



EXAMINING THE ALIGNMENT BETWEEN THE INTENDED NATIONALLY DETERMINED CONTRIBUTIONS AND SUSTAINABLE DEVELOPMENT GOALS

ELIZA NORTHROP, HANA BIRU, SYLVIA LIMA, MATHILDE BOUYE, AND RANPING SONG

EXECUTIVE SUMMARY

The year 2015 was a significant turning point for both the sustainable development and climate agendas. Two major international processes were concluded: the adoption of the Sustainable Development Goals (SDGs) by the United Nations General Assembly (UNGA) as part of the 2030 Agenda for Sustainable Development, and the adoption of a new international climate agreement, the Paris Agreement, under the United Nations Framework Convention on Climate Change (UNFCCC).

The challenge now becomes one of implementation. The Paris Agreement is underpinned by 162¹ intended nationally determined contributions (INDCs)* that reflect the national climate policies and actions of 189 countries. At the same time, the SDGs, which encompass 17 goals and 169 targets, need to be translated into national and subnational plans. This creates an unprecedented moment to pursue implementation of these two agendas in a way that can generate significant mutual benefits and move beyond the view that these agendas are somehow distinct or different avenues to achieving the transformational goals they share.

This working paper explores the extent to which the two agendas are aligned in a concrete way by identifying examples of climate actions in the INDCs that have the potential to generate mutual benefits with the SDGs.

* Note that once countries formally join the Paris Agreement, their “INDCs” will be considered “NDCs” for the purpose of the Paris Agreement. Because we examined the INDCs before they became NDCs, this paper uses “INDC” throughout.

CONTENTS

Executive Summary.....	1
Introduction.....	9
1. The Process of Mapping the INDCs to the SDGs ...	11
2. Alignment between the INDCs and SDGs.....	13
3. Alignment between Individual INDCs and the SDGs .	40
4. Conclusion.....	45
Annex I: Global-Level Mapping of the INDCs to the SDGs.....	47
Annex II: Mapping of Colombia’s INDC to the SDGs...	47
Annex III: Mapping of Uganda’s INDC to the SDGs	47
Endnotes	53

Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues. Working papers may eventually be published in another form and their content may be revised.

Suggested Citation: Northrop, E., H. Biru, S. Lima, M. Bouye, and R. Song. 2016. “Examining the Alignment Between the Intended Nationally Determined Contributions and Sustainable Development Goals.” Working Paper. Washington, DC: World Resources Institute.

Examples of climate targets, goals, policies and measures (collectively referred to as climate actions) were drawn from across the INDCs and compared to the 169 targets underpinning the 17 SDGs. Across the INDCs examined, we found climate actions that were aligned with **154 of the 169 SDG targets**. The results are summarized in Figure ES-1.

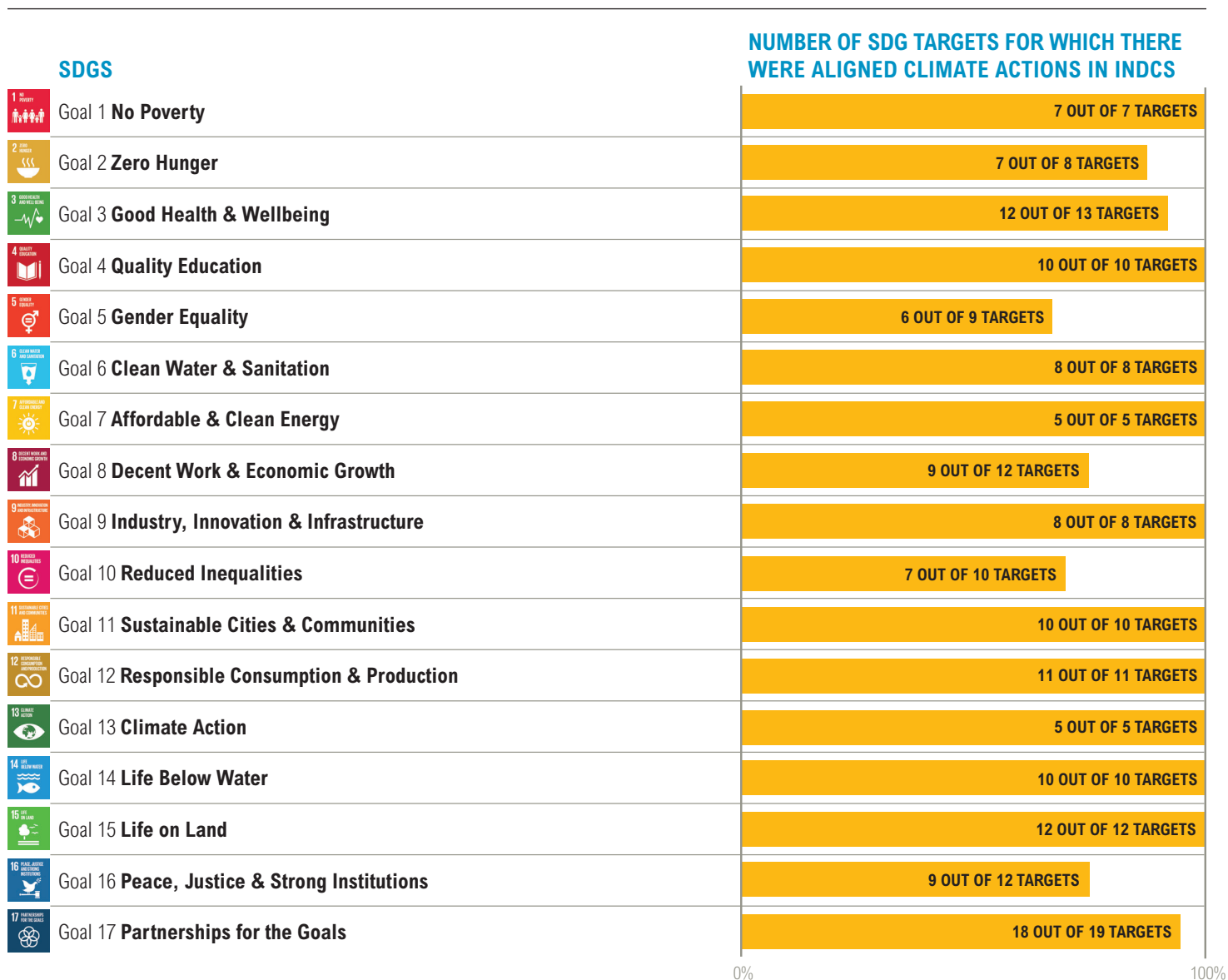
This convergence should not be surprising. Indeed, although the 2030 Agenda for Sustainable Development (henceforth the 2030 Agenda) and Paris Agreement were negotiated under separate international processes and forums, the sustainable development and climate agendas are deeply intertwined. Climate impacts have the potential to slow, and perhaps even reverse, progress on the SDGs. Well-designed sustainable development policies and actions deliver on both reduction of greenhouse gas (GHG) emissions and enhanced resilience to climate impacts, while climate policies and measures for both mitigation and adaptation can advance development objectives.

A deeper and more comprehensive understanding of the effective linkages between these two agendas will contribute to unlocking further ambition and enable movement beyond incremental, short-term measures to an approach that addresses the underlying barriers to a zero-carbon, climate-resilient future. Furthermore, this is a necessary precondition to cost-effective decision making, given that investments will often be fully realized and maintained over a longer-term horizon only if climate impacts are effectively taken into account and decision making incorporates perspectives across sectors and levels of government. Greater coherence between these agendas, fostered through an understanding of the potential mutual benefits and tradeoffs, will enable constituencies to maximize scarce international and domestic resources.

Realizing the long-term goals of the Paris Agreement and objectives of the 2030 Agenda for Sustainable Development requires that business-as-usual approaches be transcended. If 2015 was the year of reaching consensus and setting ambitious, forward-looking goals, then 2016 is the time to start the process of putting these goals into action through aligned and mutually supportive implementation strategies.

This paper aims to lay the foundation for that integrated approach by demonstrating the degree of alignment that already exists between INDCs and the SDG targets. The next steps will require joined-up implementation in countries, bringing together institutions and consciously aligning planning and budgetary processes to decisively shape future development trajectories in ways that maximize scarce resources, catalyze information sharing and technology development, enhance capacities, and evolve new skills, thereby delivering mutually beneficial and reinforcing outcomes.

Figure ES-1 | Analyzing the Degree of Alignment between the SDGs and INDCs



Alignment between the INDCs and SDGs

The extent of alignment between the climate and sustainable development agendas, as demonstrated in this paper, highlights the significant opportunities for national and subnational governments as well as other key stakeholders to approach implementation in an integrated and synergistic manner.

Despite the benefits of strong alignment between these agendas, very few countries actually referred to the SDGs or their predecessors, the Millennium Development Goals (MDGs), or to their own national development objectives






and priorities, when communicating their climate actions in their INDCs. Rather, the alignment becomes evident when comparing the climate actions communicated in INDCs to the SDG targets. Therefore, many of the potential mutual benefits and co-benefits highlighted in this paper may not yet be recognized or explicitly integrated into implementation strategies at the national level. This is understandable given that many countries developed their INDCs in a very short timeframe and ahead of the adoption of the SDGs. Responsibility for the development of the INDCs also often rested with national policymakers other than those involved with negotiation of the SDGs.

To realize the full extent of potential benefits from joined-up implementation of the two agendas, countries will often need to undertake a systematic process to identify the potential mutual benefits and co-benefits at the national and sector levels prior to developing their plans for implementation based on their development priorities. This process could also present an opportunity to review and enhance the ambition, clarity, and transparency of the INDCs based on a more comprehensive understanding of alignment between the two agendas.





Illustrative examples of the types of climate actions in the INDCs that have the potential to generate mutual benefits with the targets for each of the 17 SDG goals are contained in Table ES-1 below. More detail on each SDG target and corresponding examples from INDCs are presented in Section 2 of the paper.

For the purposes of this paper, the term “mutual benefits” is used to capture instances where the implementation of an SDG target would result in a “climate benefit,”² where the implementation of a climate action would result in a “development benefit,”³ or where implementation of both would be mutually reinforcing.⁴

Table ES-1 | **Examples of Alignment between SDG Goals and Climate Actions in the INDCs**

SUSTAINABLE DEVELOPMENT GOALS	EXAMPLES OF CLIMATE ACTIONS IDENTIFIED IN THE INDCS
 <p>Goal 1: End poverty in all its forms everywhere</p>	<ul style="list-style-type: none"> Reduce poverty through the creation of job opportunities and alternative livelihoods based on sustainable forest management aimed at reducing emissions (Zambia) Protect development gains and improve well-being through enhancing adaptive capacity of communities (Bangladesh)
 <p>Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p>	<ul style="list-style-type: none"> Adopt community-based agriculture resilience building in climate-vulnerable landscapes (Ghana) Scale up penetration of climate-smart technologies to increase livestock and fisheries productivity (Ghana) Diversify climate-resistant agricultural practices through conservation of native species (Mexico)
 <p>Goal 3: Ensure healthy lives and promote well-being for all at all ages</p>	<ul style="list-style-type: none"> Raise awareness of climate-related diseases in order to increase adaptive capacities of vulnerable communities (Sudan) Develop health surveillance, early warning systems, systematic climate risk assessment and effective disease prevention and response measures to address climate change-related health consequences (Thailand) Improve traffic safety through shifting transport modes from road to rail, including underground metro systems and bus rapid transit systems in urban areas (Bangladesh)
 <p>Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	<ul style="list-style-type: none"> Increase vocational and engineering skills to build and maintain climate-friendly technologies (Afghanistan) Expand educational programs for the rural population to improve basic literacy rates and increase the dissemination of technologies for climate-smart agriculture and sustainable land management (Niger) Enhance education for all citizens on a low-carbon way of life (China)
 <p>Goal 5: Achieve gender equality and empower all women and girls</p>	<ul style="list-style-type: none"> Explicitly recognize the role of women as agents of change in the transformation towards a low-carbon and resilient society (Mexico) Include gender perspective as a cross-cutting issue in national development models, recognizing that climate change will disproportionately impact particularly vulnerable groups (Peru) Recognize the need to develop gender-neutral policies and measures that bring social inclusion, improve livelihood security, increase resilience, and reduce emissions (Nigeria)

SUSTAINABLE DEVELOPMENT GOALS	EXAMPLES OF CLIMATE ACTIONS IDENTIFIED IN THE INDCS
 <p>6 CLEAN WATER AND SANITATION</p> <p>Goal 6: Ensure availability and sustainable management of water and sanitation for all</p>	<ul style="list-style-type: none"> • Expand adaptation measures involving sewerage systems and wastewater treatment to reach 100% of urban areas (Morocco) • Promote programs to sustain access to improved water supply sources, despite increasing water scarcity due to climate change (Jordan) • Expand state-protected areas covering river headwater areas, where 70% of water resources are formed, to ensure proper use of water resources, and to strengthen integrated water resource management in river basins that enhance adaptive capacity (Mongolia)
 <p>7 AFFORDABLE AND CLEAN ENERGY</p> <p>Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<ul style="list-style-type: none"> • Promote economic development and sustainable rural livelihoods through increased access to modern forms of efficient and sustainable energy services (Afghanistan) • Set targets and policies for increased renewable energy capacity (India) • Construct enabling infrastructure for electricity sector development, including power lines, substations and transmission facilities to meet increased renewable energy generation capacity (Uganda)
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p> <p>Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<ul style="list-style-type: none"> • Achieve inclusive and sustainable economic growth through the integration of climate and economic growth strategies aimed at reducing emissions (Ethiopia) • Promote sustainable tourism strategies that aim to diversify the economy and reduce dependence on hydrocarbon resources (Qatar) • Support clean tech entrepreneurs in developing business plans and accessing finance and markets to enhance their contribution to combating climate change (India)
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> <p>Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<ul style="list-style-type: none"> • Rehabilitate existing road infrastructure to promote resilience taking into account climate change impacts (Peru) • Reduce emissions in the cement industry by upgrading the processing technology (Mongolia) • Eliminate outdated production capacity and promote service industry and strategic emerging industries (China)
 <p>10 REDUCED INEQUALITIES</p> <p>Goal 10: Reduce inequality within and among countries</p>	<ul style="list-style-type: none"> • Foster greater inclusivity and benefit sharing through enhanced engagement with youth, vulnerable communities, and on the basis of gender (Sri Lanka) • Implement a decentralized program to promote interregional socioeconomic equality (Chad) • Recognize the need to empower groups most at risk from the short- and long-term impacts of climate change (Myanmar)
 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> <p>Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable</p>	<ul style="list-style-type: none"> • Expand sustainable transport system (Thailand) • Apply land-use regulations to relocate human settlements from disaster-prone zones (Mexico) • Accelerate the construction of low-carbon communities in both urban and rural areas, promoting green buildings and the application of renewable energy in buildings (China)
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>Goal 12: Ensure sustainable consumption and production patterns</p>	<ul style="list-style-type: none"> • Enhance education for all citizens focusing on a low-carbon and reduced-consumption way of life (China) • Increase access to services for post-harvest treatment and storage of food crops to reduce food loss and waste (Rwanda) • Promote mitigation actions that increase the decomposition of organic waste and capture gases from landfills and power generation to reduce waste and emissions (Bangladesh)
 <p>13 CLIMATE ACTION</p> <p>Goal 13: Take urgent action to combat climate change and its impacts</p>	<ul style="list-style-type: none"> • Expand national adaptation planning processes (Sudan) • Improve early warning systems and adaptive capacity of national agencies through multi-hazard risk assessments, systematic observations, integrative research and the development of relevant databases, models and technologies (Thailand) • Enhance participation of women and youth in activities related to adaptation and environmental conservation in order to empower them and enhance their adaptive capacity, including through the establishment of a rural women's development program (Sudan)

SUSTAINABLE DEVELOPMENT GOALS	EXAMPLES OF CLIMATE ACTIONS IDENTIFIED IN THE INDCS
 <p>Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<ul style="list-style-type: none"> • Promote adaptation programs to address dumping of waste and oil spills and promote sustainable use of marine resources (Somalia) • Enhance artisanal fisheries and encourage sustainable aquaculture as adaptation options for fishing communities (Nigeria)
 <p>Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>	<ul style="list-style-type: none"> • Increase efforts to sustainably manage forests and ecosystems (Suriname) • Halt deforestation and degradation of indigenous forests (Burkina Faso) • Safeguard biodiversity and restore ecological integrity in protected areas and important landscapes from the adverse impacts of climate change, with the emphasis on vulnerable ecosystems and red list species (Thailand)
 <p>Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</p>	<ul style="list-style-type: none"> • Plan adaptation measures that aim to rationally use ecosystem services with a potential to “facilitate the consolidation of peace territories,” particularly in rural communities (Colombia) • Combat all forms of corruption, apply required restructuring measures and enforce relevant legislative frameworks (Egypt) • Strengthen populations’ adaptive capacity through transparent and inclusive mechanisms of social participation designed with a gender and human rights-aware approach (Mexico)
 <p>Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>	<ul style="list-style-type: none"> • Use international cooperation to build an equitable global climate governance regime that is cooperative and beneficial to all (Brazil) • Use bilateral agreements to exchange debt for nature conservation and for adaptation to climate change in vulnerable areas (Guatemala)

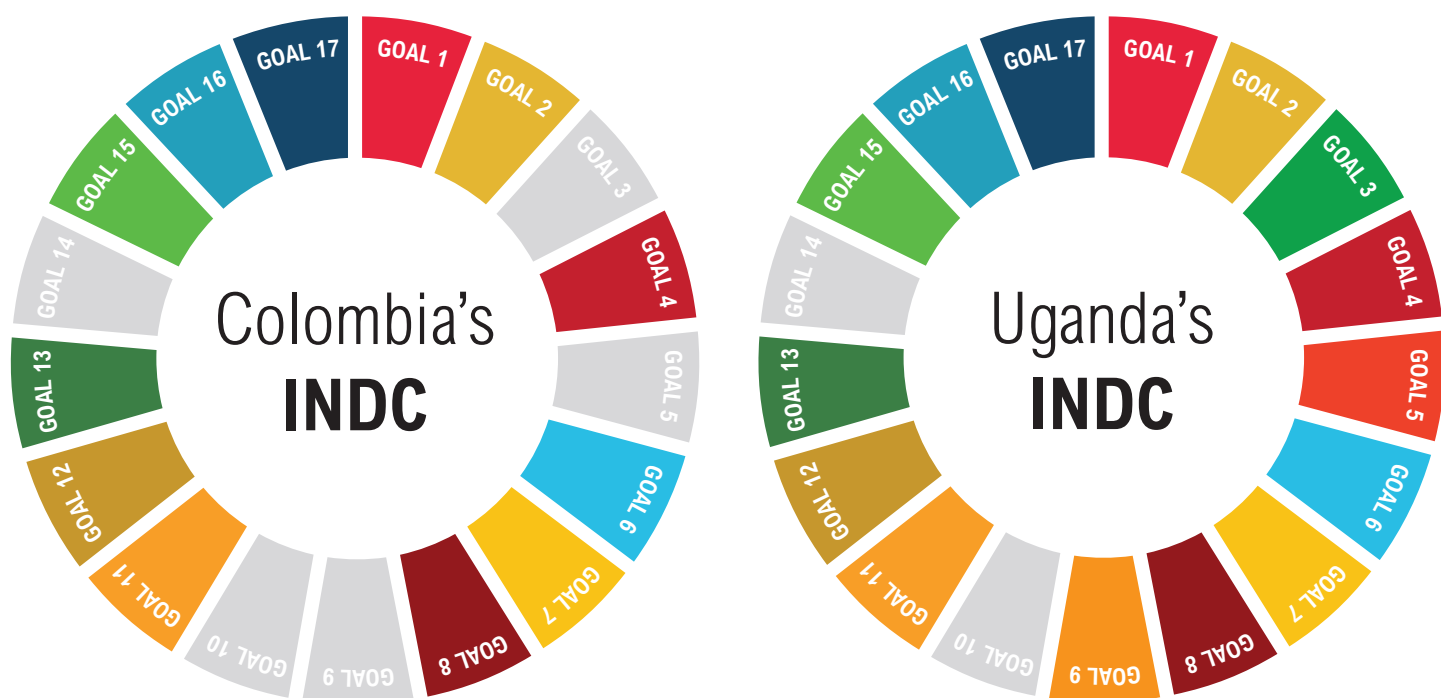
Exploring alignment for individual countries

To complement the global-level analysis undertaken across a wide range of INDCs, this paper also examines the extent of alignment between SDGs and INDCs at the individual country level. We assessed the climate actions communicated by Colombia and Uganda in their individual INDCs against the 169 SDG targets. Uganda and Colombia were selected for this analysis because both countries were front-runners in completing the domestic process of “localizing”⁵ the SDG goals and targets in their national development plans and strategies prior to finalizing their INDCs. Both countries’ INDCs revealed a high degree of alignment with the SDGs. As shown in Figure ES-2, each country’s INDC included climate actions that were aligned with targets under 12 of the goals. In the case of Colombia, climate actions in its INDC were aligned with 40 of the SDG targets and, in Uganda’s INDC, with 56 of the SDG targets.

