NDCs and wildfires

Opportunities for more ambitious climate commitments

Summary Report

Photo: IBIF - Bolivian Institute of Forest Investigation

Background

Climate change is expected to increase the frequency of wildfires in certain regions, with significant impacts predicted for the tropical forests.

Key drivers include direct effects from rising temperatures and droughts, and indirect effects from changes in vegetation and ignition patterns influenced by human activities. Over 1998-2001 period, the sum of carbon emission from tropical fires and fuel wood use was 2.6 Pg C/yr. An additional flux of 1.2 Pg C/yr was released indirectly, because of decomposition if vegetation killed by fire but not combusted. The sum of direct and indirect carbon losses from fires represented 9% of tropical and subtropical net primary production (NPP).

Consequently, accounting for fires increases growing season net flux by 12% in the tropical region. In addition to the contribution of forest fires itself, the interaction between deforestation and fire underscores the need for clear and ambitious commitments from tropical countries to reduce their GHG emissions.

NDCs serve as a crucial framework for countries to outline their strategies for mitigating GHG emissions and adapting to climate impacts, including those related to wildfires.

The inclusion of fire management strategies within NDCs is essential for countries, especially tropical ones, to address the dual challenges of reducing emissions and enhancing resilience against climate-induced fire risks.

Our study identified the top 20 tropical countries most affected by wildfires, including Brazil, Indonesia, and Bolivia. To further understand national approaches to fire management, the Nationally Determined Contributions (NDCs) of these countries were reviewed, considering the individual commitments and strategies outlined in line with the Paris Agreement. This comparison highlighted variations in national responses to fires, influenced by distinct public policies and interpretations of international climate frameworks.

Key takeaways

- Out of the 20 tropical countries analyzed, **11 have explicitly included fire management in their NDCs**[1], highlighting the growing recognition of wildfires as a significant climate risk. These countries have acknowledged the impacts of wildfires on greenhouse gas emissions and forest degradation. Their commitments range from implementing preventive measures and enhancing firefighting capabilities to integrating fire management into broader climate adaptation and mitigation strategies.

- **Comprehensive Approaches:** Countries like Colombia, Mozambique, and Indonesia have a broad, multi-dimensional approach to fire management, integrating prevention, restoration, community engagement, and legal enforcement.

- **Innovative Measures:** Peatland fire management (Indonesia), integrated agroforestry (Mozambique), and institutionalized fire management systems (Colombia) stand out as innovative models.

Six key approaches for enhancing NDCs with effective fire management

Incorporating effective fire management into NDCs is crucial for mitigating climate change impacts. Here are six key approaches that countries can adopt to enhance their NDCs with robust fire management strategies:

1. **Recognize the impact of wildfires:** Acknowledge the significant role of wildfires in contributing to GHG emissions and include specific fire management goals in NDCs. E.g. Brazil and Paraguay do not include them.

2. **Set Clear Targets:** Define clear and measurable targets to mitigate the incidence and impact of wildfires, such as reduction of the affected area or the emissions generated. E.g. Guatemala and Bolivia have clear targets, DR Congo mentions wildfires without clear targets, and Belize does not have a clear target in their GHG removals.

3. **Implement Comprehensive Measures:** Develop and implement a range of measures, including prevention, early warning systems, risk management, and community engagement, to effectively manage wildfires. E.g. Colombia has detailed actions such as updating the National Plan for Prevention, Control of Forest Fires, and coordinating with the National System for Disaster Risk Management to manage wildfire risks.

4. **Integrate Adaptation and Mitigation:** Ensure that fire management is part of both adaptation and mitigation strategies to address the multifaceted impacts of climate change. E.g. Vietnam includes fire management as part of its adaptation efforts, enhancing resilience and adaptive capacity of natural, social, and economic systems.

5. **Strengthen Institutional Capacity:** Build the capacity of institutions responsible for fire management through training, legal frameworks, and financial mechanisms. E.g. Peru focuses on strengthening wildfire risk management processes and building capacity for officials responsible for the operation of the control and surveillance system.

6. **Promote Inter-Institutional Coordination:** Foster coordination among various governmental and non-governmental entities to ensure a cohesive and effective approach to fire management. E.g. Guatemala involves multiple entities, including the National Coordinator for Disaster Reduction (CONRED), the National Institute of Forests (INAB), the National Council of Protected Areas (CONAP), and the Ministry of Environment and Natural Resources (MARN).

(1) 20 countries were analyzed for this report, only the 11 underlined have explicitly included fire management in their NDCs: Belize, Bolivia, Brazil, Colombia, Cuba, DR Congo, Ecuador, Guatemala, India, Indonesia, Mexico, Mozambique, Myanmar, Nicaragua, Papua New Guinea, Paraguay, Peru, Republic of Congo, Venezuela and Vietnam.

Comments and requests for further information are much appreciated.

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