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Policy options towards deforestation reduction in Cameroon: An analysis based on a systematic approach

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ABSTRACT

This study advances measures that can combat deforestation in Cameroon. It also looks at possible carbon dioxide (CO_2) emission reductions and the effects on gross domestic product (GDP) and employment based on selected baseline scenarios based on reductions in deforestation. A systematic approach of analyzing the drivers, agents, socio-economic context, political context, spatial context of deforestation and specific and general deforestation reduction policies is used. The final step of the approach is to verify the repercussions of deforestation reduction on CO_2 emissions, employment and GDP. Monitoring population growth and arable production through intensification of production is promising. The general policies that this study postulates are enforcement, legal adherence, specification of tasks and quotas, collaboration, forest licensing and monitoring. More specific policies could be within the reduction of emissions from deforestation and forest degradation mechanism (REDD+) as well as diversification of livelihoods, mechanization, use of fertilizers and intensive cattle farming inter alia. Reductions in deforestation will reduce atmospheric CO_2, employment in the forestry sector and the share of forestry's contribution to GDP.

Introduction

Presently, about 20% of our global anthropogenic carbon dioxide (CO_2) emissions are as a result of high rates of loss of tropical forests (Muller et al., 2013; IPCC, 2007). Other repercussions of the loss of forests globally and in Cameroon in particular are loss of biodiversity, destruction and disruption of hydrological processes and reductions in food yields inter alia (Epule et al., 2012a). Cameroon's forests constitute part of the Congo Basin which is the second largest tropical rainforest hot spot in the world after the Amazon Basin in Latin America (Epule et al., 2011). For example, the forests in Cameroon are said to contain close to 2696 million metric tons of carbon in living biomass (FAO, 2010a). This makes the loss of forests even more daunting for the environment. In addition, Cameroon has about 28 million hectares (ha) of forests and of this number, about 220 thousand (ha) are lost each year; this is equivalent to about −1.0% of annual forest cover loss (FAO, 2010a,b).

It has been argued that reducing deforestation is one of the most cost effective ways of reducing greenhouse gases (GHGs) (Eliasch, 2008). In Cameroon, forests are very important to the population because they provide about 80% subsistence to most rural communities that fetch fuel wood, hunt animals, farm, gather non-timber forest products (NTFP) and breed animals (FAO, 2007; MINEFI, 2002). The annual economic value of forest products such as veneers, saw wood, timber, pulp and parquets can be valued at millions of dollars while the forest sector's contribution to the country's gross domestic product (GDP) is in the range of 6–10% (CBFP, 2006; MINEFI, 2006; Alemagi and Kozak, 2010).

Currently, the United Nations Framework Convention on Climate Change (UNFCCC) is negotiating a mechanism that supports developing countries in their attempt to reduce emissions from deforestation under the scheme called reduction of emissions from deforestation and forest degradation (REDD+). The scope of the extended REDD+ will be based on activities such as sustainable management of forests, protection and enhancement of carbon stocks, conservation, formulation of national REDD+ strategies, capacity building, implementation of policies for the national REDD+ programs and quantification of changes in emissions (Dkamela, 2011). However, following the failure of UNFCCC in Copenhagen Denmark in 2009 to arrive at a final version of the REDD+ mechanism at a global level, doubts still exist with respect to the specifications of the mechanism and concrete blueprints on the ground. Because of this lack of clarification, the analysis of how REDD+ will be received in Cameroon is still unclear and warrants analysis (Dkamela, 2011).

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However, REDD+ still holds plenty of promise for Cameroon based on pilot studies carried out in Nkolenyeng (Cerutti and Lescuyer, 2011; Neale et al., 2010). Here, the Association des Femmes et des Hommes Amis de Nkolenyeng (AFHAN) and a national non-governmental Organization (NGO) have begun the first pilot forest conservation program aimed at reducing deforestation in the community forest area and thereby reducing emissions from deforestation and forest degradation (Lescuyer, 2010). This is based on the fact that there has been a lack of effective action to ensure the involvement of the indigenous people and forest communities. Furthermore, even with the submission of the readiness plan idea note by the government of Cameroon in 2008, the country's readiness planning linked to the forest carbon partnership has not involved the indigenous people who remain major stakeholders (Dkamela, 2011; Brockhaus et al., 2012). However, according to REDD+ Partnership (2011), Cameroon is already scheduled to benefit about $10.66 million between 2010 and 2014 for all its efforts at reducing deforestation and forest degradation. The main donors here are the global environment facility, Japan (providing the bulk) and the forest carbon partnership facility under the auspices of the other 'partner countries' category (REDD+ Partnership, 2011).

In this study, deforestation will not only be limited to the view point of the FAO which looks at the phenomenon as a loss in the number of trees but also from the view point of the United Nations Research Institute for Social Development (UNRISD) that considers it to be forest degradation in the context of reduced quality of the trees in terms of their density, structure, ecological services, species diversity, and impoverishment of standing wood quality. Therefore, this study will define deforestation in the context of REDD+ to be a reduction in the number and quality of trees over varied spatial dimensions due to anthropogenic and natural drivers.

