# **Kenya's Ineffective Response to Climate Change-related Food Insecurity:** A Growing and Overlooked Threat to National Security

**By Roselyne Omondi**

## Abstract

The ongoing Russia-Ukraine war is unfolding amid Kenya's year-long national disaster - chiefly because of the series of five consecutive failed rainy seasons - but also as a factor of other long-standing, interrelated issues such as protracted conflicts, migration, environmental degradation, and deficits in governance. As these issues hamper mass food production; lead to loss of livestock, and crops; and disrupt livelihoods unfavorably, Kenya's food system has become increasingly unstable, and food is unavailable, inaccessible, and/or misutilized. About 19.5 million individuals in Kenya's agriculture-oriented economy are reportedly starving, hungry, and/or malnourished. Using mixed methods, this paper interrogates Kenya's response to climate change-related food insecurity to determine how and the extent to which it undermines national security. The paper observes that Kenya's attempts at reducing climate change-related food insecurity are yet to reduce the rising number of acutely food insecure individuals in the country. Their exploitation by state and non-state actors cannot be ruled out. The paper thus advances that the bourgeoning mass of acutely food-insecure individuals is a growing but overlooked threat to national security. Its main preliminary finding is that Kenya has several robust strategies and plans to, inter alia, manage drought, and achieve climate smart agriculture. These efforts are yet to break the recurring drought-flooding cycle; adjust the country's security expenditure; and change her reactive response to climate-related food insecurity, and are, to this extent, ineffective. It also finds indications that the main concerns

of the government and citizens are misaligned. Ditto the security expenditure vis-à-vis the country's rising human security needs. The paper recommends the proactive centering of climate change mitigation in the country's national security framework. This will help Kenya secure her people and territory better, and maintain her geo-strategic appeal.

**Key words:** *Climate change, food (in)security, Kenya, drought, flood, response, threat, disaster, development, mitigation, adaptation, national security.*

## Introduction

Kenya is in the throes of acute food insecurity. The rainy season has failed at least five times consecutively. At least 23 of Kenya's 47 counties are in different stages of climate-related food insecurity. Of these, 12 are in the 'stressed' phase; eight are in 'crisis,' and three are in the 'emergency' phase (National Drought Management Agency [NDMA], 2022). Food is scarce, food prices are high, and livelihoods are slumping. About 19.5 million individuals are starving, hungry, and/or malnourished, and need relief food. Additionally, more than 4 million individuals urgently need food aid. A now-year-long national disaster is also in place (Intergovernmental Authority on Development [IGAD], 2022; Food and Agriculture Organization [FAO], 2022; Kenya Red Cross, 2022). On 26 September 2022, for example, President William Ruto reportedly said, "The brief that we have is that many people are suffering because they do not have food, water, and many livelihoods are being lost including livestock." He dispatched 40,000 bags of beans, rice, animal feed, and cooking oil for use in drought-afflicted regions of the country, cautioning against aid diversion via theft and/or sale (*The Star,* 2022). In these circumstances, climate change has become a proxy for the acute staple food production shortfalls; shrinking economy; and rising youth unemployment in modern-day Kenya. These seemingly 'non-security' factors are known to weaken national security.

For the most part, links between climate-related food insecurity and national security in Kenya tend to be indirect. For instance, Kenya's Ministry of Environment and Forestry (Kenya MEF) describe droughts and floods - Kenya's "main climate hazards" - as "extreme events" which "cause large-scale disasters that destroy

livelihoods, trigger local conflicts over scarce resources, and erode the ability of communities to cope, threatening Kenya's security" (Kenya MEF, 2020). There is also a tendency to express these largely indirect links between climate-related food insecurity and the country's national security in terms of deterioration in one or more aspects of human security such as the economy, environment, health, and food. The acute lack of basic needs such as food or vulnerability to adverse climate-related events such as flash flooding and prolonged droughts predispose 'at risk' individuals or communities to exploitation by state and non-state actors. Recurrent resource conflicts in some of Kenya's drought-prone counties such as Turkana, Garissa, and parts of Laikipia (International Crisis Group [ICG], 2022; Omondi, 2018) is an expression of this predisposition. Further, in times of crisis (including those related to climate change), violent extremist groups such as al Shabab, for example, have been known to entice vulnerable persons with food, cash, or emergency medical supplies, and assume roles of states, filling governance deficits (IEP, 2022; UNHCR, 2022). Notably, in the face of increasing climate change-related food insecurity, Kenya spends about 1.2 per cent of her gross domestic product (GDP; USD 110.35 billion in 2021) on military equipment, security personnel, peace stabilization missions, and countering terrorism (Kenya MEF, 2020, p.3; Institute for Economics and Peace [IEP], 2022; World Bank, 2022; CIA, 2022).

These realities are occurring on the backdrop of the Russia-Ukraine war that began in February 2022. The war has interrupted the production and exportation of wheat, maize, and sunflower seeds from the two leading global grain basket countries. The demand for these limited products has resulted in predatory and scarcity-driven price increases, including in Kenya, which imports wheat and sunflower oil. The war has also shifted the focus of humanitarian and development actors from drought-afflicted countries in the Horn of Africa region such as Kenya to Ukraine, reducing funding available for Kenya's humanitarian food aid. Kenya also has a sizeable, unsettled debt, and her recovery from the negative economic impact of COVID-19 is incomplete. The country's capacity to cope with these geo-economic challenges is limited (Central Intelligence Agency [CIA], 2022; World Bank, 2022; Ministry of Finance, 2021; Observatory of Economic Complexity, 2022).

This paper observes that the mass of acutely food-insecure individuals (as a result of climate change) in Kenya is a growing. This is happening amid the rising climate change-related food insecurity in the country. The paper also observes that the national disaster and the government's emergency food aid delivery and distribution to alleviate this food insecurity situation have not yet reversed the situation. Further, resource conflicts persist. This suggests that the number of 'at risk' individuals in the country has increased in the recent past. In other words, climate change-related food insecurity has predisposed some of the 19.5 million individuals who are starving, hungry, and/or malnourished as well as some of the estimated 4 million individuals who need food aid urgently to exploitation by state and non-state actors. The link between underdevelopment, uneven development, or arrested development and armed conflict is well documented [IEP, 2022]. It also indicates that the government's response to climate change-related food insecurity is ineffective. This paper thus advances that the bourgeoning mass of acutely food insecure individuals is a growing but overlooked threat to national security. It also seeks to address the question *How and to what extent does Kenya's response to climate change-related food insecurity undermine her national security?*

It is worth noting here that this paper conceives 'climate change-related food insecurity' as the acute unavailability, inaccessibility, misutilization and /or food system instability in a locality as a result of famine, drought, flooding, and/or locust infestation attributed to changing weather patterns (FAO, 2008). It also views 'national security' from a lens that extends beyond security officers' efforts to limit threats to territorial sovereignty such as those posed by armed states and non-state actors - to freedom from other threats such as unmitigated climate change, and the ability of citizens to participate actively in the country's overall stability as well (Buzan, 1991). 'Ineffective' as used in this paper, refers to efforts that have not yet yielded the desired result.