Given the breadth of the SDG targets and the necessary prioritization undertaken at the national level, the degree of alignment across the full set of SDG targets was not as comprehensive for Colombia and Uganda as it was for the wider set of INDCs globally, as shown in Figures 3 and 4 (see Section 3.2). The points of intersection were greatest for those SDGs that reflected the country’s national priorities and key economic sectors. This underscores the importance of individual countries undertaking a similar analysis to ensure that actions and investments are prioritized effectively and domestic budgets and capacities maximized.

Undertaking such an analysis of the alignment between climate actions communicated in INDCs and the SDGs at the national level could be a useful exercise for all countries in order to identify opportunities for aligned and integrated implementation. This analysis could

Figure ES-2 | Alignment between the INDCs of Colombia and Uganda and the SDGs



Note: Colored segments in Figure ES-2 highlight those SDGs where at least one aligned climate action was identified in Colombia and Uganda's individual INDCs.

also serve to identify which actions provide the greatest mutual benefits and are most cost-effective over the long term, and where limited national and international funding could be directed to produce the greatest outcome for both agendas.

Any recognition of the potential to generate mutual benefits through integrating climate and development responses must also include an awareness of potential trade-offs, not only between the climate and development agendas, but also within each respective agenda. Actions taken to advance some of the SDG targets could involve opportunity costs for efforts to pursue other SDGs. While mitigation and adaptation actions often involve substantial mutual benefits such as forest protection or sustainable buildings, more research must be directed at this question to assist national governments in analyzing the intersections among relevant policies and measures.

Looking forward

Recognizing the extent of alignment that exists between the two agendas is a first step in understanding the benefits of approaching national and subnational implementation in an integrated and mutually reinforcing manner. New approaches must be developed to mobilize and efficiently distribute resources for successful implementation. A key component will be the extent to which national policies and processes for these agendas can work in tandem to facilitate the sharing of information, expertise, and priorities. Additional research is needed to identify the key building blocks for integrated national, sectoral, and subnational implementation of the SDGs and INDCs.

Whole-of-government approaches will be decisive. The SDGs could be a powerful tool for encouraging engagement of finance ministries as well as line ministries in INDC implementation, and vice versa. At the same time, there is a need to achieve greater coherence both horizontally, across government, and vertically, from the national to the

local level. Examples of best practices and lessons need to be identified and the enabling conditions necessary to facilitate such integration must be leveraged. Taking a “whole-of-society” approach and identifying opportunities to engage a wide range of stakeholders—including local entrepreneurs, community lenders, unions, and civil society—is also vital in order to ensure that the policy development and implementation process is inclusive, transparent, and participatory.

Recognizing the limited international and national finance available for implementation of both agendas and the synergies identified in this paper, pursuing methods that align climate finance and finance for sustainable development should be a priority. National and international public resources need to be utilized effectively, and investments must be redirected toward supporting inclusive, sustainable growth that serves both agendas and reaches the most vulnerable populations.

Finally, monitoring, review, and accountability will play a key role in both agendas. For the Paris Agreement, such reporting will be mandatory for all countries, whereas at the High Level Political Forum for the SDGs, countries will submit voluntary national reviews. Identifying

opportunities to leverage existing processes while maximizing transparency and knowledge sharing about countries’ experiences and best practices should be a priority in the coming years as these reporting processes are fleshed out.

This paper shows that the critical question should no longer be *whether* the climate and sustainable development agendas can be mutually supportive, but rather *how* the potential mutual benefits can be maximized. Countries will need additional support to implement both agendas in a manner that fosters coherence, promotes coordination, and maximizes outcomes. Although there is much work still to be done and lessons to be learned from early implementation, the results of the analysis undertaken in this paper demonstrate the clear potential for the climate and sustainable development agendas to succeed in tandem.

INTRODUCTION

The year 2015 represented a global turning point. World leaders agreed upon unprecedented universal objectives to shift all economies and societies toward sustainable and zero-carbon development.⁶ Both the 2030 Agenda for Sustainable Development adopted in New York on September 25th by all 193 UN member states, and the Paris Agreement adopted at the twenty-first session of the Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris on December 12th, set global goals to urgently advance this transition while it is still possible.

2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) reflect a new global consensus on the major imbalances generated by existing economic and environmental trajectories, such as growing inequalities, climate change, and biodiversity loss, and on the need to rapidly achieve sustainable development by reconciling economic, social, and environmental concerns. This shared vision was built over an unprecedentedly inclusive three-year process that mobilized several million people globally through national, thematic, and on-line consultations in all countries.⁷

In their political declaration accompanying the SDGs, member states underlined progress achieved under the Millennium Development Goals (MDGs) by 2015, but acknowledged that systemic transformations are required to address root causes of development challenges and leave no-one behind. For the first time in history, all countries agreed they could and should eradicate extreme poverty and hunger within 15 years in the context of sustainable development. The 17 SDGs are supported by 169 targets that identify key drivers of sustainable development.⁸ These targets aim to transform economies and societies by making economic growth more inclusive and equitable; achieving decent work for all; decoupling growth from environmental degradation; and accelerating the transition to low-carbon, climate-resilient development pathways.

The 2030 Agenda emphasizes that the well-being of many societies, and the biological support systems of the planet, are at risk because of the impacts of climate change.⁹ In addition to a goal dedicated to taking urgent action to combat climate change and its

impacts (SDG 13), climate action and resilience are integrated throughout the SDGs as core components of this systemic transformation.¹⁰ Although only 11 targets explicitly address climate-related mitigation, adaptation, and resilience efforts, 27 targets specifically rely on climate action, such as those under SDG 12 (responsible consumption and production) aimed at building a new zero-carbon economy based on sustainable, inclusive, and resilient production and consumption systems; sustainable infrastructure; and natural resource management.¹¹

The relevant targets for climate action include sustainable agriculture (SDG 2), sustainable energy (SDG 7), decoupling growth from environmental degradation (SDG 8), sustainable infrastructures (SDG 9), cities (SDG 11), sustainable consumption and production patterns, involving natural resources management, waste generation, inefficient fossil-fuel subsidies, awareness for sustainable development and lifestyles (SDG 12), deforestation (SDG 15), and diffusion of environmentally sound technologies (SDG 17). Targets relevant to building resilience and adapting to the impacts of climate change are also found across the SDGs, including those addressing vulnerability to climate-related extreme events (SDG 1), agriculture adaptation (SDG 2), ending tropical, water-borne, and other communicable diseases (SDG 3), water-use efficiency and water scarcity (SDG 6), resilient infrastructures (SDG 9), cities adaptation and resilience (SDG 11), ecosystems resilience (SDG 14), and desertification and land degradation (SDG 15).¹²

Paris Agreement

In the lead up to COP21, and adoption of the Paris Agreement, all countries were asked to submit national climate plans, known as intended nationally determined contributions (INDCs).¹³ This process represented a bottom-up approach, enabling each country to determine the type and scope of its national contribution in accordance with national circumstances. The result was unprecedented, with 162 INDCs communicated to date, representing the actions of 189 countries, and covering 98.8 percent of global emissions.¹⁴ In addition to communicating mitigation actions, such as GHG and non-GHG targets or specific policies and measures, CAIT states 142 countries included an adaptation component in their INDCs, providing information on national adaptation efforts and identifying gaps, needs, and further opportunities to increase resilience to climate impacts.

Because they are rooted in national policies and laws, the examples of climate targets, goals, policies, and measures (collectively referred to as climate actions) in INDCs presented in this paper are likely to prove a major driver for zero-emission and climate-resilient development under the Paris Agreement. The Paris Agreement establishes the requirement that all countries progressively increase the ambition of their climate actions communicated in their INDCs every five years. This process of regular revision of national climate actions presents opportunities to achieve sustainable development, spur green growth and jobs, promote new sources of exports, and drive innovation.¹⁵

The role of climate in supporting sustainable development is also reflected in the Paris Agreement itself. The preamble emphasizes the central importance of climate change actions, responses, and impacts for equitable access to sustainable development and eradication of poverty. The Agreement also recognizes the fundamental priority of safeguarding food security, ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change. It also takes into account the imperative of ensuring a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.¹⁶

Alignment between the Agendas

The concept of universality underpins both the SDGs and INDCs. Both processes promote the participation of all countries regardless of their level of development or their share of global GHG emissions. This presents unprecedented opportunities for global coordination to identify pathways for integrated implementation on the ground.

However, despite increased understanding of the interdependence of both agendas on the part of governments and policymakers, and efforts taken by negotiators to ensure alignment between the climate and sustainable development agendas, the Paris Agreement and 2030 Agenda for Sustainable Development were each negotiated and adopted through separate international processes and forums. The negotiations for the Paris Agreement, as well as responsibility for the implementation of the NDCs, have largely fallen under the purview of environment ministries. The SDGs, however, were negotiated predominantly by foreign affairs ministries, and development, planning, or economic ministries have most often been designated to coordinate their implementation. Environment ministries have been responsible for both agendas in only a few countries.

The planning processes for the two agendas have also, for the most part, been distinct. The INDCs were nationally defined before the adoption of the Paris Agreement and will now require full implementation by countries, including through integration of relevant policies and actions into national development plans. By contrast, the SDG targets were initially the result of an international policy process and negotiations; they now need to be translated into the national context by each country. This “localization process” in each country will involve decisions on prioritization among targets, and then implementation.

The differences in the origins and institutional oversight of the two agendas creates the risk that implementation will occur in “silos” at the national level. Moreover, in some cases, clarity is lacking about how the INDC targets were arrived at and the domestic actions needed to achieve them. Continuing with a business-as-usual approach, without sufficient coordination and integration, could lead to duplication of effort and exacerbate competition for scarce international and domestic resources, making it harder to address long-term systemic issues.

Instead, what is needed is a whole-of-government approach to both agendas that ensures policies are implemented effectively, efficiently, and coherently. As national implementers face the challenge of translating the SDG targets into their national policies while simultaneously implementing the climate actions in their INDCs, they will need to understand where the synergies and potential tradeoffs between the two agendas lie and how best to achieve mutually beneficial outcomes with limited financial resources. A deeper and more comprehensive understanding of the potential to generate mutual benefits during implementation of these two agendas can also provide the foundation for unlocking further ambition, and moving beyond incremental, short-term approaches to an approach that comprehensively addresses the underlying barriers to a zero-carbon, climate-resilient future.

Furthermore, a comprehensive understanding of the points of intersection between these two agendas is a necessary pre-condition to cost-effective decision making. Investments by both national governments and the international community will often be fully realized and maintained over a longer-term horizon only if multi-sectoral and multi-level perspectives are incorporated in decision making.

This paper focuses on exploring the extent to which the two agendas are aligned in a concrete way by identifying examples of climate actions in the INDCs that have the potential to generate mutual benefits with the SDG targets. For the purposes of this paper, the term “mutual benefits” is used to capture instances where the implementation of an SDG target would result in a “climate benefit,”¹⁷ where the implementation of a climate target, action, or measure would result in a “development benefit,”¹⁸ or where implementation of both would be mutually reinforcing.¹⁹

Section 1 of this paper outlines the methodology followed and explores the types of benefits captured in our analysis. Section 2 presents the analysis undertaken at the global level, across all 162 INDCs communicated and the 169 targets of the SDGs, and Section 3 identifies the points of convergence between the individual INDCs of Colombia and Uganda and the 169 targets of the SDGs. Section 4 discusses key observations along with the challenges and opportunities facing national and subnational governments as they turn to implementation. Lastly, future research questions are proposed to ensure that national implementers have the tools and guidance they need to develop a practical roadmap for an integrated implementation agenda.

1. THE PROCESS OF MAPPING THE INDCS TO THE SDGS

1.1 Methodology

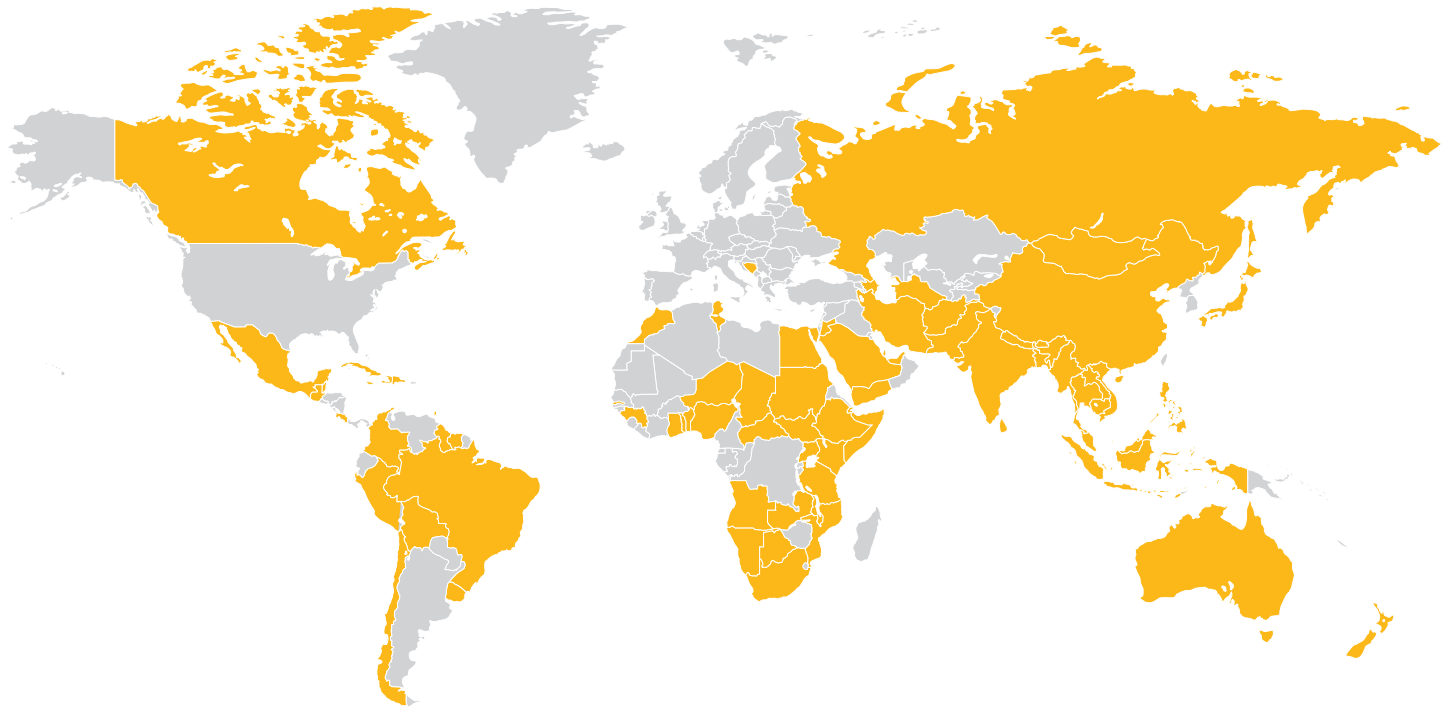
To understand the degree of alignment between the climate actions communicated by countries in their INDCs and the 17 goals and 169 targets of the 2030 Agenda for Sustainable Development, illustrative examples were identified in 92 INDCs, as shown in Figure 1.

Examples of climate actions were selected based on key word searches (for example “extreme poverty” or “education”)²⁰ and relevance to specific SDG targets (for example, countries with large coastlines were initially reviewed to identify alignment with targets relating to oceans and coasts). Given the universal nature of both the INDCs and the SDGs, efforts were made to draw examples from countries of all development levels, including developed, middle-income, and least developed countries.

For some SDG targets, only a limited number of INDCs reflected an alignment, but for other targets, the alignment was widespread across a large number of countries’ INDCs with relevant climate policies, measures, and actions. At times, the alignment with the SDGs was explicitly mentioned in the INDCs, though in many instances the alignment we identified was based on our assessment of the overlaps between the SDGs and the policies, measures, and actions communicated in the INDCs.

The aim of this analysis was to highlight examples across a broad range of INDCs, not to exhaustively analyze each INDC. For an illustration of the extent of alignment between an individual country’s INDC and the SDG goals and targets, see Section 3, which looks specifically at Uganda and Colombia. Uganda and Colombia were chosen because both countries had already integrated the SDGs into their national development plans at the time of developing their INDCs.

Figure 1 | **Distribution of Study Countries**



Note: Examples of climate actions were drawn from the INDCs of the 92 countries identified in Figure 1.

The majority of examples are drawn from INDCs communicated by developing countries. Of the 162 INDCs communicated, 147 are from developing countries. In large part, this is due to the fact that there are fewer overall submissions from developed countries—the 28 current member states²¹ of the European Union are covered by one INDC, for example. Another factor is that developing countries tend to include more information on specific policies and measures in their INDCs, whereas developed countries tend to communicate single economy-wide GHG emissions targets. This does not mean that the integration of climate and sustainable development responses in developing countries has greater potential to generate mutual benefits than in developed countries. It does, however, mean that examples were easier to identify in those INDCs that addressed adaptation in addition to mitigation, and contained more detail on the policies and measures to be undertaken.

The examples of alignment highlighted in Section 2 of this paper are intended to be illustrative only. For the complete results of our analysis, please refer to Annex I.

1.2 The Nature of the Alignment

Just as the INDCs are highly variable in scope, content, and structure, so too are the types of climate actions identified in them. Countries communicated quantified climate targets (e.g., 40 percent of cumulative electric power installed capacity to be supplied from nonfossil fuel-based energy resources by 2030), specific climate policies and measures (e.g., developing and implementing climate change-compatible building and construction codes), gaps and constraints (e.g., basic literacy and numeracy required to enhance adaptive capacity), and objectives for implementation (e.g., recognition of the role of women in decision making).

Although diverse, each of these approaches has the potential to generate mutual benefits or co-benefits with the SDG goals and targets and is therefore captured in the analysis in this paper. Identifying the alignment between the individual INDCs and the SDG targets was easiest when the climate actions were specific, timebound, and measurable.

We considered alignment as involving three potential types of benefits that could be derived from linkages between the INDCs and SDG targets during implementation:

1. **Mutual sustainable development and climate benefits.** Specific SDG targets and climate actions that result in mutual benefits or synergies upon implementation (e.g., a climate target that creates carbon sinks through additional forest and tree cover by 2030 directly aligns with SDG target 15.2 which seeks to “promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.”) The implementation of these targets will directly contribute to the achievement of both the 2030 Agenda for Sustainable Development and the Paris Agreement.
2. **Sustainable development co-benefits from climate action.** Implementation of many of the climate actions would also contribute to the achievement of specific SDG targets (e.g., climate measures aimed at raising the awareness of communities in vulnerable areas to climate change-related diseases in order to increase their adaptive capacities would help the achievement of SDG target 3.3 to “end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases” by 2030).
3. **Climate co-benefits from sustainable development action.** Implementation of many of the SDG targets would enhance the ability of countries to achieve the climate actions set out in the INDC (e.g., SDG target 7.a urges countries to “enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.”) Such actions would lead to the reduction of GHG emissions.

2. ALIGNMENT BETWEEN THE INDCS AND SDGS

This section examines the degree of alignment between the two agendas by identifying points of convergence between the climate actions communicated in the INDCs and the 169 targets set out in the SDGs. Each of these points of convergence has the potential to generate either mutual benefits or co-benefits. For the complete list of illustrative examples for all 169 SDG targets identified in the global survey of INDCs, see Annex I. This mapping exercise can serve as an example for national policymakers undertaking similar exercises to identify specific areas of convergence based on their country’s distinct national circumstances.

2.1 Goal 1: End Poverty in All its Forms Everywhere

Despite progress made under the MDGs, more than 800 million people still live on less than 1.25 dollars per day; many of them lack access to adequate food, drinking water and sanitation, health, education and energy.²² The five targets supporting the achievement of SDG 1 focus on eradicating extreme poverty for all people; reducing at least by half the proportion of men, women, and children of all ages living in poverty; implementing nationally appropriate social protection systems; building the resilience of the poor; and providing access to economic resources and basic services for all by 2030.

