ALIGNING SHORT-TERM LAND SECTOR ACTIONS WITH LONG-TERM CLIMATE GOALS

Guidance for governments to implement NDCs in line with sustainable climate pathways

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Abbreviation	Meaning
ABC	Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Economy in Agriculture (Brazil's 2010-2020 low-carbon agriculture plan)
ABC+	Adaptation and Low Carbon Emissions in Agriculture and Livestock (Brazil's updated ABC Plan until 2030, with new objectives)
AFOLU	Agriculture, Forestry, and Other Land Use
AGEOS	Gabonese Agency for Space Studies and Observations
BUR	Biennial Update Report
CBIT	Capacity-building Initiative for Transparency
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CCS	Carbon Capture and Storage
COMIFAC	Commission for Central Africa Forests
COP	Conference of the Parties
ETF	Enhanced Transparency Framework
FAO	Food and Agriculture Organization of the United Nations
FPIC	Free, Prior, and Informed Consent
FREL	Forest Reference Emission Levels
GHG	Greenhouse Gas
GTM-NDC	NDC Multisectoral Working Group (Peru)
IPCC	Intergovernmental Panel on Climate Change
IPs	Indigenous Peoples
LCs	Local Communities
LTSs	Long-term Low Greenhouse Gas Emission Development Strategies
LULUCF	Land Use, Land-Use Change, and Forestry
MRV	Monitoring, Reporting and Verification
NBCC	National Biodiversity Coordination Committee (Kenya)
NDCs	Nationally Determined Contributions
NGOs	Non-Governmental Organizations
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SBTi	Science Based Targets initiative
SDGs	Sustainable Development Goals
SMAPs	Sectoral Mitigation Action Plans
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
OFAC	Central Africa Forest Observatory

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Executive Summary

The Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report is clear: the choices we make today will determine the extent to which current and future generations experience a hotter and different world.[1]

The world faces no shortage of crises and challenges beyond climate change, such as biodiversity loss, a mounting waste emergency, and the multiple threats affecting the oceans. Yet, the decisions made to respond to immediate crises – like a global pandemic, hunger, war, and human displacement -- do not always align with the actions needed to address slow-moving, long-term challenges like climate change. Often, policymakers are not empowered to collaborate across sectors to pursue strategic objectives that both improve social and economic indicators in the short-term, and lead to the long-term results needed to transition toward sustainable, low-emissions societies.

Decisions made today can either accelerate the transition to a sustainable society or lock-in future emissions. Therefore, aligning short-term policy decisions with both short- and long-term objectives is essential for countries to contribute to both the Paris Agreement and the Sustainable Development Goals.

The land sector is at the heart of social inclusion and sustainable development – meeting today's needs without compromising the needs of the future. Land is central to human livelihoods and wellbeing, supplying a range of important ecosystem services harboring biodiversity, regulating freshwater, and sustaining the food supply.[2] Land is also an essential player in keeping average global warming below 1.5°C by the end of the century. A wide range of land use activities can act both as a significant source of greenhouse gas emissions and an important sink of carbon dioxide.

Identifying and implementing viable opportunities to modify land-use change dynamics to reduce greenhouse gas emissions and enhance carbon sinks, while ensuring sustainable, equitable, and inclusive development, is therefore one of the greatest challenges of our time.

Policymakers can take short-term, tangible steps to ensure that their country is on the right path to meeting climate goals in the land sector. The highest priority must be to ensure that land sector governance is strong, inclusive, and participatory. Governments are set up for success when they collaborate across sectors; enable inclusive participation; build their institutional, technical, and knowledge capacities; develop monitoring and reporting infrastructure; and facilitate effective financial flows to climate action.

This guidance aims to support governments in identifying and implementing feasible, short-term[a] actions in the land sector that simultaneously contribute to short-term and long-term climate mitigation goals.

Specifically, this guidance aims to help governments establish the enabling conditions needed to identify and take advantage of synergistic opportunities in the land sector. It highlights a series of governance, technical, financial, and institutional actions that can be taken by governments in the short-term to enable effective implementation of Nationally Determined Contributions.

The recommendations in this guidance are organized in a series of five "building blocks." The key elements of each building block are presented in the **Checklist** below. The guidance helps policymakers identify which common roadblocks or challenges to effective implementation apply, and then provides a number of short-term recommendations to address each roadblock.

[a] In the context of this guidance, "short-term" refers to actions that policymakers could implement within a two-year period (or less).

Checklist to enable effective NDC implementation in the land sector in line with long-term climate goals

Building Block 1: Cross-sector collaboration

☐ National-level actors plan and implement policies in coordination.

☐ Sectoral strategies integrate national climate targets and goals for the land sector.

☐ Climate and land sector databases are accessible and interoperable across ministries and available to the public.

Building Block 2: Socially inclusive and gender-responsive stakeholder engagement

☐ Policymaking and high-level planning incorporates equitable participation, and respects safeguards, human rights, and the rights of Indigenous Peoples.

☐ Opportunities for engagement are accessible to all relevant stakeholders and rightsholders.

☐ The input of stakeholders and rightsholders is equitably and transparently integrated into relevant decision-making.

Building Block 3: Institutional, technical, and knowledge capacity-building measures

☐ Technical, human, and institutional capacity gaps are identified and filled.

☐ Institutional knowledge and memory is well-documented and effectively transferred to new staff.

☐ Funding is appropriately allocated to prioritize and enable capacity building.

☐ Government staff regularly improve their skills and knowledge base.

☐ Indigenous Peoples' knowledge systems are recognized, transferred, and broadly applied in the implementation of climate and land sector

Building Block 4: Monitoring, data, and target-setting improvements

☐ National forest monitoring and reporting systems are strong and transparent.

☐ Regional, national, and community-level forest monitoring capacities are strong and institutionalized.

☐ Monitoring, Reporting and Verification (MRV) activities are subject to detailed quality assurance procedures.

☐ Existing MRV systems are improved upon before new systems are implemented.

☐ NDC implementation is tracked with high-quality indicators.

☐ Policies are designed and implemented under risk-assessment and monitoring & evaluation frameworks.

Building Block 5: Sufficient and appropriately distributed finance

☐ International climate finance for the land sector meets finance needs.

☐ Domestic budgets are aligned with mitigation targets in the land sector.

☐ The regulatory environment supports private sector investment in the land sector that is aligned with long-term mitigation goals.

The need for immediate climate action in the land sector

Today's choices determine tomorrow's

The Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report is clear: the choices we make today will determine the extent to which current and future generations experience a hotter and different world. [3]

The world faces no shortage of global challenges: climate change, biodiversity loss, ocean acidification, and a mounting waste emergency. Unfortunately, at the same time, acute crises such as a global pandemic, hunger, war, and human displacement demand rapid attention and action from governments and the international community.

The decisions made to respond to short-term crises do not always align with the actions needed to address long-term challenges. For instance, governments may provide short-term infusions of financial support to large, high-emissions industries in response to an economic crisis, despite the long-term need to phase out or decarbonize these industries.

Even outside of the context of crises, prioritization of short-term economic gains impedes progress on long-term environmental, social, and economic goals. Often, policymakers are trapped within their sectoral siloes and priorities. Decision-makers working on agricultural development, trade policy, or financial sector regulation must figure out how to deliver on their mandates to provide social and economic benefits within the prevailing socio-economic context and the limited timeframe of their political terms. They are not always empowered to collaborate across sectors to pursue both short-term improvements on social and economic indicators and the long-term results needed to transition toward sustainable, low-emissions societies.

Policy decisions made today influence countries' ability to achieve their national emissions reduction objectives and development goals. Aligning short-term decisions with emissions objectives – both short- and long-term – is essential for countries' progress towards the Paris Agreement and the Sustainable Development Goals (SDGs).

The importance of the land sector for climate action

Land is central to human livelihoods and wellbeing, providing vital ecosystem services, harboring biodiversity, regulating freshwater, and sustaining the food supply. [4] Land is also an essential player in keeping average global warming below 1.5ºC by the end of the century. Achieving this long-term goal requires not only emission reductions in all sectors, but also the preservation and enhancement of carbon sinks.

The land sector, also known as the **Agriculture, Forestry and Other Land Use (AFOLU) sector**, includes a wide range of land use activities and acts both as a significant source of GHG emissions and an important sink of carbon dioxide (CO_2). The AFOLU sector can be divided into:

1) Agriculture, concerned primarily with food, biomass, and fiber production;

2) Land Use, Land-Use Change, and Forestry (LULUCF), which includes activities related to the management of forests, grasslands, wetlands, and other types of land use, as well as changes in land use. LULUCF includes the portion of agricultural emissions that are related to its "use of land" (e.g., croplands, pastures), but does not include other agricultural activities that produce emissions like crop residue burning or livestock production.

While there are many links between Agriculture and LULUCF activities, this document places particular emphasis on LULUCF. The recommendations provided relate most directly to land use decision-making, such as whether to maintain a given area as forest or convert it to agricultural uses, rather than decision-making on agricultural practices and approaches. For simplicity's sake, the term "land sector" is also used throughout this document to refer to AFOLU.

The AFOLU sector is responsible for 22 percent of global net GHG emissions [5], reaching one-third of global net emissions if emissions from food systems are included. [6] Agricultural emissions, including CO2, methane, and ammonia, come primarily from livestock production, managed soils and pasture, rice cultivation, manure management, synthetic fertilizer application, and biomass burning.[7] Emissions from land conversion to agricultural uses are not counted as agricultural emissions. Instead, these are counted under LULUCF where emission sources include deforestation, forest degradation, and land conversion.[8] Half of the emissions from the AFOLU sector come from deforestation alone, driven by mining, urbanization, and – primarily – the expansion of agriculture for production of commodities for food, fiber, feed, and fuel.[9]

While the AFOLU sector is a significant source of emissions, it also offers immense sequestration potential. Between 2010 and 2019, the IPCC estimates that land provided a net sink of –6.6 (±4.6) billion tons of CO_2 per year. [10] This is equivalent to the sequestration of roughly one sixth of the annual emissions generated from the energy sector (which was 36.8 billion tons of CO2 in 2022 globally).

Further, it is estimated that the 20 countries with the highest land carbon sink have the potential to sequester 62 billion tons of carbon between 2005 and 2050, with Russia, Canada, USA, China, and Brazil accounting for three quarters of that figure.[11] However, these natural sinks are also vulnerable to climate change – for example, drier seasons increases the likelihood and intensity of wildfires. Also, as atmospheric CO2 concentrations increase, these existing sinks absorb a decreasing proportion of emissions.[12]

NDCs and LTSs: a framework for climate action that requires coherence

The United Nations Framework Convention on Climate Change (UNFCCC) serves as a central framework for fostering international cooperation, facilitating access to climate finance, and monitoring global efforts to address climate change. The Paris Agreement provides a framework for planning climate action both in the medium- and long-term (by 2030 and 2050, respectively). Parties submit **Nationally Determined Contributions** (NDCs) every five years and are invited to prepare Long-term **Low Greenhouse Gas Emission Development Strategies** (LTSs). In these key strategic pledges, Parties outline their emission reduction commitments and pathways to achieve these. Parties are required to increase their ambition and targets with each submission.

NDCs contain countries' medium-term, high-level climate goals, including which sectors will contribute to the overall emissions reduction objective and an indication of what policies are planned

or in place to achieve this. **LTS**s outline mid-century objectives – in many cases related to achieving net-zero emissions – and often detail scenarios and potential mitigation and development pathways.

Parties to the Paris Agreement have clearly communicated in both NDCs and LTSs [b] that mitigation in the land use sector is high priority. Over 80 percent of NDCs and 90 percent of LTSs refer to mitigation measures or targets in the land sector.

Both NDCs and LTSs can serve as a roadmap for economy-wide and sectoral policy development. However, these documents are not always developed in parallel, which can lead to inconsistencies in data, targets, or planned policies. Only 41 percent of countries who have submitted both NDCs[13] and LTSs [c] currently demonstrate a degree of alignment in the inclusion of AFOLU targets and pathways **(Box 1)**.

