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ECONOMIC IMPACT OF MITIGATION MEASURES IN BOLIVIA'S



Nationally Determined Contribution



Bolivia recently advanced the process of reviewing and updating its NDCs, with the aim of reducing its emissions by 2030 and contributing to the global effort of limiting the increase in the average world temperature to 1.5 °C.

Conservation Strategy Fund (CSF), in joint collaboration with academia, civil society and the public sector, analyzed the economic impact of some of the measures considered by the Bolivian state to achieve its NDCs.

MEASURES ANALYZED

FORESTRY SECTOR ENERGY SECTOR TRANSPORT SECTOR

Measures proposed for the reduction in emissions



C02

1. Promoting renewable energy

6. Reducing

illegal deforestation



2. Changing street lighting to LED



3. Promoting electromobility



4. Expanding the lines of Mi Teleférico (cable car transit system)



9. The control of forest fires



5. Construction of Metropolitan light rail network



10. Increasing forest areas



7. Managing the comprehensive handling of forests

8. Promoting forestry production

MEASURES ANALYZED

Baseline scenario: no mitigation measures applied / projections to 2050



Cost-efficiency of measures

"

The mitigation capacity of equivalent carbon dioxide emissions applicable to the measures considered was estimated, as well as the costs associated with the implementation of each such measure (capital costs and operating costs).

Measure	Emissions Million tCO₂eq	Cost- efficiency USD tCO₂eq
Street lighting	-0,8	-836,05
Electromobility	-115,72	-59,16
Forest timber and non-timber production	-66,37	-16,45
Forest fires	-462,68	-2,04
Community management of a comprehensive	-549,53	-1,66
handling of forests		-0,39
Reducing illegal deforestation	-1.479,90	0,09
Renewable energy	-92,01	0,60
Mi Teleférico (cable car transit system)	-219,03	17,50
Increase in forest areas	-50,40	
Metropolitan light rail network	-0,56	

+ EFICIENT

- EFICIENT

Reducing illegal deforestation would be the most cost effective measure and would contributes the most to a decrease in emissions.

Emissions scenarios



Economic growth in Bolivia and projections following from the implementation of the measures

The chart below depicts Bolivia's economic history in three phases. During the first phase, between 1990 and 2019, GDP grew at a rate of around 3.5% per year.



According to the projections, additional growth of between 2.4% and 2.7% of GDP would be expected by 2050, as a result of the measures we are proposing in this analysis.

According to observed rates of growth, there would be an average marginal gain of **USD 500 million per year** (over 30 years) compared to a scenario without measures.

This large gain is linked to a decrease in emissions and the implementation of these measures would allow Bolivia to contribute with a reduction of 40% of its emissions before 2050.

GDP Evolution to 2050



To achieve the projected growth rate, it would be necessary to go through a transition period that would result in an average annual drop in growth of 0.5%. This transition period would be necessary to arrive at cleaner energy production systems, energy-efficient transport systems and especially, agricultural production systems that require less deforestation

Required investment: It was estimated that the set of measures analyzed would require an investment equivalent to 30% of GDP at current value (USD 12,000 million based on the 2021 level). The very magnitude of such investment would require supplementing local sources of funding with external sources such as international climate funds and aid agencies.

GDP behaviour following application of forestry sector measures up to 2050

Sensitivity Analysis



Goal fulfillment scenarios in decrease of deforestation (according to year of compliance):



Postponing compliance with the deforestation reduction measure until 2050 would make it possible to achieve GDP growth close to 2.7%, slightly higher than the 2.4% that would be obtained if the goal is reached by 2030. However, this delay would allow the emission of more than 830 million additional tons of CO₂eq.

CONCLUSIONS

- In the run-up to 2050, most of the reduction in emissions is to be found in the forestry sector, (with a 40% reduction in emissions compared to the baseline scenario). Reducing illegal deforestation is the most cost-efficient measure that can be adopted in Bolivia.
- By applying the measures presented in the NDCs in the energy, transport and forestry sectors, the level of accumulated GDP would grow up to 2.7% above what is projected for 2050, which represents, at present value, USD 15,500 additional million, as well as net employment generation.
- 3 The cost of implementing the measures represents 30% of GDP. Covering this level of investment will require supplementing local sources of funding with funding from external sources.
- Delaying measures to reduce deforestation in the forestry sector until 2050 would lead to emissions of more than 830 million additional tons of CO₂eq.



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