Climate change hits the poorest people the hardest.²³ The 800 million²⁴ people who live in areas that are already vulnerable have the fewest resources to help them adapt or recover quickly from shocks.²⁵ The impacts of climate change are felt in changing water availability, loss of biodiversity and delivery of ecosystem services, declining or volatile agricultural yields, climate-related humanitarian disasters (including floods and droughts), increased incidence and prevalence of vector-borne diseases, weakened infrastructure, and political instability due to heightened conflict over resources and displacement of people.^{26,27}


These impacts jeopardize the chances of those already suffering from extreme poverty to escape from it, and create the potential for those recently out of poverty to fall back into it. This is particularly true for women, who account for the majority of the poor in the world and whose vulnerability is aggravated by social, economic, cultural, and political factors. Especially in rural areas, women still play a crucial role in providing and managing

families' means of subsistence (water, food, fuel, energy, and medicinal plants) and are therefore often the first to feel the impacts of climate change.²⁸

Reducing GHG emissions as much and as quickly as possible is therefore crucial to avoid the worst climate-related impacts and alleviate the pressure that a changing climate puts on those who are most vulnerable. Given that, the mitigation efforts put forward by countries in their INDCs are aligned with the achievement of SDG 1. For example, Zambia's INDC specifically identifies rural poverty reduction, particularly for women and youth, as co-benefits of implementing its sustainable forest management and sustainable agriculture programs, which are intended to help achieve the country's national mitigation goal of reducing emissions by 38,000 GgCO₂ eq (38 MtCO₂eq) by 2030.²⁹

Adaptation policies and actions reflected in countries' INDCs will also be essential to achieving the SDG 1 targets. For instance, in Bangladesh's INDC, the stated primary goal of adaptation is "to protect and enhance the adaptive capacity of its people and their livelihood options."³⁰ This objective is also reflected in Bangladesh's Climate Change Strategy and Action Plan, a key policy framework for INDC implementation. The action plan aims to build the country's capacity and resilience to meet the challenge of climate change and explicitly prioritizes meeting the needs of the poor and vulnerable for food security, safe housing, employment, and access to basic services, including health.³¹

Table 1 | **Examples of Climate Actions that Align with SDG 1**

 SDG 1: End poverty in all its forms everywhere	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	Eradicate extreme poverty "Eradicate extreme poverty by 2025, according to impact, among others, of the generation and energy coverage, including growth, distribution and redistribution of energy income" and (in relation to forests and agriculture) "reducing extreme poverty to zero in the population dependent on forests by 2030, based on approximately 350 thousand people by 2010." (Bolivia, National efforts 2015-2030: In relation to energy) ³²
Target 1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Reduce rural poverty "Creation of job opportunities and alternative livelihoods contributing to rural poverty reduction" and "Rural poverty reduction particularly among women and the youth." (Zambia, Co-benefits of sustainable forest management programme and sustainable agriculture programme) ³³
Target 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Provide access to resources "At national level line ministries developed climate change related policies such as the Agricultural Revival Program (ARP) of 2008–2011 and the five year economic reform programme 2015–2019. The Forest Policy, (2006) supports climate resilient livelihoods via encouraging income diversification, facilitating microfinance and providing access to land. (Ministry of Agriculture and Irrigation, 2012)" (Sudan, Planning process) ³⁴
Target 1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Build resilience "[...]extreme temperatures, erratic rainfall, floods, drought, tropical cyclones, rising sea levels, tidal surges, salinity intrusion and ocean acidification are causing serious negative impacts on the lives and livelihoods of millions of people in Bangladesh, and are gradually offsetting the remarkable socio-economic development gained over the past 30 years, as well as jeopardising future economic growth. [...] The primary goal for adaptation is to protect the population, enhance their adaptive capacity and livelihood options, and to protect the overall development of the country in its stride for economic progress and wellbeing of the people." (Bangladesh, Adaptation goal) ³⁵

2.2 Goal 2: End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture

SDG 2 aims to end hunger, achieve food security, and improve nutrition by providing access to sufficient and nutritious food for all, especially women and children, through the promotion of sustainable agriculture, improving the capacities of small-scale farmers, implementing climate-resilient agricultural practices, and increasing investment in rural infrastructure and agricultural institutions.

According to the UN Food and Agriculture Organization (FAO), in the period between 2014 and 2016, around 795 million people, corresponding to one in nine of the world's population, were undernourished.³⁶ Over 90 million children under the age of five are underweight.³⁷ Agriculture, especially as practiced on small and rain-fed farms, produces over 80 percent of food consumed in the majority of developing countries.³⁸ Achieving the targets under SDG 2 is therefore essential to ensuring food security for all.³⁹


Yet, in addition to advancing food security, SDG 2 aims to promote sustainable and climate-resilient agriculture that are essential for both climate mitigation and adaptation. The agricultural sector is the largest emitter of non-CO₂ GHG emissions such as methane.⁴⁰ Global GHG emissions from agriculture increased at an estimated average rate of 1.6 percent per year during the period between 1961 and 2010.⁴¹ GHG emissions associated with the existing food system also account for 24 percent of total GHG emissions, according to UNEP's 2016 report on Food Systems and Natural Resources,⁴² including 14 percent of emissions generated by livestock supply chains.

As highlighted by the FAO, emissions from the agricultural sector could be reduced by as much as 30 percent through the wider use of existing best practices and technologies in land, feeding, or manure management.⁴³ Evidence shows that such practices, which are in line with the objectives of SDG target 2.4 on sustainable agriculture practices, can contribute to increased crop productivity while reducing GHG emissions.⁴⁴ A number of countries, including Ethiopia and Malawi, include specific actions to reduce emissions from agriculture while also increasing crop productivity.⁴⁵

The agricultural sector is also exposed and highly vulnerable to the effects of climate change. Increased temperatures, rainfall variation, and the frequency and intensity of extreme weather make adaptation a priority in order to reduce the impacts on agricultural productivity posed by the changing climate in vulnerable countries. Climate change threatens the capacity of food production in those countries and, without adaptation measures, the achievement of SDG 2 will become increasingly challenging.⁴⁶

Many countries, including Ghana, Madagascar, Myanmar, Nigeria, Uganda, and Uruguay specifically commit to adopt technologies to build crop resilience to climate change while also sustainably increasing agricultural yields. Beyond climate-specific benefits, a large number of the climate policies and measures communicated in the INDCs that apply to the agriculture sector can also directly contribute to poverty reduction by improving agricultural productivity and increasing farm incomes.⁴⁷

Table 2 | **Examples of Climate Actions that Align with SDG 2**

 SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
<p>Target 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round</p>	<p>Guarantee food security and water access “Guarantee food security and water access in light of growing climate threats through integral watershed management, biodiversity and land conservation.” (Mexico, Adaptation actions to reduce vulnerability)⁴⁸</p>
<p>Target 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment</p>	<p>Improve food security “Improving crop and livestock production practices for greater food security and higher farmer incomes while reducing emissions.” (Ethiopia, Mitigation contributions)⁴⁹</p>
<p>Target 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality</p>	<p>Increase agricultural productivity “Agriculture resilience building in climate vulnerable landscapes - modified community-based conservation agriculture adopted in 43 administrative districts; Scale up penetration of climate smart technologies to increase livestock and fisheries productivity by 10%; Promote innovations in post-harvest storage and food processing and forest products in 43 administrative districts.” (Ghana, Adaptation policy actions)⁵⁰</p>
<p>Target 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed</p>	<p>Maintain genetic diversity “Strengthen the diversification of sustainable agriculture by conserving germplasm and native maize species.” (Mexico, Actions to be implemented for the period 2020–2030)⁵¹</p>

2.3 Goal 3: Ensure Healthy Lives and Promote Well-Being for All at all Ages


The 13 targets under this goal are aimed at achieving universal health coverage; providing access to safe and effective medicines and vaccines for all; ending the epidemics of AIDS, tuberculosis, malaria, and other communicable diseases by 2030; and reducing the number of deaths and illness from pollution. SDG 3 also includes targets that aim to strengthen early warning, risk reduction, and management of national and global health risks.

Climate change is expected to significantly increase health risks, particularly in low- and middle-income countries, by increasing climate pollutants that affect respiratory health, increasing the frequency of heat waves that contribute directly to fatalities due to cardiovascular diseases, and by changing the patterns of water- and vector-borne diseases, therefore increasing the risk of pandemics.⁵² These climate change impacts will also disproportionately impact those who are most vulnerable, including infants, children, the elderly, and those with pre-existing medical conditions.⁵³

In the long term, investment in mitigation is necessary to avoid continued degradation of these environmental determinants of health. More immediately, curbing emissions that cause climate change can also help reduce approximately seven million annual deaths from household and outdoor air pollution, one of the leading causes of death globally.⁵⁴ A recent IRENA report also finds that doubling the global share of renewables by 2030 (also in line with SDG 7) would not only significantly mitigate climate change, but also dramatically decrease emissions harmful to human health, saving up to four million lives per year.⁵⁵ Bangladesh's INDC lays out a plan to shift from road to rail transport, which will achieve the dual aim of reducing emissions and improving air quality, thereby reducing harmful impacts on health. This policy can also advance road safety, contributing to achievement of target 3.6 that aims to halve the number of global deaths and injuries from road traffic accidents by 2020.

In the short-to-medium term (20–30 years), well-planned adaptation measures can help countries address many of the projected health impacts associated with climate change.⁵⁶ For example, improving early warning systems to inform public health officials and the general public about a potential disease outbreak expands the possibilities for response to climate-related health threats.⁵⁷ Thailand, as part of the adaptation efforts in its INDC, will increase its capacity to manage climate-related health impacts, including through the development of health surveillance and early warning systems. These efforts will directly contribute to Thailand's resilience to climate impacts, while also helping the country combat water-borne diseases and other communicable diseases, as envisaged by SDG target 3.d to strengthen capacity for early warning, risk reduction, and management of national and global health risks.

Table 3 | **Examples of Climate Actions that Align with SDG 3**

 SDG 3: Ensure healthy lives and promote well-being for all at all ages	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	Scale up programmes to combat diseases “Up-scaling of national programmes to address the risk of acute respiratory infection, diarrheal disease and cholera in disaster-prone areas. Including conducting surveillance and research on water-borne and food-borne diseases associated with climate change.” (Cambodia, Adaptation priority actions) ⁵⁸
Target 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	Improve traffic safety through shift from road to rail “Modal shift from road to rail, delivered through a range of measures, including underground metro systems and bus rapid transit systems in urban areas. Co-benefits will include reduced congestion, improved air quality and improved traffic safety.” (Bangladesh, Additional mitigation actions in power, industry and transport – Transport – Description) ⁵⁹
Target 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	Improve health services and community medical services “Introduction of early disease diagnosis and treatment programmes [...] Raising the health awareness of communities in vulnerable areas to climate change related diseases in order to increase their adaptive capacities; Building the capacities of the health cadres and improvement of health services to meet the evolving and increasing challenges of climate change; Increasing health resilience to climate change related diseases and reducing the associated mortality by supporting family's and school's health programmes.” (Sudan, Adaptation contribution) ⁶⁰
Target 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	Develop health surveillance and early warning systems “Increase capacity to manage climate-related health impacts – including through development of health surveillance and early warning systems, systematic climate risk assessment and effective disease prevention and response measures to climate change related health consequences.” (Thailand, Adaptation efforts) ⁶¹

2.4 Goal 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All

The 10 targets supporting SDG 4 address a range of educational objectives, including ensuring education at all levels and for all members of the population, and ensuring inclusive and equitable education facilities.

Because education provides an essential foundation for human and economic development, it is a primary driver for advancing sustainable and decarbonized societies. Improving literacy and numeracy can play a large role in ensuring that all people understand the causes and impacts of climate change and the essential strategies to address them.

Education can also provide the training and skills needed to undertake specific adaptation and mitigation efforts. For example, SDG target 4.4 is focused on substantially increasing technical and vocational skills, which will also be key to mastering and developing the technologies needed to support climate mitigation and adaptation action. Education can also empower youth and adults alike to take responsibility and assume active roles in adopting, promoting, and inventing solutions for addressing climate change.

In its INDC, Niger emphasizes the importance of improving literacy for the implementation of its INDC, in particular to scale up sustainable land management.⁶² Afghanistan’s INDC recognizes that the country’s lack of vocational and engineering capacity needed to design, build, and maintain climate-friendly irrigation networks is a critical gap in its ability to adequately address future climate impacts.⁶³

Education is also critical for promoting more sustainable lifestyle and consumption habits to support adaptation and mitigation efforts. SDG target 4.7 specifically aims to ensure that, by 2030, “all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education.” China’s INDC includes an objective to enhance education for all its citizens on how to live a low-carbon and low-consumption way of life, an objective that will support the achievement of target 4.7.⁶⁴ Conversely, just as China’s INDC will help achieve target 4.7, taking action to achieve target 4.7 will also provide an opportunity for China to achieve its INDC climate commitment of promoting a low-carbon way of life.

Table 4 | **Examples of Climate Actions that Align with SDG 4**

 SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Build technical and vocational skills for adaptation “Vocational and engineering capacity to design, build and maintain climate friendly irrigation networks and local schemes.” (Afghanistan, Adaptation needs and means of implementation - MOI – Capacity building needs) ⁶⁵
Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	Improve literacy “The illiteracy of the rural population represents a real impediment to the dissemination of the technologies of climate-smart agriculture and sustainable land management so that these techniques can be upscaled. Effective schooling and the spread of literacy among the rural population, accompanied by a rural extension system, are in any case necessary to allow understanding and implementation of the techniques recommended in the INDC.” (Niger, Implementation of INDCs – Obstacles and gaps) ⁶⁶
Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development	Enhance education for sustainable lifestyle “Enhance education for all citizens on low carbon way of life and consumption, to advocate green, low carbon, healthy and civilized way of life throughout society.” (China, Promoting low carbon way of life) ⁶⁷

2.5 Goal 5: Achieve Gender Equality and Empower all Women and Girls

SDG 5 aims to achieve gender equality and the empowerment of all women and girls. Gender inequality remains a deep-rooted problem around the world. Women suffer from lack of access to resources, basic services, and decent work, and they are often the victims of violence and discrimination. SDG 5 includes targets that focus on the elimination of all forms of discrimination and violence against women and girls and ensuring their participation in leadership and decision-making positions.

Climate change is not gender neutral: it has the potential to strongly exacerbate existing gender inequalities. In many societies, women are primarily responsible for ensuring water availability, food production, and providing care for the sick and elderly. Climate impacts such as drought, changing agricultural patterns, increased spread of disease, and greater frequency of extreme weather events and disasters have the potential to hit women the hardest.⁶⁸ Given their role as smallholder farmers who account for 45–80 percent of all food production in developing countries, women are among those most severely affected because of reduced crop yields caused by climate change.⁶⁹

Women's unequal participation in decision-making processes and other socio-cultural norms can limit their access to information and skills necessary to pursue climate action and address climate-related impacts.⁷⁰ Yet, women can be key agents of change in the transformation to a low-carbon and climate-resilient future. Evidence shows that, because of their engagement in social and economic activities, and as providers and transmitters of climate solutions,⁷¹ the inclusion of women improves the effectiveness of climate initiatives.⁷²

The role of women in responding to climate change is reflected in a number of INDCs through the inclusion of “women” and “gender” perspectives in both adaptation and mitigation components of the INDCs, identification of gender as a cross-cutting policy priority, and commitments to integrate or mainstream gender in climate change actions and strategies.

A recent analysis by IUCN Gender Office shows that 40 percent (65 of 162) INDCs include “women” and/or “gender” in the context of their national priorities and ambitions for reducing emissions.⁷³ According to the analysis, around half of these INDCs identify gender as a cross-cutting policy priority and commit to either integrate or mainstream gender in all climate change actions and strategies. For instance, the Dominican Republic, Kenya, Morocco, and Uganda all highlighted gender as a cross-cutting issue in climate change policy and action, including the need to improve the participation of women in climate-related decision-making processes and, as a highly vulnerable group, to strengthen their adaptive capacity.⁷⁴

Table 5 | **Examples of Climate Actions that Align with SDG 5**

 SDG 5: Achieve gender equality and empower all women and girls	
SELECTED TARGETS OF SDG 5	SELECTED EXAMPLES FROM INDCS
Target 5.1 End all forms of discrimination against all women and girls everywhere	Policy reform to promote gender equality “These policies and actions include a cross-cutting human rights and gender perspective in order for the measures to be implemented to take into account women as important decision makers regarding energy consumption. They also emphasize the importance of implementing them such that they do not exacerbate the impacts of climate change that already have disproportionate adverse effects based solely on gender.” (Mexico, Gender perspective) ⁷⁵
Target 5.5 Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Ensure equal participation of women in decision-making processes “Mitigation and adaptation national policies and instruments incorporate a gender perspective to promote and ensure active, continuous, full and equal participation of women and men in the consultation and decision-making processes for the control and access to natural resources, management of GHG emissions and generation of mitigation and adaptation strategies.” (Peru, Crosscutting approaches) ⁷⁶
Target 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	Improve the status of women “Women and youth, but also remote communities, still have less economic, political and legal clout than, for example, men and the urban middle class. [...] Women benefit most from clean efficient cook stoves, gaining in health and in productive time where these are introduced. They, however, have difficulty accessing financial institutions. [...] New policies and measures need to be assessed against their ability to bring social inclusion and be culturally appropriate, as well as improve livelihood security, increase resilience and reduce emissions. The measures included in the Nigeria INDC were deemed to at a minimum be gender neutral and/or to enhance social inclusion.” (Nigeria, Gender impacts and social inclusion) ⁷⁷
Target 5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Implement national policies that incorporate a gender perspective “Mitigation and adaptation national policies and instruments incorporate a gender perspective to promote and ensure active, continuous, full and equal participation of women and men in the consultation and decision-making processes for the control and access to natural resources, management of GHG emissions and generation of mitigation and adaptation strategies.” (Peru, Crosscutting approaches) ⁷⁸

2.6 Goal 6: Ensure Availability and Sustainable Management of Water and Sanitation for All

The targets for SDG 6 cover all dimensions of a population’s water use and protection of water sources from pollution. According to UNICEF/WHO’s 2015 Assessment of the Millennium Development Goals,⁷⁹ more than 663 million people lack access to improved drinking water sources and one in three people lack improved sanitation.

The impact of climate change on the global water cycle is particularly severe and poses a vital threat to many societies. Fluctuation and volatility of precipitation increase the risk of droughts, water scarcity, and floods,

jeopardizing human security and health, food security, and economic progress in many regions. In coastal areas, where a quarter of the world’s population lives, the impacts of climate change include rising sea levels that result in saline intrusion of water sources. In low-lying areas, such as in Bangladesh, an increase in rainfall may cause groundwater levels to rise, decreasing the efficiency of natural purification processes and increasing risks of infectious disease and exposure to toxic chemicals.⁸⁰


These water stresses from climate change will need to be addressed given the fundamental importance of providing water security and food security and meeting the needs of growing populations and agricultural and economic development.

Many INDCs include the improvement of water and sanitation systems as a priority for both mitigation and adaptation. A number of countries, including Morocco, identify actions in their INDCs to enhance the recycling and reuse of treated water and reduce landfill waste as means to reduce GHG emissions.

Adaptation actions communicated in a number of INDCs include the improvement of water and sewerage infrastructure and enhancing water security through modern irrigation systems, desalination technologies, and integrated management at water basin level. For

instance, Morocco includes quantified adaptation goals for 2020 and 2030 to tackle national water scarcity through enhanced water resource management and improved wastewater treatment and water quality. As part of Mongolia’s adaptation effort, the government aims to expand state protected areas where its main water resources are formed and ensure the proper use of those resources as part of the country’s integrated water resources management system, which will also contribute to the achievement of target 6.6 to protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.

Table 6 | **Examples of Climate Actions that Align with SDG 6**

 SDG 6: Ensure availability and sustainable management of water and sanitation for all	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Improve water quality “Morocco’s vision for adaptation involves several quantified sectorial goals for 2020 and 2030. [...] Improved performances of drinking and industrial water systems; connection to the sewerage system and wastewater treatment to reach 100% of urban areas; wastewater treatment to reach 100%.” (Morocco, Goals to build resilience - Goals for 2030) ⁸¹
Target 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Expand water supply “The program’s outcomes were to develop sustained access to improved water supply sources, despite increasing water scarcity due to climate change and to strengthen the capacity for health protection and food security under conditions of water scarcity.” (Jordan, Introductory remarks to Jordan’s INDC) ⁸²
Target 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Implement integrated water resource management to ensure water security “Implement integrated water resources management in river basin systems; ensure reservoir safety; strengthen international cooperation in addressing transboundary water issues; ensure water security.” (Viet Nam, Climate change adaptation in the period 2021–2030, Ensure social security) ⁸³
Target 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Protect water-related ecosystems “Objective to expand state protected areas covering especially river headwater areas, where 70% of water resources are formed, to ensure proper use of water resources, and to strengthen integrated water resource management in river basins.” (Mongolia, Long- and short-term adaptation visions, goals, and targets) ⁸⁴

2.7 Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All

SDG 7 promotes a global energy transition to clean and modern resources, with an emphasis on achieving universal access to energy, increasing the share of renewables in the global energy mix, and doubling the global rate of improvement of energy efficiency.

This goal is very significant for both poverty eradication and climate action. As of 2015, approximately 2.8 billion people had no access to modern energy services, over 1.1 billion did not have electricity, and around 4.3 million people were dying prematurely every year due to indoor pollution.⁸⁵ Ensuring universal access to modern energy would provide multiple direct and indirect socio-economic benefits, including energy security, improved health and education services, and reduced inequality through greater economic opportunities for women in rural areas.⁸⁶ Scaling affordable clean energy services (e.g., renewables, liquid petroleum gas (LPG) kits) can also play a critical role in enhancing energy access and security, especially in off-grid areas or where grid service is inadequate. For many small island developing nations, shifting to renewable sources could be the key to ensuring energy self-sufficiency and providing affordable energy access.

