

## Projecting climate change impacts on Nigerian forest subsector

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It is now well known that the earth is warming and hence the subject of climate change is no longer new in policy and research circles. However, the quantitative impacts of climate change are yet uncertain. The impact could be positive in some regions or countries, whereas it is negative in other regions or countries. Further, the impact on agriculture could differ depending on whether crops, fisheries, livestock or forestry is considered. The focus of the present study is on forestry as there is little or no empirical study on climate change and forestry in Nigeria. Back in 1990, forest made up about 19% of Nigeria's total land area. Currently, forest area in Nigeria is only about 10% of total land area. Moreover, in 1960, forestry contribution to total GDP in Nigeria was 6.0% but this has declined to 0.4% in 2009. Therefore, the objective of this study is the assessment and estimation of the anticipated impact of climate change on the forest sector in Nigeria and the likely costs that will be associated with these impacts. An economic model is developed to estimate the historical relationships between forest outputs, land use and climate, with controls for price, socioeconomic and production-related variables. The model is further used to forecast the likely impact that the anticipated changes in climate will have on selected forest products and land uses, using the Special Report on Emissions Scenarios (SRES) developed by the Intergovernmental Panel on Climate Change (IPCC). The IPCC report sets out various development scenarios for the world, and the SRES A2 and B1 scenarios were used in the assessments. In addition, a third scenario – a reference, business as usual (BAU) scenario, based on a continuation of current economic and social practices, is presented for comparative purposes only. The current assessments project the impact of climate change on the forest subsector in Nigeria for 2050. The scenario results show that Nigeria's forest subsector will experience considerable losses both in terms of production and forest area. The damaging impact of climate change on the forest subsector of the Nigerian economy requires urgent climate change mitigation and adaptation policies to enable the country overcome the threat.

### Biography

Dr. Goodness Chioma Aye has completed her PhD in Agricultural Economics in 2011 from University of Pretoria, South Africa. She lectures at University of Agriculture, Makurdi, Nigeria. Currently, she is a postdoctoral research student at University of Pretoria. She has published more than 25 papers in reputed peer reviewed journals and conferences. She serves as reviewer for a number of reputed journals. She belongs to several international profession bodies including Australian Association of Agricultural and Resources (AARES), Agricultural Economics Association of South Africa (AEASA) and Agricultural and Applied Economics Association (AAEA) among others. Dr. Aye has travelled to several countries including the USA, United Kingdom, Australia, Austria, Amsterdam and Egypt for academic conferences and tourism.

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