In the following sections, this paper: summarizes its theoretical perspectives; details its methodology; highlights and discusses its preliminary findings; concludes; and offers its recommendations.

## Theoretical Perspectives

This paper employs a logical framework that is underpinned by the theory of change (Weiss, 1995) and game theory (von Neumann, 1928). These provide the theoretical basis for examining how and the extent to which Kenya's response to climate change-related food insecurity undermines the country's national security. This paper's use of the theory of change and game theory is in keeping with precedence of research in this field.

Within the ambit of the theory of change (Weiss, 1995), a given action is intended to produce a certain result. This could be a change in the situation that existed before a given action was taken or intervention made. The declaration of a national disaster in Kenya in 2021, for example, was expected to accelerate resource mobilization to address the critical issue of rising food insecurity related to prolonged, recurrent drought at a faster-than-usual-pace. If resources are mobilized quickly, then food in the form of food aid or imported food would be obtained. Improved access of affected individuals to this relief or imported food would for instance relieve, albeit temporarily, the acute hunger that citizens in several (23) counties were facing before they received the food.

At the same time, the said declaration signals to citizens that the government is working with and for them to address the critical issue in a mutually beneficial way or a win-win situation as the game theory (von Neumann, 1928) explains. In the case that is the focus of this paper, the declaration signals that the government is making an allowance for accelerated resource mobilization to minimize the adverse effects of acute food insecurity (starvation, hunger, malnourishment) on the affected individuals. However, if these efforts do not produce the desired outcome, the targeted citizens (beneficiaries) may reject government's efforts such as relief food distribution, or overlook requests to sell their livestock to minimize herd depletion during prolonged drought. Both are zero-sum situations as the gains of one actor accompany the losses of the other actor. The interaction between the two theories is such that a win-win situation facilitates change, and a zero-sum one maintains the *status quo*. The paper employs this theory triangulation to help minimize research bias. The following section ('Methodology') details this paper's mixed methods approach further.

## Methodology

In addition to the theory triangulation indicated in the 'Theoretical Perspectives,' this paper's mixed methods approach to answer its central question - *How and to what extent does Kenya's response to climate change-related food insecurity undermine her national security?* - also entails the use of a literature scan and a quick-extended survey. The paper relied primarily on data obtained from literature scan. However, in a slight departure from existing studies, the paper employed a quick-extended survey on issues related to its focus. This complemented the literature scan and hence this data triangulation provides insights to enrich analysis. It also helped to overcome the challenges of obtaining a more desirable sample size (as described in the 'Limitations' section of this paper). The following sections highlight the literature scan, quick-extended survey, and approach to data analysis.

## Literature Scan

This paper's literature review involved a scan of relevant official documents, work by scholars and experts, and grey literature relating to: first, Kenya's response to climate-related food insecurity; then climate change and food security; and climate change and security; and, finally, climate-related food insecurity and Kenya's national security - as indicated in the following section.

### *Kenya's Response to Climate-related Food Insecurity*

A myriad of international commitments, policy documents, and development initiatives characterize this response. Kenya is a signatory to the Paris Agreement (a legally enforceable, international, climate change treaty) and the Kyoto Protocol (agreement that operationalizes the United Nations Framework Convention on Climate Change). Both frameworks encourage the active reduction of carbon emissions by states, including economies in transition. Kenya is also committed to the achievement of the 17 United Nations' Global Goals for sustainable development (SGDs) by 2030. Zero hunger, and climate action are two of these goals (UN, 2015). Further, Kenya has several policy guidelines to manage drought and achieve climate smart agriculture, among other objectives. These include a National Climate Change Response Strategy (2010), a National Climate Change

Action Plan (2013), a National Adaptation Plan (2015), and the 2016 Climate Change Act.

The implementation of these policies is guided by available scientific and indigenous knowledge; international law; technological innovations; and social, economic, and fiscal circumstances that relate to climate change and impact the Strategy and Plans (Kenya MEF, 2020). Guided by such frameworks, Kenya has introduced several drought-resistant crops, upheld a 2012 ban on seeds that contain genetically modified organisms (GMOs) until October 2022, and engaged in forestation campaigns. On 3 October 2022, the government lifted the ban and removed related regulatory protocols to allow for importation of GMO crops such as maize, ostensibly to alleviate food insecurity (Kenya MEF, 2020; 2016; Qaim, & Kouser, 2013; *The Star*, 2022).

Additionally, former President Uhuru Kenyatta's administration (2013-2022) pursued the *Big 4 Agenda*, a development initiative prioritizing: food security, affordable housing, manufacturing, and affordable health care. The *Agenda* is to be realized through six enablers: infrastructure, security, governance, technology and innovation, energy, and technical training. The *Agenda's* food security is to be achieved by reducing: household food cost by 47 per cent, malnutrition in children under five years by 27 per cent, number of food insecure Kenyans by 50 per cent, and increasing farmers' average daily income by 34 per cent. President Ruto's administration is prioritizing climate change (Government of Kenya, 2022). This will likely improve the country's food security and grow related industries in the future.

Different public and private sector actors in the food and climate science fields have attempted - through improved agricultural practices, farmer trainings, and innovation - to resolve animal and crop losses related to changing climate. These include Kenya Agricultural and Livestock Research Organization (KALRO), Agroforestry, and International Livestock Research Institute (ILRI). This has resulted in some new crop varieties and livestock that are better adapted to extreme weather conditions such as quick-maturing crops, and farm produce with extended shelf lives, for example. These efforts notwithstanding, Kenya

continues to import market-vulnerable staple foods such as maize. There have also been efforts to encourage Kenyans to expand their staple food choices, reducing dependence on crops such as maize that are more vulnerable to changes in temperature and precipitation, for example, and increasing consumption. Some civil society actors and Kenya's development partners have also been encouraging pastoralists communities in parts of north eastern and north western Kenya to diversify their livelihood sources through agro-pastoralism, bee keeping, and/or irrigation (KALRO, 2022; ILRI, 2022; Vi Agroforestry, 2014; Kabubo-Mariara & Kabara, 2018).

