

THE CLIMATE PATHWAY PROJECT



Development and evaluation of Madre de Dios' decarbonisation pathway

FINAL REPORT

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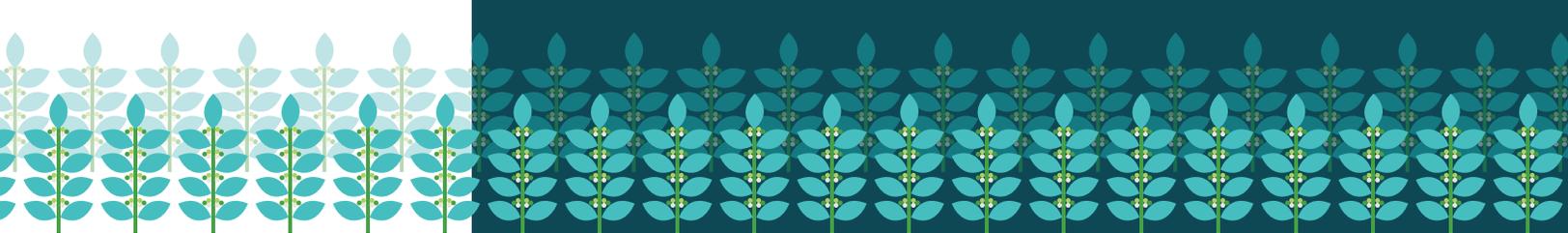


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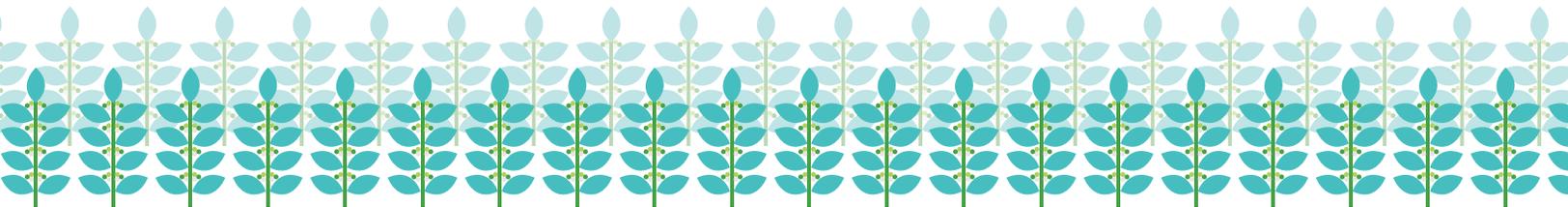
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Abbreviations

AFOLU	Agriculture, forestry and other land uses
BAU	Business as usual
C	Celsius
CE	Cost effectiveness
CCNN	Native communities
CCS	Center for Climate Strategies
CO₂	Carbon dioxide
FOLU	Forestry and other land uses
FSC	Forest Stewardship Council
GCF	Governors' Climate and Forests Task Force
G	Grams
GHG	Greenhouse gases
GOREMAD	Regional Government of Madre de Dios
GRRNyGA	Regional Office of Natural Resources and Environmental Management
Ha	Hectare
IPCC	Intergovernmental Panel on Climate Change
Kg	Kilograms
MCA	Multi-Criteria Assessment
NDC	Nationally Determined Contributions
NICFI	Norway's International Climate and Forest Initiative
OCTI	Office of International Technical Cooperation
GNI	Gross National Income
GDP	Gross Domestic Product
RCI	Residential, commercial, and institutional
RIA	Amazon Indigenous REDD
SERNANP	National Service of Natural Protected Areas
TDC	Conditional Cash Transfers (CCT)
TCG	The Climate Group
Tg	Teragrams
t	Metric tonnes
WWF	World Wildlife Fund



Executive Summary

This report includes a summary of the process of developing and evaluating the priority actions of the decarbonisation pathway of the Madre de Dios region in Peru, as well as the results of the main steps of the process, which include:

