% in least developed countries.¹⁹ In all countries, it is mostly poor and underprivileged people who remain excluded. Achievement of the SDGs, including climate action, requires measures to address the digital divide.

Innovation for climate protection in developing countries

In many developing countries, local entrepreneurs and businesses have realized that the growing climate challenge can be turned into a development and business opportunity. There are many products needed to advance a 'greener' economy that are already being manufactured in developing countries. However, investments in new technologies require considerable financial resources and can involve substantial business risks.

In several developing countries, programmes have been launched to support green technology entrepreneurs. With some international support provided by the World Bank Group under its Climate Technology Programme²⁰, the

¹⁹ International Telecommunication Union (ITU) 2019 data, and ITU Facts and Figures 2020: Measuring digital development <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf>

²⁰ World Bank Group: <https://sustainabledevelopment.un.org/content/documents/171964InnoPolicy.pdf>

Kenya Climate Innovations Center (KCIC)²¹ was established in 2012 to provide assistance to new businesses. KCIC offers incubation, capacity building and financing options to new small and medium business ventures, supporting Kenyan entrepreneurs who are developing innovations to address the challenges of climate change. KCIC provides holistic and country-driven support to accelerate the development, deployment and transfer of locally relevant climate technologies. Where needed, other developing countries may consider establishing similar support structures and services with a view to advance integrated climate and SDG solutions.

²¹ For additional background information, please see: <https://www.kenyacic.org/>



5

KEY MESSAGES:

Synergies of integrated climate and SDG policies

Overcoming poverty is urgent. Mitigating climate change is urgent. Increasing resilience and adaptation to already unavoidable climate change is urgent. And overcoming the pandemic also requires immediate action. Global challenges are enormous and growing by the day. At the same time, natural, financial and human resources are limited, and therefore need to be used in the most cost-effective, efficient, equitable, and sustainable ways possible.

The 'why' question: Making the case for integrated climate and SDG action

Synergistic policy making and integrated solutions are needed to address the global challenges

It is critical to recognize that climate change, SDGs, and 'building back better' from the global pandemic are interconnected challenges. Failure in addressing one process could undermine the success of the other. At the same time, addressing one goal effectively can make progress on the others easier. Given the limited resources available, harnessing synergies is not an option, it is a must.

A nexus approach enabled by facts and a clear narrative based on evidence

There is a growing body of empirical evidence showcased by a number of global and national institutions demonstrating that climate action can deliver tangible social, environmental and economic benefits. A clear

narrative and supporting evidence should guide the international, national, and local policy dialogue towards greater harnessing of climate-SDG synergies. The Global Commission on the Economy and Climate is one of the think tanks emphasizing and illustrating the benefits of synergistic policy making.

Getting the whole government onboard

The traditional 'silo' approach to development taken by many countries in the past can be counterproductive. Institutional coordination requires cross-sectoral synergy by coordinating policies and programmes across ministries to ensure that a country's existing development strategies, plans, or roadmaps align with the SDGs and also advance climate action. Coordination with sub-national governments and local authorities is equally important.

Leading the way, ensuring a just transition, and leaving no one behind

Climate and SDG policy and decision making should be based on inclusive, fair, and transparent multi stakeholder participation that engages representatives of all concerned groups. Inclusive policies should consider the concerns of urban and rural populations, women and men, young and old, indigenous people and migrants, and differing social, ethnic, religious, and cultural groups. Wherever possible, decisions should be based on win-win solutions.

Rational policies and decision making require foresight

Due to the pandemic, GHG emissions fell temporarily in some countries in 2020. However, most observers expect

that global emissions will rise again significantly, as soon as travel and other restrictions ease. Therefore, programmes aimed at stimulating economic recovery should seek to support the growth of a 'green economy', rather than perpetuation of the 'gray economy'. Achieving the SDGs, economic recovery, and climate ambitions should go hand in hand, as one cannot be achieved without the others.

The "how" question: How to maximize opportunities and navigate trade-offs

A nexus approach to identifying tailor-made climate and SDG solutions

Each country will have to decide on its own which sustainable development policies are the most suitable, and which national or local measures should be implemented with priority. Countries may choose to focus their analysis of policy options on certain interlinked issues, or 'nexus clusters', such as: the agriculture, food and climate nexus; the energy, water and climate nexus; the air pollution, health, and climate nexus; the urban development, transport, construction, and climate nexus; the sustainable consumption, production, waste and climate nexus; and the forestry, desertification, biodiversity, and climate nexus.