Providing access to clean energy in rural, off-grid areas can also reduce biomass (wood, dung, or charcoal) consumption that causes indoor air pollution, which has been found to be a significant cause of morbidity and mortality, primarily for women.⁸⁷ Evidence now links an increased risk of respiratory tract infections, exacerbations of inflammatory lung conditions, cardiac events, stroke, eye disease, tuberculosis (TB), cancer, and hospital admissions with indoor air pollution levels.⁸⁸

Energy is fundamental to reducing global GHG emissions, since it contributes roughly two-thirds of all anthropogenic GHG emissions.⁸⁹ Under current national policies and plans, demand for energy could grow by 33 percent between 2010 and 2035 and global energy-related GHGs could rise by 20 percent over this period.⁹⁰ According to a recent IRENA report, meeting SDG target 7.2 through an increase of 36 percent in the proportion of renewables in the global energy mix would provide about half of the emissions reductions needed to hold global warming below 2°C.⁹¹

Doubling the global rate of improvement in energy efficiency—the objective set out in SDG target 7.3—could also be a major driver for decoupling GHG emissions from economic growth. The International Energy Agency (IEA) estimates that about 40 percent of the emissions reductions required by 2050 to stick to the 2°C target could come from energy efficiency.⁹² Energy efficiency improvements in IEA countries since 1990 have already avoided a cumulative 10.2 billion tonnes of CO₂ emissions, and avoided 870 MtCO₂ in 2014 alone.⁹³

A number of INDCs include quantified targets for the energy sector or specific actions to focus on expanding clean energy and energy infrastructure and improving energy efficiency. Eighty percent of the INDCs submitted include elements related to clean energy; 90 INDCs (56 percent of all INDCs) refer to clean energy plans with specific outcomes, and 39 INDCs (24 percent) refer to clean energy plans without specific targets. India's INDC, for example, includes a target of 40 percent non-fossil fuel sources in the national energy mix by 2030 and refers to India's domestic goal of achieving installed capacity of 60 GW of wind power and 100 GW of solar power by 2022.

In many INDCs, increased access to clean energy and improved energy efficiency are also identified as key approaches to addressing rising fuel demand and threats to energy security. Some also highlight energy access as key to addressing the impacts of climate change and promoting resilience. In Afghanistan's INDC, for example, access to modern forms of efficient and sustainable energy services is identified as a means to ensure economic development and sustainable livelihoods as part of a strategy to enhance the adaptive capacity and resilience of vulnerable communities.

Table 7 | **Examples of Climate Actions that Align with SDG 7**

7 AFFORDABLE AND CLEAN ENERGY	
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	<p>Increase access to modern forms of energy</p> <p>Afghanistan's vision for addressing the adverse impacts of climate change through adaptation aims to protect the country and its population by enhancing adaptive capacity and resilience, effectively respond to the vulnerabilities of critical sectors, and efficiently mainstream climate change considerations into national development policies, strategies, and plans." [...] "Promoting economic development and sustainable rural livelihoods through sustainable management of environmental resources and increase access to modern forms of efficient and sustainable energy services." (Afghanistan, Near and long-term adaptation visions, goals and targets)⁹⁴</p>
Target 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	<p>Increase share of renewable energy</p> <p>"[...] Between 2002 and 2015, the share of renewable grid capacity has increased over 6 times, from 2% (3.9 GW) to around 13% (36 GW). This momentum of a tenfold increase in the previous decade is to be significantly scaled up with the aim to achieve 175 GW renewable energy capacity in the next few years"(Promotion of clean energy) "[...] India hereby communicates its Intended Nationally Determined Contribution (INDC) in response to COP decisions 1/CP.19 and 1/CP.20 for the period 2021 to 2030: [...] To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level. To achieve about 40 percent cumulative electric power installed capacity from nonfossil fuel based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF)." (India)⁹⁵</p>
Target 7.3 By 2030, double the global rate of improvement in energy efficiency	<p>Intensify energy efficiency efforts</p> <p>"The aim of the mitigation plan is to intensify the promotion of energy efficiency in all consumer sectors and for all energy usages. Around 20 energy efficiency actions have been included in the calculation of avoidable emissions, covering the entire industrial, building, transport and agricultural sectors. This should allow primary energy demand to decrease by some 30 per cent by 2030, compared to the baseline." (Tunisia, Mitigation contribution: Energy sector)⁹⁶</p>
Target 7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	<p>Global Solar Alliance</p> <p>"India has also decided to anchor a global solar alliance, InSPA (International Agency for Solar Policy and Application), of all countries located between the Tropic of Cancer and the Tropic of Capricorn." (India, Promotion of clean energy)⁹⁷</p>
Target 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	<p>Expand infrastructure</p> <p>"Construction of enabling infrastructure for electricity sector development, including power lines, substations and transmission facilities. Development of the electricity sector holds great mitigation potential for Uganda due to the potential offsetting of wood and charcoal burning, and the consequential deforestation." (Uganda, Energy power supply)⁹⁸</p>

2.8 Goal 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All

The 12 targets of SDG 8 tackle key aspects of the transition to sustainable economic growth, including improving global resource efficiency in consumption and production, developing entrepreneurship and innovation, promoting sustainable tourism, and providing decent work and employment for all.

Recent studies show the tremendous potential of a more sustainable economy. Shifting to a development pathway that is more socially, economically, and environmentally inclusive can create new sources of economic dynamism, create new jobs, raise living standards, and enhance social cohesion.⁹⁹ The World Bank estimates that sectoral policies to shift to clean transport and promote energy-efficient industry and buildings will generate GDP growth of \$1.8 trillion to \$2.6 trillion per year, or an additional 1.5–2.2 percent in annual growth, by 2030.¹⁰⁰ The International Labour Organization projects that transitioning to a green economy could add up to 60 million jobs to the global economy.¹⁰¹

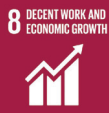
Conversely, emerging trends, including new pressures on resources, rising consumption levels, and changing consumption patterns, mean that development and growth will need to incorporate environmentally sustainable policies and measures. Reconciling prosperity with the environment and the climate is becoming a top priority for many countries, and many have set forth strategies that integrate economic growth with development and climate initiatives.

Sierra Leone’s INDC, for example, highlights the country’s commitment to mainstream inclusive green growth in its development process through a transition to low-emissions development, decoupling carbon emissions from economic growth. Similarly, Myanmar’s INDC sets objectives for the institutional arrangements and planning for implementation of the INDC through achievement of climate-resilient, low-carbon, resource-efficient, and inclusive development as a contribution to its overall policy for sustainable development. Mexico’s INDC underlines the country’s efforts to establish synergies between adaptation and mitigation that serve to tackle climate change and reduce social and ecosystem vulnerabilities, while also promoting inclusive green growth in the country.

A similar understanding of the strong alignment between addressing climate change and ensuring economic prosperity across all economic sectors is evident in other INDCs. Qatar, for example, indicates that the country will focus on promoting sustainable tourism as a strategy to reduce its dependence on hydrocarbon resources and “protect the country’s economy from market fluctuations that can significantly affect its economic growth.”¹⁰²

Peru’s INDC points out that under a business as usual (BAU) scenario, climate change could cause a GDP loss of 20–23.4 percent by 2050 relative to the 2015 baseline. Peru’s INDC also underscores that implementing climate policies is essential not only to meet ethical responsibilities, but also to maintain “a highly competitive economy that is in line with the new global trends, and maximizing the social and environmental benefits of efficient and inclusive productive sectors, as a result of sustainable use of natural resources.”¹⁰³

Table 8 | **Examples of Climate Actions that Align with SDG 8**

 SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Promote Climate Resilient Green Economy Strategy “The foundation of Ethiopia’s Intended Nationally Determined Contributions (EINDC) is its Climate Resilient Green Economy Strategy - CRGE. The CRGE sets out to deliver the following objectives: lifting Ethiopia to middle-income status by 2025; ensuring economic development is sustainable by limiting GHG emissions; creating green job opportunities; protecting the Ethiopian population and economy against the adverse effects of climate change.” (Ethiopia, Supplementary information) ¹⁰⁴
Target 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Support clean tech entrepreneurs “New Ventures India (NVI) is an initiative to support clean tech entrepreneurs in developing their business plans and access finance and markets.” (India, Private sector contributions to combating climate change) ¹⁰⁵
Target 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Improve sustainable consumption and production “The government will continue to pursue the green growth goal under the Eleventh Malaysia Plan (2016–2020) [and] will further focus on pursuing green growth for sustainability and resilience. These include strengthening enabling environment for green growth, adoption of sustainable consumption and production, conserving natural resources and strengthening resilience against climate change and natural disasters. These actions will further reduce Malaysia’s carbon footprint.” (Malaysia, Fairness and ambition considerations) ¹⁰⁶
Target 8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Promote sustainable tourism strategies “Qatar has a long-term strategy towards advancing its tourism industry through a series of well-defined plans, programs, and policies developed according to international best practices, and following a nation-wide consultative process. The aim of this strategy is to reduce dependence on hydrocarbon resources by promoting sustainable tourism strategies, as well as to protect the country’s economy from market fluctuations that can significantly affect its economic growth.” (Qatar, Economic diversification with mitigation co-benefits - Tourism) ¹⁰⁷

2.9 Goal 9: Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation


SDG 9 aims at building resilient infrastructure and promoting inclusive and sustainable industry in key economic sectors such as transport, irrigation, energy, and information and communication technology. Eight targets support this goal, focusing on sustainable and resilient infrastructure, inclusive and sustainable industrialization, access to resources for small-scale industrial and other enterprises, innovation, and access to information and communication technology.

Low-carbon and resilient infrastructure will be key to achieving countries’ social, economic, political, and environmental goals. The lack of basic infrastructure, such as roads, information and communication, sanitation, electrical power, and water remains acute in many developing countries. One-third of the world’s population has no access to electricity, one-third lacks access to basic sanitation, and 663 million people, nearly half of them in Sub-Saharan Africa and South Asia, still use unimproved drinking water sources.¹⁰⁸ Worsening this situation, the impacts of climate change-related extreme weather events, including floods, cyclones, drought, and heat waves, threaten serious damage to infrastructure, settlements, and industrial facilities.¹⁰⁹

Infrastructure and industry play a key role in efforts to address climate change. According to the IPCC, emissions from industry, which represent 30 percent of total global GHG emissions, arise mainly from material processing—the conversion of natural resources (e.g., ores, oil, biomass) or scrap into material stocks that are then converted into useable products.¹¹⁰ Mongolia’s mitigation contribution in its INDC includes a commitment to update its cement production technology, contributing both to global emissions reductions and to SDG target 9.4 to upgrade and retrofit industries to make them sustainable.

A number of countries’ INDCs also include actions focusing on building sustainable and resilient infrastructure. One of Peru’s priority adaptation actions is to repair and rehabilitate existing road infrastructure, taking into account past, present, and future climate change impacts. This work program will directly contribute to the achievement of SDG target 9.1 on sustainable and resilient infrastructure (develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all). Similarly, the INDC submitted by Laos presents adaptation projects that will increase infrastructure resilience in key sectors such as agriculture, water, transport, and public health in the face of extreme climate events.

Table 9 | **Examples of Climate Actions that Align with SDG 9**

 SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Build resilient infrastructure “Repairing and rehabilitating existing road infrastructure and ensuring effective operation and maintenance, taking into account climate change impacts.” (Peru, Priority adaptation actions) ¹¹¹
Target 9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry’s share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Encourage low-carbon industries “Embark on a new path of industrialization, developing a circular economy, [...] accelerating the elimination of outdated production capacity and promoting the development of service industry and strategic emerging industries; promote the share of value added from strategic emerging industries reaching 15% of the total GDP by 2020.” (China, Building energy efficient and low-carbon industrial system) ¹¹²
Target 9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	Support the development of micro, small, and medium enterprises “Create an enabling infrastructure for the development of Micro, Small and Medium Enterprises (MSME) and provide substantial support to vocational education and training.” (Egypt, National priorities and objectives) ¹¹³
Target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Upgrade to clean and environmentally friendly technologies “Reduce emissions in the cement industry through upgrading the processing technology from wet- to dry-processing and through the construction of a new cement plant with dry processing up to 2030.” (Mongolia, Mitigation contribution) ¹¹⁴

2.10 Goal 10: Reduce Inequality Within and Among Countries

SDG 10 aims to address the root causes of poverty and inequality. It includes ten targets that address inequality both within countries—for instance, through achieving and sustaining income growth for the bottom 40 percent of the population, and between countries—through enhancing developing countries’ representation in decision making within global international economic and financial institutions and the promotion of safe, regular, and responsible migration and mobility of people.

Climate change and inequality are deeply intertwined, in terms of responsibility for both emissions and impacts. According to estimates by Piketty and Chancel, 23 percent of the world’s population is responsible for 66 percent of global GHG emissions.¹¹⁵ Disparities are also present within countries, including within developed countries. In the United States, for example, in 2013, the average per capita emissions of the richest 1 percent (3.2 million people) was around 318 tCO₂e, while the average per capita emissions of the poorest 10 percent (around 31 million people) was roughly 3.6 tCO₂e.¹¹⁶

In addition, though climate impacts will be felt globally, they will not be experienced equally. The impacts of climate change pose the greatest threat to those who are most vulnerable, typically those who have the fewest resources to address the impacts or are the most socially and politically marginalized. While Africa accounts for less than four percent of global GHG emissions, between 70 million and 400 million people in the continent may be exposed to climate-related water shortages as early as 2020.¹¹⁷

These impacts come at a time when global inequality has been increasing.¹¹⁸ Globally, the richest 10 percent earn up to 40 percent of total global income and the poorest 10 percent earn only between 2 and 7 percent of total global income.¹¹⁹ The annual World Economic Forum Global Risk reports regularly identify income disparity, unemployment, and underemployment as key threats to the world economy.¹²⁰ These trends will only continue, and will in fact get worse, as the impacts of climate change worsen.

Many INDCs address inequality, demonstrating significant alignment with the targets for SDG 10, particularly for those that focus on intranational equity. For instance, in its statement on the fairness and ambition of its INDC, Sri Lanka focuses on the importance of ensuring inclusivity in the implementation of its climate plans, supporting those most vulnerable to ensure that these groups have the opportunity to engage and benefit from climate actions. This approach demonstrates a synergy with SDG target 10.1, which aims to empower the bottom 40 percent of the population at a faster rate than the national average. Consistent with SDG target 10.4 on social, economic, and political inclusion, Mexico emphasizes that the policies and actions in its INDC include a “cross-cutting human rights and gender perspective in order for the measures to be implemented to take into account women as important decision makers regarding energy consumption. They also emphasize the importance of implementing them such that they do not exacerbate the impacts of climate change that already have disproportionate adverse effects based solely on gender.”¹²¹

Table 10 | **Examples of Climate Actions that Align with SDG 10**

 SDG 10: Reduce inequality within and among countries	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
<p>Target 10.1 By 2030 empower and promote the bottom 40 per cent of the population at a rate higher than the national average</p>	<p>Ensure equity through inclusion “Sri Lanka will also take steps to ensure internal equity by maintaining inclusivity. Inclusivity will be focused through the factors and groups such as gender, youth, vulnerable communities, and providing opportunities to these groups to engage, benefit from the ambitious targets.” (Sri Lanka, Fairness and ambition)¹²²</p>
<p>Target 10.2 By 2030 empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status</p>	<p>Promote social, economic and political inclusion “Myanmar recognises a number of important emerging themes which are key to addressing both future emission reductions and adaptation to climate impacts, including the need for sustainable urban development; a more consistent inclusion of civil society perspectives; the empowerment of groups at risk of the short and long-term impacts of climate change, (such as children and other younger members of society); and the integration of gender considerations into climate change policy design.” (Myanmar, National circumstances)¹²³</p>
<p>Target 10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality</p>	<p>Adopt policies that helps to achieve greater equality “These policies and actions include a cross-cutting human rights and gender perspective in order for the measures to be implemented to take into account women as important decision makers regarding energy consumption. They also emphasize the importance of implementing them such that they do not exacerbate the impacts of climate change that already have disproportionate adverse effects based solely on gender” (Mexico, Gender perspective)¹²⁴</p>
<p>Target 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies</p>	<p>Protect displaced people and those vulnerable to climate change “Whilst the actions are applicable to all of Chad, it appears that the priority target zones (Kanem, Barh El Ghazal, Batha, Guéra, Hadjer Lamis, Wadi Fira; Ouaddai, Dar Sila, Lac, Moyen-Chari, Borkou, Tibesti, Ennedi Est, Ennedi Ouest) are especially vulnerable to the effects of climate change and, in part, to the arrival of displaced populations. There are approx. 700,000 displaced people in Chad, including refugees and Chadians returning from Sudan, the Central African Republic, Nigeria and Libya (OCHA, 2015).” (Chad, National priorities in terms of adaptation to climate change)¹²⁵</p>
<p>Target 10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes</p>	<p>Ensure financial flows and cooperation with developing countries “New Zealand has committed \$45 million to the Global Research Alliance on Agricultural Greenhouse Gases out to June 2019 and a further \$48.5 million through the New Zealand Agricultural Greenhouse Gas Research Centre for research into technology to reduce agricultural greenhouse gas emissions. Maintaining support for this research will continue to be a priority for us.” (New Zealand, Fairness and ambition)¹²⁶</p>

2.11 Goal 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable

By 2050, more than 70 percent of the global population—6.4 billion people—is projected to be living in urban areas. This substantial increase in the global urban population will have significant implications for air quality, water availability and quality, land use, and waste management.¹²⁷ The 10 targets that support the achievement of SDG 11 address issues focusing on affordable housing, universal access to public transport, reducing the per capita environmental impact of cities, and providing access to safe, inclusive, and accessible green and public spaces.


Cities and human settlements are critical to emissions reductions, as well as to adaptation and building resilience to climate impacts. Cities consume 60–70 percent of the world’s energy supply and account for 70–80 percent of total global CO₂ emissions due to energy generation, transport, industry, and biomass use.¹²⁸

Transport in particular, much of it in urban areas, is a key sector for climate change mitigation. The transport sector currently accounts for half of global oil consumption and nearly 20 percent of world energy use, contributing 23 percent of total energy-related CO₂ emissions.¹²⁹ Due to the transport sector’s current reliance on fossil fuels, emissions from the sector have been rising.¹³⁰ The World Energy Council warns that, without strong global action, car ownership worldwide is on track to more than double, to over two billion vehicles by 2050, with a correlated increase in the demand for diesel and fuel oil of up to 200 percent.¹³¹ Nearly three-quarters of countries prioritize the transport sector and 61 percent include transport sector-specific mitigation measures¹³² in their INDCs.¹³³

Cities are also often highly vulnerable to climate impacts such as rising sea levels, increased precipitation, floods, frequent and strong cyclones, and periods of more extreme heat and cold. SDG target 11.b reflects the importance of climate resilience and disaster-risk reduction in urban areas. The target aims to “substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.”

A number of INDCs, including those of Ethiopia, India, Mexico, and Morocco, include adaptation actions that aim to reduce climate impacts on human life and property and thereby increase the resilience of cities and human settlements. For example, by highlighting the importance of planning and land regulation for making human settlements safe and resilient, Mexico is committing to relocate “irregular human settlements” from disaster-prone areas as part of its adaptation efforts. Ethiopia’s development and implementation of climate change-compatible building and construction codes will minimize economic damages and loss of life from water-related disasters, directly contributing to the achievement of SDG target 11.5, which aims to reduce the number of people killed or affected by disasters, and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters.

Table 11 | **Examples of Climate Actions that Align with SDG 11**

 SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
<p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p>	<p>Construct sustainable transport systems “The Environmentally Sustainable Transport System Plan also proposes ambitious actions to promote road-to-rail modal shift for both freight and passenger transport, which include extensions of mass rapid transit lines, construction of double-track railways and improvement of bus transit in the Bangkok Metro areas.” (Thailand, Mitigation plans)¹³⁴</p>
<p>Target 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries</p>	<p>Ensure sustainable human resettlement “Relocate irregular human settlements in zones prone to disasters through land use regulations.” (Mexico, Adaptation actions 2020–2030)¹³⁵</p>
<p>Target 11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations</p>	<p>Minimize economic damages “Developing and implementing climate change compatible building/construction codes for buildings, roads, airports, airfields, dry ports, railways, bridges, dams and irrigation canals that are safe for human life and minimize economic damage that is likely to result from increasing extremes in flooding.” (Ethiopia, Medium and long term actions: floods)¹³⁶</p>
<p>Target 11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels</p>	<p>Build resilient cities “It is important to take into consideration that 76% of the population lives in urban areas, with an annual growth rate of 2.1%, whereas rural areas have grown at a rate of 0.01% per annum. That is why it is essential to consider the vulnerability of cities and promote the concept of “Resilient Cities” as units of climate risk management.” (Peru, Vulnerability and impacts of climate change in Peru)¹³⁷</p>

2.12 Goal 12: Ensure Sustainable Consumption and Production Patterns

SDG 12 on sustainable consumption and production (SCP) patterns aims at reconciling the economy with human fulfillment and environmental preservation. Eleven targets cover key drivers for SCP, such as natural resource use efficiency, waste reduction, sustainable infrastructure, access to basic services, green and decent jobs, promotion of sustainable lifestyles, and a better quality of life for all.