- 1. Developing the region's baseline;**
- 2. Selecting the region's targets to reduce net GHG emissions by 2030 and 2050;**
- 3. Selecting priority actions for the pathway and its designs;**
- 4. Assessing the expected impacts of implementing the actions on GHG emissions, considering direct costs and savings of the actions, and on the macroeconomics of the region.**

A decarbonisation pathway is a transformational process to reduce greenhouse gas (GHG) emissions in the long term (2050) through a series of actions in key economic sectors that will change the business-as-usual projection of these GHG emissions (i.e. baselines) through the application of good environmental management practices, innovation and technologies.

This executive summary has been translated into English, please note that the full technical report is only available in Spanish.

Pathway development and assessment process

This was a collaborative process between the Regional Government of Madre de Dios (GOREMAD) and a team of international technical experts. GOREMAD's efforts were led by the Office of International Technical Cooperation (OCTI) and the Regional Management of Natural Resources and Environmental Management (GRRNyGA).

The project team consisted of the Climate Group, Winrock International, the Center for Climate Strategies (CCS), World Wildlife Fund (WWF) Peru and the Governments' Climate and Forests Task Force. Throughout the process, input and feedback from other key public and private sector stakeholders was solicited and incorporated through face-to-face and remote workshops.

Baseline

The baseline developed revealed that in 2015, total GHG emissions in Madre de Dios were 11.3 TgCO₂e, and it was projected that by 2030 these emissions would reach 17.5 TgCO₂e and by 2050 they would reach 28.6 TgCO₂e. According to this analysis, the most important driver of emissions in the region is the conversion of forest land to other land uses (i.e. deforestation).

Decarbonisation target

The selection of a GHG emissions reduction target for the Madre de Dios region was based on the level of emission reductions required globally to limit global warming to less than 2°C above pre-industrial levels.

An assessment was carried out of the regional emissions reduction targets needed to achieve consistency with the goal of limiting global warming to 2°C.

These targets also reflect the region's commitments as a member of the Under2 Coalition. Based on this assessment, Madre de Dios selected the following regional GHG emissions reduction targets:

- By 2030, 26% reduction of GHG emissions below the 2016 emissions level¹ (i.e. a reduction of emissions to a level of 8.6 TgCO₂e).
- By 2050, 66% reduction of GHG emissions below the 2016 emissions level (i.e. a reduction of emissions to a level of 4.0 TgCO₂e).

Selected actions

Eleven priority actions were selected for inclusion in the Madre de Dios pathway, all in the agriculture, livestock, forestry, and other land use (AFOLU) sector:

Conservation mechanisms in native community forests and community forestry

Increased productivity and efficiency of agricultural activities

Increased productivity and efficiency of livestock activities

Forest plantations for protection/restoration purposes

Community forest plantations

Promoting stakeholder participation in the management of natural protected areas and local forests

Agroforestry systems for the recovery of degraded areas

Reducing the risk of forest fires

Reducing the conversion of forest land to mining areas

Programme to combat illegal logging

Sustainable forest management in forest concessions (timber)

As discussed below, it was only possible to assess the impacts of the first 9 actions because there were no data records needed to analyse actions 10 and 11.

Expected impacts of implementing the actions

Expected impacts of action implementation on GHG emissions

By implementing the 9 actions that could be assessed, by 2030, GHG emission reductions of 8.4 TgCO₂e (i.e. a 48% reduction compared to BAU levels) are expected. By 2050, reductions of 18 TgCO₂e (i.e. a 61% reduction compared to BAU levels) are expected. All GHG emission reductions will come from priority actions in the agriculture, livestock, forestry and other land use (AFOLU) sector.

By 2050, it is estimated that GHG emission reductions from priority actions will account for more than two-thirds of those needed to reach the 2050 target (18 TgCO₂e of the 25 TgCO₂e needed) (Figure 1). To reach the 2050 target, Madre de Dios will need to reduce GHG emission levels by around 0.42 TgCO₂e/year by 2050.

