Chapter 13
Climate Change and Agricultural Sustainability in Nigeria:
An Assessment of the Crop, Forestry, Fisheries, and Livestock Sub-Sectors

Edidiong Samuel Akpabio
Trinity University, Nigeria

Valentine Chidozie Udeh
University of Nigeria, Nsukka, Nigeria

Ifeanyi Emmanuel Uzochukwu
University of Nigeria, Nsukka, Nigeria

Nnanna Ephraim Ikeh
University of Nigeria, Nsukka, Nigeria

Ndubuisi Samuel Machebe
University of Nigeria, Nsukka, Nigeria

ABSTRACT

Climate change and agriculture are intertwined with one having significant impact on the other. Hence, taking cognizance of the relevance of agriculture to man's survival, it has become important to interrogate the effect of climate change on agricultural sustainability. This work therefore embarks on a sub-sectorial assessment of the agricultural sector in the face of rising threats due to climate change. Majorly, the agricultural sector is divided into four sub-sectors.

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INTRODUCTION

Globally, climate change has negatively affected humanity and the environment(NASA,2021),as a result, it will be apt to refer to it as one of the leading issues capable of causing human and environmental crisis in the 21st century(Debay,2010). It is a global challenge whose impacts have been more noticeable in developing countries as these category of countries are more vulnerable than their developed counterparts (Ludwig et.al, 2007). Studies have shown that the agricultural sector has suffered more in terms of economic losses due to the size and sensitivity of its operations, as it has been predicted that climate change will negatively affect production of crops especially in low latitude countries (Folnovic, 2020). Agbola & Fayiga (2016) alluded to this position by stating that extreme climate events have often led to soil degradation and low yield of crops. This can be attributed to the nature of the agricultural industry, a weather-sensitive sector which is prone to disruption by climatic dysfunctionalities. Climate change which results in drought can lead to water scarcities hence resulting in low agricultural yield(Assaf,H et.al,2012). There is also the danger of excessive rainfall which could cause heavy flooding thereby making the soil waterlogged and resulting into destruction of crops(Tabari,2020). The impact of climate change on livestock production is detrimental because climate change poses serious threats to livestock production (FAO, 2020). Hence, livestock production suffers greatly in the event of climate variability. This development is not just a red flag to the sub-sector but could affect the entire agricultural industry. Therefore, there is a need to put in place adaptive strategies to save livestock cultivation.

Fish provides a rich source of protein to man and has been highly recommended by food nutritionist. However, about 60% of fishes risks going into extinction due to the negative impact of climate change on her habitat(World Economic Forum,2020). Water bodies which is the natural dwelling place of fishes is prone to destruction and destabilization due to weather variations occasioned by climate change. Aquaculture is impacted by climate change because the intensity and frequency of extreme weather conditions cause material damage and flood freshwater farms (Climefish, 2020). The impact of climate change in developing countries is higher as most of such countries rely on firewood to cook their meals. This drives massive felling of trees resulting in deforestation and harm to the ecosystem. Forests and climate change are closely linked because forests could be a cause of climate change or its solution (Hoogeveen, 2020). To be more succinct, forests impact the climate to a very significant extent. The crucial role that forest plays in issues of climate change has made this study quite expedient due to the fact that while afforestation affects the climate positively, deforestation does so negatively that is why in developed regions of the world, forest resources have been utilized in mitigating the impact of climate change. This goes to show that proper management of the forest will help to solve the challenges of climate change that Nigeria is currently grappling with because as the forest changes, the climate follows suit.

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