It is instructive to note here that about 48.1 per cent of Kenya's 582,646 km²-large land is used for agriculture. Permanent pasture utilizes 37.4 per cent of the agricultural land. About 9.8 per cent of this agricultural land is arable (Central Intelligence Agency [CIA], 2022). This arable land and pasture "support over 80 per cent of Kenya's population," according to Kenya's Ministry of Environment and Forestry (Kenya MEF, 2020, p.2). Given the climatic stress - and that Kenya's agriculture is rain-fed; her economy agriculture-oriented, and that the said 23 counties occupy more than two-thirds of the country by landmass - Kenya's food system is unstable. Food is increasingly becoming unavailable, inaccessible, and/or utilized inappropriately. Calls for a national emergency are growing (CIA, 2022; NDMA, 2022; IGAD, 2022; FAO, 2022; Kenya Red Cross, 2022).

Further, drought has repeatedly affected millions of Kenyans in recent times. In the past five years, for example, 23 counties have consistently experienced prolonged drought. This has resulted in repeated humanitarian food flagging-off ceremonies. Food relief appeals and delivery of food aid have become common but increasingly disconcerting. On 27 September 2022, for instance, President Ruto dispatched a relief food convoy to 23-drought afflicted counties. He said, "It is my hope that this is the last time we are having this ceremony" (Kenya MEF, 2020; UNHCR, 2022; *The Star*, 2022; CIA, 2022). The suggested relief food fatigue highlights a cycle or pattern that should be broken.

### *Climate Change and Food Security*

There is a growing body of work on climate change and food security. As is evidenced in scholarship and practice, some academics, practitioners, and policy

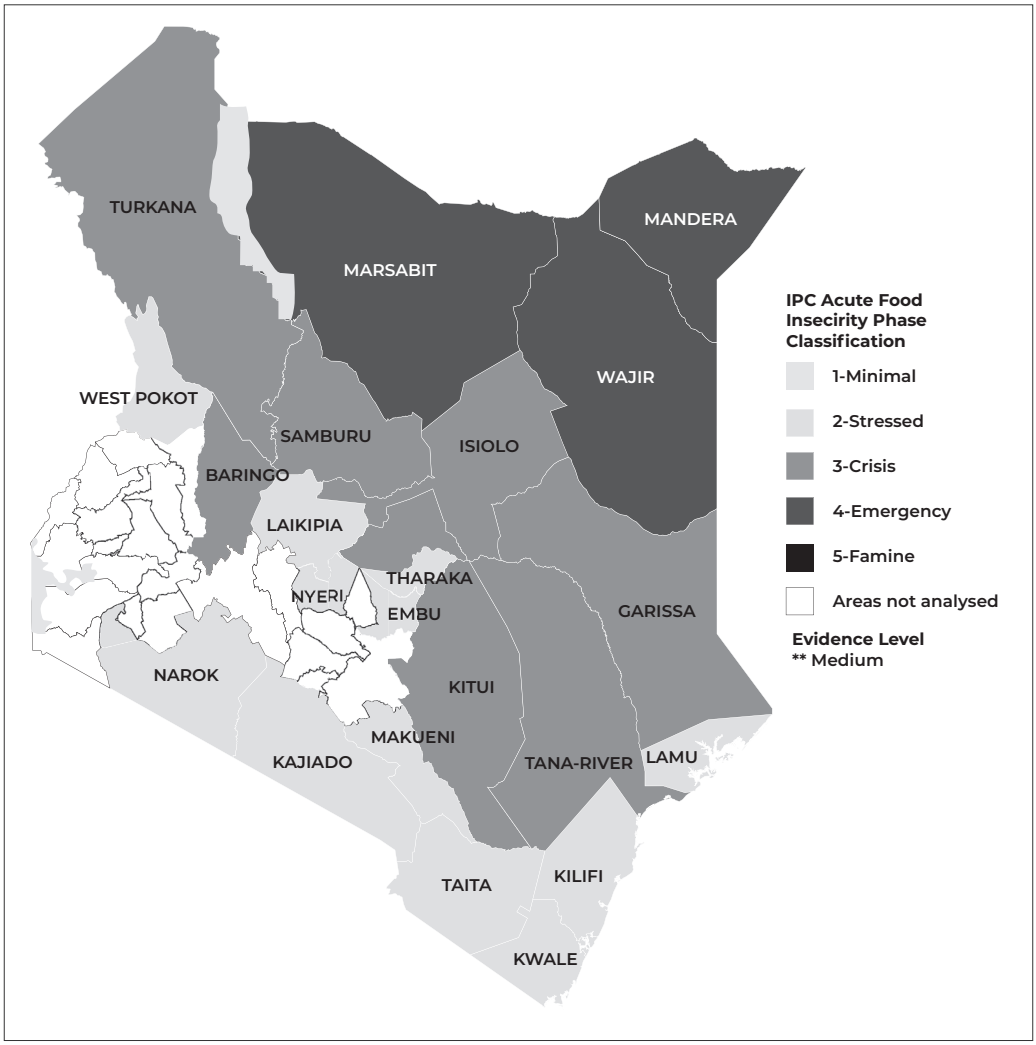
implementors view the two issues as being separate. Climate change, has been described as, *inter alia*, a "crisis," "a new threat," the "greatest challenge of our time," "a disaster," and "a global phenomenon with diverse local consequences" (Internal Displacement Monitoring Centre's [IDMC], 2022; Kelman, 2020; UNHCR, 2022; World Bank, 2018; Intergovernmental Panel on Climate Change [IPCC], 2022; Sending et al., 2019, p. 183; Mayer 2012, p. 32, FAO, 2008). Climate change researchers tend to focus on the causes, evidence of, or effects on the phenomenon IDMC, 2022; World Bank, 2018; Busby, 2018; Campbell, 2014). Similarly, food security researchers and practitioners focus their work on different aspects food production or consumption, including nutrition (Kabubo-Mariara & Kabara, 2018). Abouleish, a national adaptation plans champion, for example, terms the two issues as "huge problems of the 21st Century" (2021).

Others regard the two issues as being related linearly in a cause-effect manner, with the pursuit of food security contributing to climate change, or climate change contributing directly to food insecurity. On the one hand, Kenya's agricultural sector is the country's top carbon emitter; carbon dioxide is a key greenhouse gas. This carbon is emitted as livestock digest their food (enteric fermentation) and through soil enhancing practices such as on-the-ground manure preparation and fertilizer application. It accounts for 40 per cent Kenya's total emissions. Carbon emission is a climate change accelerator (Kenya Ministry of Environment and Forestry, 2021; IPCC, 2022). On the other hand, climate change is worsening food insecurity. FAO has identified four components of food security: food availability, food accessibility, food utilization, and food system stability. FAO notes that changing weather patterns alter agricultural production patterns, diminishing food supply. This reduces access to food, and disrupts livelihoods (FAO, 2008). IPCC has observed that:

> "Climate change has led to, and will continue to lead to, increases in the frequency and intensity of natural disasters and extreme weather events, such as droughts, floods and hurricanes … with expected reduction in agricultural productivity, especially in sub-Saharan Africa. Predictions suggest that yields from rain-fed agriculture in parts of sub-Saharan Africa could fall by 50 per cent by the year 2020" (IPCC, 2007a).