Sustainable consumption and production involves not only reducing environmental impacts, but also maintaining natural capital, including non-renewable and renewable natural resources and the productivity and

capacity of our planet to meet human needs and sustain economic activities.¹³⁸ Transforming consumption and production patterns is a core and essential component of any low-carbon or zero-carbon strategy. SCP tackles existing development models that can lead to overuse of natural resources, excessive waste generation, and steadily eroded natural capital.¹³⁹


For example, achieving SDG target 12.3 to halve per capita global food waste can provide significant global benefits. According to the FAO, the energy used for the global production, harvesting, transport, and packaging of wasted food—amounting to about 1.3 billion tons annually—generates around 3.3 billion tons of CO₂, which would make it the third highest source of carbon

emissions after the United States and China.¹⁴⁰ Similarly, SDG target 12.5 aims to substantially reduce waste generation by 2030 through waste prevention, reduction, recycling, and reuse. Reducing waste generation will contribute to decoupling waste generation from economic growth and can also produce significant climate benefits.¹⁴¹

A number of countries' INDCs include mitigation options related to SCP for various sectors. The Dominican Republic states that its strategy to transform society to a culture of sustainable production and consumption is

a way to promote adequate climate change adaptation. Bangladesh includes mitigation actions related to reducing waste and improving energy efficiency as a means to reduce GHG emissions, as well as to sustainably manage urban waste, thus “ensuring livable cities while lowering GHG (methane) emissions.”¹⁴² In its INDC, Rwanda sets a goal of 100 percent of farmers having access to services for post-harvest treatment and storage of food crops and to reduce post-harvest losses to no more than 1 percent by 2030.

Table 12 | **Examples of Climate Actions that Align with SDG 12**

 SDG 12: Ensure sustainable consumption and production patterns	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Efficiently use natural resources “This strategy promotes the transformation of society to a culture of sustainable production and consumption, which manages risks with equity and efficiency, protection of the environment and natural resources, and promoting adequate climate change adaptation.” (Dominican Republic) ¹⁴³
Target 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	Properly manage post-harvest treatment to reduce food loss “Rwanda targets to have 100% of farmers with access to services for post-harvest treatment and storage of food crops and reduce post-harvest losses to at least 1% by 2030 from 10.4%, 27.4% and 8.3% in 2014 for maize, beans and rice respectively.” (Rwanda, Adaptation contribution) ¹⁴⁴
Target 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Reduce waste and reuse landfill gas “Increase composting of organic waste and promote landfill gas capture and power generation.” (Bangladesh, Additional mitigation actions in other sectors - Waste) ¹⁴⁵
Target 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Enhance environmental education and lifestyles “To enhance education for all citizens on low-carbon way of life and consumption, to advocate green, low-carbon, healthy and civilized way of life and consumption patterns and to promote low-carbon consumption throughout society.” (China, Promoting the low-carbon way of life) ¹⁴⁶
Target 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	Remove subsidies for fossil fuels as a strategy to reduce cost of living “The mitigation options for energy address both energy demand and energy supply. [...] At present, poor Nigerians pay a significant “poverty penalty” in order to meet their energy needs. They pay proportionately more for energy, spend more time acquiring fuels, and suffer the health impacts from poor fuel quality. [...] Importantly, reduced dependence on fossil resources can also increase security. [...] The removal of consumer and producer subsidies for fossil fuels can help stabilize government budgets. While intended to reduce the cost of living for the poor, these subsidies have ended up mostly benefiting the rich.” (Nigeria, Mitigation actions by sector - Energy) ¹⁴⁷

2.13 Goal 13: Take Urgent Action to Combat Climate Change and its Impacts


SDG 13 highlights the need for urgent action to combat climate change and specifically acknowledges the UNFCCC as the primary international, multilateral forum for negotiating the global response to climate change. Further, the targets associated with SDG 13 are clearly aligned with ambitions in INDCs. SDG13 does not provide concrete mitigation targets or proposed limits to global warming. It instead targets strengthening resilience and adaptive capacity, integrating climate change measures in national policies and strategies, building human and institutional capacity, and setting ambitious targets to implement the commitment by developed countries to mobilize, by 2020, \$100 billion annually in climate finance from public and private sources.

The inclusion of SDG 13 in the sustainable development agenda is significant because it reflects a recognition that combating climate change is considered essential both to the achievement of sustainability goals and a core component of sustainable development and poverty reduction strategies. As underlined in the political declaration of the 2030 Agenda, climate change poses

a vital threat to many societies and their environments. More than 86 percent of developing countries include adaptation components in their INDCs outlining goals, activities, and needs for countries to cope with increased drought, stronger storms, sea level rise, and other consequences of a warming planet.¹⁴⁸ Adaptation includes strategies to create high levels of economic and livelihood diversity; promote skills, learning and innovation; reduce dependence on ecosystem services; and reduce inequality.

Many INDCs include information regarding the integration of climate action, both mitigation and adaptation, into broader national policies and strategies, an objective in line with SDG target 13.2 on integrating climate change measures into national policies. Sudan, for example, developed a National Adaptation Plan integrating climate risks into all national development planning processes to reduce the vulnerability of strategic sectors to the impacts of climate change. Some countries, like Afghanistan, Costa Rica, South Africa, Thailand, and Yemen, include the need for a disaster risk-reduction approach in their development policies and plans, which relates to target 13.1 to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters.

Table 13 | **Examples of Climate Actions that Align with SDG 13**

 SDG 13: Take urgent action to combat climate change and its impacts	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	Enhance adaptive capacity “Strengthen disaster risk reduction and reduce population’s vulnerability to climate risk and extreme weather events through enhanced awareness, coordination and adaptive capacity of local communities, especially in the disaster risk-prone areas. [...] Establish effective early warning system and enhance the adaptive capacity of national agencies through multi-hazard risk assessment, systematic observations, integrative research and development of database, model, and technology.” (Thailand, Adaptation efforts) ¹⁴⁹
Target 13.2 Integrate climate change measures into national policies, strategies and planning	Integrate climate change in national planning “Sudan’s NAP (National Adaptation Plan) aims to integrate climate risks into all national development planning processes and reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience. As such, Sudan’s NAP process includes assessment of vulnerability and adaptation in all Sudan’s States, covering the main development sectors, such as water, agriculture, health and coastal zone.” (Sudan, Planning process) ¹⁵⁰
Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Promote climate change education and public awareness “In this context, in addition to the specific adaptation and mitigation strategies included above, the Government of Uganda plans to: Promote and enhance climate change education, public awareness and capacity development through communication, training, information and knowledge management.” (Uganda - Means of implementation) ¹⁵¹
Target 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries, including focusing on women, youth and local and marginalized communities	Enhance participation of women and youth “Enhancing the participation of women and youth in activities related to adaptation and environmental conservation in order to empower them and enhance their adaptive capacity including through establishment of rural women development programme.” (Sudan, Sudan’s Intended adaptation contributions) ¹⁵²

2.14 Goal 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development

SDG 14’s targets focus on conserving and sustainably using and protecting marine and coastal ecosystems. Ten targets cover protection and sustainable management of marine and coastal ecosystems from land-based pollution, enhancing conservation and the sustainable use of ocean-based resources, and protecting coral reefs from climate change and ocean acidification.

Oceans and marine resources cover approximately two-thirds of Earth’s surface and support the livelihoods of over three billion people. Oceans are also the primary

regulator of the global climate, forming the world’s largest single carbon sink.¹⁵³ The impacts of climate change pose growing and alarming threats to oceans, seas, and marine habitats and resources, as well as to human livelihoods dependent on the ocean. Ocean acidification is one of the significant impacts of climate change on oceans and marine resources; the more CO₂ the oceans absorb, the more acidic they become, harming many species at the base of the food chain.¹⁵⁴

In the adaptation component of their INDCs, many countries, including Nigeria, Somalia, and Tonga, communicate specific actions targeted at conserving and restoring coastal and marine ecosystems. Given Somalia’s significant reliance on fishing and particular vulnerability

to coastal climate impacts, promotion of sustainable use of marine resources and increased scientific knowledge about marine and coastal environmental degradation, habitats, and resources are seen as part of the country's adaptation

efforts. Tonga aims to double marine protected areas as one of its mitigation efforts, a target that has linkages with SDG target 14.5, which urges countries to conserve at least 10 percent of coastal and marine areas.

Table 14 | **Examples of Climate Actions that Align with SDG 14**

 SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
<p>Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p>	<p>Protect against marine pollution “Marine and Coastal Environmental Governance and Management of Somalia” [...] Coastal and marine habitats and resources of Somalia suffered from habitat destruction, pollution resulting from oil spillage, dumping waste and resource over exploitation by illegal foreign fishing vessels, rapid urbanization and coastal population growth. Climate change is further exacerbating pressures on marine and coastal areas.” (Somalia, Ready for implementation and planned adaptation and mitigation INDCs projects - Project profile 9)¹⁵⁵</p>
<p>Target 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</p>	<p>Conserve and manage coastal zone ecosystems “Put in place the measures needed to protect, conserve and manage ecosystems, revive economic activities and boost the resilience of communities in its coastal zone.” (Guinea, Current and planned commitments in order to deal with the local consequences of climate change)¹⁵⁶</p>
<p>Target 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics</p>	<p>Encourage sustainable aquaculture “5. Enhance artisanal fisheries and encourage sustainable aquaculture as adaptation options for fishing communities.” (Nigeria, National adaptation strategy and plan of action - Sectoral strategies)¹⁵⁷</p>
<p>Target 14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</p>	<p>Double the number of Marine Protected Areas “Tonga’s contributions will also include the following: To double the 2015 number of Marine Protected Areas by 2030.” (Tonga, Mitigation contribution)¹⁵⁸</p>
<p>Target 14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism</p>	<p>Sustainably manage fisheries, aquaculture and tourism “St. Kitts and Nevis, a twin island state, is abundant in nearshore and marine resources which provide the basis for a range of economic and social activity relevant to the tourism and fishing industries. Some of these marine resources include coral reefs, beaches, mangroves, freshwater lagoons and sea-grass beds. Tourism, water supply and coastal infrastructure, are also being affected by the sea-level rise, saline intrusion and flooding. St. Kitts and Nevis plans to develop a comprehensive plan to build resilience in the following sectors: water, coastal infrastructure, agriculture (including fisheries and aquaculture on land farm).” (St. Kitts and Nevis, Adaptation contribution)¹⁵⁹</p>

2.15 Goal 15: Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainable Management of Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss

SDG 15 encompasses the protection, restoration, and promotion of sustainable use of all terrestrial ecosystems. The twelve targets underpinning SDG 15 include the conservation and restoration of terrestrial ecosystems such as forests, wetlands, drylands, and mountains, and promotion of the sustainable management and use of forests.

Forests play a key role in providing livelihoods and stabilizing the planet's climate and water cycles. They boost economies through employment, manufacturing, and trade; help make communities more resilient against natural disasters; and offer a haven for biodiversity. Although estimates vary, it is believed that approximately 450 million people (8 percent of the global population) live in forest ecosystems, and that 350 million of the world's poorest people are entirely dependent on forest ecosystems for their livelihoods.¹⁶⁰


Forests and other landscapes are also both sinks and sources of GHG emissions. Emissions are caused by deforestation and landscape degradation, while reforestation or forest regrowth can increase sequestration of carbon.¹⁶¹ GHG emissions from forestry and other land uses accounted for 12 percent of global GHG emissions from 2000 to 2009.¹⁶²

Recognizing their importance to both mitigation and adaptation, forestry and land use are among the key sectors included by a number of countries in their INDCs. A wide range of countries, including Bolivia, Brazil, China, and the Democratic Republic of Congo, put forth targets that can contribute to the protection of more than 50 million hectares of forest over the next 15 years.¹⁶³ Thirteen African countries include measurable land-use commitments that include restoration, REDD+, and climate-smart agriculture in their INDCs (focused on increasing yields, economic gain, and reducing GHG emissions). These would cumulatively lead to an estimated reduction of 1.2 Gt CO₂e over the next 10 years, equivalent to 36 percent of Africa's annual emissions and 0.25 percent of global emissions.¹⁶⁴

In its INDC, Suriname designates 13 percent of its total land area under a national protection system by increasing the area of protected forests and wetlands. Tonga specifically makes commitments to halt deforestation of indigenous forests.

A number of countries, including Myanmar, include reforestation in their INDCs as an adaptation strategy to restore degraded and sensitive forest areas and enhance rural livelihoods in degraded watershed areas, coastal areas, and hilly regions. Mexico includes actions related to forests that aim to "reach a rate of zero percent deforestation by the year 2030" as part of its adaptation efforts.¹⁶⁵

Table 15 | **Examples of Climate Actions that Align with SDG 15**

 SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Sustainably manage forests and ecosystems “Intends to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally. Additionally, to support its efforts at maintaining the integrity of forest ecosystems and keeping with its obligations regarding the United Nations Convention on Biological Diversity, Suriname has established 13% of its total land area under a national protection system and will continue to pursue the expansion of this system by increasing the percentage of forests and wetlands under preservation.” (Suriname, unconditional contributions) ¹⁶⁶
Target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Restore degraded land and increase natural forests “The proposed mitigation measures (... in the National Rural Sector Program - NRSP) contribute to the achievement of the Government’s objective, i.e. the restoration of degraded land at the rate of 30,000 ha/yr, the increase of natural forests from 170,00 to 500,000 ha, the reduction of forest areas burned by wildfires from 30% of the national territory to 20%, the development of village hunting areas through the awareness and training of the population, and the spread of knowledge regarding techniques for sustainable management of natural resources.” (Burkina Faso, The need for a NAMA framework) ¹⁶⁷
Target 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Safeguard biodiversity “Safeguard biodiversity and restore ecological integrity in protected areas and important landscapes from the adverse impacts of climate change, with the emphasis on vulnerable ecosystems and red list species.” (Thailand, Adaptation efforts) ¹⁶⁸
Target 15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	Remove invasive species “Project Profile 7: Project Proposal Charcoal Production from Prosopis and Replacement with Crop Production - Removal of invasive species Prosopis juliflora through use as charcoal, thereby also reducing deforestation from current charcoal production.” (Somalia, Ready for implementation and planned adaptation and mitigation INDCs projects) ¹⁶⁹

2.16 Goal 16: Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at all Levels


SDG 16 focuses on promotion of peace and stability, securing human rights and access to justice, and effective and inclusive governance based on the rule of law. The targets for SDG 16 include reducing all forms of violence; promoting the rule of law; reducing corruption and bribery; building institutions that are effective, accountable, and inclusive; and ensuring responsive, inclusive, participatory, and representative decision making at all levels.

In the last decades, countries affected by conflict and violence are lagging behind in their economic growth and progress in sustainable development.¹⁷⁰ The IPCC Fifth Assessment report states that there is a “justifiable common concern” that climate change increases the risk of armed conflicts in some situations.¹⁷¹ While climate change may not be a direct cause of instability, it can play a role as an important contributor to the causes of conflict such as poverty and reduced access to critical resources such as water. In some cases, conflict may result due to a lack of institutions to manage climate-related migration. In several instances, climate-related natural hazards have led to migration across borders, creating the potential for conflict.¹⁷² Particularly in fragile states where significant climate impacts are anticipated, including countries in Sub-Saharan Africa and the Middle East, climate change will complicate the achievement of SDG 16.¹⁷³

A number of INDCs include information relevant to achieving SDG 16, including a focus on reducing violence and corruption, building peace, and strengthening participatory decision-making processes in the context of climate action. Colombia's INDC, for example, highlights the role of mitigation and adaptation action in consolidating peace in a more equitable manner that may have the potential to reduce conflict and violence in the country. To promote local engagement and the development of plans that match local circumstances, Colombian regional departments will be given the opportunity to prioritize and design their own climate change strategies that take into account regional circumstances and seize development opportunities. Adaptation and resilience building are also priorities for Colombia and represent a national security issue.

Other targets such as SDG target 16.6 (effective, accountable and transparent institutions at all levels) and target 16.7 (inclusive, participatory and representative decision making at all levels), are also closely linked to accelerating progress on climate action. For instance, Mexico's INDC states that transparent and inclusive mechanisms for social participation, designed to incorporate gender and human rights approaches, are important to strengthen the adaptive capacity of the population.

Table 16 | **Examples of Climate Actions that Align with SDG 16**

 SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
Target 16.1 Significantly reduce all forms of violence and related death rates everywhere	Consolidate peace "Mitigation and adaptation to climate change have the potential to facilitate the consolidation of peace territories where productive activities and land uses can, in a more equitable manner and with greater ownership of the territory, play a key role providing better development opportunities, in particular in rural communities." (Colombia, Peace building) ¹⁷⁴
Target 16.5 Substantially reduce corruption and bribery in all their forms	Develop apparatuses and fight corruption "Create an enabling and favorable environment for local and foreign private investment, redistribute investments in a manner, which ensures geographical balance, develop the State's administrative apparatus and fight corruption;" [...] "Combat all forms of corruption, apply required restructuring measures, and enforce the new Civil Service Law no. 18/2015." (Egypt, National Circumstances – National objectives and priorities) ¹⁷⁵
Target 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	Strengthen transparent and inclusive mechanisms "ii - ensure capacity building and participation of the society, local communities, indigenous peoples, women, men, youth, civil organizations and private sector in national and subnational climate change planning [...] iv - Strengthen adaptive capacity of population through transparent and inclusive mechanisms of social participation designed with gender and human rights approach." (Mexico, Adaptation actions to reduce vulnerability) ¹⁷⁶
Target 16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	Enhance public participation "Enhance education, training, public awareness, public participation, public access to information on climate change adaptation across public and private sectors." (Kenya, Programme of action for adaptation) ¹⁷⁷

2.17 Goal 17: Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development

SDG 17 aims to strengthen means of implementation—including finance and other support—and to revitalize the global partnership for sustainable development. SDG 17 includes 19 targets, 12 of which are means of implementation in four categories: finance, technology, capacity building, and trade; and seven of which address systemic issues such as policy and institutional coherence, promotion of multi-stakeholder partnerships, and data monitoring and accountability.

Means of implementation are vital for achieving climate objectives together with the SDGs as a whole. The finance targets aim to strengthen resource mobilization, support developing countries in attaining long-term debt sustainability, and promote and implement investments in sustainable development projects. These targets are instrumental in mobilizing the financial resources necessary to address climate change. In their INDCs,

the majority of developing countries communicate both unconditional components that they will undertake with domestic resources, and conditional components involving climate targets, policies, and measures (for both mitigation and adaptation) that will require international support.¹⁷⁸

SDG 17 places an emphasis on the need for more global partnerships among actors from public and private institutions and from developed and developing countries. Such cooperation is a key prerequisite for accessing knowledge and technology and implementing integrated capacity building in developing countries. These objectives are closely aligned with the needs and gaps communicated by a number of countries in their INDCs. Brazil communicates its intention to strengthen cooperation with other developing countries to build technical capacities, and Japan states in its INDC that it will develop international cooperation with developing countries for human resources development and technology transfer in the context of emissions reductions.

Table 17 | **Examples of Climate Actions that Align with SDG 17**

 SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development	
SELECTED TARGETS	SELECTED EXAMPLES FROM INDCS
<p>Target 17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress</p>	<p>Exchange debt for adaptation “Guatemala has a number of mechanisms that support the implementation of various policies and laws, including: an agreement of debt swap for nature with United States [...] The government of Guatemala is currently implementing with the government of Germany an agreement of debt swap for adaptation to climate change in vulnerable areas. Guatemala is expected to continue to promote this type of instruments with other developed or emerging countries.” (Guatemala)¹⁷⁹</p>
<p>Target 17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism</p>	<p>Enhance financial flows and cooperation with developing countries “Recognizing the complementary role of South-South cooperation, on the basis of solidarity and common sustainable development priorities, Brazil will undertake best efforts to enhance cooperation initiatives with other developing countries, particularly in the areas of: forest monitoring systems; biofuels capacity-building and technology transfer; low carbon and resilient agriculture; restoration and reforestation activities; management of protected areas; increased resilience through social inclusion and protection programmes; capacity building for national communications and other obligations under the Convention, in particular to Portuguese speaking countries.” (Brazil, South-South initiatives)¹⁸⁰</p>
<p>Target 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed</p>	<p>Promote international cooperation and diffusion of leading technologies “Japan will also actively contribute internationally towards, inter alia, human resource development and promotion of development and diffusion of technologies relating to emission reductions in developing countries.” (Japan, JCM, and other international contributions)¹⁸¹</p>
<p>Target 17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation</p>	<p>Enhance cooperation initiatives for capacity-building and technology transfer “[Brazil] Will undertake best efforts to enhance cooperation initiatives with other developing countries, particularly in the areas of: forest monitoring systems; biofuels capacity-building and technology transfer; low carbon and resilient agriculture; restoration and reforestation activities; management of protected areas; increased resilience through social inclusion and protection programmes.” (Brazil, Means of implementation)¹⁸²</p>

3. ALIGNMENT BETWEEN INDIVIDUAL INDCS AND THE SDGS

Looking across all 162 INDCs, there is a high degree of alignment between the climate actions communicated by countries and the SDGs and targets that underpin them. This strongly suggests that the implementation of both of these agendas at the national level has the potential to be mutually beneficial. To understand the degree of alignment between an individual INDC and the SDGs, a similar mapping exercise was undertaken to assess the INDCs of Colombia and Uganda.

This section compares the climate actions communicated in each country's INDC with the 17 goals and 169 targets of the SDGs. Colombia and Uganda were chosen because each country had already gone through the process of translating (or "localizing") the SDGs into their respective national development plans before developing their INDCs. The "localization" process, as defined by the United Nations Development Group (2015),¹⁸³ "is the process of defining, implementing, and monitoring strategies at the local level for achieving global, national, and subnational SDGs."

The degree and specificity of information included in each INDC affects the potential for mutual benefits that can be identified when analyzing the INDC only on its face and not looking at the national policies and plans underpinning or related to it. To completely understand the alignment between an individual country's climate objectives and the SDGs, all relevant national strategies, plans, and policies would need to be considered—an analysis that is beyond the scope of this paper.

