

Integration of forest landscape restoration in Ethiopia's nationally determined contributions



Ethiopia has demonstrated its continued and enhanced commitments to the international community and the Paris Agreement by presenting a bold and ambitious new and updated nationally determined contribution (NDC) in July 2021. This aims to reduce national emissions by 68.8% as compared to business as usual by 2030, to be largely accomplished through reforestation and forest restoration, and primarily implemented in the drylands. The land use change and forestry (LUCF) sector represents more than 85% of the mitigation potential of the country, and the proposed interventions will address the impacts of alarming deforestation and land degradation on communities and the economy, while contributing to climate change mitigation. As a drought prone country, Ethiopia recognizes that forests and other native vegetation play a modulating role in the regional climate and hydrological cycle, with improved and reliable rainfall enhancement as a major outcome.

The land use change and forestry (LUCF) sector

Emissions in the LUCF sector originate from net changes in the stock of carbon, largely from land conversion and emissions from biomass energy use (using the IPCC and Ethiopia NDC use of terminologies). Ethiopia's first NDC (2015) only considered forest land as a category, whereas the revised NDC includes the stock of carbon in all land classes: wetland, forest land, grassland, crop land, settlement, and other land.

The table below highlights several crucial points. Firstly, in 2020, the livestock and (LUCF) sectors alone made up almost 90% of Ethiopia's GHG emissions. Secondly, in the unconditional pathway target, LUCF is the only sector to see a reduction in GHG emission projections in 2030 as compared to 2020 levels. Finally, and crucially, is that in the conditional pathway target, LUCF becomes a net carbon sink of almost 100 Mt CO₂e by 2030 as a result of highly ambitious reforestation and forest restoration targets, equivalent to a relative reduction of emissions of -240.1 Mt CO₂e or 171% compared to BAU emissions, and thus the importance of focusing on this sector.

Greenhouse gas emission projections (Mt CO₂e) in business as usual, unconditional and conditional pathways

Sector	Business as usual (BAU)			Unconditional		Conditional (including unconditional)	
	2020	2025	2030	2025	2030	2025	2030
Livestock	146.4	169.5	194.8	168.7	192.9	162.8	180.0
Land use change and forestry (LUCF)	125.0	133.8	140.2	112.6	91.8	21.4	-99.9
Energy	10.7	14.4	20.0	12.7	14.9	10.4	9.5
Waste	9.1	10.3	11.5	9.4	9.5	6.0	2.9
Industry	5.9	12.7	26.1	12.9	27.3	10.2	22.6
Managed soils	5.8	8.1	11.0	8.0	10.9	8.0	10.6
TOTAL (Mt CO₂e)	302.9	348.8	403.5	324.3	347.3	218.8	125.8

Source: FDRE, 2021. Updated Nationally Determined Contribution of the Federal Democratic Republic of Ethiopia. https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pd

Policy interventions

These aim to achieve the potential for net emission removals in LUCF through massive reforestation and restoration based on strategic actions under Ethiopia's Forest Sector Development Plan, the Green Legacy Initiative, and Reducing Emissions from Deforestation and Forest Degradation (REDD+). This primarily targets the drylands, with 80% of reforestation and 90% of forest restoration to be implemented in these areas. Realizing this ambitious plan will increase forest cover to 30% of Ethiopia by 2030. The other important driver of LUCF emissions is use of biomass energy for cooking and baking, which according to international inventory guidelines are accounted for under LUCF. Thus, replacing or improving household biomass energy use for cooking and baking leads to substantively reduced pressure on forestry resources. The following table portrays policy options for the LUCF sector in the coming ten years.

Policy interventions in the land use change and forestry (LUCF) sector

Sustainable agriculture

- Increasing the share of agricultural land under sustainable management practices
- Reducing pre-harvest losses and land converted for agricultural infrastructure

Grassland improvement

- Carbon sequestration through grassland improvement
- The Lowlands Livelihoods Resilience Project

Reducing residential biomass use

- Shift from unsustainable biomass energy demand to electric stoves, renewable biofuels (e.g. residues)
- Biomass efficiency: improved cookstoves

Reforestation

- Reforestation of 3 million hectares by 2030 (conditional pathway): 60% dry Afromontane, 20% dry forest (10% *Acacia-Commiphora*, 10% *Combretum-Terminalia*) and 20% moist Afromontane

Restoration

- Restoration of 5 million hectares by 2030 (conditional pathway): 60% dry Afromontane, 30% dry forest (10% *Acacia-Commiphora*, 20% *Combretum-Terminalia*) and 10% moist Afromontane

Adapted from: FDRE, 2021. Updated Nationally Determined Contribution of the Federal Democratic Republic of Ethiopia. https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pd

With support from the international community, Ethiopia can achieve its ambitious goals for reducing its CO₂ emissions and meet its targets under the Paris Agreement, while also improving the environment and social wellbeing, with forest landscape restoration as the key means of achieving this.

The infobrief summarizes selected findings from an in-depth review:

Moges Y¹, Haile M² and Livingstone J³. 2021. *Integration of forest landscape restoration in Ethiopia's nationally determined contributions. A review, with a focus on drylands*. PENHA, Addis Ababa, Ethiopia and Tropenbos International, Ede, the Netherlands. 66pp

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