After the expected implementation of the priority actions in 2050, the majority of emissions will remain in the AFOLU sector.

Through this project, Madre de Dios has set ambitious and transformative decarbonisation targets, and the priority actions represent a significant undertaking by the region to achieve such targets due to the significant levels of effort

entailed. To achieve the targets, an additional 0.5 TgCO₂e of emissions will need to be reduced by 2030 and 17 TgCO₂e of additional emissions by 2050.

Expected impacts on cost magnitude and direct savings

The implementation of almost all priority actions that could be assessed (7 out of 9) is expected to generate net costs over time that depend, for most of these actions, on new practices, programmes, technologies and infrastructure that minimise deforestation and allow for more sustainable territorial development, as well as direct payment systems that could be implemented. However, compared to the expenditure levels of the benchmark sectors, these costs are expected to be of moderate magnitude for most of these actions (4 of the 7) and of small magnitude for the remaining ones. No action is expected to generate a significant cost. Only minor savings are estimated for action AFOLU-5 (community forest plantations).

It is important to note that the cost and savings analysis did not take into account the social cost of carbon, i.e. the avoided damage that each metric tonne of GHG causes to society due to the negative impacts of climate change. Nor did it include the impacts of the services that newly established forest ecosystems and existing conserved forest ecosystems would provide (in addition to carbon dioxide removals). Since actions on this pathway would conserve hundreds of thousands of hectares of forest, the savings from the protection of ecosystem services that these actions would generate could be significant.

Expected macroeconomic impacts

An assessment based on previous indicators and empirical modelling was carried out to determine the potential direction and magnitude of impacts on employment, income and economic growth driven by the priority actions. The six indicators include shifts in favour of: 1) Technologies and practices with lower net implementation costs than in the BAU scenario; 2) Energy and natural resource expenditures; 3) Local energy supply and other local resources; 4) Local supply chains; 5) Labour-intensive activities; and 6) External sources of investment and income.

The vast majority of the priority actions that could be assessed have positive macroeconomic indicators, meaning that they are likely to generate a positive macroeconomic impact for the Madre de Dios economy if implemented to capitalise on the key drivers of macroeconomic gain.

However, as stated above, the priority actions are not expected to represent major deviations from economic growth patterns or to have a disruptive influence considering the potential direct costs or savings compared to the value added (i.e. the level of expenditures) of the sectors.

Conclusion

Madre de Dios is well positioned to move forward with its targets and achieve the cumulative GHG emission reductions identified, building on these priority actions as well as other socio-economic targets. The 9 priority actions that could be assessed in the pathway help the region move closer to its

GHG reduction targets for 2030 and 2050. With the remaining assessment of the last two actions the region will move even closer to the realisation of the targets and possibly reach them. If not, in order to meet the targets, it is recommended that the region focuses on reducing deforestation rates further and at the same time increase its carbon sequestration via forest plantations and the establishment of agroforestry systems.

As next steps, the region will have to identify specific implementation mechanisms for the quantification of costs and benefits, and consequently, identify also financing mechanisms for the different actions in order to maximise their mitigation potential and socio-economic benefits.

On the other hand, it will also be necessary to establish a system for monitoring, reporting, and verifying the impacts of implementing these actions.

Additional information

In a folder attached to this report, all intermediate outputs of this project are included. Annexes I-VIII are the summaries of the sectoral baselines; Annex IX is the methodology used to develop the decarbonisation targets; Annex X includes the sectoral decarbonisation visions; Annex XI includes the sectoral catalogues of mitigation actions; Annex XII includes the definitions of the criteria used to prioritise actions in the MCA survey; Annexes XIII to XXIII are the design documents for each priority action included in the pathway; Annexes XXIV to XXXII are the Excel tools to calculate the baselines for the different sectors and the impacts of the actions on these sectors; and Annexes XXXIII to XXXV are the modules presenting the detailed methodologies of the impact assessments of the actions.