As Figure 1 indicates, the National Drought Management Authority's (NDMA's) assignment of 'stressed,' 'crisis,' or 'emergency' food insecurity tags to different counties in Kenya is based on how extreme the heat is in the counties (NDMA, 2022).

**Figure 1: Climate-based Food Insecurity Phase Classification in Kenya**




**Source*:* National Drought Management Authority (2022, p.1).**

Kabubo-Mariara and Kabara (2018) contend that climate variability and change increase food insecurity in Kenya. Gitau (2022), and IPCC (2020) note that

climate change deteriorates food security by lowering crop production. While addressing the United Nations General Assembly (UNGA) on 21 September 2022, President William Ruto linked food insecurity caused by crop failure to changing temperatures (increasing heat waves) and precipitation (inadequate rainfall, regular drought) patterns in the country. He also suggested the mobilization of the agricultural sector to mitigate climate change.

Others suggest a multi-directional interaction between the two variables with climate change as a 'threat multiplier' exacerbating existing structural, geopolitical, or environmental conditions. In this line of thought, food insecurity may or may not be attributed to changing weather patterns, but climate change worsens food security outcomes. This could happen, for instance, when drought-driven migrants such as 'climate refugees,' pastoralists, or internally displaced persons deplete food sources for humans and livestock in their destinations (FAO, 2008; Climate links, 2022; El-Hinnawi, 1985; Office for the Coordination of Humanitarian Affairs, 2021). On 13 September 2022, during his inauguration as Kenya's fifth President, Ruto said, "In our country, women and men, young people, farmers, workers, and local communities suffer the consequences of climate emergency" (Kabukuru, 2022).

### *Climate Change and Security*

Climate change is linked to security in scholarship and practice in five main ways: exploitation of 'at risk' communities by state and non-state actors; armed conflicts; forced migration; delayed troop deployment; and expanded focus on 'security proper' to include increasing humanitarian duties. As witnessed in September 2022, security officers accompany humanitarian food convoys to flood- or drought-affected locations to minimize attacks on the convoys and diversion of relief supplies through theft, for example (Climatelinks, 2022; Maathai, 2006; IDMC, 2022; IEP, 2022; FAO, 2008). FAO (2008), for example, observe that "climate change and its impacts trigger internal and international migration, resource-based conflicts, and civil unrest" (FAO, 2008).

Hanlon and Christie (2016) view climate change as a contemporary human security issue, and human security as "an extension of traditional security." They

also define human security as "the protection of vulnerable individuals from threats and dangers posed by their environment" (Hanlon & Christie, 2016, pp. xi and 4). Buzan (1991) conceives security as freedom from several human insecurities: environmental, food, political, economic, and personal that threaten the survival of a state. The United Nations Development Program (UNDP) lists hunger, poverty, disease, and natural environmental disasters as threats to life (UNDP, 1994). Hanlon and Christie (2016) note that these kinds of threats "kill far more people than war, genocide, and terrorism combined" (2016, p.5). Speaking at UNGA on 21 September 2022, Kenya's President termed climate change as a "conventional threat," placing it on the same pedestal as the global food crisis, terrorism, cybercrime, and armed conflict. Ruto also stated, during his inauguration, that Kenya (where 75 per cent of the population is aged below 34 years according to the Kenya National Bureau of Statistics [KNBS, 2019]) has "the huge challenge of youth unemployment." Kenya's 2022 population estimate is 55,864,655 (CIA, 2022).

### *Climate-related Food Insecurity and Kenya's National Security*

As has been indicated in the 'Introduction' of this paper, the links between climate-related food insecurity and national security in Kenya tend to be - for the most part, indirect. Secondly, these indirect links are generally expressed in terms of the deterioration in one or more aspects of human security such as the economy, or environment. Lastly, individuals or communities who acutely lack basic needs such as food and/or are vulnerable to adverse climate-related events such as flash flooding and prolonged drought are 'at risk' of exploitation by state and non-state actors.

Overall, empirical studies on climate-related food insecurity and Kenya's national security are limited. Even then, the association between climate change-related food insecurity and national security is inferential, and discussed in terms of the impact of Kenya's implementation of climate change adaptation and/or mitigation efforts on pillars of human security such as the economy (employment opportunities), fiscal circumstances (vulnerable communities), and the environment (ecosystem, biodiversity). Given Kenya's vulnerability to the negative effects of increasing and frequent climate extremes; the ineffectiveness

of the country's climate change mitigation actions; and the rising number of climate-related food insecure citizens, this paper examines how and the extent to which climate change-related food insecurity undermines Kenya's national security. It thus attempts to increase scholarship at the nexus of climate change-related food insecurity and national security.

## Quick-Extended Survey

In addition to the literature on this paper's focus, spanning: Kenya's response to climate-related food insecurity; climate change and food security; climate change and security; and climate change-related food insecurity and Kenya's national security, this paper deployed a 20-question, structured survey containing questions on climate change and forced displacement. The literature scan in which some scholars indicate climate change as a key challenge in modern-day Kenya, and climate change as a migration trigger in the country informed these questions.

The survey targeted 500+ individuals. These potential respondents, who were Kenyan residents aged above 18 years, were identified using convenient sampling. This sampling method was used because the quick-extended survey required that survey respondents be available in a specified period. Additionally, the method allows potential respondents to respond to the questionnaire willingly. This eagerness to participate in the survey enhanced the paper's respect for research ethics such as voluntary participation, anonymity, and freedom to withdraw participation.