Potential synergies and solutions with distinct co-benefits

Climate smart agriculture shifts towards more sustainable diets, and reductions in food waste together offer opportunities to increase productivity and incomes from agriculture, reduce hunger, and improve food security at lower levels of GHG emissions.

Greater use of renewable sources of energy, and integrated water and energy planning, can help to expand water, energy, and sanitation services and also decarbonize the economy at the same time.

Many measures that are aimed at reducing air pollution and protecting public health will have positive co-benefits in terms of GHG emission mitigation.

To be sustainable and climate friendly, cities should support vibrant and inclusive local economies, creative and efficient industries and services, attractive city centres and recreational zones, quality local transport systems, and more energy efficient buildings.

Measures that advance a circular economy – through reduced energy intensity, greater reuse and recycling of materials, and better waste management – will also contribute greatly to advancing a low-carbon economy.

Protection of forests, (re)afforestation, rehabilitation of degraded lands, measures to halt and roll back desertification, and protection of biodiversity are all measures that can enhance permanent or temporary forms of natural carbon storage, thereby contributing to climate change mitigation. Many traditional and modern scientific nature-based solutions are available that can sustain more productive livelihoods in rural areas.

Tools for assessing synergies and co-benefits of integrated policies and action

A considerable variety of tools are available to facilitate decision making, enable qualitative assessments of potential synergies and trade-offs, or undertake detailed quantitative modelling for intermediate or long-term projections. Countries will need to decide on which tools may serve them best.

Developing country efforts and experiences with integration of SDGs and climate action

Developing countries are increasingly using integrated planning and synergistic strategies in their preparation of updated NDC reports. Recent submissions suggest a distinct trend towards increasing levels of ambition in 2020-2021. Private sector companies and non-governmental organizations in developing countries are also being recognized as making greater contributions to implementing integrated climate-SDG solutions. Country reports are highlighting efforts and progress in advancing social inclusion, and the importance of adaptation measures is increasingly recognized in the new round of NDC reports.

The "What" question: What barriers need to be overcome to realize synergies

Unlocking barriers to implementation is key to maximizing synergies

Despite the progress made in many countries on creating synergies in the design of policy and programmes with co-benefits for Agenda 2030 and the Paris Agreement, many countries continue to face barriers to harnessing climate-SDG synergies. In addition, it appears that the pandemic is placing added financial burdens on least developed and

low-income developing countries.

International climate finance has been growing significantly but continues to fall short of the Paris Goals

Climate finance has greatly increased during the period 2015-2019, and more funding is being made available from all sources. However, global investment in climate-related infrastructure and projects has remained far below of what is needed under a 1.5 °C scenario. The Global Commission on Adaptation estimates that the investments required to meet global adaptation need to be about US\$180 billion annually from 2020 to 2030.

International climate finance flows to developing countries have risen but remain much below expectations

Global climate finance has increased during recent years, but more than three-quarters of all resources are invested in the same country in which they are sourced. In spite of the reported increases in climate finance between 2015 and 2019, the Paris Agreement goal of a collective mobilization of developed countries of US\$100 billion per year for developing countries has not yet materialized.

Leveraging private sector financing

The private sector already plays an important role in mobilizing climate finance, but could increase its contribution, in particular with additional investments in renewable energy, sustainable transport, and more energy-efficient buildings. .

Capacity building support for implementing climate-SDG policies and action

Continued capacity building is needed on climate and SDGs, and on NDC formulation. Support is available from non-governmental organizations and peer exchanges, and from the United Nations, and its related agencies, funds, and programmes.



Annex 1

Concept Note for the Webinars

Five years after the adoption of the Paris Agreement and the 2030 Agenda for sustainable development, 2020 was meant to be a turning point for climate action and the SDGs. While the COVID-19 Pandemic has upended societies, causing significant disruption worldwide, the climate and SDG emergency continues apace.

Extreme poverty is projected to increase for the first time in 20 years, as the most vulnerable bear the brunt of the Pandemic's impacts. Greenhouse gas concentrations in the atmosphere are at record levels and continue to increase, putting the world on a dangerous path of rising temperatures, well above the level necessary to prevent the worst impacts of climate change.