Improving the coherence between these documents can help governments implement better land use planning, allocate resources more effectively, and prioritize actions that would enable the achievement of their short- and long-term climate goals in their respective socio-economic contexts.

The land sector is at the heart of sustainable development

In addition to being essential for mitigating and adapting to climate change, a well-managed AFOLU sector is vital for achieving SDGs. It is therefore essential to identify synergies between AFOLU-related actions that improve food security, reduce poverty, advance gender equality, conserve biodiversity, and all other essential global goals.

[b] By August 2023, 195 Parties to the Paris Agreement had submitted NDCs, and 66 submitted LTSs.

[c] Based on an original analysis by Climate Focus of 66 LTSs submitted to the UNFCCC by August 2023. See Annex 2 for more information

Over 80 percent of NDCs and 90 percent of LTSs refer to mitigation measures or targets in the land sector.

Marginalized groups such as women, Indigenous Peoples (IPs), local communities (LCs), and youth deserve a say in land sector decision-making. These groups disproportionately affected by the repercussions of disappearing forests and climate change. [14] Additionally, they have a clear stake in – and, often, a traditional or legal right to control or influence – decision-making for the territories they own, occupy, or rely on for their livelihoods and cultural traditions. When land sector policies do not integrate socially inclusive and gender-based approaches, existing inequalities risk being further exacerbated.

Identifying and implementing viable opportunities to modify land-use change dynamics to reduce emissions, enhance carbon sinks, and ensure sustainable, equitable, and inclusive development, is therefore one of the greatest challenges of our time.

Aligning short-term needs with long-term goals requires effective participation across stakeholder groups. This includes policymakers at all levels, IPs, LCs, farmers, consumers, landowners, investors, academia, non-governmental organizations (NGOs), and private companies. This alignment also requires sufficient institutional, knowledge, and technical capacities, and must be underpinned by sufficient domestic and international financing.

Finally, mitigation actions in the AFOLU sector can simultaneously help countries address multiple SDGs – notably those related to food security (SDG 2), water (SDG 6), energy (SDG 7), and climate (SDG 13). The world is experiencing growing demands for food, water, and energy among others, all of which compete for limited land resources. Yet many AFOLU mitigation options can also provide significant benefits for system resilience, ecosystem services, biodiversity, and livelihoods.

Recommendations for governments to support short-term actions in the land sector aligned with long-term objectives

This guidance aims to support national and subnational governments in identifying and implementing feasible, short-term [d] actions for the land sector that simultaneously contribute to short-term and long-term climate mitigation goals.

The guidance particularly focuses on implementing and strengthening coherent, inclusive, and effective governance and institutional processes. Recommendations are specifically made to facilitate implementation and alignment of NDCs and LTSs.

Specifically, this guidance aims to help governments establish the enabling conditions needed to identify and take advantage of synergistic opportunities in the land sector. It highlights a series of governance, technical, financial, and institutional actions that can be taken by governments in the short-term to:

1) Eliminate potential institutional and regulatory barriers to successful policy implementation,

2) Identify appropriate mitigation options and pathways, and

3) Develop strategies and resources for the long-term implementation of land sector mitigation policies.

[d] In the context of this guidance, "short-term" refers to actions that policymakers could implement within a two-year period (or less).

Box 1 .Coherence between forest targets and pathways in NDCs and LTSs

Parties to the Paris Agreement have clearly communicated in both NDCs and LTSs that mitigation in the land sector is a high-priority climate action.

Over 80 percent of NDCs refer to mitigation measures in the AFOLU sector, including over 40 percent of NDCs which specify quantitative LULUCF mitigation targets.[15] The most common mitigation measures include afforestation, reforestation and restoration, conservation, sustainable forest management, and reducing emissions from deforestation and forest degradation.

Similarly, over 90 percent of LTSs include a quantitative or qualitative AFOLU mitigation target, whether related to agriculture, LULUCF or both.[e] Of those, 60 percent include both agriculture and LULUCF targets and 2 percent include agriculture-related targets exclusively. Emissions reductions targets are the most common, appearing in 63 percent of the LTSs that have targets related to AFOLU.

However, a side-by-side review of the NDCs and LTSs from countries (or groups of countries) that have submitted both documents to the UNFCCC demonstrates generally low levels of alignment on forest sector targets and pathways (See Annex 2 for the full assessment).

Overall, a minority (41 percent) of the assessed LTSs provide a sufficient degree of alignment with NDCs that would allow the documents to be used together as a foundation for short-term policy planning and action prioritization. Nearly 40 percent of assessed countries present a forest-related target in only one of the two documents or do not mention forests at all in their NDCs.

Only eleven countries are either “aligned” on their forest targets (meaning that both documents present the same 2030 target) or “fully aligned” (which, in addition, means that the LTS builds on the NDC to indicate further ambition or increased targets for 2050).

As an example of “fully aligned” targets, Chile’s NDC and LTS both state a target of reducing emissions due to degradation and deforestation of native forests by 25 percent by 2030, from a 2001-2013 baseline. Both also aim to recover and sustainably manage 200,000 hectares of native forests. The LTS further states that by 2050, they will sustainably manage and recover the necessary areas of native forests to achieve the carbon neutrality committed in the NDC.

In contrast, twenty-five countries’ NDCs and LTSs are “poorly aligned.” This means that only one document has a numerical target; both documents have numerical targets, but they are not comparable; or the documents lack a forest-related target completely.

For example, the Gambia’s NDC states that GHG emissions in the LULUCF sector will be 589,000 tons CO2e in 2030 – a 58.4 percent decrease from 2020 and a 45.6 percent decrease from the business-as-usual expectation for 2030. However, the LTS states that emissions reductions in the LULUCF sector will total 330,000 tons CO2e in 2030, without specifying a baseline or explaining discrepancies with the NDC.

[e] Based on an original analysis by Climate Focus of 66 LTSs submitted to the UNFCCC by August 2023. See Annex 2 for more information.

5 building blocks for successful NDC implementation in the AFOLU sector:

These recommendations are organized in a series of five “building blocks” for effective NDC implementation through the AFOLU sector.

Each building block contains a table that guides policymakers through the following steps:

1) Consider if all key elements of the building block are effectively functioning.

2) If not, identify which common roadblocks or challenges to effective implementation apply.

3) Consider applying the short-term reco mendations to address each roadblock.

The building blocks were developed through a desk review, interviews with experts, and consultations with country stakeholders (see more on methodology in Annex 1). Each building block includes one or more case studies showcasing countries or regions that have successfully strengthened their enabling conditions for reaching climate and land sector objectives. While each of the five building blocks are distinct, there are key overlaps and interlinkages between them. As just one illustration, strengthened monitoring and reporting processes rely on institutional and technical capacity improvements.

Given the diversity of country contexts, the recommendations described here will need to be tailored to the policy, economic, and technical conditions of each country and region. Thus, this guidance serves as a menu of ideas for

Figure 1. Five building blocks of effective policymaking in the AFOLU sector

Building Block 1:
Cross-sector collaboration

Why cross-sector collaboration?

Climate goals can only be reached when they are successfully integrated throughout policy domains, connecting national and sub-national policymaking levels, and reducing trade-offs amongst diverse policy objectives. Cohesive governance on climate issues derives from effective cross-sector collaboration, both vertically (between local, national, and international domains) and horizontally (between peer ministries, such as agriculture, health, and finance sectors).

Effective collaboration also depends on sufficient prioritization of climate goals compared to other competing priorities across the land sector. Shared responsibility for NDC implementation in the land sector can increase buy-in and accountability across sector stakeholders.

Synergies between environmental goals – whether SDGs, biodiversity plans, or mitigation and adaptation targets outlined in strategic policy documents such as LTSs – are also essential to successful NDC implementation. Given that the AFOLU sector intersects with a wide range of government domains and domestic policy goals, the sector's mitigation potential must be approached with cohesive, coordinated action and objectives.

Is effective cross-sector collaboration in place?	**Are national-level actors planning and implementing policies in coordination,** resulting in synergies between sectoral policies and goals, including those between agriculture, forestry, health, energy and mining, environment, economy and other relevant ministries? [16]	**Have sectoral strategies adequately integrated national guiding climate targets and goals for the land sector,** including from NDCs, LTSs, and development plans? [17]	**Are climate and land sector databases adequately integrated across ministries** , and is information shared among government institutions and widely available to the public?
If not, then identify the roadblock(s) that apply			
Potential roadblocks to effective monitoring, data, and target-setting	**Is policymaking happening in siloes?** Siloes occur when each institution acts towards only its own goals without coordinating with other institutions. It can happen when there is no legal or operational framework in place for intersectoral planning, implementation, and monitoring. **Is there a lack of interinstitutional communication?** Inter-institutional communication may be limited due to a lack of established engagement channels, or a failure to use them effectively. **Is nobody tracking inter-institutional collaboration?** Few or no tracking systems may exist to assess whether cross-sector collaboration is being worked towards and ultimately achieved.	**Is there a lack of guidance for aligning planning with climate targets?** Clear guidelines for the development of sectoral strategies that align with national climate targets and goals may not exist or be poorly implemented.	**Is information-sharing non-existent?** Governments institutions may exchange little or no information, and transparency measures may not be in place, including limited or restricted access to databases. **Are data parameters misaligned?** Different government institutions may use different parameters, definitions, and degrees of detail for the data they collect. **Do institutions struggle to share data even if they are willing to do so?** Government institutions might not have the mandate or resources to collaborate with other institutions on data collection and sharing.
And then consider these short-term actions			
Short-term actions to enable effective monitoring, data, and target-setting	**Set up a formal coordination body or build upon existing platforms** to ensure government ministries consider the mitigation and adaptation needs of the land sector where appropriate. This body can be responsible for identifying gaps and inconsistencies in sectoral plans, mapping out the coordination needs, setting up formal working groups, establishing protocols to guide the coordination process and securing high-level support for the NDC implementation process. **Ensure that interministerial cooperation and coordination has a basis in legal and institutional frameworks.** Review and, if needed, amend regulations to mandate intersectoral planning, implementation and monitoring of climate policies and strategies. [f] **Clarify roles of ministries whose mandates intersect with the land sector and define how respective budgets will be used** against a set of joint key performance indicators. **Create or combine existing inter-institutional communication into a single, unified channel, and establish or strengthen processes** to encourage ministries to keep each other informed on climate change- and land sector-related activities within their sectors. **Establish an inter-institutional, cross-sectoral collaboration tracking system or build upon existing schemes** to integrate AFOLU considerations.	**Communicate NDC and LTS goals clearly to policymakers and other stakeholders.** Using simple language and formatting (e.g., bullet points, graphics, or tables), assemble and distribute a short overview of NDC and LTS goals for the land sector to ensure that every decision-maker is aware of them. **Periodically review sectoral strategies against national guiding climate documents** to the standard procedures for updating sectoral strategies. **Conduct a full review of national and sector-level strategies and development plans** ensuring cohesion and alignment with AFOLU and other climate goals and targets.	**Establish or strengthen an inter-ministerial technical working group that** seeks to synergize sectoral and national level Monitoring, Reporting and Verification (MRV) systems and databases.[18] This working group should conduct a review of the types and formats of data already collected by different institutions, and then identify opportunities for harmonization. **Establish and fund mandates on data sharing** and promote the publication and public accessibility of databases. **Collaborate to develop data sharing protocols** involving key government institutions.

[f] See the CBIT for more information on increasing country capacity for transparent MRV for NDC implementation.

CASE STUDIES:

The establishment of cross-sectoral bodies to achieve climate and land sector objectives

Peru has instituted a cross-sectoral coordination body for NDC implementation to break out of siloed decision-making [19]

Peru's Ministry of Environment, supported by the United Nations Development Programme (UNDP) NDC Support Programme, has put in place an institutional change process called an NDC Multisectoral Working Group (GTM-NDC, in its Spanish acronym), integrating 14 of Peru's government entities. The GTM-NDC is responsible for producing NDC-related information and coordinating the development of sectoral action plans that outline the mitigation and adaptation measures to be implemented in the country. Four specialists (supported by UNDP and based at the Ministries of Transport and Communications, Housing Construction and Sanitation, Agriculture and Irrigation, and the Forest and Wildlife Service) generate the necessary information for the design and implementation of prioritized measures. The GTM-NDC has identified 61 mitigation measures and 96 adaptation measures and has also identified key actors and enabling conditions for their implementation. A public consultation process called Dialoguemos has involved other stakeholders in the NDC process.