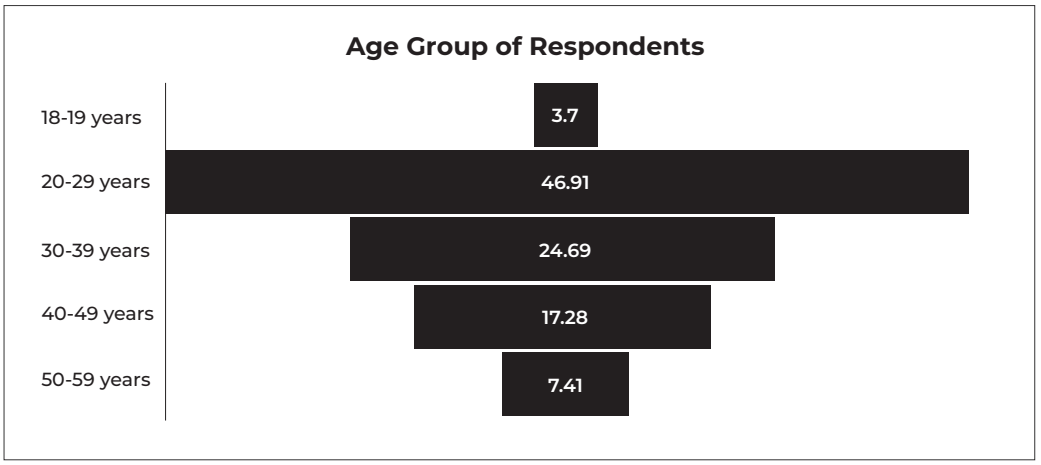
### *Survey Limitations*

Three key factors frustrated this paper's primary data collection. First, the lack of funding to mobilize a large-enough pool of respondents through research assistance (for example); make follow ups; and collect data. The biggest hurdle was overcoming the prevalent culture of incentivizing data collection through provision of cash or non-monetary 'compensation' such as airtime. Secondly, limited research time. Thirdly, the timing of the survey (which inadvertently coincided with the immediate-post 2022 election period, and with a short timeline). This timing likely diminished the participation of potential respondents for whom politics was a more immediate concern. To overcome some of these

challenges, the survey was digitized and administered online via email and social media platforms (WhatsApp). The survey findings are preliminary and have the utility of illuminating and complementing the paper's secondary data, but cannot be generalized.

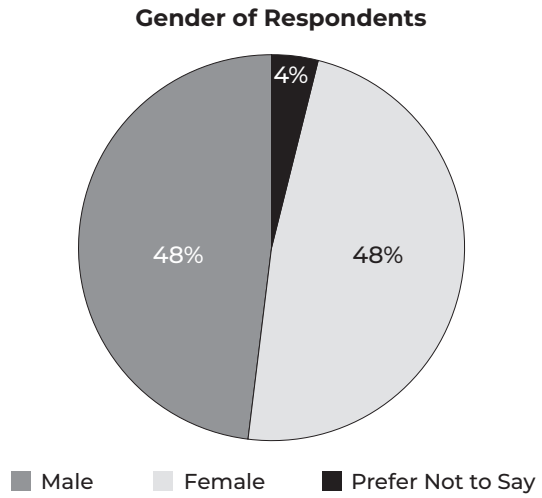
Eighty-one (81) individuals took, completed, and submitted the questionnaire within the suggested time (36 hours). 3.7 per cent of them were aged between 18 and 19 years; 46.91 per cent were in their 20s; 24.69 per cent were aged between 30 and 39 years; 17.28 per cent were in their 40s; and 7.41 per cent were aged between 50 and 59 years as Figure 2 indicates.

**Figure 2: Distribution of Survey Respondents by Age Group**




As Figure 3 shows, 48.15 per cent of the respondents were male; 48.15 per cent were female; and 3.7 per cent preferred not to disclose their gender.

**Figure 3: Distribution of Survey Respondents by Gender**



## Data Analysis

This paper collated its quantitative and qualitative data. It categorized the quantitative data (Kenya's: population estimate, security budget, and GDP, as well as number of countries experiencing acute food shortage, number of individuals in dire need of emergency food supplies, and so on) it generated from the literature scan and quick-extended survey into descriptive statistics. It also categorized the qualitative data from the scan into three broad themes: climate change-related food insecurity in Kenya; Kenya's response to climate change-related food insecurity; and implications of Kenya's response to climate change-related food insecurity on national security. The paper's preliminary findings are highlighted and discussed in the following section.

## Discussion, Analysis of Preliminary Findings

## Drought and Floods are Kenya's Leading Climate Hazards

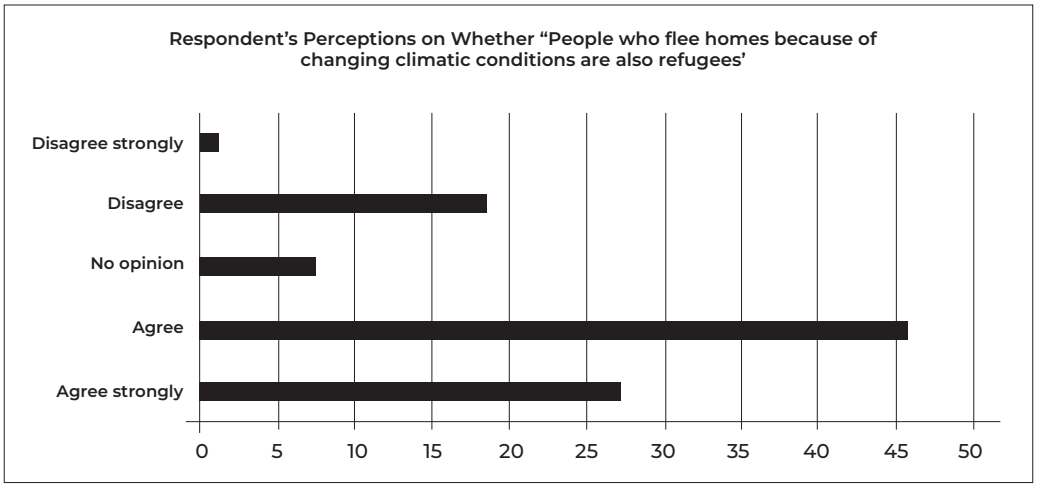
When it comes to climate change-related food insecurity in the country, drought and floods are the leading climate hazards. The two hazards are cyclic, and are becoming more severe. The hazards also damage the ecosystems that support crop production, livestock farming, vegetation, and wildlife (Kenya MEF, 2020; NDMA, 2022).

## Kenya's Two Leading Climate Hazards are Disempowering a Rising Number of Citizens

Drought and floods are disempowering a rising number of citizens through hunger and malnourishment. As has been previously indicated in this paper, about 19.5 million individuals either lack or have insufficient food. More than 4 million of the individuals who have no food need food aid urgently (FAO, 2022; IGAD, 2022; Kenya Red Cross, 2022). The two climate hazards are also contributing to loss of income, and hazard-driven displacement. FAO (2008) categorizes drought-driven migrants into three groups: pastoralists, internally displaced persons, and 'climate refugees.'

