ECONOMIC IMPACT OF MITIGATION MEASURES IN BOLIVIA'S

NDCs

Nationally Determined Contribution

Conservación Estratégica

Suecia
Sverige

Bolivia recently reviewed and updated its NCDs, with the aim of reducing its CO2 emissions by 2030, in support of the Paris Climate Agreement.

In collaboration with academia, civil society and the public sector, Conservation Strategy Fund (CSF), analyzed the economic impact of some of the measures considered by the Bolivian state to reduce these emissions.

MEASURES ANALYZED

FORESTRY SECTOR | ENERGY SECTOR | TRANSPORT SECTOR

Measures proposed for the reduction in emissions

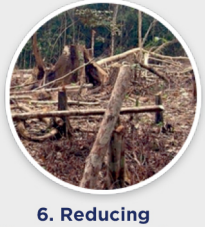
1. Promoting renewable energy

2. Changing street lighting to LED

3. Promoting electromobility

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

5. Construction of Metropolitan light rail network



6. Reducing illegal deforestation

7. Sustainable forest managment

8. Promoting forestry production

9. Control of forest fires

10. Expanding the forest

MEASURES ANALYZED

- **Baseline scario: If no mitigation measures are applied. (Projections to 2050)**

Gross Domestic Product

GDP per capita = USD 16.000

Emissions generated

CO_2 = 200 and 250 Million tons of CO_2

- **Cost-efficiency of measures**

We estimated the carbon dioxide emission mitigation for each measure, and the costs associated with their implementation.

Measure	Emissions Million tCO_2eq	Cost- efficiency USD tCO_2eq
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 handling of forests	-549,53	-1,66 -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	

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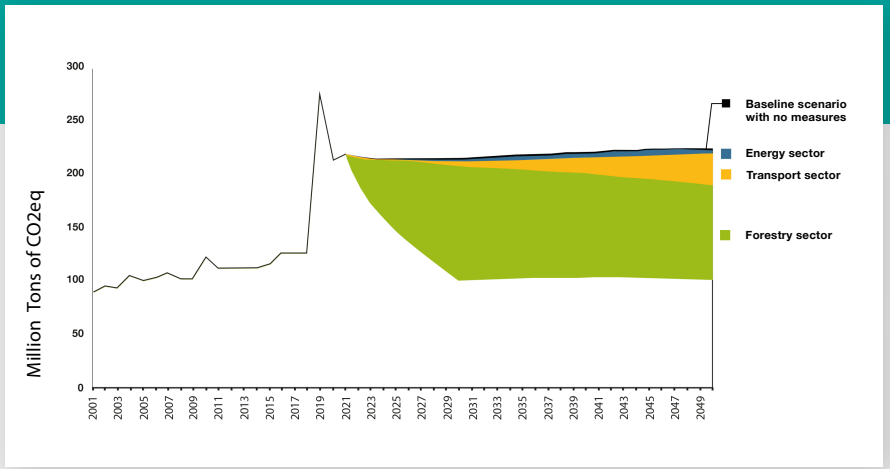
> Reducing illegal deforestation would be the most cost-effective measure and would contributes the most to a decrease in emissions.

Emissions Scenarios



FORESTTRY SECTOR

72% of overall decrease in emissions

TRANSPORT SECTOR

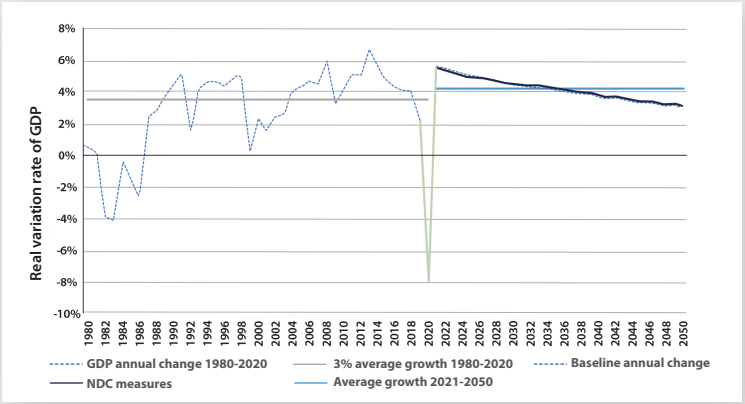
25% of overall decrease in emissions

ENERGY SECTOR

3% of overall decrease in emissions

Economic Growth Projections if Measures are Implemented

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.

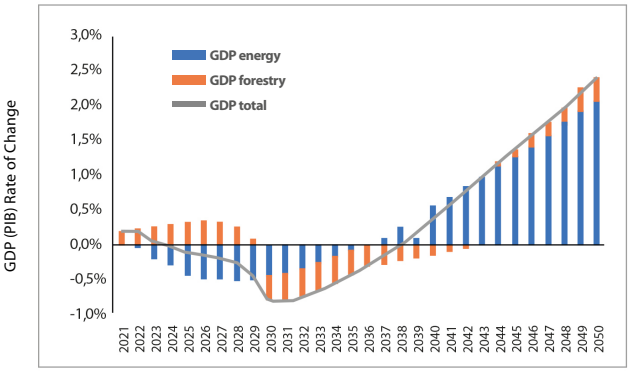


Based on these projections Bolivia's GDP would experience an additional growth of between 2.4% and 2.7% by 2050, as a result of our proposed measures.

With the measures implemented, we also estimate an average influx of USD 500 million more per year (over 30 years) to the country's economy.

"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

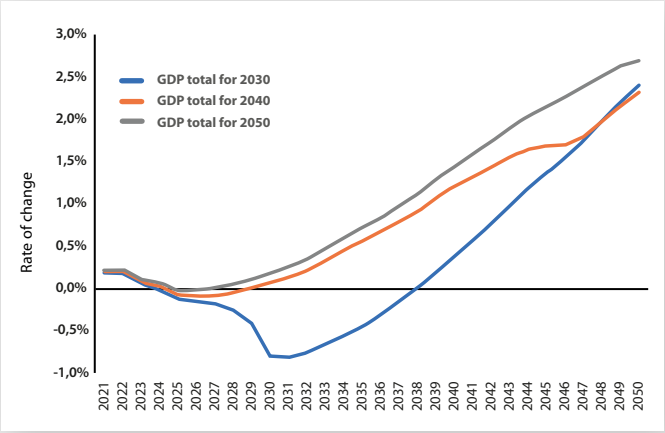


In order to establish the proposed measures, there would be a transition period with an average annual drop of 0.5% of GDP growth. This transition period would allow the time and investments necessary to develop cleaner energy solutions, energy-efficient transport systems, and agricultural production systems that require less deforestation.

Implementation of these measures would require an investment equivalent to 30% of GDP at current value (USD 12,000 million based on the 2021 level). This will require additional funding 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):

2030 **2040** **2050**

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 CO_2eq .

CONCLUSIONS

1. Changes made in the forestry sector alone would account for a 40% reduction in CO2 emissions before 2050. **Reducing illegal deforestation is the most cost-efficient measure that can be adopted in Bolivia.**

2. 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, and an increase in employment opportunities accross the country.

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.

4. Delaying measures to reduce deforestation in the forestry sector until 2050 would lead to emissions of more than 830 million additional tons of CO_2eq.

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