3.1 The INDCs of Colombia and Uganda

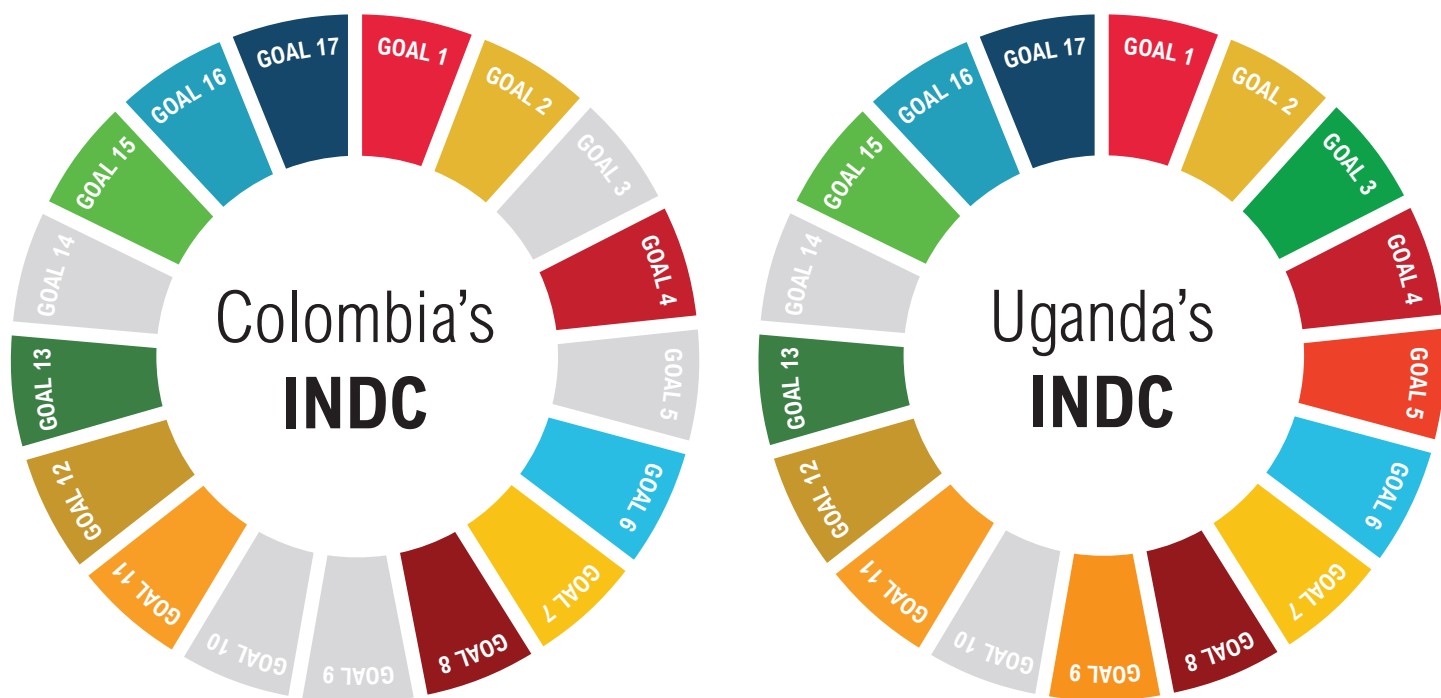
Colombia and Uganda both include mitigation and adaptation contributions in their INDCs. As is the case with all countries that have submitted INDCs, each country takes a different approach to preparing and communicating its INDC. Differing approaches yield a wide variety of climate actions between countries' INDCs, both in terms of types of action and specificity of targets.

Colombia's mitigation contribution is expressed as an economy-wide emissions target to reduce its GHG emissions by 20 percent with respect to its projected business-as-usual scenario by 2030. Like many other countries that chose emissions reduction targets, Colombia's INDC does not describe the specific measures

and actions that will be taken to achieve its target, other than to confirm that it will fulfill its Sectorial Mitigation Action Plans (SMAPs), which aim to maximize the carbon-efficiency of economic activities at the national and sectorial levels and in turn contribute to social and economic development.¹⁸⁴ Recognizing the significant share of emissions from livestock sub-sectors, agriculture, forestry, and other land use in the national emissions profile (about 58 percent of its emissions profile), Colombia also reaffirms its commitment to reduce deforestation within its borders and to protect important ecosystems such as the Amazonian forest that help stabilize atmospheric concentrations of greenhouse gases. Colombia's adaptation contribution focuses on its strategic national approach to adaptation and priority actions for 2030. These priority adaptation actions present substantial potential for synergies with the SDGs and include strengthening adaptation planning, land protection, water resource management, and education to raise awareness on climate risks and vulnerability.¹⁸⁵

Uganda, by comparison, does not communicate a national emissions reduction target¹⁸⁶ and instead expresses its mitigation contribution through a set of specific actions and measures in three key sectors: energy, forestry, and wetlands. Using 2013 as a baseline, Uganda sets 2030 as the target year to more than triple its renewable electricity generation capacity, increase forest cover by 7 percent, and wetland coverage by slightly over 1 percent. Uganda is among the countries that explicitly links its INDC to the SDGs, noting that its "Intended Nationally Determined Contribution opens the door to affordable and modern energy as inscribed in goal seven of the United Nations Sustainable Development Goals (UNSDGs)."¹⁸⁷ In terms of its adaptation contribution, Uganda articulates a long-term goal of ensuring that all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development and green growth. Specific priority adaptation actions are identified and include: agriculture, forestry, water, infrastructure (with an emphasis on human settlements, social infrastructure, and transport), energy, and health. A focus on disaster risk management is crosscutting among all sectors and actions.¹⁸⁸

Figure 2 | Alignment between the SDGs and the INDCs of Colombia and Uganda



Note: Colored segments in Figure 2 highlight those SDGs where at least one aligned climate action was identified in Colombia and Uganda's individual INDCs.

3.2 INDC Alignment with the SDGs and SDG Targets

Comparing each country's INDC to the SDG targets reveals a high degree of alignment at the goal level. Each country communicates climate actions in its INDC that are aligned with targets for 15 of the 17 SDG goals, as identified in Figure 2.

COLOMBIA

At the level of specific targets, Colombia's mitigation and adaptation targets and actions demonstrate potential synergies with 40 of the 169 SDG targets, as indicated in Figure 3.

Colombia's National Development Plan identifies peace, equity and education as the three overarching priority policy areas and a further six cross-cutting objectives: strategic competitiveness and infrastructure; social mobility; rural transformation; security, justice and democracy for peace-building; good governance; and green growth. These priorities are clearly reflected in the strong alignment of Colombia's INDC with SDG 15 (life on land), SDG 17 (partnerships for the goals), SDG 7

(affordable and clean energy), SDG 8 (decent work and economic growth) and SDG 16 (peace, justice and strong institutions). SDG 15 aims to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Colombia's INDC includes targets that aim to increase the coverage of newly protected areas, reduce deforestation, preserve important ecosystems such as the Amazon region, and protect Colombia's high mountain Andean ecosystems covering around three million hectares. Regarding SDG 16, which aims to promote just, peaceful, and inclusive societies, Colombia's INDC explicitly recognizes the potential for climate action to facilitate the consolidation of peace territories where productive activities and land uses can play a key role providing better development opportunities, in particular in rural communities.

Given that equity is also a priority objective for that development plan, there may be more opportunities than appear on the surface of the INDC. Colombia makes several references throughout its INDC to its efforts to reduce vulnerability and prioritize adaptation efforts in

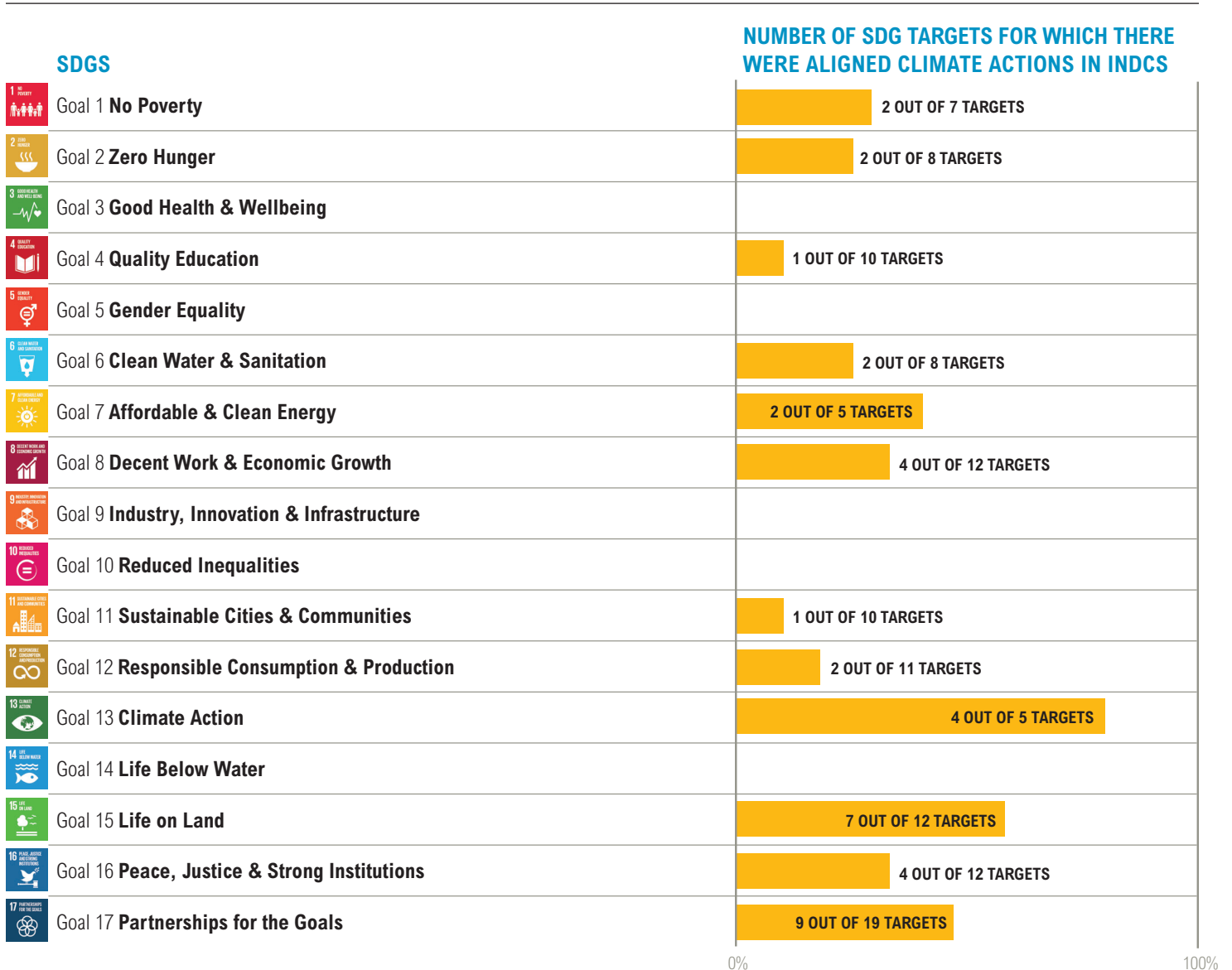
areas with the greatest vulnerability. If these adaptation efforts are implemented in a manner that ensures equal opportunity and empowerment while promoting the social, economic, and political inclusion of all, particularly women, children, and the elderly, Colombia’s adaptation efforts will support the achievement of a number of targets within SDG 5 and SDG 10.

Given Colombia’s objectives regarding infrastructure and green growth and the climate co-benefits available through investing in green infrastructure, there is potential for further mutual benefits to arise through implementation of the country’s INDC.

UGANDA

In the case of Uganda, analysis at the target level reveals alignment with 56 of the 169 SDG targets, as indicated in Figure 4. The country’s INDC is most aligned with SDG 7 (affordable and clean energy), SDG 6 (clean water and sanitation), SDG 3 (good health and well-being), SDG 2 (zero hunger) and SDG 15 (life on land). In relation to SDG 6, which aims to ensure availability and sustainable management of water and sanitation for all, Uganda’s INDC includes actions to provide safe water and sanitation facilities, improved water efficiency, reliable water supply for economic sectors and domestic use, management of water resources systems, and promotion of watershed conservation. Regarding SDG 7, which aims to ensure

Figure 3 | Alignment between Colombia’s INDC and the SDG targets



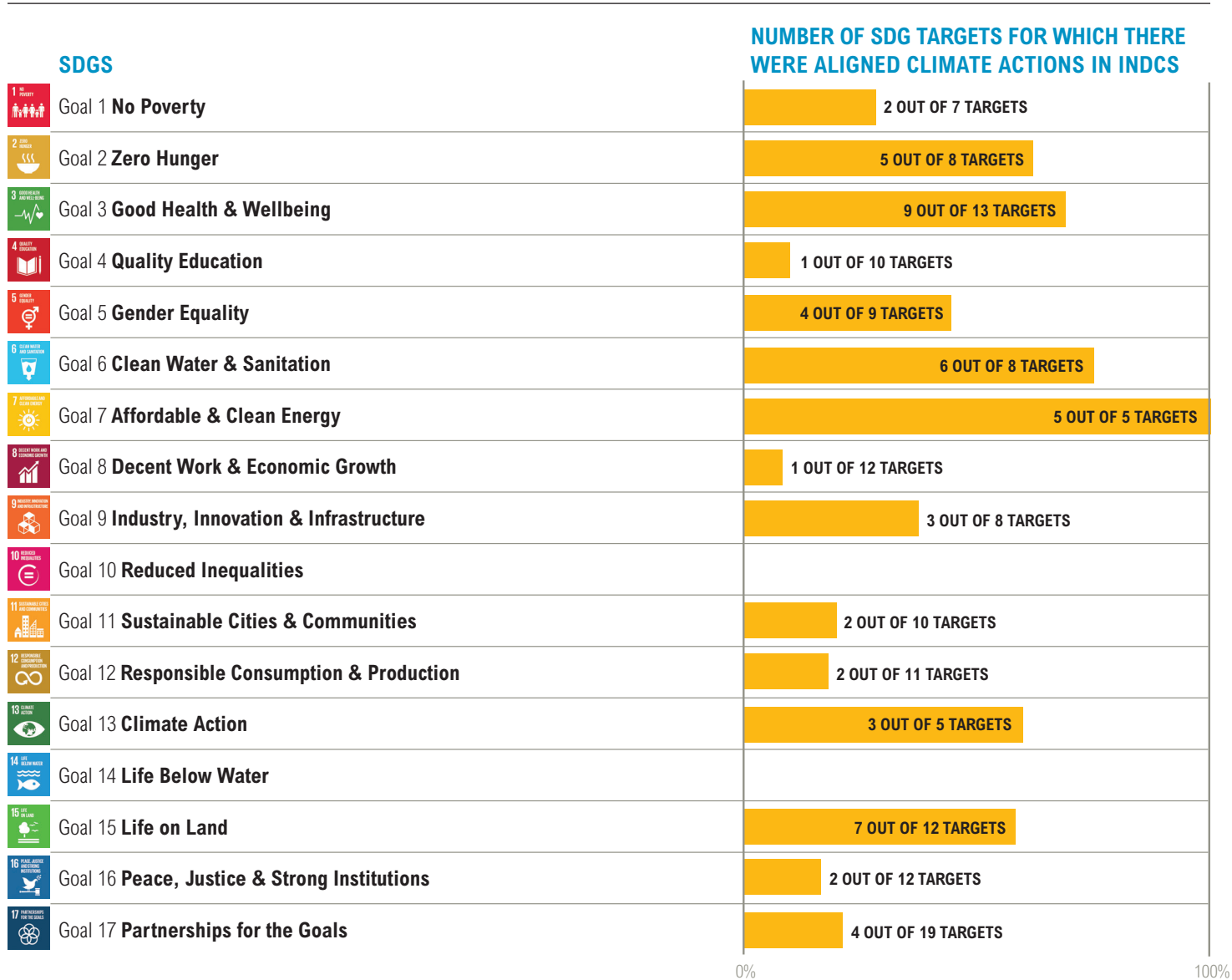
access to affordable, reliable, sustainable, and modern energy for all, Uganda’s INDC includes mitigation action that aims to provide access to energy while reducing emissions through the promotion of renewable energy sources and energy efficiency.

Under Uganda’s Second National Development Plan, the country prioritizes agriculture, minerals, oil and gas, tourism, infrastructure development (including transport, energy, oil and gas, and water), and human capital development (including health, education, and social development). These priority areas are captured in the

alignment of Uganda’s INDC with SDG 2 (zero hunger), although the focus on oil and gas in Uganda’s development priorities and its INDC objectives for reducing emissions through renewable energy could be at odds.

Not surprisingly, both countries’ INDCs demonstrate strong alignment with SDG 13 (climate action) including, for example, target 13.1 to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries, and target 13.2 to integrate climate change measures into national policies, strategies, and planning.

Figure 4 | Alignment between Uganda’s INDC and the SDG targets



The one target within SDG 13 that cannot be implemented by either country is SDG target 13.4, which involves efforts to implement the commitment undertaken by developed-country parties to jointly mobilize \$100 billion annually by 2020 from all sources to address the needs of developing countries and fully operationalize the Green Climate Fund as soon as possible.

However, both countries include information that is relevant for the achievement of target 13.4 by developed countries. By underlining their financial and capacity building needs in order to achieve more ambitious emissions reduction targets, both countries provide clear indications of how they intend to invest the resources mobilized by developed countries. For instance, Uganda outlines in detail the finance required to implement its INDC, drawing on the Uganda National Climate Change Policy and its Costed Implementation Strategy.¹⁸⁹ Similarly, Colombia commits to “continue to work together with the financial sector in order to contribute to the continuous improvement and development of solutions to the environmental and social challenges that the country faces,” and has been “making progress in the identification of financing sources and the definition of a climate-finance strategy.”¹⁹⁰

Comparing the results of the analysis of these two countries’ INDCs to the global analysis undertaken in Section 2 of this paper raises important questions regarding the issues that countries took into account and prioritized when developing their INDCs. It is likely that prioritization based on national development priorities drove the choices that countries made when setting their climate actions, though it is not clear to what degree prioritization during the INDC preparation process was undertaken in a systematic manner or through coordination among multiple ministries.

In many countries, responsibility for negotiating the Paris Agreement and developing their INDCs and the responsibility for negotiating and implementing the 2030 Agenda for Sustainable Development were assigned to different national ministries. As such, the potential for generating mutual benefits between the climate and development agendas is likely underexplored at the national level. This leaves significant potential for these mutual benefits to be systematically mapped prior to implementation. Undertaking such an analysis at the national level could be a useful exercise for all countries to undertake as a way of identifying opportunities for joint implementation. This analysis can also serve to identify which actions provide the greatest mutual benefits and where limited national and international funding could be directed to produce the best outcome for both agendas.

In doing so, countries must have an awareness of potential trade-offs, not only between the climate and development agendas, but also within each respective agenda. In other words, countries should be mindful that actions taken to advance some of the SDG targets could be taken at the expense of achieving the outcomes of other SDGs, and so too could certain actions taken to reduce GHG emissions undermine certain adaptation efforts for a particular region or community. Any national prioritization exercise aimed at undertaking national action to support implementation of the INDCs and the SDGs must be undertaken knowing the implications of such prioritization. More research must be directed toward understanding the potential mutual benefits and trade-offs of implementing the climate and development agendas simultaneously in order to support national governments in making fully informed decisions, sustained by relevant data and in an open and transparent manner.

Please see Annexes II and III for the complete mapping exercise undertaken for Colombia and Uganda.

4. CONCLUSION

4.1 Key Observations

The analysis presented in this paper demonstrates the high degree of alignment that exists between the SDG targets and climate actions communicated in the INDCs. Even though no individual INDCs contain elements aligned with all 169 SDG targets, the alignment across the INDCs as a whole is particularly striking and suggests substantial potential for a mutually supportive set of implementation strategies within countries.

Successful implementation of both agendas in an integrated manner will depend on the ability of national governments to develop and implement a set of national targets that serve both agendas, optimize benefits, and reconcile trade-offs. To do this well, each country needs to complete a systematic analysis of potential mutual benefits between its INDC and the SDG targets. Such analysis should be used to develop an integrated national implementation plan that reflects national priorities and maximizes international and domestic financial resources.

The SDGs can help develop more comprehensive INDCs, which take into account key drivers of climate action that may have been overlooked, such as empowering women, reducing food waste, and strengthening coordination across government ministries. Key social priorities to mitigate climate impact can also be considered, including strengthening health sector preparedness and preventing tropical diseases and pandemics.

The overarching priority of the 2030 Agenda for Sustainable Development to “leave no-one behind” can support a more integrated analysis of the climate actions, policies, and measures in the INDCs with the view of ensuring that climate action benefits all. For example, the construction of dams for hydropower plants can have a significant effect on reducing greenhouse gas emissions by shifting energy production away from coal, but it can result in the displacement of communities, destruction of ecosystems, and even compromise the ability of downstream communities to adapt to climate change through reducing the supply of water. Aligning climate and development priorities can support prioritization of socially and environmentally conscious climate actions based on a global assessment of economic, social, and environmental impacts. Such an approach can also support a shift from short-term project-based implementation toward long-term transformational decision making.