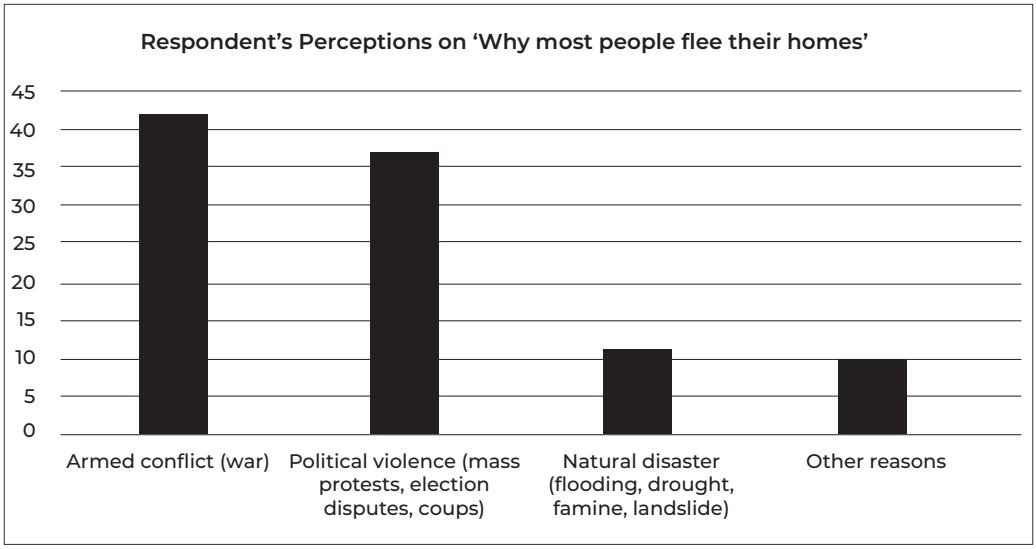
Survey respondents were asked for their view on 'climate refugees.' Asked whether '*People who flee their homes because of changing climatic conditions are also refugees*,' 45.68 per cent of the respondents 'agreed' with this statement, 27.16 per cent of survey respondents 'agreed strongly,' 7.41 per cent had 'no opinion,' 18.52 per cent 'disagreed,' and '1.23 per cent 'disagreed strongly' (n=81), as Figure 4 shows. 19.

**Figure 4: Level of Agreement on Respondent's View on Whether Climate-displaced Persons are Refugees**




Survey respondents were also asked for their view on the leading cause of forced displacement in the country. As Figure 5 illustrates, 42 per cent of this paper's survey respondents said 'armed conflict' is the leading cause of forced displacement. 37 per cent said 'political violence,' 11 per cent said 'natural disaster,' and 10 per cent said 'other reasons.'

**Figure 5: Respondents' Perceptions on Leading Cause of Forced Displacement in the Country**




## Kenya's Response to Climate Change-related Food Insecurity is Evidence-based but Ineffective

Kenya's response to climate change-related food insecurity exhibits three main features. It is: informed by scientific and indigenous knowledge; characterized by international commitments, policy documents to manage drought and promote climate-smart agriculture; and development initiatives; and largely reactive.

### Scientific and Indigenous Knowledge

Kenya's knowledge on climate change and food insecurity backs and is backed by international laws, and technological innovations. Interestingly, scholars generally agree that climate change and food insecurity are key challenges in modern-day Kenya. However, they disagree on whether - on the one hand - the two issues are inter-related linearly, multi-dimensionally, or one variable amplifies the other, or - on the other hand - are disparate (separate, unrelated). In the same vein, it appears that there is some reluctance to favor scientific knowledge over indigenous knowledge. For instance, although pastoralists are among the most vulnerable communities to climate change-related food insecurity, they have been generally reluctant to adopt agro-pastoralism. This is likely because

a sedentary lifestyle threatens their traditionally mobile way of life, which is tied to and defined by the size of their herds. It is fair to say that in the face of recurrent and prolonged drought, even alternative livelihood sources such as bee keeping (which is dependent on vegetation, including flowering plants) or surface irrigation are untenable. Variations in scientific and indigenous knowledge on the climate change-food insecurity link and what to do about it arguably contribute to varied approaches to improving climate-sensitive agriculture in the country. In this regard, Kenya's response to climate change-related food insecurity appear to yield mixed, uncoordinated results.

## Several Policy Frameworks and Development Initiatives

Kenya has an impressive array of strategies and plans to mitigate climate change and minimize the acute lack of food by the masses, including climate-related food insecurity. These evidence-based international commitments, policy documents, and development initiatives that characterize Kenya's response to climate change-related food insecurity also prioritize the country's food security. Further, the *Big 4 Agenda* cites security as an enabler for food security.

However, this effort has not yet produced the desired results as evidenced by the country's current realities in this regard. This makes for an interesting read with interrelated aspects. The drought-flooding cycle is undoubtedly reducing the quality of life of millions of Kenyans in several counties, and undermining their livelihoods through forcible displacement, and environmental degradation, for instance. However, Kenya seems to be more focused on meeting her global obligations on carbon emissions than on disrupting this cycle.

The focus on reducing carbon emissions is envisaged to prevent further rise of global temperature and minimize the incidence and frequency of extreme weather events (Weiss, 1995). It is thus not necessarily misplaced. However, Kenya is struggling to glocalize and align these obligations with her other critical obligations such as securing her people, food systems, economy, political influence, and territory concurrently, consistently, and sustainably (Buzan, 1991). The ongoing drought and lifting of the GMO ban have recast the spotlight on the merits and demerits of leveraging technological innovation in food production

without exposing Kenya's people, food systems, economy, and territory to known and unknown bio-environmental threats. Additionally, the agriculture-climate change nexus is complex as the agricultural sector doubly mitigates and contributes to climate change. A more effective approach would be an integrated and simultaneous focus on increasing the country's carbon sinks and disrupting the drought-flood cycle. The process thus requires sustained political and financial investments in the short and medium terms.

## Largely Reactive

At least 23 counties have consistently experienced climate-related food insecurity in the past five years. This suggests that, unmitigated, this challenge is expected. Interestingly, while Kenya's response to climate change-related food insecurity is ostensibly evidence-based and prioritizes food security, it is also generally reactive. Typically, these interventions are the effecting of national disasters; humanitarian appeals for emergency food to alleviate starvation, hunger, and malnutrition; and the selling of pastoralists' livestock during drought, among other reactions. Occasionally, other interventions are made. The lifting on the GMO ban in October 2022, for example. In mid-October 2022, Kenya's former Vice-President reportedly said:

> "We must safeguard future generations and protect our sovereignty at all cost from manipulation and penetration by foreign entities. Kenya's multi-billion-shilling food market is susceptible to manipulation by profit-hungry multinationals … Our biodiversity and natural pride in organic seeds will forever be lost to mutated crops … GM [genetically modified] crops cannot co-exist with organic and non-GMO crops due to contamination" (*Daily Nation*, 2022).