Colombia is developing integrated sectoral climate action plans that combine mitigation and adaptation actions to implement its NDC in line with its LTS [20]

Colombia is implementing its NDC on a sectoral level, through the country's Low-Carbon and Resilient Development Strategy, under which the country developed eight sectoral mitigation action plans (SMAPs) from 2014 to 2016. Following the approval of the National Climate Change Policy in December 2016 and in the context of the National System for Climate Change, Colombia is now transforming its SMAPs into integrated climate change plans, which will include both mitigation and adaptation actions. The plans will be developed and implemented by sectors and territories, with clearly defined responsibilities, timelines, and implementation routes to achieve the national-level mitigation and adaptation targets.

Kenya is integrating its biodiversity goals into sectoral strategies through inter-institutional and cross-sectoral collaboration [21]

Kenya launched its BIODEV2030 initiative in March 2020, supported by the Agence Française de Développement, coordinated by Expertise France and implemented by International Union for Conservation of Nature and World Wide Fund For Nature. The project aims to accelerate the integration of biodiversity into priority sectors essential for both biodiversity and economic development. To achieve this goal, BIODEV2030 is collaborating with the Ministry of Environment and Forestry to establish a coordinating platform for biodiversity stakeholders. The initiative also partners with the Inter-sectoral Forum on Agrobiodiversity and Agroecology to develop voluntary commitments in the agriculture, livestock, and forestry sectors. A National Biodiversity Coordination Committee (NBCC) has been established to enhance coordination and collaboration among national, country, and local level multi-sectoral agencies that work towards biodiversity goals. An important next step will be to ensure the NBCC and the NDC implementation unit of Kenya work together, ensuring alignment and coherence in their strategies to achieve their targets.

Building Block 2:

Socially inclusive and gender-responsive stakeholder engagement

Why socially inclusive and gender-responsive stakeholder engagement?

Engaging many stakeholders and rights holders throughout NDC development and implementation is essential for achieving climate and land sector goals in the short-and long-term. [9] Consulting stakeholders in gender-responsive, equitable and inclusive processes, and gaining the Free, Prior and Informed Consent (FPIC) of Indigenous Peoples help establish consensus on an implementation path and fosters a sense of ownership and shared responsibility over policies' outcomes. This multi-level buy-in from stakeholders adds legitimacy and credibility to NDC implementation, especially when different stakeholders' priorities come into conflict.

Stakeholder participation is especially important to collect country- and region-specific information to incorporate into NDC implementation plans in the land sector. Meaningful stakeholder input should reveal unique social, gendered, political, and economic challenges in any given country context, allowing countries to reject 'one-size-fits-all' approaches that may undermine NDC implementation.

Implementing NDCs in the land sector also provides a valuable opportunity to advance social inclusion, gender equality and women's empowerment by identifying and elevating the unique needs and capacities of especially marginalized groups, such as Indigenous Peoples, local communities, women, youth, etc. For example, taking a gender-responsive approach requires recognizing that women and men have different experiences, perspectives, and knowledge on land use given their different roles, rights, and responsibilities. Integrating these different perspectives requires acknowledging and addressing the socio-economic, social, cultural, and political barriers facing women which often can prevent them from effectively participating in land use decision-making.

Ensuring meaningful consultation and engagement with IPs and LCs is of equal importance. Inclusion of these groups is key for respecting their rights and integrating their concerns into land sector planning. These communities are particularly impacted by land sector decisions and can make significant contributions to the implementation of mitigation and adaptation measures.

Effective stakeholder engagement can improve the sustainability of AFOLU policies and practices and enhance the livelihoods of marginalized groups.[22] Robust and inclusive stakeholder engagement requires a recognition that different stakeholders' perspectives and knowledge – across genders, classes, age groups, and ethnicities – have value. Only through socially inclusive, gender-responsive, and collaborative decision-making can solutions be found that serve the greater interests of society.

Engaging stakeholders helps foster strong, constructive, and responsive relationships that are key for ensuring effective design and implementation of projects. When stakeholders are effectively engaged, their acceptance and ownership of the project is enhanced, besides strengthening the benefits and social and environmental sustainability of actions. Stakeholder engagement is both a goal in itself as well as a means for achieving projects outcomes. It seeks to uphold the rights of those who may be affected by a project, while at the same time it seeks to improve projects results related to democratic governance, environmental protection, respect for human rights, and prevention and resolution of conflict. [23]

[9] For further guidance, see UNDP's Guidance Notes on Social and Environmental Standards on Stakeholder Engagement and Indigenous Peoples

Is socially inclusive and gender-responsive stakeholder participation in place?	**Are there conditions to ensure that equitable participation of diverse stakeholders; human rights and safeguards; and the rights of IPs are ,** resulting in synergies between sectoral policies and goals, including those between agriculture, forestry, health, energy and mining, environment, economy and other relevant ministries? [24]				**Are opportunities for engagement accessible to all relevant stakeholders and rightsholders** including marginalized groups such as women, youth, Indigenous Peoples, and local communities?					**Is stakeholder and rightsholder input equitably and transparently integrated** into relevant decision-making? [37]
If not, then identify the roadblock(s) that apply										
Potential roadblocks to socially inclusive and gender-responsive stakeholder	**Is stakeholder and rightsholder participation and engagement missing from policy cycles and strategic land use planning at the national level?** Specific mandates and resources for inclusive consultation processes may not be embedded in policy planning and project approval cycles.	**Are FPIC rules not in place or seen as just a "box-ticking" exercise?** IPs' right to Free, Prior, and Informed Consent may not be respected as a proper process of transparent and participatory decision-making. Decisions may be imposed on Indigenous communities without meaningful consultation or consent, disregarding that the right to consent includes the right to withhold consent. [26]	**Do IPs and LCs face insecurity over their land and tenure rights?** IPs and LCs may not have recognized rights to their territories that are supported by strong legal frameworks. In practice, this may limit their ability to influence land use decision-making in these areas. IPs and LCs may also face challenges in securing land rights recognition due to burdensome and time-consuming processes.	**Are requirements that mandate respect for human rights and safeguards missing in climate policies?** Without a formal requirement for inclusion, mechanisms to ensure human rights and safeguards may be left out of climate policies. to burdensome and time-consuming processes.	**Are there challenges in identifying the most appropriate stakeholders to consult?** Countries may face difficulties in identifying the most appropriate stakeholders to consult due to insufficient data (e.g., stakeholders' gender, age, socioeconomic status, etc.). [29]	**Do stakeholders and rightsholders face barriers to participate in consultations and participatory dialogues?** Failing to integrate the needs and cultural sensitivities of stakeholders and rightsholders may create barriers to their engagement. There may also be barriers to the participation of marginalized groups (such as women, or those who use – but do not own – land), status, etc.).	**Are there communication gaps between state and non-state stakeholders?** Insufficient and non-tailored communication mechanisms and a lack of political will from decision makers might hinder the participation of IPs and LCs [31] and other stakeholders.	**Do marginalized groups have insufficient institutional knowledge or capacity to participate in decision-making processes?** Marginalized groups such as women, youth, IPs, and LCs may not have the internal resources to equitably and actively participate in existing processes for consultation and decision-making. [32]	**Do stakeholders and rightsholders lack sufficient forest and land sector information to make informed decisions?** Relevant data and information on the forest and land sector – such as tenure data or data on forest risk, degradation, and deforestation – may not be publicly available or in accessible formats, or in languages understandable to them.	**Does stakeholder input enter a "black box" after consultations?** Formal review processes may not be in place to assess the integration of stakeholder input into final decisions. Policymaking may be imbalanced and insufficiently transparent, with some relevant actors not being involved enough, while other more powerful stakeholders may have excessive influence. [38]
And then consider these short-term actions										
Short-term actions to enable effective socially inclusive and gender-responsive stakeholder participation	**Revise planning documents that establish clear frameworks for stakeholder engagement to ensure that there are concrete measures for equitable, inclusive and participatory engagement processes** within climate and land sector planning processes, including target setting within NDCs and LTSs. This includes: **Offer training on facilitating socially inclusive stakeholder consultations and engagement** to relevant government employees, including 'training of trainers' programs. Track participation in these trainings. **Consider centralizing the oversight function of stakeholder consultations within a single government agency or institution** to improve compliance consultation mandates and strengthen the capacity to apply best-practice approaches. [25]	**Develop FPIC rules and, where they exist, review implementation processes** to ensure that Indigenous rights receive visibility and are well communicated to project implementers.[27] Where there is none, develop specific guidance on how the right to FPIC will be respected, implemented in practice, and adequately enforced. [28] Fully respect community protocols on FPIC when such exist.	**Ensure that FPIC processes always apply on all matters that affect IPs and their rights.** **Clearly and publicly communicate current procedures for recognizing and securing territorial rights,** ensuring that relevant documents and materials are available in appropriate formats and languages for relevant communitieson FPIC when such exist. **If such procedures do not exist, establish and implement community land rights formalization procedure,** that include IPs and LCs in fair, participatory and gender equitable consultations and result in tangible policy actions that restore and recognize their land tenure rights. If such procedures already exist, assess how they could be streamlined and strengthened.	**Mandate that new climate policies formalize how they address human rights and safeguards,** [1] Review current policies and identify any that need to be amended.	**Identify stakeholders through mapping, focus group discussions, surveys, and formal and informal interviews** including with representatives from marginalized groups, including women, IPs, and youth. [30] **Conduct macroeconomic and microeconomic modeling to predict distributional impacts of proposed policies and projects** to identify stakeholder groups most likely to be affected. If not already included, **include additional variables in national censuses** to help identify marginalized and relevant stakeholder groups, such as ethnicity.	**Prioritize stakeholders' needs and cultural sensitivities (e.g., location, language, format, and time)** when holding consultations and participatory dialogues to build trust and encourage attendance. [1] Inclusive consultations may require engaging different stakeholder groups in different ways, such as holding women-only or youth-only consultations to allow for marginalized voices to be heard. **Ensure that marginalized groups, including women and those who do not own the land they use, participate** in consultations and participatory dialogues.	**Consider establishing (or strengthening) continuous and long-term coordination mechanisms with non-state stakeholders** to develop communication channels that can reliably reach relevant stakeholders.	**Provide all stakeholders with the background information required to participate in a meaningful way.** Document the steps of the consultation process and disseminate beforehand to set expectations and allow stakeholders to prepare and bring the results into decision-making. [33] **Include gender assessments** in activities involving public consultation, feasibility, and evaluation of mitigation actions.[34] Ensure that existing processes appropriately account for and address any existing gender concerns or inequalities. [35]	**Ensure that citizens – regardless of ethnicity, gender, social class, and formal literacy levels – have access to forest- and land sector-related information** ideally through open databases and other forms of communication materials, and in a language that they can understand, to enable public participation and accountability in decision making. results into decision-making. [36]	**Establish clear mandates for how feedback from consultations is to be recorded, addressed, and integrated** into final decisions. **Disclose how stakeholder consultation feedback is integrated into decision-making.** [39] Public documentation of the standard consultation and feedback integration process should be made available before consultations are held, and specific reporting and disclosure of how feedback was integrated into final decisions should be reported back to stakeholders and made public whenever possible. **Mandate the collection and publication** of disaggregated data (e.g., gender, stakeholder group) on feedback collected and integrated feedback to support transparency and setting and tracking targets for socially inclusive and gender-responsive action. [40] **Ensure resources to facilitate continuous communication** enabling feedback and transparent reporting to stakeholders about the incorporation of their input into the decision-making process.

[1] May seek guidance from the UNDP Social and Environmental Safeguards.

[1] For more information see UN-REDD's "Checklist for Gender-Responsive Workshops".