Even though the majority of INDCs were developed ahead of adoption of the SDGs, countries will have the opportunity to review and update their nationally determined contributions ahead of 2020 under the Paris Agreement.¹⁹¹ Countries could use this moment to more closely align their policies and actions with the SDGs and provide clear, transparent, and measurable plans that maximize the potential benefits and minimize potential trade-offs. Such updated national plans could be a crucial tool for countries to leverage additional support, including finance along with technology and capacity building, to fully achieve their climate and sustainable development objectives.

Similarly, numerous SDG targets can be translated to the national level in bolder terms if countries identify and leverage mutual benefits with their INDCs. For instance, given the recent declines in renewable energy prices and the benefits of off-grid renewables for the most vulnerable populations, countries could take ambitious action in localizing SDG target 7.2 (increase substantially the share of renewable energy in the global energy mix).¹⁹² Even the SDGs themselves could be enhanced when viewed through the lens of climate action. For instance, implementation of SDG 2 (zero hunger) could be supported by the development of climate-resilient agriculture, and SDG 11 (sustainable cities and communities) could be achieved through ambitious efforts to adopt low-carbon transportation strategies, including public transport.

4.2 Looking Forward: Key Research Questions

While there is widespread recognition that synergies exist between the sustainable development and climate agendas, the understanding still may not be comprehensive enough to capture the full potential benefits. What is more, understanding the alignment between INDCs and SDGs is only the first step in understanding the benefits of approaching implementation in an integrated and mutually reinforcing manner. More research must be directed to assist policymakers who work on climate and other sustainable development issues to undertake comprehensive analyses of the potential synergies, as well as trade-offs, between relevant policies and measures within the two agendas and find ways to prioritize actions and use of resources in ways that optimize the linkages.

There are also differences between how mitigation and adaptation implementation play out in development contexts. Yet it is important to bear in mind the critical synergies between those two dimensions of climate action, particularly when thinking in terms of broader sustainable development objectives. For many national governments, successful implementation of both agendas will rely heavily on how national policies and processes interact. Synergistic implementation will require decision makers to foster coherence where the two agendas intersect. This is easier said than done.

Real progress has been made in recent years to bring climate and development together, not least in the way that action to address the causes and consequences of climate change has been woven into the sustainable development goals and targets. In large part, this is due to dedicated SDG 13 (climate action), but climate has also been integrated across many of the other goals to ensure systemic transformation.¹⁹³ Eleven targets explicitly address climate-related mitigation, adaptation, and resilience efforts, and a further 27 targets specifically rely on climate action, such as those under SDG 12 (responsible consumption and production) aimed at building a new zero-carbon economy based on sustainable, inclusive, and resilient production and consumption systems, sustainable infrastructure, and natural resource management.¹⁹⁴

Despite progress, much work remains to be done at the national level to achieve the kind of integrated, whole-of-government and whole-of-society approach that is called for. This is the task for the post-2015 implementation agenda, and the SDGs themselves point in the right direction. SDG target 17.4 highlights the need to foster policy coherence for sustainable development. Indeed, anchoring sustainable development and climate objectives in all national policies and plans is an essential task.

To help guide these processes and inform decisions being made on national policies and strategies and institutional responsibility, additional research is needed. Examples are multiplying that show how national governments are approaching integrated planning, for instance, Ethiopia's Climate Resilient and Green Economy strategy, which is now being even further integrated into Ethiopia's overarching national development strategy and has formed the basis for its INDC. But Ethiopia's integrated approach is hardly widespread at this point and there are still many lessons to be learned about how to do it well.

Important questions also arise when considering the role of institutional coordination to achieve effective integration. In many countries, responsibility for climate change and development rests with separate specialized agencies at the national, regional, and local levels. Institutional fragmentation has a number of implications. It encourages inter-departmental competition for scarce resources and political attention. Key technical capacities are stretched across a number of agencies, and many governments are still unable to undertake the analysis, planning, coordination, monitoring, and reporting required to formulate, implement, and track climate actions. Incentives for collaboration, information, and data sharing are weak, compounding capacity challenges because individual authorities lack access to relevant knowledge and technical capacities from other departments.

Moreover, a lack of institutional coherence makes it increasingly difficult to achieve policy consistency, resulting in avoidable conflicts and trade-offs. Ensuring that decision makers at all levels have the opportunity to talk to one another, collaborate on key policies and processes, and share expertise, information, and tools will be a key element in achieving effective implementation of both agendas. Different options for structuring such coordination and fostering coherence must be further examined and best practices shared. Deepening coordination and coherence at the subnational level and strengthening local institutions will be a key piece of this puzzle, ensuring that national targets and goals are translated into local priorities.

Efforts must also be made to take a "whole-of-society" approach and identify opportunities to engage a wide range of stakeholders—including local entrepreneurs, community leaders, unions, and civil society—to ensure that the policy development and implementation process is inclusive, transparent, and participatory. Such stakeholders often possess essential knowledge about interactions between climate action and sustainable development. Across issues such as health, gender, urban planning, rural development, and many others, those most directly involved in issues such as health, urban and rural planning, education, and agriculture are likely to have the greatest insight into what needs to be done to align climate and sustainable development objectives in implementation.

Finance also plays an important role in effective implementation, and can either foster coherence or create further artificial divides. For both agendas, there is a clear and well-documented need to mobilize additional finance. How this money is spent also matters: it must be directed in ways that better serve multiple objectives, especially so that funding for climate purposes, including those closely linked to development aims, does not diminish funding needed to support development purposes such as broad healthcare reform. The role of international finance, as well as domestic budgetary processes, in optimizing mutual benefits between climate and development deserves greater attention. Financial reporting to provide this assurance is also needed. Tracking and reporting of finance in detail will also be needed to ensure that the maximum number of possible synergies between climate and development is being achieved and that climate funds, for example, are not missing opportunities to support development.

Lastly, monitoring and reporting on whether and how outcomes are actually being achieved is essential to progress integrated implementation. In addition to the benefits of improved tracking and monitoring for achieving progress in each realm, it can also play a key role in enabling better understanding and assessment of the interplay between climate action and sustainable development. Linking the ways in which monitoring and reporting are undertaken for climate action under the Paris Agreement and for sustainable development to achieve the SDGs can be a critical tool in linking the two agendas more broadly. Identifying opportunities to leverage these existing reporting processes in order to maximize information and knowledge sharing should be a priority in the coming years as these reporting processes are fleshed out. Meanwhile, SDG target 17.19 underscores that broad measures of progress, which better take into account social and environmental capital, should also be considered as a top priority to set the right enabling environment for deep transformation across agendas.

Although there is much still to be done, and lessons to be learned from those leading the way in early implementation, the results of the analysis undertaken in this paper indicate the strong potential for mutually supportive pathways to implement the bold visions that were agreed globally in 2015.

ANNEX I: GLOBAL-LEVEL MAPPING OF THE INDCS TO THE SDGS

Please use the following address to access Annex I.
<http://www.wri.org/annex-I-global-analysis.pdf>

ANNEX II: MAPPING OF COLOMBIA'S INDC TO THE SDGS

Please use the following address to access Annex II.
<http://www.wri.org/annex-II-colombia-analysis.pdf>

ANNEX III: MAPPING OF UGANDA'S INDC TO THE SDGS

Please use the following address to access Annex III.
<http://www.wri.org/annex-III-uganda-analysis.pdf>

REFERENCES

- ADB (Asian Development Bank). 2012. "Sector Briefing on Climate Change Impacts and Adaptation: Water Supply and Sanitation." Mandaluyong, the Philippines: ADB.
- Adger, W.Neil., J.M. Pulhin, J. Barnett, G.D. Dabelko, G.K. Hovelsrud, M. Levy, Ú. Oswald Spring, and C.H. Vogel. 2014. "Human Security." In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. Contribution of Working Group II to the Fifth Assessment Report of the IPCC, edited by C.B. Field, V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White. Cambridge, UK and New York, NY: Cambridge University Press, 755–791. Available online at: https://ipcc-wg2.gov/AR5/images/uploads/WGIAR5-Chap12_FINAL.pdf
- Biru, Hana, and J. Thwaites, 2015. *Insider: Examining Finance Needs in Countries' National Climate Plans (INDCs)*. Washington, D.C.: World Resources Institute. Available online at: <http://www.wri.org/blog/2015/11/insider-examining-finance-needs-countries%E2%80%99-national-climate-plans-indcs>
- Bogner, J., M. Abdelrafie Ahmed, C. Diaz, A. Faaij, Q. Gao, S. Hashimoto, K. Mareckova, R. Pipatti, and T. Zhang. 2007. "Waste Management." In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer. Cambridge, UK and New York, NY: Cambridge University Press.
- Bowen A., C. Duffy, and S. Fankhauser. 2016. "'Green growth' and the New Industrial Revolution." Policy brief. London, UK: London School of Economics and Political Science, Grantham Research Institute on Climate Change and the Environment.
- CAIT (Climate Data Explorer). 2016. "Paris Contribution Map." Available online at: <http://cait.wri.org/indc/>
- Crawford, Alec. 2015. "Climate Change, Conflict, and the Sustainable Development Goals." Winnipeg, Canada: International Institute for Sustainable Development (IISD). Blog. Available online at: <https://www.iisd.org/blog/climate-change-conflict-and-sustainable-development-goals>
- FAO (Food and Agriculture Organisation). 2013. "Food Wastage Footprint: Impacts on Natural Resources." Rome, Italy: FAO. Available online at: <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>
- FAO. 2015. "World Agriculture: Towards 2015/2030." Edited by Jelle Bruinsma.
- FAO, IFAD (International Fund for Agricultural Development), and WFP (World Food Programme). 2015. "The State of Food Insecurity in the World 2015. Meeting the 2015 international Hunger Targets: Taking Stock of Uneven Progress." Rome, Italy: FAO
- Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. 2013. "Tackling Climate Change Through Livestock – A Global Assessment of Emissions and Mitigation Opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome. Available online at: <http://www.fao.org/3/i3437e.pdf>
- Government of Arab Republic of Egypt. 2015. "Egyptian Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Egypt/1/Egyptian%20INDC.pdf>
- Government of Bolivia. 2015. "Intended Nationally Determined Contribution from the Plurinational State of Bolivia." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Bolivia/1/INDC-Bolivia-english.pdf>
- Government of Brazil. 2015. "Federative Republic of Brazil Intended Nationally Determined Contribution Towards Achieving The Objective of The United Nations Framework Convention on Climate Change." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf>
- Government of Cambodia. 2014. "Cambodia Climate Change Strategic Plan 2014–2023." Available online at: <http://www.camclimate.org.kh/en/policies/nccsd-news/197-cccsp-2014-2023-kh-en-final.html>
- Government of Cambodia. 2015. "Cambodia's Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Cambodia/1/Cambodia's%20INDC%20to%20the%20UNFCCC.pdf>
- Government of Central African Republic. 2015. "Intended Nationally Determined Contribution (INDC)." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Central%20African%20Republic/1/CPDN_R%C3%A9publique%20Centrafricaine_EN.pdf
- Government of China. 2015. "Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>
- Government of Colombia. 2015. "Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Colombia/1/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf>
- Government of Dominican Republic. 2015. "Dominican Republic Intended Nationally Determined Contribution (INDC-DR)." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Dominican%20Republic/1/INDC-DR%20August%202015%20%28unofficial%20translation%29.pdf>
- Government of Federal Democratic Republic of Ethiopia. 2015. "Intended Nationally Determined Contribution (INDC) of the Federal Democratic Republic of Ethiopia." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Ethiopia/1/INDC-Ethiopia-100615.pdf>
- Government of India. 2015. "India's Intended Nationally Determined Contribution: Working Towards Climate Justice." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf>

Government of Islamic Republic of Afghanistan. 2015. "Intended Nationally Determined Contribution Submission to the United Nations Framework Convention on Climate Change." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Afghanistan/1/INDC_AFG_Paper_En_20150927.docx%20FINAL.pdf.

Government of Japan. 2015. "Submission of Japan's Intended Nationally Determined Contribution (INDC)." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Japan/1/20150717_Japan's%20INDC.pdf

Government of Kingdom of Tonga. 2015. "Intended Nationally Determined Contributions." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Tonga/1/Tonga%20INDC.pdf>.

Government of Mexico. 2015. "Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>

Government of Morocco. 2015. "Morocco Intended Nationally Determined Contribution (INDC) Under the UNFCCC." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Morocco/1/Morocco%20INDC%20submitted%20to%20UNFCCC%20-%20%205%20june%202015.pdf>

Government of Republic of Chad. 2015. "Intended Nationally Determined Contribution (INDC) for the Republic of Chad." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Chad/1/INDC%20Chad_Official%20version_English.pdf

Government of Republic of Ghana. 2015. "Ghana's Intended Nationally Determined Contribution (INDC) and Accompanying Explanatory Note." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Ghana/1/GH_INDC_2392015.pdf

Government of Republic of Guinea. 2015. "Intended Nationally Determined Contribution (INDC) under the United Nations Framework Convention on Climate Change (UNFCCC)." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Guinea/1/INDC_Guinea_english_version%20UNFCCC_20151016170448_232956.docx.

Government of Republic of Malawi. 2015. "Republic of Malawi Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Malawi/1/MALAWI%20INDC%20SUBMITTED%20TO%20UNFCCC%20REV%20pdf.pdf>

Government of Republic of Peru. 2015. "Intended Nationally Determined Contribution (INDC) from the Republic of Peru." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Peru/1/iNDC%20Per%C3%BA%20english.pdf>

Government of Republic of Rwanda. 2015. "Intended Nationally Determined Contribution (INDC) for the Republic of Rwanda." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Rwanda/1/INDC_Rwanda_Nov.2015.pdf.

Government of Somalia. 2015. "Somalia's Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Somalia/1/Somalia's%20INDCs.pdf>

Government of Sudan. 2015. "Intended Nationally Determined Contributions (INDCs)." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Sudan/1/28Oct15-Sudan%20INDC.pdf>

Government of Viet Nam. 2015. "Intended Nationally Determined Contribution of Viet Nam." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Viet%20Nam/1/VIETNAM'S%20INDC.pdf>

Government of Zambia. 2015. "Zambia's Intended Nationally Determined Contribution (INDC) to the 2015 Agreement on Climate Change." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Zambia/1/FINAL+ZAMBIA'S+INDC_1.pdf

Halsnæs, K., P. Shukla, D. Ahuja, G. Akumu, R. Beale, J. Edmonds, C. Gollier, A. Grübler, M. Ha Duong, A. Markandya, M. McFarland, E. Nikitina, T. Sugiyama, A. Villavicencio, J. Zou. 2007. "Framing issues." In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the IPCC, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer. Cambridge, UK and New York, NY: Cambridge University Press. Available online at: <https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter2.pdf>

IEA (International Energy Agency). 2012. *World Energy Outlook 2012*. Paris, France: IEA.

IFAD (International Fund for Agricultural Development). 2013. "Smallholders, Food Security, and the Environment." Rome, Italy. Available online at: http://www.unep.org/pdf/SmallholderReport_WEB.pdf

ILO (International Labour Organization). 2012. "Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy." Geneva, Switzerland: ILO. Available online at: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_181836.pdf

IPCC (Intergovernmental Panel on Climate Change). 2007. "Summary for Policymakers." In: *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, edited by M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK. Available online at: https://www.ipcc.ch/publications_and_data/ar4/wg2/en/spm.html

IPCC. 2014. "Summary for policymakers." In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available online at: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

IUCN (International Union for Conservation of Nature). 2015. "Oceans and Climate Change, Ocean Acidification and other Stressors." Issue Brief. Gland, Switzerland: IUCN.

IUCN Gender Office. 2016. "Gender in Mitigation Actions (EGI Brief). Environment and Gender Information Washington, DC. Available Online at: https://www.climate-links.org/sites/default/files/asset/document/Gender%20In%20Mitigation%20Actions_April%202016.pdf

Kaczan D., A. Arslan, and L. Lipper. 2013. "Climate-Smart Agriculture? A Review of Current Practice of Agroforestry and Conservation Agriculture in Malawi and Zambia." FAO-ESA Working Paper No. 13-07. Rome, Italy: FAO, Agricultural Development Economics Division. Available online at: <http://www.fao.org/3/a-ar715e.pdf>

Kahn Ribeiro, S., S. Kobayashi, M. Beuthe, J. Gasca, D. Greene, D.S. Lee, Y. Muromachi, P.J. Newton, S. Plotkin, D. Sperling, R. Wit, and P.J. Zhou. 2007. "Transport and its Infrastructure." Contribution of Working Group III to the Fourth Assessment Report of the IPCC, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer. Cambridge, UK and New York, NY: Cambridge University Press. Available online at: <https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter5.pdf>.

Kenya Ministry of Environment and Natural Resources. 2015. "Kenya's Intended Nationally Determined Contribution (INDC)." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Kenya/1/Kenya_INDC_20150723.pdf

Kroodsma Communications. 2016. "What's in the INDCs?" Available online at: <http://kroodsma.com/?p=356>

Latvian Presidency of the Council of the European Union. 2015. "Intended Nationally Determined Contribution of the EU and its Member States." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Latvia/1/LV-03-06-EU%20INDC.pdf>.

Markandya, A., D. Saygin, A. Miketa, D. Gielen, and N. Wagner. 2016. *The True Cost of Fossil Fuels: Saving on the Externalities of Air Pollution and Climate Change*. Abu Dhabi, UAE: IRENA (The International Renewable Energy Agency).

Ministry of Mahaweli Development and Environment Sri Lanka. 2015. "Intended Nationally Determined Contributions." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Sri%20Lanka/1/INDCs%20of%20Sri%20Lanka.xls>

MOEF (Ministry of Environment and Forests). 2009. "Bangladesh Climate Change Strategy and Action Plan 2009." Dhaka, Bangladesh: Government of the People's Republic of Bangladesh. Available online at: http://www.climatechange-cell.org.bd/Documents/climate_change_strategy2009.pdf

MOEF. 2015. "Intended Nationally Determined Contributions (INDC)." Dhaka, Bangladesh: Government of the People's Republic of Bangladesh. Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Bangladesh/1/INDC_2015_of_Bangladesh.pdf

Mogelgaard, Kathleen, and Heather McGray. 2015. "With New Climate Plans, Adaptation is No Longer an Overlooked Issue." Blog, November 24. Washington, D.C.: World Resources Institute. Available online at: <http://www.wri.org/blog/2015/11/new-climate-plans-adaptation-no-longer-overlooked-issue>

National Research Council. 2001. "Under the Weather: Climate, Ecosystems, and Infectious Disease." The National Academies Press, Washington, DC. Available online at: <http://www.nap.edu/read/10025/chapter/9>

NCE (New Climate Economy). 2014. *Financing a Low-Carbon Future: Better Growth, Better Climate: The Synthesis Report*. Global Commission on the Economy and Climate. Available online at: http://2014.newclimateeconomy.org/wp-content/uploads/2014/08/BetterGrowth-BetterClimate_NCE_Synthesis-Report_web.pdf

OECD (Organisation for Economic Co-operation and Development (OECD)). 2014. "Cities and Climate Change: National Governments Enabling Local Action." Paris, France: OECD. Available online at: <http://www.oecd.org/env/cc/Cities-and-climate-change-2014-Policy-Perspectives-Final-web.pdf>

OECD. 2015. "OECD-FAO Guidance for Responsible Agricultural Supply Chains." Paris, France: OECD. Available online at: http://www.oecd.org/daf/inv/mne/FAO-OECD-guidance-responsible-agricultural-supply-chains_2015-Draft.pdf

OECD. 2015. Agriculture and Climate Change. Trade and Agriculture Directorate. Available Online at: <https://www.oecd.org/tad/sustainable-agriculture/agriculture-climate-change-september-2015.pdf>

Office of Natural Resources and Environmental Policy and Planning Thailand. 2015. "Intended Nationally Determined Contribution and Relevant Information." Available online at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Thailand/1/Thailand_INDC.pdf

Oxfam. 2016. "An Economy for the 1%: How Privilege and Power in the Economy Drive Extreme Inequality and How This Can Be Stopped." Briefing Paper. Oxford, UK: Oxfam. Available online at: www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp210-economy-one-percent-tax-havens-180116-en_0.pdf.

Paris Process on Mobility and Climate. 2015. *Emission Reduction Potential in the Transport Sector by 2030*. See: <http://ppmc-cop21.org/wp-content/uploads/2015/08/Emission-Reduction-Potential-in-the-Transport-Sector-by-2030.pdf>

Pearce, D. n.d. "Policy Frameworks for the Ancillary Benefits of Climate Change Policies." CSERGE Working Paper GEC 2000-1. <http://www.uea.ac.uk/env/cserge/pub/wp/gec>

Piketty T., and L. Chancel. 2015. *Carbon and Inequality: From Kyoto to Paris*. Paris, France: Paris School of Economics.

Republic of Tunisia, Ministry of Environment and Sustainable Development. 2015. "Intended Nationally Determined Contribution." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Tunisia/1/INDC-Tunisia-English%20Version.pdf>.