This ban reversal reportedly elicited mixed reactions about what Kenyans' food choices and right to food. For example, organic farmer Sylvia Kuria's response to whether citizens will have a choice between GMO- and non-GMO-animal-fed products was part rhetorical, "If the animals have been fed with GM maize, how then will I know that these pigs, cows or chickens have actually been fed by such

feeds? … as a Kenyan, I have the right to choose the food that I want to eat" (*Daily Nation*, 2022).

*The Star* Editorial has suggested that the use of GMOs is a choice.

> "Let GMOs be allowed in Kenya because that will reduce food import prices and help battle drought. But Kenyans should not be forced to use GMO seeds provided by Monsanto or KALRO [Kenya Agriculture and Livestock Research Organization] unless they wish to – it should be their choice" (*The Star*, 2022).

Paul Mwangi, a lawyer, challenged the constitutionality of the directive, and sought legal redress. "It goes against the right to food of acceptable quality, consumer rights guaranteed by Article 43 [of the Kenyan Constitution] …" he said (*Citizen Digital*, 2022).

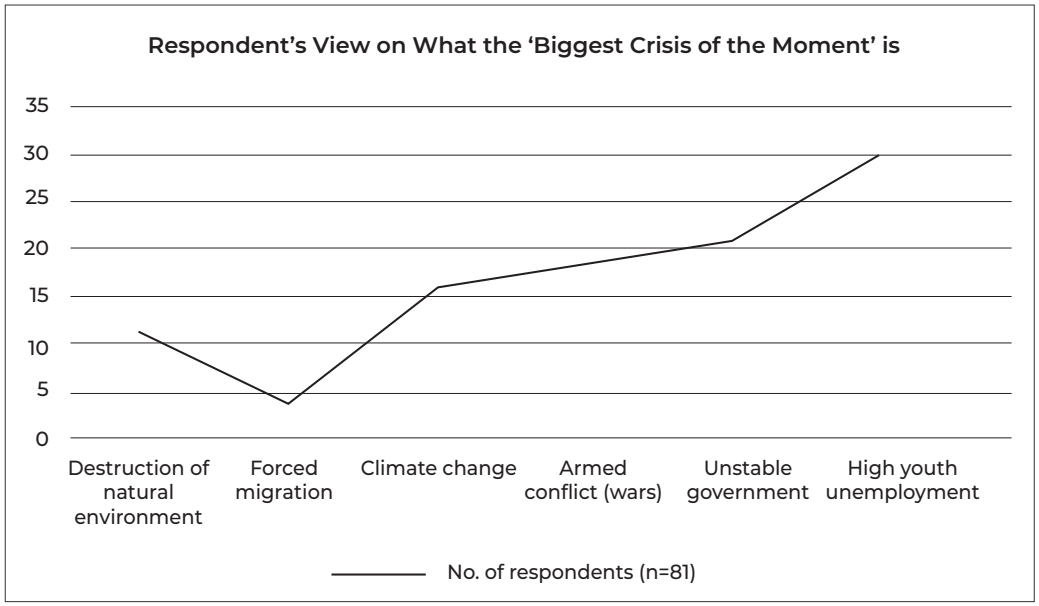
Kenya's reactive approach to foreseeable 'crises' such as persisting climate-related hunger signals the myriad of challenges confronting the country. These challenges range from an underperforming economy to high youth unemployment. Further, the limited application of Kenya's numerous climate-related strategies and plans suggests deficits in governance. To some extent, the reactive response also arguably reflects some of the disagreements in the scholarly community on the climate change-food insecurity conundrum. It is difficult to act on differing advice on the same issue. Such challenges curtail efforts to comprehensively secure the nation (Kenya MEF, 2020; 2016; World Bank, 2022; Buzan, 1991; Weiss, 1995). It may be time to revisit the 2016 Climate Change Act alongside the National Climate Change Response Strategy (2010), a National Climate Change Action Plan (2013), and the National Adaptation Plan (2015), and find better ways to overcome Kenya's climate change-related food insecurity sustainably.

## There are Differences in Political Rhetoric and Citizen's Perception of What 'the Biggest Crisis at the Moment' Is

There are indications of discordance between the central concern of the government and the governed. On the one hand, the incoming government

has stated 'climate change' as its main concern. On the other hand, high youth unemployment has featured in key public statements of the government as a known and undisputed fact. Asked what they 'think the biggest crisis at the moment is,' most respondents (29.63 per cent of them) said 'high youth unemployment.' 20.99 per cent said 'unstable government,' 18.52 per cent said 'armed conflict (wars),' 16.05 per cent said 'climate change,' 3.7 said 'forced migration,' and 11.11 per cent said 'destruction of natural environment,' as Figure 6 illustrates.

**Figure 6: Respondents' Perception of What the Biggest Crisis of the Moment is**




## There are Policy Gaps Relating to "Conventional Threats" to Kenya's National Security

President Ruto's administration views climate change and food insecurity as "conventional threats." However, his pronouncements are silent on how the two issues actually threaten Kenya's national security. Further, although Kenya's climate change strategies and plans are up-to-date and speak directly to the two issues, these guidelines are heavily focused on shrinking carbon emissions and make no direct or explicit connection to national security. This is despite the knowledge that non-confrontational threats such as acute hunger causes similar or higher number of deaths as or than conventional ones such as war and terrorism.

## Traditional Threats Constitute the Bulk of Kenya's Security Expenditure

Kenya expends the bulk of her security budget on traditional threats. This is despite increasing human security threats and the country's increasing struggles to secure her territory and population from the two critical "conventional threats'' to national security.

There is also the matter of Kenya's regional disposition. As an anchor state in a conflict-prone region, Kenya supports the region's peace efforts. As her overt security expenditure attests, the support has typically entailed: peace stabilization missions to Somalia, and the Democratic Republic of Congo; joint counter-terrorism against al Shabab and other violent extremist groups; and mediation (Buzan, 1991). This has had two mixed results. On the one hand, it has helped to preserve Kenya's territorial integrity. On the other hand, it has undermined the country's human security, predisposing her to internal (resource conflicts in drought and flood prone regions, loss of agricultural land, growing mass of vulnerable and marginalized individuals, and external security threats (global economic shocks, and rising food and energy prices). Kenya's security outlook is out-of-step with the contemporary global practice of securing a country's territory and people (Buzan, 1991). Recalibrating her 'security' expenses will be a first step in the right direction. Not in the least because equating climatic stress and acute food insecurity to terrorism conflates conventional and non-conventional threats, but also because both threats have caused hundreds of needless deaths in Kenya (Hanlon & Christie, 2016; Kenya Red Cross, 2022; Omondi, 208; ICG, 2022).