[1] UN-REDD's new tool on "Beyond Headcounts: A tool for monitoring women's and men's effective participation in meetings and workshops" can help in tracking such information. Available to download in English, French and Spanish.

CASE STUDIES:

Securing the right to Free, Prior, and Informed Consent through legislation

National legal frameworks are increasingly legislating the right to FPIC of Indigenous Peoples. For example, in Asia, the Philippines passed the Indigenous Peoples Rights Act (1997); in Ecuador, the right to FPIC is enshrined in its Constitution; Peru has its Law of the Right to Prior Consultation to Indigenous or Native Peoples (2011) while Colombia's Law 21 (1991) has provisions on FPIC.

Other efforts to secure FPIC have recently occurred in Africa, such as:

The Republic of Congo pioneered the legal protection of IPs' rights in Africa

The Republic of the Congo was the first African country to adopt a national legislative framework for the protection of IPs' rights.[41] The 2011 Law On the Promotion and Protection of the Rights of Indigenous Peoples establishes a legal basis for the protection and assertion of the rights, culture, and livelihoods of IPs.[42] The established legal framework ensures that consultations are held before any measures are implemented that affect IPs' cultural or property rights, the demarcation of land based on customary law, the right to revenue generated by land use and the requirement of Free, Prior, and Informed Consent. [43]

For the first time, the Democratic Republic of Congo recognizes the distinct environmental rights of IPs

The Democratic Republic of Congo has adopted a new law on the Promotion and Protection of the Rights of the Indigenous Pygmy Peoples. [44] The law for the first time distinguishes IPs from local communities and allows for recognition of their separate rights and for their protection. [45] It legally secures ancestral lands, protects, and promotes traditional knowledge and practices, and addresses the challenges of occupation or dispossession faced by forest communities. With this distinct recognition, the Indigenous Pygmy peoples now have the basis to claim and exercise their right to FPIC regarding decision-making in their territories.

Mainstreaming gender-responsive and socially inclusive approaches in domestic forest policy

Papua New Guinea is putting gender at the heart of FPIC

In Papua New Guinea, where women generally have limited influence in land use decision-making, UNDP, through the UN-REDD Programme, has made efforts to ensure gender considerations are incorporated into the National REDD+ FPIC Guidelines, in coordination with the country's Climate Change and Development Authority. [51] This process has involved integrating gender perspectives into the operational framework, recognizing both women and men as potential land owners and users, and ensuring gender balance in local FPIC facilitation teams. The guidance also stresses the importance of making grievance mechanisms accessible to women. Furthermore, UNDP led a comprehensive stakeholder study in 18 communities across three different REDD+ pilot areas to inform the process for tailoring the national FPIC guidance to local needs. The study revealed gender disparities, noting women's limited involvement in decision-making, and formed the basis for local strategies to involve communities and integrate FPIC protocols, ensuring women's participation.

Cambodia has integrated a gender-responsive approach throughout its forest policies and institutions

In Cambodia, gender objectives are included throughout the country's main forest policy documents.[46] The National Forest Program highlights the promotion of women's participation in forest management at both national and local levels as a means to improve the institutional structure of the Forestry Administration. [47] The National Reducing Deforestation and Forest Degradation (REDD+) Strategy establishes a gender group that reviews and provides gender-specific inputs, which has resulted in the collection of gender disaggregated data, [48] and the strategy states that its implementation is guided by gender responsive approaches.[49] The NDC includes adaptation measures with gender disaggregated targets for forestry, and notes that participation of women could be increased in the forestry sector. [50]

Kenya has recently published new policies that promote and mainstream women's participation in forest management

Kenya's National Policy on Gender and Development, passed in 2019, obligates the state to mainstream gender in all its policy and legal frameworks, programs, and operations, including explicitly policies related to sustainable natural resource management and climate change mitigation and adaptation. [52] The draft Forest Policy 2020 includes provisions that mandate the Kenyan government to ensure the involvement of women and other marginalized groups in sustainable forest management. [53] Kenya's REDD+ safeguards include requirements that actions, policies, and measures are gender responsive and embody gender equality and disaggregation, and that no more than two-thirds of members of REDD+ decision-making public bodies should belong to one gender.

CASE STUDIES:

Stakeholder engagement in the design and implementation of NDCs

Canada is partnering with Indigenous Peoples for climate solutions [54]

Canada reported its collaboration with Indigenous Peoples in the implementation measures of its Pan-Canadian Framework on Clean Growth and Climate Change to make progress towards its first NDC. In its revised NDC, the government committed to:

- Power rural, remote, northern and Indigenous communities that currently rely on diesel with clean, reliable energy by 2030.
- Co-develop solutions with IPs to ensure carbon pricing works for them and their communities.
- Increase funding for Indigenous Protected and Conserved Areas and Indigenous Guardians programs with a portion of the recent investments of $2.3 billion in Canada's Nature Legacy Initiative, to help address the biodiversity crisis, fight climate change, and protect and create jobs.
- Support self-determined climate action which is critical to advancing Canada's reconciliation with Indigenous Peoples, as is the leadership of Indigenous Peoples to achieve the foundational transformations required to address and mitigate the consequences of climate change.
- Continue to partner with IPs in adapting to the changing climate and contributing to national decarbonization efforts, to position indigenous climate leadership as a cornerstone of Canada's Strengthened Climate Plan.
- Engage with key stakeholders,including IPs, to achieve its commitment to reach net-zero GHG emissions by 2050.

Inclusiveness in Honduras's NDC revision process

In Honduras, UNDP supported a highly inclusive and society-wide NDC revision process. This exercise encompassed 74 technical working meetings, three socialization workshops, and three validation meetings involving key stakeholders. Key measures and targets aligned with SDGs and comprehensive information on social inclusion (gender equality and equity, young people, and Indigenous and Afro-Honduran peoples) were developed through the process. The process also included six social commitments, including the identification of clear roles of relevant institutions to play a role in NDC implementation and ensure the promotion of social inclusion, gender equality, women's empowerment, and intergenerational equity. To validate the recommendations on social inclusion and gender that were proposed for the updated NDC, a national consultation was held with targeted participation of groups of women, youth, and Indigenous and Afro-Honduran Peoples. This process resulted in a more robust and inclusive revised NDC for Honduras.

Building Block 3:

Insitutional, technical, and knowledge capacity-building measures

Why capacity building?

Implementing countries' NDCs in the land sector in a way that supports long-term objectives requires sufficient institutional, technical, and knowledge capacities. Regardless of how strategic and comprehensive a given policy or regulation is, any given plan will struggle to achieve its intended outcome when countries lack the human, financial, technical, or institutional capacities needed to see it through.

Capacity building is a continuous process that seeks to address identified gaps and promote gradual improvements both in individual and institutional abilities to perform actions. Having strong institutional, technical and knowledge capacities is an enabler of NDC implementation, helping countries design and implement effective policies, access and manage financial resources, monitor and report progress, and collaborate and engage stakeholders.

Overarching NDC implementation is country-driven and shifts based on unique country contexts; similarly, capacity building needs differ significantly from country to country. Many countries are at different stages of their sustainable development journey and face diverse constraints and needs. For some countries, top priorities may include adequate funding for staff salaries. For others, priorities may include access to higher education and staff training. Others might lack access to specific technologies and technical knowledge, which may take precedence over other capacity building measures. Though capacity building is not a one-size-fits-all category, it remains an essential building block for NDC implementation in the land sector.

Are effective capacity-building measures in place?	**Have technical, human, and institutional capacity needs in the land sector been identified,** and if so, have initiatives to support these needs been implemented?	**Are high-functioning administrative processes in place** so that institutional knowledge and memory are not affected by staff turnover?	**Is funding appropriately allocated to prioritize and enable capacity building?**			**Do government staff regularly improve their skills and knowledge base?**		**Are the knowledge systems of Indigenous Peoples (IPs) recognized, transferred, and broadly applied** in the implementation of climate and land sector objectives?		
If not, then identify the roadblock(s) that apply										
Potential roadblocks to effective capacity building	**Is a formal process to identify capacity gaps within government institutions either missing or not in force?** Without an accurate, up-to-date assessment of capacity gaps, policymakers may fail to appropriately calibrate proposed solutions with actual, on-the-ground challenges.	**Would institutional knowledge be lost if key government staff left?** Institutional memory may rely excessively on individuals instead of being properly documented.	**Is there insufficient investment in capacity building of civil servants?** Funds allocated to capacity building may not be enough.	**Are external consultants being used to perform activities that civil servants could do?** Consultants may be paid higher rates than civil servants and may retain key knowledge that could otherwise be built by internal civil servants.	**Is there a lack of expertise in accessing finance instruments that provide funding for capacity building?** There may be insufficient know-how to understand and access financial instruments that could finance capacity building.	**Are staff overloaded with work?** Overworked staff may have limited time to attend trainings and workshops.	**Do staff need to spend an excessive amount of time and resources to simply access NDC implementation data?** Collecting and accessing data for NDC implementation (e.g., emissions data, ongoing mitigation measures, etc.) may consume time and resources that could be allocated to capacity building.	**Are the voices of IPs not being sufficiently heard in the NDC implementation process?** IPs may not be adequately engaged in implementation of the NDC or their considerations may be partially or fully disregarded.	**Are policymakers unable to leverage Indigenous knowledge in the AFOLU sector?** Government staff may not be aware of the potential of Indigenous knowledge for the AFOLU sector and may not know how to incorporate it. Cultural barriers may prevent policymakers from understanding and appreciating IPs' spiritual and territorial relationships with nature.	**Do IPs face issues in transferring their knowledge across generations?** IPs may need assistance in funding the transfer of Indigenous knowledge to younger generations, and enhancing and protecting this knowledge.
And then consider these short-term actions										
Short-term actions to enable effective capacity building	**Set up a standing, centralized entity (or allocate this role to an existing inter-agency working group)** to identify needs for the land sector across the institutional, human, knowledge, and financial scopes – building upon previous assessments if available.	**Identify individuals who hold important institutional knowledge** and support them in documenting that knowledge for others. **Establish administrative processes** to document and preserve institutional knowledge and memory, as well as plans and decisions made by inter-sectoral committees.	**Allocate funds for civil servant capacity building activities.** **Implement "train-the-trainer" programs** to reduce costs and increase the impact of capacity building interventions.	**Prioritize the employment and capacity building of civil servants** and minimize the use of external consultants. If the use of consultants cannot be avoided for a task **require that they also build capacity of civil servants as part of the process.**	**Train staff to be able to access finance instruments** that provide funding for capacity building.	**Prioritize capacity building needs and create training plans** that are adapted to the time constraints of staff.	**Facilitate the access to data for NDC implementation** which can lead to more time and resources for capacity building. Examples may include data on emissions, planned and ongoing mitigation and adaptation measures, finance, how stakeholder are being engaged, and collaboration efforts with national and international partners.	**Establish or strengthen participatory and inclusive platforms** for dialogue and involvement of Indigenous communities in the NDC implementation process, which can fill knowledge gaps and expand capacities.	**Conduct awareness-raising and capacity-building activities** for government staff on the value and relevance of indigenous knowledge for the land sector with the aim of mainstreaming this knowledge into policies and decisions, and on how to ensure and empower indigenous voices in the NDC implementation process.	**Support and promote Indigenous-led initiatives and help IPs in accessing financial instruments** that can support the transfer of Indigenous knowledge to younger generations. **Ensure an enabling environment for IPs to freely practice and enhance their knowledge systems** including for the participation of different generations.

CASE STUDIES:

Assessing, updating, and addressing Mongolia's adaptation technology needs

In 2013, Mongolia conducted its first technology needs assessment to determine climate change adaptation technology priorities [55]

The country's Ministry of Environment and Green Development facilitated stakeholder engagement, defined implications of climate change for the country's development priorities and strategies, prioritized sectors, and subsectors, and identified technologies as high priorities for climate change adaptation. The assessment identified that arable farming and animal husbandry were the sectors most vulnerable to climate change. It also highlighted that the social, economic, and environmental losses due to climate change impacts were expected to be higher in those sectors compared to others.

