Chapter 2
Climate Variability and Urban Agricultural Activities in Ibadan, Nigeria

Ayobami Abayomi Popoola
https://orcid.org/0000-0002-9742-0604
University of KwaZulu-Natal, South Africa

ABSTRACT

Two terms that are enjoying increasing overwhelming global literature advocacy and discussion are urban farming and climate change. While there is increasing advocacy towards the relevance of urban agriculture for urban dwellers and how it translates into a mitigation strategy against climate change variability and adaptation to urban poverty, the effect of some urban farming activities and how it serves as a driver to climate change needs to be investigated. In most of the urban periphery where there is availability of a large expanse of land areas, farming activities are usually practised in form of settlement farm, livestock rearing, or plantation agriculture. The study based on quantitative and qualitative data from urban farmers in Ibadan argues that the location of urban farmlands is dependent on climatic factor such as access to land. The study identified that climate variability as reported by the urban farmers has resulted in the increased use of fertilizer for farming by urban farmers, and the main activity that is pro-climate change and variability is bush burning.

INTRODUCTION

The global evidence and effect of climate change is no longer hidden. Adhikari et al. (2015) reported that extreme climate conditions resulting in an increased global warming effect is not just a local phenomenon but rather a country-wide experience. The country-wide climatic experience was identified by Hartmann et al. (2013) who reported an increased and increasing global temperature. Hartmann et al. (2013) and Adhikari et al. (2015) identified that the global temperature has increased by 0.72°C which is still expected to increase to between 0.3°C and 0.7°C by 2023 with an increase of 0.3–4.8°C by the end of the 21st century. Niang et al. (2014) forecasted a 4°C Africa temperature by the end of the century.

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The findings of Barrios et al. (2010) argued that slow growth experienced in Africa can be traced to erratic rainfall pattern. Narrating the climate change effect in Africa, Henderson et al. (2017) reported that the diversity and dynamic nature of Africa climate has resulted in negative effect from diverse moisture conditions and a drier environment.

BACKGROUND

In Africa, Gonzalex-Sanchez et al. (2018) reported that the Intergovernmental Panel on Climate Change (IPCC) Africa temperature expected increase alert of between 2-6°C within the next 100 years, which expected to result in rising average temperature and varying rainfall patterns which will birth incidences of aridity, drought, floods and subsequently a decline in food production. The effect on the changing and varying climate can be said to be multi-sectoral and multi-dynamic in nature. Its effect is felt in energy (Scott et al., 1994; Iwayemi, 2008; Oyedepo, 2012; Schaeffer et al., 2012), transportation accessibility, connectivity (Chapman, 2007; Amosun et al., 2012; Dillimono & Dickinson, 2015; Bakun et al., 2015; Metzler et al., 2019), health conditions (Popoola & Alli, 2015; Ryan et al., 2015) and food security status (Wahab & Popoola, 2018, 2019) of people and places.

Climate change as a stressor is expected to affect the quantity and quality of food produced across Africa (Connolly-Boutin & Smit, 2016). Henderson (2017) argues that the coming decades will be characterized by a decline in crop yield owing to the changing climate. Schroth et al. (2016) reported that in Nigeria, Togo, Guinea and Cote D’Ivoire, climate change has been a main identifier for the projected threat to the production of cocoa. Conway et al. (2015) states that the climate change experience in Southern Africa which has resulted in an expected 20% drop in precipitation is expected to result in shortages, reduced availability and crop yield. Thornton and Herrero (2015) reported that the threat of climate change in Africa’s food system and livelihood security is a result of her heavy dependence on a rain-fed system of agriculture. In Cape Town South Africa, the water crisis is a result of drought and increasing aridity which has been traced to climatic driven environmental factors (Wolski, 2017; Fallon, 2018).

Mugambiwa & Dzomonda (2018) concluded that the threat from climate change can no longer be hidden as communities and people’s livelihood sources and survival strategies are now questioned and faulted. Taiwo (2014) identified that limited capacity in forecast, mitigation and adaptation are major issue and challenge in Nigeria. He identified that wetland farming has been the result of urban farmers trying to cope with the declining precipitation and increasing aridity. He went further to put forward that with resilience dropping and the best adaptation technique not yet proffered, the capacity of urban farmers to respond to climate change adequately needs to be invested upon and further investigated. Forecasting the costing from climate change (heat). Parkes et al. (2019) projected that estimated energy costs to prevent climate heat-stress is predicated at $51bn by 2035 and $487bn by 2076 with the most noticeable cost expected to be in the densely populated area of Nigeria. In addition, Abraham & Fonta (2018) reported a 63% relationship between climate change exposure and farming finance. Their study further revealed that over 96% sourcing for financial inclusion and support was targeted at mitigating the effects of climate change on their farms which they perceive to be exposed to.

While adaptation and mitigation remains the two mechanism of response to climate change and variability adverse effects, the roles of some urban agricultural activities towards the changing climate remains to be investigated. Activities of man across the globe have limited the adaptation and mitigation against the perceived and evident effects of climate change. This study argues that these anthropogenic