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Climate Change Versus Food Security in the Sub-Sahara Africa: A Thematic Review

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ABSTRACT

Various studies have shown that sub-Saharan Africa (SSA) is highly vulnerable to impact of climate change because of its overreliance on agricultural production which is rain fed and highly susceptible to weather and climate. Climate change impacts on agricultural production range from direct effects on agricultural production such as poor output and death of livestock to fluctuations in market supply and prices of food commodities. Based on the review, climate in the sub-Sahara regions is already showing significant changes, as evidenced in fluctuation in average temperatures and rainfall patterns as well as intensity of extreme weather event. It also showed that climate change is unpredictable, but its severity could be felt on agricultural production and food security in SSA.

Review of Food Security and Climate Change in SSA

Over time, concept called «food security» has evolved. World Health Organization (WHO), 2019) defined it as the ability to meet physical and economic accessibility of dietary food needs of the people along with their preferences within a particular region Policies on how to ensure adequate and timely production of food and its accessibility are the major concerns of main actors in food sector (FAO, 2018b). Juxtaposing the global progress made in hunger reduction and poverty in other continents with Africa, progress in African nations are restricted due to various challenges faced by subsistence rural farmers where change in climate and its variabilities in term of precipitations, sunshine and temperature are germane (Soglo, et al. [1]). In SSA, impacts of climate changes are becoming severe and unbearable (Azong, et al. [2]). In fact, among the water-scarce countries of the world, SSA countries came the topping rank among dry countries in the world (Soglo, et al. [1]). Having a sufficient rainfall, smallholder farmers have the capability of contributing positively to the country's economic development and increase food security of rural households (Baudoin, et al. 2018). However, the contributions of subsistence rural farmers to the nation's food security and economy growth has been decreasing over the years as a result of change in climate and their vulnerable to its impacts (Schreiner, 2018).

In SSA, the outcome of food system currently depends immensely on climate change compare to about decades ago (FAO 2018a). Presently in SSA, the consequences of climate change on food security is severe. Such that climate variabilities in form of extreme weather events such as drought, excessive precipitation leading to flooding are major risks hindering agricultural productivity and rural household food security in countries of SSA (Adego, et al. [3]). Unsustainable agricultural leading to inadequate food availability at various household level as well as limiting rural employment opportunities is a function of insufficient rainfall (Etwire, [4]). However, climate change as well as extreme weather events have negative influence on all dimensions partaking to food security in many ways, either through direct impacts on agricultural production such as unstable precipitation patterns leading to droughts and floods, or temperature fluctuations, leading to altered length of growing season as well as changes in markets, food prices and supply chain (FAO 2018a).

Specifically, soil, which is the basic requirements in food crop production, will be depleted because of climate change, which will at the long run leads to shortage of available food, water and biodiversity problems (IASC 2019). Likewise, climate change exerted indirectly on food availability, economic growth, income distribution, and agricultural demand through food security (Schmidhuber and Tubiello 2017).

By year 2050, calorie intake per person in SSA is expected to decline by average of 21% due to climate change and this region is expect to about 70 million people at risk of hunger by the 2080. Furthermore, the effect is expected to be more severe with the trend in climate change is not well manage, with additional 70 million people at risk of hunger in SSA (Parry, et al. 2019). Furthermore, Food security is directly related to sustainable agriculture and food supplies, which all depend on good climatic conditions and variabilities (FAO 2018a). Recent studies (IFPRI, 2020; WHO, 2020; FAO, 2021) reported that while the global food supply appears no to be seriously threatened by the projected climate change, but food security in SSA will be worsen while the population at the risk of hunger will increase during the coming century. In addition, IPCC (2019) reported that the overall impact of climate change on food security in SSA is still not well articulated, especially the roles of climate change and it variabilities such as precipitation, temperature and extreme weather events on food availability is not well documented. In as much the broad consensus is that unmanaged climate change will lead to about 200 million people suffering from hunger and malnutrition globally by 2080, where by three-quarters of them will live in SSA (WHO, 2020) [5-6].

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