Rich, David, Eliza Northrop, and Kathleen Mogelgaard. 2015. "Colombia First South American Country to Release New Climate Plan Ahead of Paris." WRI Blog. Available online at: <http://www.wri.org/blog/2015/09/colombia-first-south-american-country-release-new-climate-plan-ahead-paris>

Scovronick, Noah. 2015. "Reducing Global Health Risks through Mitigation of Short-lived Climate Pollutants." WHO (World Health Organization). Available online at: http://apps.who.int/iris/bitstream/10665/189524/1/9789241565080_eng.pdf?ua=1

Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, S. Ogle, F. O'Mara, C. Rice, B. Scholes, and O. Sirotenko. 2007. "Agriculture." In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, edited by B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer. Cambridge, UK and New York, NY: Cambridge University Press.

Smith, P., M. Bustamante, H. Ahammad, H. Clark, H. Dong, E.A. Elsidig, H. Haberl, R. Harper, J. House, M. Jafari, O. Masera, C. Mbow, N.H. Ravindranath, C.W. Rice, C. Robledo Abad, A. Romanovskaya, F. Sperling, and F. Tubiello. 2014. "Agriculture, Forestry and Other Land Use (AFOLU)." In *Climate Change 2014: Mitigation of Climate Change*. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx. Cambridge, UK and New York, NY: Cambridge University Press.

Soroptimist International of the Americas. 2008. "White Paper: Reaching Out to Women When Disaster Strikes." Philadelphia, PA. Available online at: <https://www.soroptimist.org/whitepapers/whitepaperdocs/wpreachingwomensdisaster.pdf>.

State of Qatar, Ministry of Environment. 2015. "Intended Nationally Determined Contributions (INDCs) Report." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Qatar/1/Qatar%20INDCs%20Report%20-English.pdf>.

Stolle, Fred, Taryn Fransen, Ranping Song, Hana Biru, James Anderson, and Octavia Aris Payne. 2015. "New Climate Commitments on Forests and Land Will Reduce Emissions by 2%, but More Needed." Washington, D.C.: World Resources Institute. WRI blog. Available online at: <http://www.wri.org/blog/2015/12/new-climate-commitments-forests-and-land-will-reduce-emissions-2-more-needed>.

Tsay, Shin-Pei, and Victoria Herrmann. 2013. "Rethinking Urban Mobility: Sustainable Policies for the Century of the City." Washington, D.C.: Carnegie Endowment for International Peace. Available online at: http://carnegieendowment.org/files/urban_mobility.pdf.

Tubiello, F.N., M. Salvatore, S. Rossi, A. Ferrara, N. Fitton, and P. Smith. 2013. "The FAOSTAT Database of Greenhouse Gas Emissions from Agriculture." *Environmental Research Letters* 8. Available online at: <http://www.fao.org/climatechange/36143-0fa4483057747f41c08183b702ec5954e.pdf>

Uganda Ministry of Water and Environment. 2015a. "Uganda's Intended Nationally Determined Contribution (INDC)." Available online at: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Uganda/1/INDC%20Uganda%20final%20%2014%20October%20%202015,%20minor%20correction,28.10.15.pdf>

Uganda Ministry of Water and Environment. 2015b. Ugandan Climate Change Costed Implementation Strategy. Available online at: <http://ccd.go.ug/index.php/accordion-b/level-2/2-uncategorised/120-uganda-cc-costed-implementation-strategy-final-version-for-approval-14-10-2013>

UN (United Nations). 2009. "Women, Gender Equality and Climate Change." Fact Sheet. UN WomenWatch: The UN Internet Gateway on Gender Equality and Empowerment of Women. www.un.org/womenwatch

UN. 2016a. "Women and Poverty." Available online at: http://www.un.org/womenwatch/directory/women_and_poverty_3001.htm

UN. 2016b. "World Economic Situation and Prospects 2016." Available online at: http://www.un.org/en/development/desa/policy/wesp/wesp_current/2016wesp_full_en.pdf.

UNDESA (UN Department of Economic and Social Affairs). 2014. "How Oceans- and Seas-Related Measures Contribute to the Economic, Social and Environmental Dimensions of Sustainable Development: Local and Regional Experiences." UN-DOALOS/OLA, IAEA, IMO, IOC-UNESCO, UNDP, UNEP, UNWTO. Available online at: http://www.un.org/depts/los/nippon/documents/Non_recurrent_e_publication_Oceans_final.pdf

UNDG (United Nations Development Group). 2014. "Localizing the Post-2015 Development Agenda." Available online at: http://www.uclg.org/sites/default/files/dialogues_on_localizing_the_post-2015_development_agenda.pdf

UNDP (United Nations Development Programme). 2013. "Policy Brief: Overview of Linkages Between Gender and Climate Change. Gender and Climate Change Asia and Pacific." New York, NY: UNDP.

UNDP. 2015. Human Development Report 2015: Work for Human Development. Available online at: http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf

UNDP. 2016. "Goal 10: Reduced Inequalities." Available online at: <http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-10.html>

UNEP (United Nations Environment Programme). 2014. "UNEP Post-2015 Note #2: Sustainable Consumption and Production and the SDGs." Available online at: <http://www.unep.org/post2015/Publications/UNEPPost-2015Note2/tabid/133050/language/en-US/Default.aspx>

UNFCCC (United Nations Framework Convention on Climate Change). 2015. "Paris Agreement." Available online at: http://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english.pdf

UNGA (United Nations General Assembly). 2015. "Transforming our World: The 2030 Agenda for Sustainable Development." Resolution adopted by the General Assembly on 25 September, 2015 (A/RES/70/1). Available online at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

UNICEF (United Nations Children's Emergency Fund) and World Health Organization (WHO). 2015. "Progress on Sanitation and Drinking Water—2015 Update and MDG Assessment." Available online at: http://www.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update.pdf

UNICEF. 2016. "Current Status + Progress: Undernutrition contributes to nearly half of all deaths in children under 5 and is widespread in Asia and Africa." Available online at: <http://data.unicef.org/nutrition/malnutrition.html#sthash.6H63Va48.dpuf>

USAID (United States Agency for International Development). 2009. "Climate Change, Adaptation, and Conflict: A Preliminary Review of the Issues." Washington, D.C.: USAID. Available online at: http://pdf.usaid.gov/pdf_docs/Pnadr530.pdf

WEC (World Energy Council). 2011. *Global Transport Scenarios 2050*. London, UK: WEC.

WEF (World Economic Forum). 2015. "Global Risks 2015." Geneva, Switzerland: WEF. Available online at: <http://reports.weforum.org/global-risks-2015/part-1-global-risks-2015/introduction/>

Westhoek, H., J. Ingram, S. Van Berkum, L. Özay, and M. Hajer. 2016. *Food Systems and Natural Resources*. A Report of the Working Group on Food Systems of the International Resource Panel. UNEP.

WHO (World Health Organization). 2015a. "FACTSHEET: Climate Change and Health." Geneva, Switzerland: WHO. Available online at: <http://www.who.int/mediacentre/factsheets/fs266/en/>

WHO. 2015b. "Strengthening Health Resilience to Climate Change." Geneva, Switzerland: WHO. Available online at: http://www.who.int/phe/climate/conference_briefing_1_healthresilience_27aug.pdf

WHO. 2015c. "Operational Framework for Building Climate Resilient Health Systems." Geneva, Switzerland: WHO. Available online at: http://apps.who.int/iris/bitstream/10665/189951/1/9789241565073_eng.pdf?ua=1

WHO. 2016. "FACTSHEET: Household Air Pollution and Health." Geneva, Switzerland: WHO. Available online at: <http://www.who.int/mediacentre/factsheets/fs292/en/>

World Bank. 2014. "Climate Smart Development." The World Bank and ClimateWorks Foundation. Available online at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/06/20/000456286_20140620100846/Rendered/PDF/889080WPOv10RE0Smart0Development0Ma.pdf

World Bank. 2015. "Climate Change Complicates Efforts to End Poverty." Feature Story. Washington, D.C.: World Bank. Available online at: <http://www.worldbank.org/en/news/feature/2015/02/06/climate-change-complicates-efforts-end-poverty>

World Bank. 2016. "Poverty Headcount Ratio at \$1.90 a day (2011 PPP) (% of Population)." Washington, D.C.: World Bank. Available online at: <http://data.worldbank.org/indicator/SI.POV.DDAY>

World Nuclear Association. 2015. "World Energy Needs and Nuclear Power." London, UK: World Nuclear Association. Available online at: <http://www.world-nuclear.org/information-library/current-and-future-generation/world-energy-needs-and-nuclear-power.aspx>

ENDNOTES

1. The EU submitted one INDC representing its 28 member countries.
2. For the purpose of this paper “climate co-benefit” is used to refer to those ancillary global climate change benefits that would result from the implementation of a plan, policy, or strategy aimed primarily at implementing the SDGs.
3. For the purpose of this paper “development co-benefit” is used to refer to those ancillary local benefits that derive from the implementation of a plan, policy, or strategy aimed primarily at implementing either the mitigation or adaptation component of an INDC. For greater discussion, see Pearce, n.d.
4. See the discussion in chapter 12.1.1. in the IPCC’s Fourth Assessment Report, available online at: https://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch12s12-1-1.html
5. Localization is the process of defining, implementing, and monitoring strategies at the local level for achieving global, national, and subnational SDGs.
6. Sendai Framework for Disaster Risk Reduction was adopted at the Third UN World Conference in Sendai, Japan, on March 18, 2015 and the Addis Ababa Action Agenda was agreed at the Third International Conference on Financing for Development in Addis Ababa, Ethiopia on July 16, 2015.
7. UNDG, 2013.
8. For a full list of all 17 goals, and their associated targets, see: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>
9. See paragraph 14 of the 2030 Sustainable Development Agenda.
10. UNGA, 2015.
11. 27 targets are particularly climate-relevant: 1.5 vulnerability to climate-related extreme events; 2.4 agriculture’s adaptation to climate change; 3.3 end neglected tropical diseases, water-borne diseases and other communicable diseases; 6.4 water-use efficiency and address water scarcity; 7.2 renewable energy; 7.3 energy efficiency; 8.4 sustainable production and consumption, decoupling economic growth from environmental degradation; 9.1 sustainable and resilient infrastructure; 9.a enhanced support for sustainable and resilient infrastructures; 11.3 enhance sustainable urbanization; 11.5 mitigate impact of disasters; 11.6 reduce adverse per capita environmental impact of cities; 11.b increase number of cities and human settlements adopting and implementing policies and plans towards mitigation and adaptation to climate change, resilience to disasters; 12.2 sustainable management of natural resources; 12.5 reduce waste generation; 12.8 sustainable procurement practices; 12.8 awareness for sustainable development and lifestyles; 12.c rationalize inefficient fossil-fuel subsidies; targets 13.1 to 13.b dedicated to climate change; 14.2 resilience of ecosystems; 15.2 sustainable management of forests, halt deforestation, increase afforestation and reforestation; 15.3 combat desertification, land degradation-neutral world; 17.7 diffusion of environmentally sound technologies.
12. UNGA, 2015.
13. Note that once countries formally join the Paris Agreement, their “INDCs” will be considered “NDCs” for the purpose of the Paris Agreement. For simplicity’s sake, this paper uses “INDC” throughout.
14. CAIT, 2016.
15. Bowen et al., 2016.
16. UNFCCC, 2015.
17. For the purpose of this paper “climate co-benefit” is used to refer to those ancillary global climate change benefits that would result from the implementation of a plan, policy, or strategy aimed primarily at implementing the SDGs.
18. For the purpose of this paper “development co-benefit” is used to refer to those ancillary local benefits that derive from the implementation of a plan, policy, or strategy aimed primarily at implementing either the mitigation or adaptation component of an INDC. For greater discussion, see Pearce n.d.
19. See the discussion in chapter 12.1.1. in the IPCC’s Fourth Assessment Report, available at: https://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch12s12-1-1.html
20. Key word searches were performed on INDCs in English and searchable format via <http://kroodsma.com/?p=356>
21. With the UK vote to leave the EU, the EU INDC will represent 27 member states once the exit of the UK is complete.
22. World Bank, 2016.
23. World Bank, 2015.
24. World Bank, 2016.
25. World.Bank, 2015.
26. IPCC, 2014a.
27. OECD, 2015.
28. UN, 2016a.
29. Government of Zambia, 2015.
30. MOEF, 2015.
31. Government of the People’s Republic of Bangladesh, 2009.
32. Bolivia INDC: 9.
33. Zambia INDC: 3.
34. Sudan INDC: 15.
35. Bangladesh INDC: 2, 10.
36. FAO, IFAD and WFP, 2015.
37. UNICEF, 2016
38. IFAD, 2013
39. IFAD, 2013
40. Smith et al., 2007.
41. Tubiello et al., 2013: 1–13.
42. Westhoek et al., 2016.
43. Gerber et al., 2013.
44. Kaczan et al., 2013.
45. See Ethiopia and Malawi INDC submission.
46. OECD, 2015.
47. See: Government of Federal Democratic Republic of Ethiopia, 2015; Government of Islamic Republic of Afghanistan, 2015; Republic of Tunisia, Ministry of Environment and Sustainable Development. 2015.
48. Mexico INDC: 7
49. Ethiopia INDC: 2
50. Ghana INDC: 15
51. Mexico INDC: 8
52. WHO, 2015a.
53. WHO, 2015b.
54. Scovronick, 2015.
55. Markandya et al., 2016.
56. WHO, 2015c.
57. National Research Council. 2001. “Under the Weather: Climate, Ecosystems, and Infectious Disease.”
58. Cambodia INDC: 4
59. Bangladesh INDC: 6
60. Sudan INDC: 14
61. Thailand INDC: 4
62. Government of Republic of Niger, 2015.
63. Government of Islamic Republic of Afghanistan, 2015.
64. Government of China, 2015: 11.
65. Afghanistan INDC: 6
66. Niger INDC: 14

67. China INDC: 11
68. Soroptimist International of the Americas, 2008.
69. UN, 2009.
70. UNDP, 2013.
71. UN, 2009.
72. UNDP, 2013.
73. EGI, 2016.
74. See Annex I and Government of Federal Democratic Republic of Ethiopia, 2015; Government of Morocco, 2015; Kenya Ministry of Environment and Natural Resources, 2015; Government of Dominican Republic, 2015; Uganda Ministry of Water and Environment, 2015.
75. Mexico INDC: pages 4 and 8
76. Peru INDC: 11
77. Nigeria INDC: 16
78. Peru INDC: 11
79. UNICEF and WHO, 2015.
80. ADB, 2012.
81. Morocco INDC: 13
82. Jordan INDC: 2
83. Viet Nam INDC:10
84. Mongolia INDC: 7
85. WHO, 2016.
86. GEA, 2012.
87. Fullerton et al., 2008.
88. Fullerton et al., 2008.
89. IEA, 2015.
90. IEA, 2012.
91. IRENA, 2016.
92. IEA, 2015b.
93. IEA, 2015b.
94. Afghanistan INDC: 4
95. India INDC: page 8 and 9
96. Tunisia INDC: 8
97. India INDC: 9
98. Uganda INDC: 8
99. NCE, 2014.
100. World Bank, 2014.
101. ILO, 2012.
102. State of Qatar, Ministry of Environment. 2015: 4–2.
103. Government of Republic of Peru, 2015.
104. Ethiopia INDC: 11
105. India INDC: 32
106. Malaysia INDC: 3
107. Qatar INDC: 4
108. UNICEF and WHO, 2015.
109. IPCC, 2014.
110. Fishedick et al., 2014.
111. Peru INDC: 14
112. China INDC: 8
113. Egypt INDC: 4
114. Mongolia INDC: 2
115. Piketty and Chancel, 2015.
116. Kenner, 2016
117. IPCC, 2007.
118. Oxfam, 2016.
119. UNDP, 2016.
120. WEF, 2015.
121. Government of Republic of Mexico. 2015.
122. Sri Lanka INDC: 4
123. Myanmar INDC: 2
124. Mexico INDC: 4
125. Chad INDC: 4
126. New Zealand INDC: 4
127. OECD, 2014.
128. Tsay and Herrmann, 2013.
129. IEA, 2013.
130. Kahn Ribeiro et al., 2007.
131. WEC, 2011.
132. Paris Process on Mobility and Climate, 2015.
133. Paris Process on Mobility and Climate, 2015.
134. Thailand INDC: 3
135. Mexico INDC: 7
136. Ethiopia INDC: 6
137. Peru INDC: 8
138. UNEP, 2014.
139. UNEP, 2014.
140. FAO, 2013.
141. Bogner et al., 2007.
142. MOEF, 2015.
143. Dominican Republic INDC: 1
144. Rwanda INDC: 7
145. Bangladesh INDC: 7
146. China INDC: 11
147. Nigeria INDC: 15
148. Mogelgaard and McGray, 2015.
149. Thailand INDC: 5
150. Sudan INDC: 17
151. Uganda INDC: 16
152. Sudan INDC: 13
153. UNDESA, 2014.
154. IUCN, 2015.
155. Somalia INDC: 45
156. Guinea INDC: 7
157. Nigeria INDC: 20
158. Tonga INDC: 10
159. St. Kitts and Nevis INDC: 6
160. FAO, 2015.
161. Smith et al., 2014.
162. Smith et al., 2014.
163. Stolle et al., 2015.
164. Stolle et al., 2015.
165. Government of Mexico, 2015.
166. Suriname INDC: 7
167. Burkina Faso INDC: 3
168. Thailand INDC: 5
169. Somalia INDC: 41
170. UNDP, 2015.
171. Adger, 2014.
172. USAID, 2009.
173. Crawford, 2015.
174. Colombia INDC: 7
175. Egypt INDC: 4
176. Mexico INDC: 7
177. Kenya INDC: 5
178. Biru and Thwaites, 2015.
179. Guatemala INDC: 15
180. Brazil INDC: 4
181. Japan INDC: 6
182. Brazil INDC: 4
183. UNDG, 2014.

184. Government of Colombia, 2015.
185. Rich et al., 2015.
186. Note, however, that Uganda did attempt to quantify the impact of its measures, estimating that the potential cumulative impact of the policies and measures could result in an approximate 22% reduction of national greenhouse gas emissions in 2030 compared to business-as-usual.
187. Uganda Ministry of Water and Environment, 2015: 3.
188. Uganda Ministry of Water and Environment, 2015.
189. Uganda Ministry of Water and Environment, 2015b.
190. Government of Colombia, 2015: 7.
191. See paras 23 and 24 of decision 1/CP.21.
192. NCE, 2014.
193. UNGA, 2015.
194. 27 targets are particularly climate relevant: 1.5 vulnerability to climate-related extreme events; 2.4 agriculture's adaptation to climate change; 3.3 end neglected tropical diseases, water-borne diseases and other communicable diseases; 6.4 water-use efficiency and address water scarcity; 7.2 renewable energy; 7.3 energy efficiency; 8.4 sustainable production and consumption, decoupling economic growth from environmental degradation; 9.1 sustainable and resilient infrastructure; 9.a enhanced support for sustainable and resilient infrastructures; 11.3 enhance sustainable urbanization; 11.5 mitigate impact of disasters; 11.6 reduce adverse per capita environmental impact of cities; 11.b increase number of cities and human settlements adopting and implementing policies and plans towards mitigation and adaptation to climate change, resilience to disasters; 12.2 sustainable management of natural resources; 12.5 reduce waste generation; 12.8 sustainable procurement practices; 12.8 awareness for sustainable development and lifestyles; 12.c rationalize inefficient fossil-fuel subsidies; targets 13.1 to 13.b dedicated to climate change; 14.2 resilience of ecosystems; 15.2 sustainable management of forests, halt deforestation, increase afforestation and reforestation; 15.3 combat desertification, land degradation-neutral world; 17.7 diffusion of environmentally sound technologies.

ACKNOWLEDGMENTS

We would like to thank the many people who contributed to the ideas and discussions that have shaped this working paper. We greatly appreciate the guidance and earlier reviews provided by Paula Caballero, David Waskow, Kitty van der Heijden, David O'Connor, Viviane Romeiro, Nambi Appadurai, Cynthia Elliott, Melissa Krnjaic, Kathleen Mogelgaard, Jesse Worker, and Deborah Drew.

Special thanks go to Alizah Epstein, Natalie Krul, Nadine Noble, Carni Klirs, Hyacinth Billings, Emily Matthews for their invaluable editorial and design support.

We are also grateful to the following external experts for sharing their expertise and feedback, though responsibility for the final product rests fully with the authors and WRI: Revocatus Twinomuhangi, Mohamed Khalil, Diego Martinez-Schutt and Lina Dabbagh.

ABOUT THE AUTHORS

Eliza Northrop is an Associate with WRI's International Climate Action Initiative.

Contact: enorthrop@wri.org

Hana Biru is a Research Analyst with WRI's International Climate Action Initiative.

Contact: hbiru@wri.org

Sylvia Lima contributed to this working paper in her capacity as an intern in WRI's Climate Program.

Contact: sylvia.niemeyer@gmail.com

Mathilde Bouye is an Associate with WRI's SDG Delivery Team.

Contact: mbouye@wri.org

Ranping Song is the Developing Country Climate Action Manager at WRI.

Contact: rsong@wri.org

ABOUT WRI

World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



Copyright 2016 World Resources Institute. This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of the license, visit <http://creativecommons.org/licenses/by/4.0/>