Four years later, Mongolia submitted their Initial Biennial Update Report (BUR) under the UNFCCC. The 2017 BUR refers to the country's technology needs assessment. [56] However, the actual technology needs listed in the BUR do not relate to the land sector, despite their prioritization in the 2013 technology needs assessment. That said, in 2018, Mongolia submitted its Third National Communication to the UNFCCC, [57] wherein the country reviewed and deepened its assessment of adaptation technology needs based on the 2013 report. Using the output of the previous assessment as background data and material, Mongolia updated the technology needs it first expressed five years earlier.

With this renewed and updated clarity, the country is currently receiving support from UNDP (with funding from the Green Climate Fund) to improve the adaptive capacity and risk management of rural communities. Running from 2021 to 2028, the project will integrate climate information into land and water use planning at the national and sub-national levels; scale up climate-resilient water and soil management practices for enhanced small scale herder resource management; and build herder capacity to access markets for sustainably sourced, climate-resilient livestock products. [58]

Use of Indigenous and traditional knowledge and practices for adaptation [59]

Jamaican farmers use guinea grass mulching to adapt to droughts

In some areas of Jamaica, droughts are becoming more frequent, making farmers whose livelihoods depend on agriculture more vulnerable. In general, there is a wide perception that negative effects of droughts can be mitigated through appropriate technologies. However, the unavailability of resources usually hampers their actual adoption. One agricultural practice which has been widely adopted is guinea grass mulching, which consists of covering land with dried guinea grass after it has been prepared for cultivation. This is done before sowing, in order to ensure that moisture is conserved, weeds are controlled, soil erosion, run-off and soil temperature are reduced, soil structure is improved and volatile fertilizer material is retained. By doing this, farmers can produce crops during the dry season without having to resort to irrigation. Guinea grass mulching enhances soil moisture for germinating seeds and allows for a better crop establishment and nutrient uptake.

Agrodiversity as an adaptation tool in China

In China, IPs such as the Hani people have long embraced agrodiversity as a means of dealing with the risk of drought, illustrating the importance of this tool in adaptation. The Hani and other ethnic minorities in the Ailao Mountain, to the south of the Red River in Yunnan Province, have been extensively practicing rice terrace agriculture for many years. In the Yunnan Province, the monsoon climate consists of the wet season from June to October and the dry season from November to May. Agriculture is highly vulnerable to the impacts of drought, and in many parts of the Yunnan Province, agricultural production suffered a huge loss in a drought that occurred between 2009 and 2012. However, the agriculture of the Hani people was not greatly affected by that drought, mainly due to their use of agrodiversity.

Seasonal climate advisories developed locally in Kenya and Ghana

Communities, service providers and meteorological departments in Kenya and Ghana have developed and widely disseminated locally relevant seasonal climate advisories, producing seasonal, and in some cases, short-range forecasts. These were disseminated to farmers and livestock keepers through community-held seminars, chiefs' meetings, radios and mobile telephones, churches and mosques, governmental and non-governmental extension services, and local early warning systems.

Building Block 4:

Monitoring, data, and target-setting improvements

Why monitoring, data, and target setting?

Accurate and timely monitoring, including measurement, reporting, and verification (MRV), capacities are crucial for land-based mitigation for several reasons. [60] Building human, operational, and financial capacities to monitor deforestation is an important step toward enforcing laws and reducing illegal activity that harms the land sector. Further, increasing transparency in the forest sector (i.e., making data, information, and decisions accessible to stakeholders and rightrightsholders) can improve the accountability of forest sector actors. [61] To this end, civil society-led monitoring and deforestation alert tools can play an important role for holding governments, landowners, and companies accountable and improving overall transparency. Improved data on the effectiveness, co-benefits, and risks of emerging response options can help achieve sustainable land management. [62]

It is key to strengthen and formalize countries' institutional arrangements for their national monitoring and MRV systems. This includes building technical capacity for NDC implementation in the land sector and enhancing access to national climate information. It also requires building and enhancing the capacity of national institutions to coordinate, manage, and implement climate actions listed in their NDCs in a structured, clear process.

Monitoring and reporting on countries' NDC progress is central to NDC implementation. Tracking NDC progress can inform any adjustments to implementation plans. [63] Additionally, increased requirements for monitoring and reporting progress in the AFOLU sector under the Enhanced Transparency Framework (ETF) highlight how important these components are in developing NDCs and their periodic updates.

Are monitoring, data, and target-setting in place?	Are strong, transparent systems for national forest monitoring and reporting used, including those that monitor and report on safeguard implementation? [64]	Are MRV activities – like the compilation of greenhouse-gas emissions into national inventories – subject to detailed quality assurance procedures? [67]	Are there strong, institutionalized forest monitoring capacities at regional, national, and community levels? [72]		Are existing MRV systems improved upon before new systems are implemented? [74]	Are high-quality indicators developed and selected for tracking progress on NDC implementation in the AFOLU sector?		Are policies designed and implemented under risk-assessment and monitoring & evaluation frameworks?
	If not, then identify the roadblock(s) that apply				If not, then identify the roadblock(s) that apply			
Potential roadblocks to effective monitoring, data, and target-setting	**Are monitoring systems insufficiently funded?** Reliable quantitative data may be unavailable due to a lack of funding invested in monitoring programs.[65]	**Are environmental and social (including gender-related) safeguards non-existent or not in force?** If safeguards exist, they may not be monitored and reported.	**Are there issues with a lack of third-party verification, inflated baseline scenarios, or disaggregated data that was collected under different methodologies?** Available information may not be verified against independent or third-party sources. [68] Inflated baseline scenarios for mitigation options may create technical challenges in assessing the real impact of interventions. [69] Information in different datasets may be collected using different parameters and methodologies.	**Does the government staff lack adequate MRV-specific professional capacities?** Limited professional capacity may hinder the government's capacity to perform MRV-specific activities such as data collection and analysis. [73]	**Is there a lack of coordination on MRV between government entities?** Government entities may lack clarity on their institutional mandates and responsibilities for data collection and monitoring. This may result in GHG data collection efforts and other data collection efforts remaining unlinked. Overlapping mandates without harmonized approaches may lead to inadequate use of resources, duplicated work, and data incompatibilities.	**Is MRV information documented using a system that inhibits central sharing of data – particularly using paper records?** Paper-based information systems, rather than digitized systems, make it difficult to interpret and record data in a systematic and centralized manner.	**Is there inadequate institutional understanding of the existing state of MRV systems, and how they could be improved?** There may be insufficient understanding of what systems are already in place, what MRV systems can already do, how the technology has advanced and the limits to MRV. This may create challenges to improve existing MRV capacities.	**Is there insufficient understanding of impactful AFOLU-related mitigation options?** Not having a full understanding of emissions reduction options available for the AFOLU sector may make it difficult to track relevant data. [76]	**Are MRV systems misaligned with adaptation and mitigation goals?** Lack of alignment between data systems and national goals may lead to inconsistencies and challenges in tracking the implementation of the NDC.	**Is data on formal and customary land ownership either unavailable** not gender-disaggregated, or not utilized to promote sustainable and inclusive AFOLU practices?	**Is the effectiveness of existing land sector policies and activities either not tracked at all or not used to design future programs?** Failing to track policies' effectiveness and then incorporate lessons may lead to inefficiencies and repetition of issues that happened previously.
	And then consider these short-term actions							
Short-term actions to enable effective monitoring, data, and target-setting	**Allocate sufficient finance within national and sectoral budgets** for the government's own MRV and data analysis responsibilities. **Begin the process of developing and implementing a national MRV strategy** if one does not already exist. Include provisions for monitoring and reporting into national and sectoral development projects. This could minimize the budgetary constraints associated with top-down, multi-sector effort monitoring and reporting systems. [66]	**Establish guidelines for the implementation of environmental and social (including gender-related) guidelines** – if they do not already exist – and mandate that government bodies report on their implementation on a frequent basis.	**Prepare MRV guidelines and protocols** for all relevant actors to harmonize outputs, integrate diverging datasets, define common parameters for key selected inputs, and improve third-party verification. [70] **Support local monitoring efforts** established by civil society, IPs, and LCs. [71]	**Conduct trainings on forest data collection and analysis** to strengthen staff MRV-specific capacities at national, regional and community levels. **Explore opportunities to collaborate with research institutions and the private sector** who may have existing MRV capacities that could leverage government capacity. **Identify any government officials with existing knowledge on MRV and document their expertise** to ensure it is not lost in their absence.	**Ensure that interministerial cooperation and coordination has a basis in legal and institutional frameworks** – If needed, amend the legal framework for climate change action to mandate coordination on data collection and reporting. [†] **Set up a working group (or delegate this responsibility to an existing inter-sectoral coordination structure) to oversee national MRV activities.** Arrange periodic meetings where representatives from different sectors can discuss challenges and best practices in MRV activities. **Ensure that agencies with overlapping mandates (e.g., forest monitoring), collaborate in a harmonized manner** to optimize the use of resources and avoid repeated work and data incompatibilities. [‡]	**Conduct pilot digitization projects and promote digitization at a larger scale.** While a country-wide transition to a digital MRV system (if not already in place) is a major task, implementing a pilot digitization project on a smaller scale can serve as a model for wider adoption of digital systems. Additionally, a pilot program can help identify any unexpected issues prior to a national level roll out of a new technology.	**Use existing UNFCCC technical submission processes and reports** such as REDD+ Forest Reference Emission Levels (FREL) or BUR, to identify areas of improvement for MRV. **Make collected data publicly available in a central location** where possible, to ensure that data does not remain siloed within one ministry, department, or organization. **Improve gradually upon existing systems** by building on available structures and defining concrete improvements that deliver benefits on their own, even if other improvements are not implemented. **Improve incrementally upon existing MRV systems to ensure that available infrastructure is capitalized on** Begin by identifying existing MRV systems and MRV-related technologies that may not be used under a national system and clearly define indicators and targets for improvements. [75]	**Conduct an analysis of AFOLU mitigation options** that exist and identify the top priorities based on national context and feasibility.	**Establish methodologically sound baselines against which to track progress, and set clear targets, milestones, and indicators** –for mitigation and adaptation goals based on existing MRV capacities, covering input/activity, output, and outcome indicators. [77] **Create or strengthen existing governance structures** to oversee reporting on NDC implementation and secure high-level support to incentivize stakeholders to provide data. [78] **Develop strategies for alignment** between existing MRV systems, processes, and capacities in the forest sector, including systems established in the context of GHG monitoring and REDD+, and how they can be used for the purposes of tracking progress toward NDCs. [79]	**Set up or strengthen working groups to identify data gaps on land ownership.** Ensure that gender-disaggregated data is collected, made public and easily accessible.	**Review and assess policies that seek to mitigate emissions in the AFOLU sector.** Consider whether these policies have achieved real, verifiable, and timely emissions reductions. Based on this review, document the successes of and barriers to these policies. Circulate these "best practices" and "potential roadblocks" to relevant policymaking bodies. **Develop a broad risk assessment** to all new and, where possible, existing AFOLU policies, applying environmental and social (including gender) safeguard measures and considering the costs and benefits of implementing the different initiatives.

[†] Countries can request support for building their institutional and technical capacities for MRV for NDCs under the Capacity-building Initiative for Transparency (CBIT) from the Global Environment Facility.

[‡] This resource from FAO, UNDP, UNEP, and the UN-REDD Programme can support countries in establishing and strengthening legal frameworks for MRV: "Institutionalization of forest data: Establishing legal frameworks for sustainable forest monitoring in REDD+ countries"

CASE STUDIES:

Uruguay's National Climate Change Policy and NDC Progress Tracker [85]

Uruguay is leveraging a transparent and accessible data dashboard to improve accountability and mobilize climate finance

In 2020, Uruguay launched a publicly accessible interactive dashboard to enable users to monitor the implementation of the country's global commitments in tackling climate change. After more than a year since its initial launch, the dashboard underwent significant enhancements to provide a more comprehensive and illustrative version. This was done with the support of the Agency for Electronic Government and Information and Knowledge Society.