Covid-19 shows us the importance of inclusive, sustainable, and resilient societies. No country can achieve this goal without swift and integrated climate and SDG action. As countries seek to rebound, recovery plans present an unrepresented opportunity to raise ambitions to leave no one behind and achieve net-zero carbon emissions by mid-century. Climate and SDG goals are best achieved in synch, with deliberately reinforcing policy synergies (or multipliers). Investment in social protection, energy and food systems; public services and infrastructure, for example, can be shaped to maximize environmental, economic and social co-benefits. A mounting body of evidence shows that lowcarbon and climate resilient growth can deliver long-term social and economic co-benefits. Synergies can also boost the public benefits of investment, attracting additional resources.

Many low and medium-income countries responded to the pandemic with able and effective public health responses. They can continue to lead the way with recovery strategies that enable more resilient, sustainable, inclusive and prosperous economies.

In the wake of the UN Climate Ambition Summit on 12 December, UNDESA, UNFCCC and UNITAR are launching this learning series to share the science, evidence and tools that enable climate and SDG synergies. The series will build on the 2019 Climate and SDG Synergies Conference and 2020 Virtual Consultations, going into more depth to facilitate the application of synergies in practice. The series' three webinars will respond to the questions: why, what and how. The first will equip stakeholders 2 to make the case for synergies; the second will zero-in on tools used to identify and harness climate & SDG interlinkages; and the third will focus on strategies to overcome implementation challenges.

Webinar 1: Making the Case for Integrated Climate and SDG Action

Date: Tuesday, 15 Dec 2020

Webinar 1 will provide participants with tools and evidence they can use to advocate for climate & SDG synergies in their local context. Speakers will illustrate how synergies can be tapped to meet needs now, while laying the ground for more resilient, just and prosperous economies. They will introduce ways to demonstrate the potential of tying climate action to job growth and poverty reduction;

human health; financing; food security; and resilience.

Guiding Questions:

- How can SDG & Climate synergies be applied to generate jobs and sustain livelihoods? How are these benefits directed to the most vulnerable and poorest?
- What financial gains or benefits can be realized by applying SDG & Climate synergies?
- What links human health to climate action and other SDGs? What examples best illustrate?
- With increased food insecurity, how do we make the case for climate & SDG synergies in agriculture and related sectors?

Webinar 2: How to Maximize Climate & SDG Synergies? Identifying Opportunities and Navigating Trade-offs

Date: Tuesday, 19 Jan 2021

Webinar 2 will introduce the tools and methods that can help decision-makers identify climate & SDG synergies with the most potential in their locality or country. Trainers will offer lessons learned for local and national planning and introduce decision-making tools that can help planners navigate trade-offs and prioritize opportunities to realize climate & SDG co-benefits.

Guiding Questions:

- What policy areas hold the most promise to maximize SDG and climate synergies?
- What tools can help stakeholders understand how social, environmental and economic policies and/or targets will interact in practice?
- What methods are used to identify the actions & collaborations most likely to advance multiple targets?
- How can stakeholders minimize or avoid trade-offs between objectives?
- How does integrated SDG and climate planning work in practice?

Webinar 3: Overcoming Constraints to Implement Climate & SDG Synergies: capacity, financing and monitoring

Date: Tuesday, 2 Feb 2021

Webinar 3 will focus on the re-occurring challenges of realizing climate & SDG synergies in practice. Trainers will speak to the implications of integrated Climate & SDG action for national capacity,

financing and monitoring. They will offer tools, resources and advice to help participants address each implementation challenge. Participants will be asked to share relevant examples and make forward-looking suggestions.

Guiding Questions:

- What capacity or institutional constraints prevent countries or localities from integrating climate and SDG action? What strategies have been effective to overcome capacity gaps?
- What does integrated climate & SDG action mean for financing? In light of the Pandemic, how can countries and localities identify financing for integrated climate and SDG action?
- How can the synergies be monitored for transparency & accountability? What steps are countries taking to capture the impacts of policy multipliers, including across sectors?

