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Policy forum: Nationally-determined climate commitments of the BRICS: At the forefront of forestry-based climate change mitigation

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ABSTRACT

There exists significant potential for climate mitigation actions from the Forestry Sector among the BRICS, a group of some of the largest economies in the world. In the run-up to the Paris Climate Summit in December 2015, all parties to the UNFCCC outlined their climate action commitments for the next decade and beyond, in the form of Nationally Determined Contributions (NDCs). This article evaluates the commitments of the BRICS countries and critically analyses the Forestry Sector-specific climate mitigation actions. We find a demonstrable focus on this sector, indicating its leading role towards climate mitigation. Further south-south cooperation and knowledge sharing can bring about additional gains towards innovations in increasing carbon sinks, reducing emissions from forests, building tools for robust Safeguards Information Systems (SIS) and accessing climate finance instruments including, but not limited to, forest carbon financing mechanisms like REDD + in these countries.

1. Introduction

The United Nations Framework Convention on Climate Change (UNFCCC), in Article 2 of its charter, states its objective of achieving the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' (UNFCCC, 1992). Activities under the UNFCCC framework have focused on this objective since its inception in 1992. In December 2015, the Paris Agreement (hereafter, referred to as 'the Agreement') was adopted by the member countries of the UNFCCC to outline the post-2020 global climate action agenda. As part of the Agreement, member countries committed 'to limit the increase in global average temperatures to below 2°C, to pursue efforts to limit the increase to 1.5°C and to achieve net zero emissions towards the second half of the century' (United Nations Framework Convention on Climate Change: Twenty-first Session of the Conference of the Parties, 2015). The Agreement came into force on 4 November 2016, with 147 of 197 member states having ratified it.

In the preparation of the Agreement, member states were encouraged to publicly outline their national climate actions, in the form of Intended Nationally Determined Contributions (INDCs). These INDCs reflected country-level emissions targets that would be regularly updated, forming the basis of national mitigation and adaptation commitments. For member states which have ratified the Agreement and look forward to its implementation, the INDCs are no longer 'intended', but actionable as Nationally Determined Contributions (NDCs).

The NDCs have been designed to link national policies, circumstances and capabilities, with a global framework for collective action. They make it possible to track progress and encourage countries to achieve the long-term objectives of the Agreement. Notwithstanding recent setbacks to this process, the Agreement represents a cornerstone for global climate action.

The Forestry Sector has been identified as one of the major thrust areas for achieving climate change mitigation objectives. The reasons for such prominence include the potential for direct social, ecological and economic impacts on-the-ground, and several other co-benefits, especially in developing countries. These critical aspects have resulted in the Forestry Sector being accorded a special status (Lebedys and Li, 2014). Such status has been reinforced in the Agreement, where the Forestry Sector is the only sector that finds a special mention, with Article 5 emphasizing the need to decrease emissions from forests and sustainably conserve Carbon stocks held in forestlands.

A result-oriented global climate action framework requires the wholehearted participation of the five major developing economies in the world: Brazil, Russia, India, China and South Africa. These countries, collectively known as the BRICS, constitute more than 40% of the world's population on nearly 30% of the world's total geographical area, and are particularly vulnerable to the impacts of climate change

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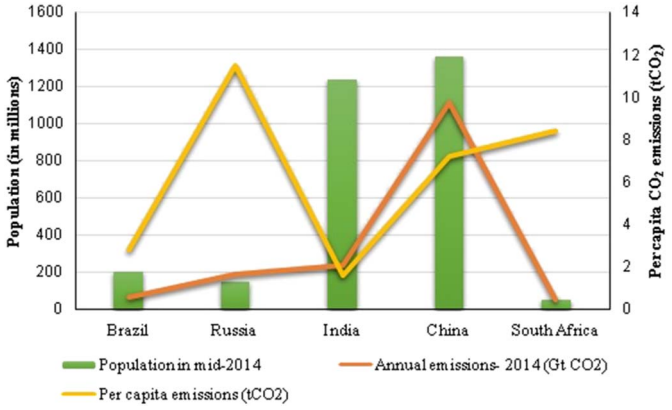

Fig. 1. The relationship between annual CO_2 emissions, per capita CO_2 emissions and mid-year population for the BRICS for the year 2014.
(Source: BRICS, 2015; Greenpeace, 2015).

(BRICS, 2015; Goldman Sachs, 2007). These economies are well-placed to play a key role in influencing the outcomes of climate action commitments under the Agreement. Analyses show that even if other developed countries committed to zero emissions, attaining climate action goals would be impossible without BRICS countries contributing substantially to emissions reductions (Bosetti et al., 2009).

In this background, this article appraises the obligations of the BRICS countries towards their climate action commitments and analyses the Forestry Sector-specific climate mitigation actions.

2. CO_2 emissions trends in the BRICS

Among BRICS countries, Brazil, Russia, India and China alone are responsible for about one-third of the world's Gross Domestic Product (GDP), more than a third of the global energy use and 37% of the world's carbon emissions through fossil fuel combustion. These emissions are rising disproportionately: per capita CO_2 emission has increased faster than the population in proportion in India, Brazil and China (Engelman, 2010) (Fig. 1).