For each measure included in Uruguay's NDC, the dashboard displays the level of progress towards a respective goal. Users can filter measures in a variety of ways, including by sector or area, by the institution responsible for their monitoring, or by their current progress status. Notably, the dashboard also classifies measures according to their potential impact on gender inequalities. Furthermore, the dashboard shows towards the maintenance of carbon sinks and makes it possible to distinguish between progress towards conditional and unconditional emission intensity reduction targets. For each objective and measure, users can download information sheets that clarify existing progress values.

The tool has strengthened civil society's access to information while also reinforcing the accountability of institutional actors in consistently providing up-to-date and relevant data on established goals and measures. Currently, a working plan is in place to ensure datasheets are updated according to the pre-established methodologies. In this context, Uruguay has also issued its first sovereign bonds associated with environmental indicators, which align the public financing strategy with the national commitments to sustainability and low-carbon economic development. The key performance indicators of the bonds issued are based on the goals established by the country's NDC,[86] further underlining how efficient MRV systems can incentivize investments in NDC implementation.

National and regional advances in forest monitoring in the Congo Basin [80]

OFAC centralizes forest monitoring in Central Africa, increasing capacity and transparency through regional collaboration

At the regional level, the Central Africa Forest Observatory (OFAC, in its French acronym) [82] acts as the technical body of the intergovernmental regional Commission for Central African Forests (COMIFAC) and plays an important role in its data collection and centralization. Created in 2007, OFAC collects, analyzes, and publishes regular flagship assessments of the state of forests and the state of protected areas in the region, including relevant and up-to-date data on forests and ecosystems.

Through these analyses and publications, OFAC seeks to promote better governance and coherent policies for sustainable resource management. National coordinators in each country collect and transmit data, following an online indicator grid.[83] Private companies, NGOs, protected area managers, and policymakers can provide additional data. An interactive portal allows the visualization of existing data by country and by theme.[84]

Gabon has been a leader in real-time deforestation monitoring to inform sectoral governance

Gabon institutionalized its remote sensing activities through the creation of the Gabonese Agency for Space Studies and Observations (AGEOS, in its French acronym). In collaboration with the National Parks Agency, AGEOS produces land cover maps as part of the National Observation System for Natural Resources and Forests.

AGEOS enables real time monitoring of the national forest cover and contributes to efforts to reduce deforestation in key driving sectors such as forestry, agriculture, and infrastructure. Additionally, Gabon has assessed its national forest baseline and put in place a roadmap to monitor and update forest inventory data in a consistent manner. [81]

Building Block 5:

Sufficient and appropriately distributed finance

Why finance?

Parties to the Paris Agreement are committed to making “finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” This requires both new climate finance and the redirection of existing financial flows towards climate-aligned action.

However, countries often lack sufficient finance for meeting their NDC targets.[87] As one example of insufficient public finance in the land sector, global public finance for forests (both domestic and international) reaches an average of just USD 2.3 billion per year – that’s less than 1 percent of the up-to USD 460 billion required annually to conserve, manage, and restore forests in line with Paris Agreement targets. [88]

NDC implementation in the land sector can be supported with a range of financial mechanisms. In terms of domestic public finance, mechanisms include grants, loans, green budgeting tools, tailored fiscal policies, and programs for blended and de-risked finance. Some of these tools can also incentivize green private investments. Within international and donor finance, increased finance can come from readiness and capacity building support as well as results-based payments. Carbon markets also provide an opportunity for mobilizing funds.

Alongside the public sector, private sector actors have yet to make bold, systemic changes to align their investments with climate goals in the land sector **(Box 2).** Few financial institutions include deforestation and other ecosystem conversion safeguards for their investments.[89] Most private finance flowing to AFOLU activities – which far outweighs public funding for AFOLU – is still directed towards activities that are likely harmful to the environment. [90]

Is effective finance in place?	**Is international climate finance for the land sector meeting finance needs,** including reaching the AFOLU activities, projects, and communities most in need of financing?						**Are domestic budgets aligned with mitigation targets in the land sector,** reflecting an alignment between economic development priorities and NDC goals? [93]		**Does the regulatory environment support private sector investment in the land sector** that is aligned with long-term mitigation goals?	
	If not, then identify the roadblock(s) that apply							**If not, then identify the roadblock(s) that apply**		
Potential roadblocks to effective finance	**Are burdensome requirements reducing access to committed funding?** Shifting and often burdensome requirements of donor countries and stringent REDD+ requirements may overwhelm recipient countries and create challenges in accessing funding for AFOLU projects and building capacity to manage climate finance processes.[91]	**Are funding approaches under the Paris Agreement not yet being adopted and adapted to national context?** Entry points for forest and nature-based solutions include payments for results for REDD+ under Article 5; cooperative approaches, transferable mitigation outcomes, carbon markets and non-market approaches under in Article 6. Assessing the relevance of each of these approaches, and adopting policies and frameworks to participate in these mechanisms, can help access new streams of finance.	**Is there a lack of bankable projects that are based on NDC targets and that will attract investment?** Financially viable and attractive projects in line with NDCs are key to attracting climate finance.	**Do funding proposals elevate donor priorities over national objectives and needs?** In efforts to attract funding from international channels, ministries may formulate proposals to meet donor requirements at the expense of aligning with NDCs, LTS, and other national plans.	**Are marginalized communities' needs poorly or not at all reflected in existing climate financing?** Gender and social inclusion considerations may not be embedded across the implementation strategies of financial plans and commitments.	**Are climate investments in the land sector underreported or difficult to track?** Understanding land sector expenditure can help identify financial gaps and align national policies with NDC goals.	**Is budgeting happening in siloes?** Budgets may be allocated to individual sectors without considering links to climate goals and targets, and without promoting synergies.	**Are mitigation goals in the land sector seen as low priority?** Policymakers may prioritize and subsidize high emission sectors or activities that are seen as contributing to other economic priorities, rather than low-emissions development. NDC targets may not be mainstreamed into sectoral strategies, which could limit the capacity of the land sector to influence domestic budgeting.	**Are investors in the dark on their exposure to forest-related risk?** A lack of knowledge and transparency on financial risks may hinder informed investment decision-making.	**Are companies unsure of how or where to make NDC-aligned land sector investments?** Mechanisms for green investments may be unavailable. Existing investment opportunities may be perceived as too risky, whether in terms of potential returns on investment, or in terms of having insufficient social and environmental safeguards and benefit-sharing.[97] The regulatory basis for private sector participation in mechanisms like voluntary carbon markets may be unclear.
Short term actions to enable effective finance	**Seek out strategic partnerships** with organizations, like UNDP and the United Nations Environment Programme (UNEP), that are already available for countries to consider, and that have the capacity to support recipient countries to assess and comply with the landscape of REDD+ and other climate finance requirements. Outsourcing or collaborating on this work in the short-term can serve as a stopgap while internal capacities are increased. When capacities are deemed sufficient, the ministry or institution can become a direct access entity able to access funds directly. **Review existing capacities to receive, manage and monitor climate finance and consider investing in strengthening these capacities** through targeted hiring, staff training, and improving systems.	**Create a comprehensive investment plan** for NDC implementation in the land sector that diversifies sources of finance: 1) **Review and document current flows of climate- and AFOLU-related international finance** into the country to understand the status quo. 2) **Set out a clear outline of climate-related finance needs in the land sector** – how much is needed, what type, and what will it achieve.[92] 3) **Compare needs with current flows** to identify financing gaps. 4) **Identify potential financial mechanisms to complement and diversify international climate-related land sector finance** (e.g., debt-for-nature swaps, green bonds, carbon markets). 5) **Identify, and if needed, develop bankable or investable projects** that are based on the NDC and are eligible for financial mechanisms. 6) **Prioritize new financing sources to pursue** based on scale of potential financing, suitability for the national context, and feasibility of implementing new systems and meeting requirements.		**Prioritize advancing project proposals that have demonstrated synergies with NDC and LTS goals** in line with a comprehensive investment plan for NDC implementation in the land sector. **Strengthen government staff capacity to formulate high quality project proposals** including coordination with donor representatives to harmonize national and donor priorities. **Urge donors and partners to coordinate amongst themselves** to capitalize on synergies and resource efficiencies for NDC implementation and communicate these synergies to climate change departments.	**Develop and implement an engagement strategy** equitably with women and men, youth, IPs and LCs, and other impacted communities to ensure that enough finance is being deployed to respond to their priorities. **Allocate funds and build gender budgeting practices in a systematic manner** and integrate gender indicators within NDC, sectoral financing, and investment strategies. **Establish systems for direct funding** to IP & LC communities where actions make more direct impacts to climate change.	**Establish or strengthen a land sector financial reporting mechanism** that is easily accessible, promotes transparency and allows the identification of financial gaps in land sector investments.	**Integrate budget planning into inter-ministerial communication processes** linking the ministry responsible for financial planning with the ministries whose mandates intersect with the land sector including ministries overseeing allocation of energy and agricultural subsidies (e.g., ministries of energy, environment, agriculture, forests and/or climate).[94] Include financial and insurance institutions into budget roundtable discussions.[95]	**Incorporate environmental risk and impact assessment into public budgeting frameworks.** Through this process, policymakers should identify which subsidies lead to adverse impacts on forests and other ecosystems, and, to the maximum extent possible, redirect and repurpose these subsidies. [96] **Develop cost-benefit assessments for budget allocation** that take into consideration the climate impacts of land sector policies and activities.	**Mandate corporate disclosure** of forest- and ecosystem-related risks and progress against deforestation and ecosystem conversion pledges, to increase transparency and allow investors to reconsider their capital allocation decisions.	**Implement policies and instruments that can help to de-risk private investments** to create an enabling environment for private finance. These instruments, such as green grants, low-interest loans, green bonds, and blended finance mechanisms, should integrate a gender-responsive and socially inclusive approach that ensures that women and men, IPs and LCs, and other marginalized communities can equitably take advantage of such opportunities. **Invest in and support multistakeholder landscape initiatives and platforms** that can incentivize and channel private investment to locally agreed priority activities for forest and ecosystem protection and sustainable production. **Establish clear regulations for private sector investment in emerging financing mechanisms to provide certainty.** For carbon markets: provide clarity on ownership, necessary contractual templates, any relationship to jurisdictional approaches, and adherence to integrity principles.

Box 2. Recommendations for private finance actors

What short-term actions can private finance actors take to support NDC implementation in the land sector? [98]

Manage risk

• Develop a full understanding of the company's or institution's exposure and contribution to climate, forest, and other ecosystem-related risks and impacts (in the short, medium, and long term).

• Incorporate processes for assessing climate, forest, and other ecosystem-related risks into existing portfolio risk management processes. This includes processes for identifying, managing, and mitigating risks.

Invest "green"

• Implement lending standards and policies that actively promote green investments and lending to ecosystem conservation and restoration-oriented land sector businesses.

• Prioritize investments that are aligned with and synergetic with zero-deforestation and zero-conversion, or net positive, goals, applying the mitigation hierarchy to all investment decisions. Limit the volume of private finance flowing to activities that have a detrimental impact on forests and other ecosystems.

• Invest in landscape finance for ecosystem conservation and restoration activities that holistically address the major drivers of deforestation, conversion, and land degradation, both market and non-market based; and that promote sustainable and regenerative agriculture. One such example is the support of multi-stakeholder platforms that can promote constituency building, strategic planning, mapping, and project development.

Use carbon credits to take – not shirk – responsibility

• When using nature-based carbon credits to meet internal climate mitigation targets, organizations should first prioritize emissions reductions within the organization's internal operations and the operations of companies within investment portfolios and only after, compensate for residual emissions.

• In addition, consider investing in nature-based carbon credits as part of strategies to achieve societal decarbonization beyond companies' own value chains and institutions' direct investment portfolios.

CASE STUDIES:

Aligning fiscal incentives with national climate and land sector objectives

Countries are using land taxes to encourage conservation practices [99]

In Costa Rica, land use and production practices that have an explicit conservation aim can yield significant tax benefits for landowners. Farms that employ soil management and conservation practices may have their annual property taxes reduced by up to 40 percent.[100] In Japan, the transfer of farms managed for conservation purposes is subject to a reduced registration tax rate of 0.4 percent, compared to a 2 percent rate for farmlands with other land use objectives.