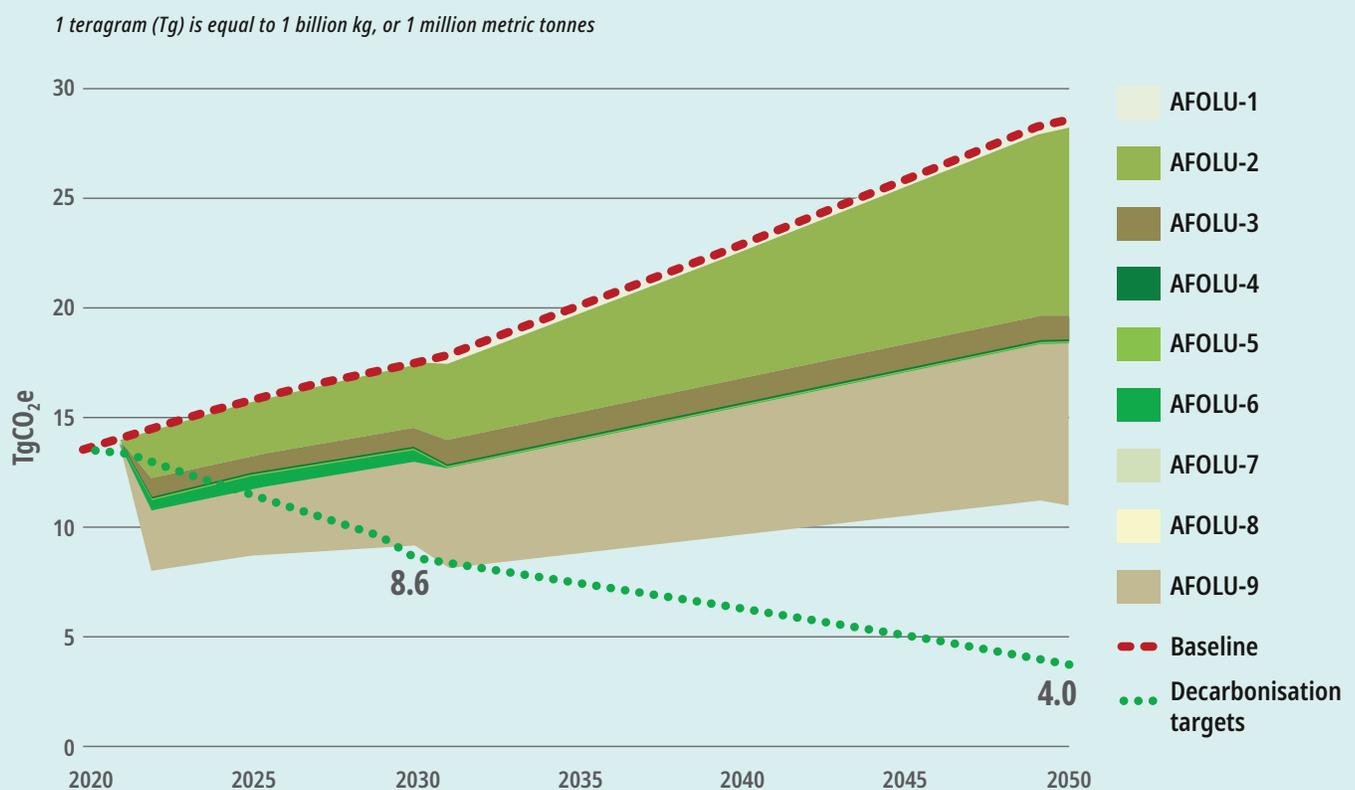


FIGURE 1. GHG REDUCTIONS FROM PRIORITY ACTIONS

Note: AFOLU: agriculture, forestry and other land use.