Key Resource Material

UNDESA & UNFCCC 2020 Virtual Consultations on Climate & SDG Synergies, Background Note:
https://sustainabledevelopment.un.org/content/documents/26236Concept_Note_2020_Global_Climate_SDGs_Synergies_Consultations.pdf

UN Climate and SDGs Synergies Knowledge Platform
<https://sustainabledevelopment.un.org/climate-sdgssynergies2019#home>

UN Global Sustainable Development Report 2019, "The Future is Now: Science for Achieving Sustainable Development" https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf

Report of the First Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development, 1-3 April 2019, Copenhagen, Denmark
https://sustainabledevelopment.un.org/content/documents/25256WEB_version.pdf

Stockholm Environment Institute (SEI), SDG Synergies Website and planning tool,
<https://www.sdgssynergies.org/>

"Green recovery plans boost income, employment and GDP", Report of the We Mean Business Coalition, Oct2020
<https://www.wemeanbusinesscoalition>



Annex 2

Programmes of the Webinars

Webinar 1: Making the Case for Integrated Climate and SDGs Action

Tuesday, 15 December 2020

Opening by Moderator Paul T. Yillia, Director of Operations, The Energy Nexus Network (TENN)

Illustrating the Potential of Climate & SDG Co-Benefits

Jobs, Poverty Reduction and Finance:

- Leonardo Garrido, Lead Economist, New Climate Economy Presentation
- Mandy Rambharos, Head of Just Energy Transition, Eskom

Human Health, Food Security and Resilience:

- Huda Jaffer, Director, SELCO-Foundation
- Diarmid Campbell-Lendrum, Coordinator climate change and health program, World Health Organization (WHO) Presentation
- Deissy Martinez Baron, Regional Program Leader for Latin America of the CGIAR Research Program on Climate Change, Agriculture and Food Security Presentation

Webinar 2: How to Maximize Climate and SDG Synergies? Identifying Opportunities and Navigating Trade-offs

Tuesday, 19 January 2021

Opening by Moderator Dhesigen Naidoo, PhD., CEO, Water Research Commission, South Africa

- Illustrating potential policy areas for climate/SDG co-benefits and the relevance of supporting tools and methods

Tools and methods that help decision-makers identify and act on climate/SDGs synergies:

- Mr. Jason Veysey, Senior Scientist, SEI - U.S. Centre - LEAP Model (SEI Integrated Climate and Development Planning Initiative) Presentation
- Mr. Piotr Magnuszewski, Ph.D, Research Scholar, Centre for Systems Solutions/ IIASA - Nexus/SDGs Synergies Game Presentation
- Ms. Sofia Gonzales-Zuñiga, Lead Author, SCAN-tool Methodology, New Climate Institute Presentation

Lessons and practices from national NDC processes and planning with climate/SDGs synergies:

- Ms. Anne Nyatichi Omambia, Ph.D, Climate Change Coordinator, NEMA - Kenya NDC process
- Mr. Manjeet Dhakal, Head of LDC Support Team, Climate

Analytics - Nepal NDC process Presentation

- Ms. Sara Gonzalez, Head of International Relations, National Council for Climate Change and CDM Presentation

Webinar 3: Overcoming Constraints to Implement Climate and SDG Synergies: capacity, financing and monitoring

Tuesday, 2 February 2021

Opening by Moderator Prof Mark Swilling, Co-Director, Stellenbosch Centre for Complex Systems in Transition, Stellenbosch University, South Africa

Speakers:

- Baysa Naran, Senior Analyst, Climate Policy Initiative - Overview of the global climate finance landscape and opportunities for climate/SDG synergies. Presentation
- Héctor Arce Benavides, Ing., Director, National REDD+ Strategy, Costa Rica National Forestry Finance Fund (FONAFIFO) - Payments for ecosystem services (synergies between Forests & climate action). Presentation
- Shehnaz Moosa, PhD., Director, Climate Development & Knowledge Network - Capacity building challenges and opportunities for climate/SDG synergies in the Global South. Presentation
- Surabhi Rajagopal, Senior Program Manager, SustainPlus Energy Foundation - Climate/SDG synergies: Overcoming challenges on means of implementation.

Closing of webinar series and next steps:

- Bahareh Seyedi, Senior Sustainable Development Officer, UNDESA Presentation
- Marco Suazo, Head of New York Office, UNITAR



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