In Brazil, financial support for agriculture is often conditional on environmental criteria[101]

Brazil implemented environmental conditionalities for agricultural support in 2008, when it introduced a law determining that banks could only provide rural credit to producers in the Amazon region who presented proof of compliance with environmental regulations.[102] This measure prevented the loaning of BRL 2.9 billion (USD 1.4 billion) and is estimated to have avoided deforestation of over 270,000 hectares between 2008 and 2011, representing a 15 percent decrease in forest clearing in the biome during the period.[103] Environmental conditionalities became increasingly common in Brazil's agricultural sector over the years, and the country introduced policies aimed at promoting a transformation in the sector. Beyond being required to comply with the law, farmers in Brazil also receive incentives to adopt more sustainable practices.

Here, a leading policy in this area is Brazil's low-carbon agriculture plan: the Sectoral Plan of Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Economy in Agriculture (ABC, in its Portuguese acronym). Since 2010, the plan has provided priority access to government-subsidized credit to those who adopt agricultural practices that either increase productivity or reduce emissions. ABC supports farmers in adapting their agricultural practices and creates complementarity between capacity building, credit provision, and the promotion of climate-friendly techniques and behavior change.[104] The ABC Plan, which initially was planned to run from 2010-20, has been effective in reducing deforestation and mainstreaming sustainable farming techniques.[105] The policy was extended for the 2021-30 period through the Sectoral Plan of Adaptation and Low Carbon Emissions in Agriculture and Livestock (ABC+, in its Portuguese acronym). The new version of the program reinforces the strategies of the original ABC while increasing its scope, promoting technical and scientific innovation, and prioritizing monitoring and evaluation.

ABC and ABC+ provide clear examples of how conditionality can achieve positive outcomes when governments combine financial incentives and capacity building, encouraging, and supporting farmers in their transition to low-carbon agricultural practices.

Developing and applying biodiversity risk assessment frameworks

Central banks and financial regulators are beginning to systemically assess and address countries' exposure to biodiversity- and other nature-related risks [106]

Biodiversity loss and ecosystem degradation pose a systemic risk to the financial sector, but many financial actors are not fully aware of what this could mean to their investments. To that end, new risk assessment frameworks are being developed to take these issues into consideration. In 2020, the Netherlands' central bank, De Nederlandsche Bank, pioneered biodiversity risk assessment when it reviewed the extent to which the Dutch financial sector is exposed to risks from the loss of biodiversity. [107] The assessment found that 36 percent of Dutch investments rely on one or more ecosystem services, putting EUR 510 billion at risk. The total biodiversity "footprint" of the sector, expressed as a loss of species from a "pristine" ecosystem scenario, is 1.7 times as large as the country of the Netherlands itself.

France's central bank conducted a similar review in 2021.[108] The review found that 42 percent of the total value of French financial institutions' securities were issued by companies either highly or very highly dependent on ecosystem services. To illustrate this scale, consider a pristine ecosystem being converted into a parking lot. Using this analogy, French financial institutions' biodiversity footprint would be equivalent to paving over one fourth of the country.





Conclusion

Decisions made today can either accelerate the transition to a sustainable society or lock-in future emissions

Though it is easier to compartmentalize current policy actions from desired climate targets, governments cannot afford to wait to mitigate their country's emissions to achieve their NDC targets. This is true particularly for the land sector, which not only accounts for a substantial share (22 percent) of global emissions, but also serves as a major carbon sink while contributing to SDGs and other key benefits and tradeoffs.

To implement their NDCs in line with intended long-term climate and development pathways, countries must undergo significant societal transformations. In addressing this challenge head-on, countries' immediate focus must be on creating favorable conditions that enable coherent, equitable policies that help achieve NDCs. Governments must integrate their NDC targets, goals, and policies into national legislative, regulatory, and planning processes as a means of ensuring implementation in the LTSs.

Policymakers can take short-term, tangible steps to ensure that their country is on the right path to meeting climate goals in the land sector. The highest priority must be to ensure that land sector governance is strong, inclusive, and participatory. Governments are set up for success when they collaborate across sectors; enable inclusive participation; build their institutional, technical, and knowledge capacities; develop monitoring and reporting infrastructure; and facilitate effective financial flows to climate action.

Governments have a leading role to play, but they are not alone in holding responsibility for achieving a shared, prosperous future. The private sector, civil society, and all citizens must contribute, according to their means and abilities, to aligning action with intention. By focusing on short-term action that policymakers can take to strengthen enabling conditions, this guidance aims to support countries in kicking-off the transformation required for long-term, sustainable climate action in the land sector. Hopefully, other stakeholders will be incentivized and inspired to follow suit.

Glossary

AFOLU: In the context of national greenhouse gas (GHG) inventories under the United Nations Convention on Climate Change (UNFCCC), AFOLU is the sum of the GHG inventory sectors Agriculture and Land Use, Land Use Change and Forestry (LULUCF).

Enhanced Transparency Framework (ETF): Improved set of rules for monitoring and reporting progress under the Paris Agreement. The ETF allows a greater level of transparency and comparability of information reported by Parties through the use of common reporting guidelines and a standardized format for the reporting of information. It also includes the use of a facilitative, non-intrusive and non-punitive approach to the review of reported information, with a focus on providing technical assistance and support to Parties in improving the quality and completeness of their reported information.

Global Stocktake: Periodic review of the implementation of the Paris Agreement. It aims to assess the collective progress towards achieving the Agreement's long-term goals and to enhance the actions and support provided by Parties to reduce greenhouse gas emissions and address climate change. It is set to be completed every five years, with the first stocktake occurring in 2023. The UNFCCC's subsidiary bodies (Subsidiary Body for Scientific and Technological Advice (SBSTA) and Science Based Targets initiative (SBTi)) assist the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement in conducting the global stocktake, especially with regards to the technical assessment component through the technical dialogue and the Joint Contact Group. The UNFCCC has developed an online resource hub to facilitate online availability of all global stocktake inputs by thematic area.

Long-term Low Greenhouse Gas Emission Development Strategies (LTSs): Article 4.19 of the Paris Agreement states that all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances. These strategies provide a vision and roadmap for how a country will achieve its long-term decarbonization goals, typically 2050 or beyond, while also pursuing sustainable development. As of August 2023, 66 LTS had been submitted to the UNFCCC.

LULUCF: In the context of national greenhouse gas inventories under the UNFCCC, LULUCF is a GHG inventory sector that covers anthropogenic emissions and removals of GHG in managed lands, excluding non-CO2 agricultural emissions.

Nationally Determined Contributions (NDCs): Article 4.2 of the Paris Agreement requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions. These country-specific climate action plans to reduce emissions and adapt to climate change also include information on how a country will finance and support those efforts. NDCs are intended to be updated and strengthened over time.

REDD+: Policy approaches and positive incentives in the forest sector that include reducing emissions from deforestation and forest degradation, as well as the sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries. The UNFCCC Conference of the Parties (COP) developed a framework with a package of decisions to operationalize REDD+.

Sustainable forest management: Sustainable forest management can be defined as stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.[109] Actions include forest planning and monitoring, mapping forest resources, implementing appropriate silvicultural measures to maintain the growing stock resources at - or bring to - a level that is economically, ecologically and socially desirable, increasing the health and vitality of forests, rehabilitating degraded forest ecosystems, reforestation and afforestation, minimizing the use of pesticides, clearly defining property rights and land tenure arrangements, protection of sites with recognized specific historical cultural or spiritual significance, recognizing and respecting Indigenous Peoples' rights and traditional knowledge and community involvement, and conservation of biological diversity.[110] Other measures include longer rotations, less intensive harvests, continuous-cover forestry, mixed stands, more adapted species, selected provenances, high quality wood assortment. [111]

Annex 1: Methodology

This guidance was developed through a combination of a desk review, semi-structured interviews with technical experts, and consultation with and input from experts from forestry country governments, civil society, and multilateral institutions.

The desk review focused on reviewing literature that is currently available to help countries develop and implement their climate strategies under the Paris Agreement. This allowed revisiting and updating short-term recommendations that have already been made and filling gaps that still exist in prioritizing short-term AFOLU sector action.

To ensure accuracy and relevance, international experts across the AFOLU sector were consulted for input and validation. Semi-structured interviews were conducted with the following experts:

• **Aline Mosnier** – Scientific Director, Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium

• **Haseeb Bakhtary** – Senior Consultant, Climate Focus

• **Nataliya Vasylyeva** – Climate Change Technical Specialist, UNDP Climate Promise

• **Nathália Nascimento** – Member, Science Panel for the Amazon

• **Patty Fong** – Program Director, Climate and Health & Well-being, the Global Alliance for the Future of Food

• **Richard Eba'a Atyi** – Senior Scientist & Hub Leader, Center for International Forestry Research (CIFOR)

• **Scarlett Benson** – Director of Corporate Standards, the Food and Land Use Coalition (FOLU)

Drawing on semi-structured expert consultations and existing NDC implementation guidance documents, five interconnected building blocks of effective policymaking in the AFOLU sector were identified:

1. Cross-sector collaboration

2. Socially inclusive and gender-responsive stakeholder engagement

3. Institutional, technical, and knowledge capacity-building measures

4. Monitoring, data, and target-setting improvements

5. Sufficient and appropriately distributed finance

In addition to the consultations with experts, UNDP and Climate Focus organized and facilitated a side-event on the margins of the 58th session of the SBSTA in Bonn, Germany, on 14 June 2023. This event, “Accelerating NDC implementation through the forest sector: Short-term actions and long-term strategies”, was an opportunity to introduce the draft NDC Implementation Guidance to forest country stakeholders, collect feedback and invite them to contribute to the document’s review process. In total, 29 participants attended the side-event, with members of governments and NGOs from Brazil, Cambodia, Dominica, Ecuador, Guatemala, Kenya, Nepal, and Philippines.

By nature of this guidance’s overarching scope – which targets policymakers across regions and contexts – the recommendations presented are broad and may not be applicable to every country or government. While recommendations are primarily aimed at forest countries, their broad nature and focus on effective policymaking will still be relevant to stakeholders and policymakers in other contexts.

Though the recommendations presented here highlight some of the most common and consensus-backed principles of effective policymaking, the guidance remains non-exhaustive. The recommended short-term actions will need to be tailored to the unique policy, economic, and technical conditions of each country and region. This guidance therefore intends to serve as a menu of ideas for policymakers in priority forest countries and beyond to effectively and rapidly advance on AFOLU targets and implement their NDCs.

The final guidance presented here is intended to reflect the collaborative effort implemented to develop and refine it. Its authors hope that it can support transformative action in the implementation of NDCs in the land sector.

Annex 2. Analysis of AFOLU in LTSs, and comparison to NDCs

2.1 Methodology

A high-level analysis of the 66 LTSs submitted to the UNFCCC as of August 2023 was carried out to:

1) explore whether countries include further information about quantitative or qualitative targets in the AFOLU sector, either as a whole or disaggregated into agriculture and/or LULUCF targets;

2) provide an initial indication of the degree of alignment between NDCs and LTSs when both have been submitted by a Party; and

3) identify what AFOLU mitigation options are most commonly put forward across LTSs.

For objective 2, on the coherence between NDCs and LTSs, the comparison framework developed was based on the immediate availability of information in the NDCs and LTSs. It does not analyze or judge the extent to which mitigation from forests is or is not included in specific scenarios or alternative policies. It rather assesses the extent to which the two strategic, international documents -the NDCs and LTSs - allow a clear assessment of a country's targets and ambition in the sector, and therefore the extent to which these can drive national-level action.

The analysis found that over 90 percent of LTSs include a quantitative or qualitative AFOLU mitigation target, whether related to agriculture, LULUCF or both. Of those, 60 percent include both agriculture and LULUCF targets and 2 percent include agriculture-related targets only. Further analyzing the nature of these targets found that most relate to emissions reductions (63 percent of the LTS that have targets related to AFOLU). Other AFOLU-related targets refer to increasing the countries' land sink absorption capacity (27 percent), afforestation (15 percent), increasing forest cover (13 percent), reducing the surface subject to deforestation and forest degradation (8 percent), and land restoration. Only a few LTSs do not cover the AFOLU sector at all.