Conceptually, it can be noticed that when population increases there is an increase in the demand for food, meat or more generally protein which can easily be obtained from cattle, fuel wood, and forest products. This in turn leads to an increase in cattle stock, logging, and extraction of forest products and the cultivation of more land to meet food needs. All these land uses are often at the detriment of forests since they all lead to reduced forest area (Fig. 1).

It is therefore important to assess the effectiveness and efficiency of policies aimed at curbing deforestation. One way of doing this is by carrying out detailed country specific studies that examine the causes of deforestation and base the policies to overcome deforestation on these causes or drivers (Muller et al., 2013). The processes, patterns, causes and agents of deforestation vary from region to region and from country to country as different political, economic and spatial circumstances exist (Fearnside, 2008). This necessitates the use of a systematic approach to analyze at a national scale the actual causes of deforestation and possible policies to reduce deforestation.

The first objective of this study is to identify the drivers of deforestation in Cameroon, the spatial context, political context and the socio-economic context of deforestation. The second objective looks at the general and specific policies that can be used to curb deforestation in Cameroon. This is followed by an analysis of the impact of various deforestation reduction scenarios on gross domestic product (GDP), employment and CO_2 emissions in Cameroon and related deforestation reduction policies. To the best of our knowledge, this is the first study that applies the systematic approach to postulate deforestation reduction policies in Cameroon. In the sections that follow, this study will present the systematic approach, the main drivers of deforestation in Cameroon, the political, socio-economic and spatial context of

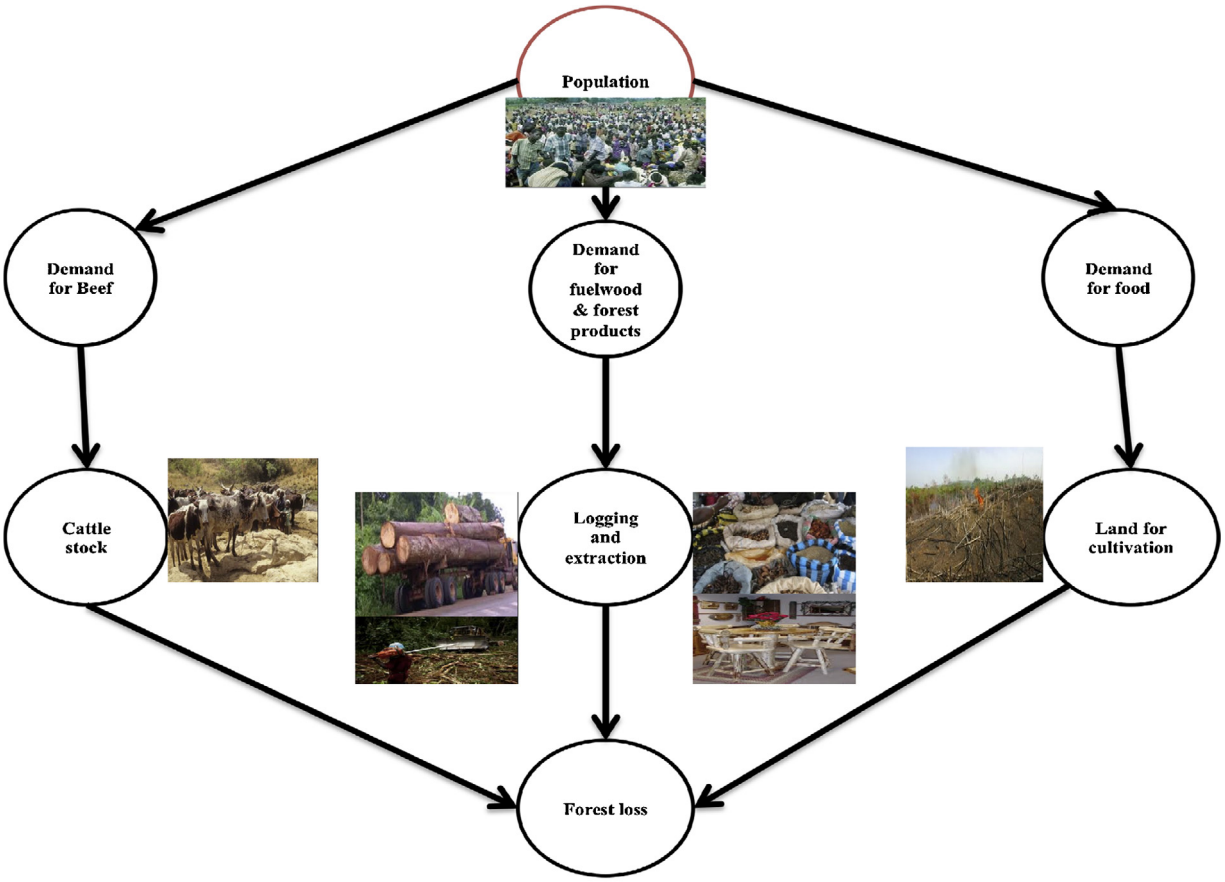

Fig. 1. Conceptual framework of the linkages between population, arable land, cattle stock and logging/extraction of forest products.