## Implications of Kenya's Response to Climate Change-related Food Insecurity on National Security

Kenya's ineffective response to the increasing climate change-related food insecurity, and - by extension - rising number of individuals that this situation is disenfranchising is undermining national security in three main ways. First, it is increasing the exposure of 'at risk' individuals and communities to exploitation by state and non-state actors, in exchange for food and livelihood sources. The higher the number of 'at risk' individuals becomes, the more difficult it will

become for Kenya to secure her territory in both human security and traditional security terms. The risk of increasing armed violence in forms such as resource conflicts, crime, protests, and violent extremism cannot be ruled out.

The second implication of Kenya's ineffective response to climate change-related food insecurity is arrested development. Arguably, acute food insecurity reduces the capacity of the climate-afflicted individuals to make and sustain meaningful contributions to development. As Hanlon and Christie (2016) note that these kinds of threats [acute food insecurity, for example] also "kill far more people than war, genocide, and terrorism combined" (2016, p.5). Internally, this portends uneven national development, with areas most affected by climate change-related food insecurity lagging behind those that are less affected by the situation. This could exacerbate grievances that violent extremist groups can exploit. Externally, the high and rising number of disenfranchised people signals that the country is struggling to manage her domestic affairs. Unresolved, this will diminish the country's standing among regional communities such as the East African Community, and IGAD that generally hold Kenya in high regard. It will also take the edge off Kenya's positioning in important global *fora* including those on climate action.

The third implication of implication of the Kenya's ineffective response to climate change-related food insecurity is (forced) hazard-driven population displacement. The more drought, flood, and the effects of the same displace people internally and into neighboring countries, the higher the risk of intercommunal and cross border conflicts becomes. As has been well documented, such conflicts can destabilize a state, or region. In sum, the presence of human insecurities relating to the environment, food, politics, economy, and individuals and their communities compromise security and threaten the survival of a state (IEP, 2022; Buzan, 1991).

## Conclusion

Kenya's efforts to mitigate climate change and reduce the related food insecurity in law and practice are commendable and welcome. However, on account of

the reasons that this paper has highlighted, the efforts have not yet disrupted the recurring drought-flooding cycle. The said cycle is damaging the ecosystems that support crop production, livestock farming, vegetation, and wildlife. This, for a country whose key economic drivers (agriculture, wildlife tourism, for example) are rain-dependent, is critical as it portends the increase of acutely food insecure individuals in the country. The presence of a growing mass of food insecure people increases the risk of unrest, which can destabilize the country.

Further, Kenya's security budget is yet to meaningfully accommodate non-confrontational existential threats such as the acute climate-related food insecurity that is disempowering millions of Kenyans in at least 23 counties regularly. Humanitarian appeals for emergency food and medicine have featured repeatedly on the country's socio-economic fabric in the past five years. It is also evident that climate change threatens to increase the number of people at risk of food insecurity. A growing mass of acutely food insecure individuals is incapable of participating meaningfully in developing the nation or securing its borders. It is likely that President Ruto's administration will consider allocating some funds to address growing or emerging threats to Kenya's security related to climate change. Until then, Kenya's response to climate change-related food insecurity has been undermining the country's national security to the extent that efforts at drought management and climate-smart agriculture have not yet turned the tide of Kenya's climate change-related food insecurity; reduced the "conventional threats;" or strengthened Kenya's capacity to secure her people and territory better.

Finally, Kenya's response to the growing climate-related food insecurity is reactive. This is in part because empirical studies on climate-related food insecurity and Kenya's national security are limited. At the same time, this response is based on varied scientific and scholarly approaches to climate change and food security. This has contributed to mixed, ineffective results. Amid these, the number of acutely food insecure individuals as a result of climate change-related food insecurity is rising. This is a growing but generally overlooked threat to national security; no effort should be spared in addressing it.

## Recommendations

### *Center Climate Change Mitigation in Kenya's National Security Framework Proactively*

This will bridge the traditional security-human security divide; free up some traditional security funds to address human security threats to the country better; and forestall non-confrontational threats such as acute food insecurity. It will also provide room for more public-private partnerships that could inject funds and technical expertise to shore up Kenya's efforts at reducing drought- and flood-associated food insecurity. The reduction of 'at risk' individuals in drought- and flood-prone regions will in turn reduce the need for security officers to secure humanitarian food caravans, counter resource-based conflicts, and prevent recruitment of disempowered individuals (unemployed youth, marginalized persons, and vulnerable communities) by merchants of violence in the country and region.

### *Fund Research at the Climate Change–Food Insecurity–National Security Nexus*

This should be undertaken by an interdisciplinary and transdisciplinary team with the support institutions such as the National Defense University-Kenya. The study could build on the preliminary findings of this paper and other that have attempted to explore this nexus. Such a study could be conducted at county-level (targeting the 23 hazard-prone counties) or national level. It may also include neighboring countries that have had climate change-related national emergencies in recent times such as Ethiopia and Somalia. The findings of such a study will help to revise Kenya's outlook and approach in relation to issues at this nexus, and geopolitical positioning, which will serve her well in the long run.

### *Encourage More Kitchen Gardening at Household and Community Levels*

Repeated failed crop seasons has compelled farmers to abandon agriculture and pursue other livelihood sources such as real estate and/or migrate to other regions including urban areas where opportunities for large-scale farming or subsistence farming as is practiced in Kenya's rural areas are limited. These, among other reasons, have reduced food production. Kitchen gardens including

vertical gardening techniques will help to meet basic food needs at household and community levels while complementing Kenya's efforts to attain an acceptable level of food security for her population amid changing climate. Supplying kitchen gardeners with organic seeds will also help to assail health fears of producing and/or consuming potentially 'harmful' or technologically altered food, and provide entry points to further deliberations on the implications of genetically modified produce on Kenya's development and stability. Engaging young unemployed youth in such an endeavor may have the added benefit of reducing the country's high youth unemployment. Kitchen gardening also helps to reduce household food costs, which is one of goals of the food security pillar of the *Big 4 Agenda*.

### *Plug Deficits in Climate and Environmental Governance*

Improving climate and environmental governance will help to disrupt Kenya's 'normal' perennial ills: the recurring drought-flooding cycle; an unreflective security expenditure; and reactive response to climate-related food insecurity. This could be coupled with active citizen participation to energize the implementation of existing and emerging strategies and plans. This will reduce the country's leading climate hazards (droughts, floods) and bolster climate smart agriculture.

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