2.2 Coherence of forest sector targets and pathways in NDCs and LTSs

Analyses of AFOLU in NDCs have previously been conducted. As of October 2022, over 80 percent of NDCs referred to mitigation measures in the AFOLU sector.[112] Reducing deforestation is often highlighted in NDCs not only as a mitigation measure but also as an action providing a range of non-carbon socioeconomic and environmental benefits.[113] Most Parties also identify agriculture as a high priority for adaptation, often emphasizing co-benefits and aiming to use mitigation opportunities in the sector.[114] Over 40 percent of NDCs further specify quantitative LULUCF mitigation targets.[115]

Comparisons of AFOLU inclusion in both NDCs and LTSs have not yet been developed. Therefore, for the 66 countries or groups of countries that had submitted both an NDC and an LTS as of August 2023, an original preliminary assessment was conducted to compare the nature, specification, quantification, and time frame (within a 2030 – 2050 horizon) of the targets, assessing their consistency and relationship through six levels of coherence (**Table A1**). Without analyzing all the hypotheses underlying different business-as-usual or climate ambition mitigation pathways outlined across different LTSs, this analysis seeks to capture the extent to which 2030 AFOLU targets are described in corresponding NDCs and LTSs, and the extent to which the LTS builds upon the NDC target to provide targets beyond 2030.

Overall, only 41 percent of the LTSs were assessed to provide a degree of alignment with the NDCs, suggesting that both documents are coherent and can be used together as a foundation for short-term policy planning and action prioritization. Less than 40 percent of countries assessed present a forest-related target in only one of the two documents (the LTS) or do not mention forests in their NDCs.

2.3 Mitigation actions in the AFOLU sector, and inclusion in LTSs

Mitigation actions in the AFOLU sector are varied, and region and context dependent. A range of interventions is available, each with different impacts on socio-economic aspects such as food security and land tenure, as well as biodiversity conservation. Due to the capacity of land systems to store carbon, many mitigation options in AFOLU involve maintaining or increasing carbon sequestration,[116] with ending deforestation and implementing large-scale afforestation and/or reforestation offering by far the greatest land-based mitigation potential.

• **Reducing deforestation and forest degradation (REDD+):** emissions from land use and land-use change occur mostly due to deforestation and forest degradation.[117] Actions to reduce forest clearing and degradation include adopting and enforcing stronger mandates for forest protection and sustainable management, strengthening regulations, empowering civil society, strengthening law enforcement, legal frameworks and institutional capacities, conducting conservation and restoration activities, establishing binding due diligence regulations and mandatory disclosure of forest-related risks and progress against pledges, moratoria, securing land tenure rights of IPs and LCs, strengthening land-use planning, among others.[118] Under the UNFCCC, Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a specific framework that guides activities related to reduced depletion of forests in developing countries. To be labeled as REDD+, projects must comply with a series of stringent requirements. [119]

• **Managing forests sustainably:** sustainable forest management can be defined as stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems. [120] Actions include forest planning and monitoring, mapping forest resources, implementing appropriate silvicultural measures to maintain the growing stock resources at - or bring to - a level that is economically, ecologically and socially desirable, increasing the health and vitality of forests, rehabilitating degraded forest ecosystems, reforestation and afforestation, minimizing the use of pesticides, clearly defining property rights and land tenure arrangements, protection of sites with recognized specific historical cultural or spiritual significance, recognizing and respecting Indigenous Peoples' rights and traditional knowledge and community involvement, and conservation of biological diversity. [121] Other measures include longer rotations, less intensive harvests, continuous-cover forestry, mixed stands, more adapted species, selected provenances, high quality wood assortment. [122]

• **Improving soil organic carbon management:** soil management practices can enhance the capacity of the soil

to sequester carbon. Examples include reducing soil disturbance by reducing or eliminating tillage, enhancing carbon input by cultivation of cover crops, crop rotation and residue management. [123]

• **Improving management of cropland and grazing lands:** Practices for improved cropland management include increasing soil organic matter, erosion control, improved fertilizer management, conservation agriculture, improved crop management, for example paddy rice management, and use of varieties and genetic improvements for heat and drought tolerance. [124] For improved management of grazing lands, practices include optimizing grazing intensity and frequency, increased productivity, nutrient management, fire management and species introduction. [125]

• **Conserving ecosystems and restoring land:** Activities include monitoring ecosystem components, establishing protected areas, ecosystem-based management, strengthening environmental regulations, afforestation, reforestation, wetland restoration, grassland restoration, management of invasive species, natural regeneration, rehabilitation of landscapes, among others.

• **Transitioning to healthy diets:** Current dietary choices are the main drivers of the conversion of natural ecosystems to agriculture, and agriculture production (particularly livestock and rice production) accounts for 50 percent of anthropogenic methane emissions. [126] "Human and planetary health diets" are predominantly plant-based, which means reducing the consumption of meat and thus the emissions caused by livestock production. [127] Actions to promote the transition to healthy diets include repurposing agricultural subsidies and market support mechanisms, targeted public food procurement, taxes and regulations on unhealthy food, issuing strong, clear guidelines for healthy food consumption and promoting them vigorously, supporting farmers to transition to regenerative agriculture through incentives, and investment in sustainable innovation to expand choice, among others. [128]

• **Increasing sustainability of food production:** Sustainable food production practices include using regenerative farming methods, promoting local food systems, agroforestry, application of climate-smart techniques to agriculture, grazing and forestry, a greater focus on aquatic ecosystems for food production, increasing post-harvest measures, including circularity, food waste and food loss prevention measures, and increasing engagement with smallholder farmers, IPs and LCs, women, and youth. [129]

• **Reducing food loss and waste:** Actions include adjusting regulations to enable reductions in food loss and waste, developing policies on food safety, quality, labelling, packaging, trade and customs, tax incentives for reduced food loss and waste, use of unsold food for animal feed or energy, developing storage and conservation units that reduce high post-harvest losses, requiring larger companies to report on food loss and waste, and adopting voluntary corporate targets. [130]

• **Adopting carbon pricing:** Carbon pricing is a policy tool that puts a price on carbon emissions. It is an effective mechanism in promoting implementation of low-cost emission reductions. Carbon pricing can help support mitigation in the AFOLU sector by creating financial incentives for the protection of forests. Article 6 of the Paris Agreement establishes an international framework for Parties to transfer mitigation outcomes and use them for achieving their mitigation targets. [131]

Mitigation options outlined by countries in their LTSs

The diversity of mitigation options available in the AFOLU sector – and their large dependence on local context – is reflected in the wide range of planned actions outlined in countries' LTSs (Figure A1). These intended AFOLU-related mitigation options fall into the following categories:

• **Mitigation actions in forest systems** are put forward in over 85 percent of submitted LTSs including afforestation and reforestation, restoration, conservation and rehabilitation, reduced deforestation and degradation, and fire control. They also include sustainable forest or land management. Many LTSs link these actions to the implementation of their REDD+ strategies.

• **Mitigation actions in agricultural systems:** Over 55 percent of submitted LTSs lay out mitigation actions linked to agriculture systems and improving the sustainability of food production to meet their long-term climate targets. The three most mentioned mitigation interventions are (1) improved agricultural techniques, including productivity gains and precision agriculture, (2) more efficient use of fertilizers, so as to reduce methane emissions in particular, and (3) agroforestry or agri-food systems. Other actions related to improving management of cropland and grazing lands include improving livestock feed quality and manure management, improved infrastructure and energy systems, waste management, conservation agriculture, climate-smart agriculture and adapting livestock.

• **Improving soil organic carbon:** Soil management practices can enhance the capacity of the soil to sequester carbon. Examples include reducing soil disturbance by reducing or eliminating tillage, enhancing carbon input by cultivation of cover crops, crop rotation and residue management.[132] Almost 45 percent specifically refer to increasing carbon sequestration and fertility in biomass, soils or agricultural lands.

• **Mitigation actions in food systems**: Despite current dietary choices are the main drivers of the conversion of natural ecosystems to agriculture, only 7 out of 66 LTSs include the implementation of mitigation actions related to food systems and demand. This includes dietary shifts, reducing food loss and/or waste, reducing demand for arable land and food transformation, transport and storage.

• **Other:** Other specific technologies described include CCS, biochar and blue carbon.

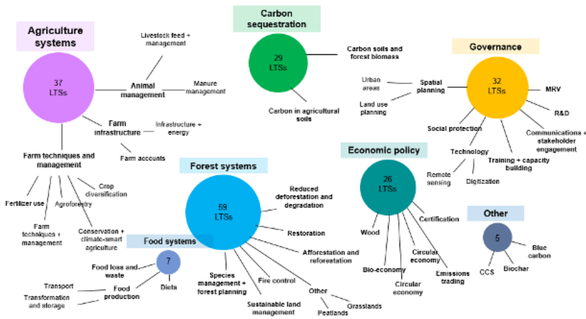

Figure A1. Main AFOLU-related mitigation actions mentioned across the 66 LTSs submitted as of August 2023

Annex 2. Analysis of AFOLU in LTSs, and comparison to NDCs

Alignment	Comparison Framework	Countries	Examples
Fully Aligned	The same numerical 2030 targets are described, with the LTS further suggesting either possible increases in ambition or 2050 targets building on the 2030 NDC target, so that the LTS builds on the NDC.	Chile Colombia Costa Rica Nepal Sri Lanka	Chile: Both the NDC and LTS state reducing emissions from the forestry sector due to degradation and deforestation of the native forest by 25 percent by 2030, considering the emissions average between the period 2001-2013. Furthermore, they mention recovering and sustainably managing 200,000 hectares of native forests. However, the LTS states that by 2050, they will sustainably manage and recover the necessary areas of native forests to achieve the carbon neutrality committed in the NDC. Nepal: Both the NDC and LTS state that by 2030, 45 percent of the total area of the country will be under forest cover, with the LTS showing increased ambition targets under an additional measures scenario.
Aligned	The same numerical 2030 high level targets are described in both the NDC and the LTS. Further targets are described in either the LTS or the NDC but are not linked to an overall pathway to 2050 or no further targets are described for 2050.	Bosnia and Herzegovina China India Indonesia Mexico Singapore	China: Both the NDC and LTS state that the forest stock volume will increase 6 billion cubic meters over 2005 level by 2030, but the LTS further states China's forest coverage rate will reach about 25 percent by 2030. Mexico: Both the NDC and LTS state reaching net zero deforestation by 2030. However, no further targets are described in the documents or mention a pathway for 2050.
Somewhat Aligned	Targets of a similar nature in both do not present the same level of specificity or are difficult to compare.	Andorra Cambodia Ethiopia Guatemala Tonga Tunisia Uruguay Zimbabwe	Guatemala: Both the NDC and LTS referrer to similar mitigation options such as forest plantations and conservation but the targets are difficult to compare since they are not aligned numerically. Tonga: Both the NDC and LTS state 30 percent of land in Tonga to be utilized for agro-forestry or forestry. However, while the NDC states this goal is to be reached by 2025, the date is not specified in the LTS.
Poorly Aligned	A numerical target is only described in one of the two documents with the other only presenting a generic indication of action in the sector; or targets are of a different nature; or numerical targets are inconsistent or difficult to compare.	Belize Benin Canada Fiji Gambia Georgia Morocco Nigeria North Macedonia Republic of Korea	The Gambia: The NDC states that GHG emissions in the LULUCF sector will be 589,000 tons CO_2e, decreasing by 45.6 percent as compared to the expected baseline level in 2030. The LTS states that with the implementation of mitigation options, it is envisaged that there will be a reduction of 330,000 tons CO_2e in 2030. Republic of Korea: The NDC states the country will maintain and improve its carbon sinks with sustainable forest management, conservation and restoration and will increase forestlands by greening urban spaces, but no numerical target is described. The LTS states a 38.7 million tons CO_2e reduction in the overseas reduction & forestry sector by 2030.

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