An increase in Greenhouse Gas (GHG) emissions from sources excluding Land Use, Land Use Change and Forestry (LULUCF) since 1990 has been reported in all BRICS countries except Russia. Russia initially showed decreasing trends from 1990 to 2000, but thereafter, an increase in these emissions has been witnessed (Fig. 2). This initial decrease can be attributed to the breakup of the Soviet Union and the realignment of the Russian economy.

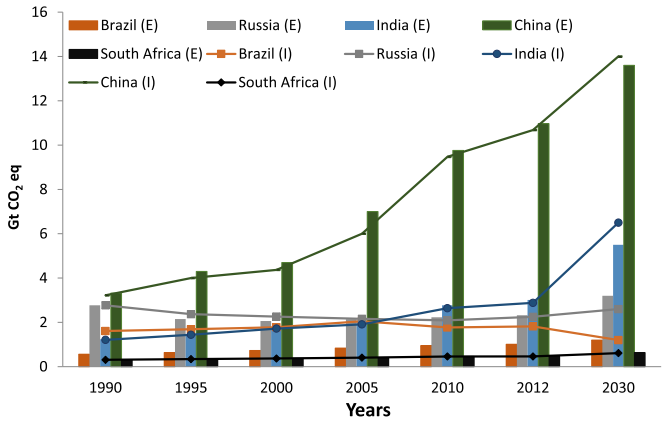

Fig. 2. A comparison of the GHG emissions from 1990 to 2012 and the commitments made for 2030 for the BRICS.
(Source: Den Elzen et al., 2015; climatetracker.org; Yeo, 2015; Yeo and Evans, 2015).
(E = Excluding LULUCF and I = Including LULUCF).

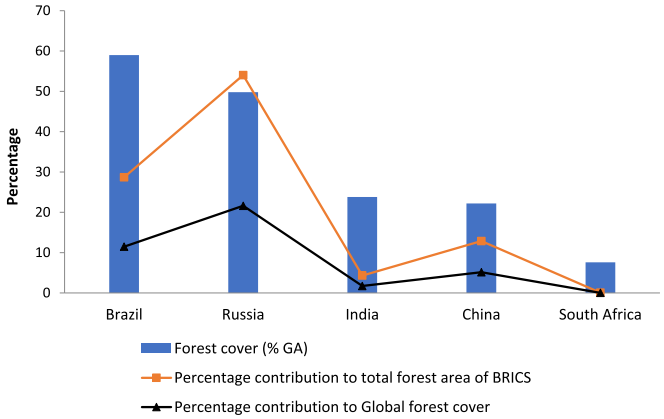

Fig. 3. Forest Cover in the BRICS (a) as % of the total geographic area of the country, (b) as % of the total forest area in the BRICS and (c) as % of the total forest area globally in 2010.
(Source: FAO, 2010; World Bank, 2016).

For GHG emissions including LULUCF, only Brazil has shown a negative trend from 1990 to 2012, on the back of intensive regulatory and enforcement mechanisms in the LULUCF sector. On the other hand, Russia, China, India and South Africa have reported a corresponding increase in emissions (IPCC, 2000 and Climate Action, 2016). These trends underscore the need for advancing effective climate mitigation actions across these countries.

The BRICS countries have significant capacity to lead the way towards forest-based climate change mitigation as they contain more than 40% of the world's total forest area (Fig. 3). Key opportunities to reduce GHG emissions from forestlands in BRICS countries include: (1) Increasing forested areas through reforestation, (2) Increasing density of existing forests at both stand and landscape levels, (3) Expanding the use of forest products that sustainably replace CO_2 emissions and (4) Reducing emissions originating from deforestation and forest degradation (Canadell and Raupach, 2008). These capabilities have been reflected in the climate mitigation portfolio of the BRICS under their respective NDCs. These commitments underscore the need for initiating forest-based climate mitigation actions, in line with Article 5 of the Agreement, which calls on member countries to actively initiate, implement and support activities related to the five-pronged approach – (a) Reducing emissions from deforestation, (b) Reducing emissions from forest degradation, (c) Conservation of forest stock, (d) Enhancement of forest stock and (e) Sustainable Forest Management (United Nations Framework Convention on Climate Change: Twenty-first Session of the Conference of the Parties, 2015). These five activities together constitute the REDD + mechanism.

3. Analysis of climate action commitments

Brazil's NDCs sets a goal to reduce its greenhouse gas emissions by 37% in 2025, and further by 43% by 2030 below 2005 levels. This is in line with the country's mitigation goals of reducing GHG emissions by 36 to 39% on a projected 'business-as-usual' basis agreed at the UNFCCC's 16th Conference of Parties (COP16) held at Cancun (Santarius et al., 2011). The Government of Brazil recognizes the implementation of REDD + activities and result-based payments in the Forestry Sector as integral to achieving its commitments. Further, Brazil commits to adopting measures to restore and reforest 12 million hectares of forests by 2030, restoring an additional 15 million hectares of degraded pasturelands and enhancing 5 million hectares of Integrated Cropland-Livestock-Forestry Systems (ICLFS) by 2030 (Nationally Determined Contributions of the Federative Republic of Brazil, 2015).

Also, Brazil's policy to reduce carbon emissions has focused