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Research Idea

How Will Africa, Specifically its Sahelian Countries, Address Food Insecurity during the Covid-19 Pandemic?

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Abstract: This paper examines the food insecurity in Africa with special attention given to the Sahelian region, where this situation was a concerning issue before the Covid-19 pandemic. This article argues that food insecurity in the Sahelian region of Africa has resulted from a seasonal rainfall deficit for many years. This rainfall deficit started in the 1970s after many countries in that region became independent from their colonial powers. The first long devastating drought occurred in 1973.

Conceptual Framework of Food Insecurity

This paper examines several conceptual frameworks to help understand food insecurity dynamics in general, particularly in the Sahel region of Africa. The framework or concept helps policymakers understand and address some measures to secure food for the population.

During the 1996 Summit of the United Nations for Food and Agriculture (FAO) in Rome, Italy, it was stated that food security exists when all people always have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. There are three fundamental analytical points in that statement that ensure food security. The first point is food availability (sufficient); the second point is the accessibility to food (physical and economic access to food), and the third point is food utilization (food intake by person per day that meets dietary needs to ensure health). The absence of these basic characteristics of food security leads to food insecurity. Therefore, food insecurity is defined as a lack of consistent access over a long period, i.e., two (2) months or longer, to enough food for every person in a household to live an active, healthy life (FAO, 1996, 2012). These three elements of food security are not often met in the Sahel. Food unavailability has resulted from insufficient rainfall over several consecutive years. According to Sharon E. Nicholson (2018), across the Sahel region, rainfall has diminished from the northern to the southern part of the region. It measures from near zero millimeters of rain in Eastern Sahara to over 10,000mm yearly in the south. However, most of the Sahara receives less than 25mm per year. This reinforces drought and the decimation of livestock. However, Nicholson (2018) indicated that maze, wheat or sorghum, beans, fonio, suna (local version of wheat), and

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other local agriculture products have all increased and met the increase in the Sahelian population during the past decades. Cecile Barbiere (2018) demonstrated that the Sahel does not have a chronic deficit of food production or availability, but the region has a seasonal deficit due to climate or a problem of accessibility to funds. Barbiere (2018) also indicated that farmers in the Sahel increased production by increasing the arable land zones today no one is dying in the Sahel from hunger, but malnutrition remains very problematic among children. The author continued to argue that these issues stem from the cost of food. In many cases, food is too expensive but also inaccessible due to wars, i.e., Bokou Haram and other terrorist activities in the region, or bad roads for the transport of agricultural products across the region.

In a similar vein, Margrethe Brigham (2011) posited that the food exports policy is why many Sahelian countries suffer from partial food insecurity. Her research further demonstrated that providing food exportation to alleviate hunger and poverty is not the solution to eradicate food insecurity anywhere. The author continued to outline the pervasion of this policy with respect to auto- self-sufficiency of crop productions to ensure food security in that region. In addition, food exportation increases the region's dependency on foreign aid and maintains the region under a perpetual food crisis, which exportation cannot solve. Another conceptual framework in this analysis stems from the human rights perspective. The Human Rights Framework is based on the Universal Declaration of Human Rights of the United Nations in 1948.

Mariana Chilton and Donald Rose (2009) presented the Human Rights Framework perspective. It is based on three principles: respect for the right to food, to fulfill the right to food, and to protect the right to food. These points stipulate that people have a right to "want," including food. Under this statement, these rights must be protected by all governments. These include the need to respect the right to food, so others do not interfere with one's ability to require food. The fulfillment of the right to food has two components that are required to facilitate or to create social and economic environments that foster human development.
Finally, protecting the right to food is to ensure that others do not interfere with access to food. Sheri et al. (2015) analyzed this study's last framework or policy analysis. This point of view is based on the malnutrition aspect of food insecurity anywhere. The authors demonstrated that food insecurity has a direct connection with health through three (3) aspects that affect the well-being of people, particularly children. They include the nutritional, mental, and behavioral aspects. Furthermore, the authors indicated that these aspects lead to three levels of determinants: the community, the household, and the individual. The community level of the concept includes climatic features characterized by drought and flooding.

Meanwhile, the household level of this conceptual framework includes socioeconomic factors, including poverty and access to education. The last level of determinants of the conceptual framework is the social factor which provides for gender inequality, health-related stigma, and local food availability and

consumption of healthy food. This point of analysis is different from other frameworks because their analysis includes children and women who are often left out in a general study concerning poverty and economic issues in many regions across the world. These frameworks allow politicians and governments to ensure that basic human rights regarding food and availability are protected everywhere. They also help to understand the basics of food insecurity across the globe as well as in the Sahel. The next step of this analysis focuses on the Sahel region where food insecurity has become prevalent over several decades.

The Sahel Region and Food Insecurity

The Sahel region stretches from Senegal in the West to Chad to the east. It is located between the south of the Sahara Desert and the north of the tropical region in the south. This region comprises 15 countries (from Ca Verde in the West to Chad in the east), and some 44,000,000 people live there with constant food insecurity. Drought affects some parts of the following states Northern Togo, Benin, Northern Nigeria, Northern Central African Republic and Northern Cameroun. However, only nine countries (9) form a regional organization to combat drought in the region (CILSS). CILSS member states are Senegal, Mauritania, Mali, Burkina Faso, Niger, Cape Verde, Gambia, and Guinea Bissau. For the last decades, the Sahel region has faced more instability, stemming from armed conflicts, terrorist groups, drought, and other environmental changes. All affect and increase the possibility of food insecurity in that region (FAO, 2018). Despite the aridness of the region, the people in that part of Africa have always managed to handle food shortages. Furthermore, food shortage or insecurity is not always due to the lack of rainfall in that region, which is always lower compared to other African regions. Trudell et al. (2020) asserted that in 2018, 52.5% of Africa's population was moderately or severely food insecure. The paper indicated that the cause stems from many factors including climate change, conflict in the region, and general economic downturn. Furthermore, the authors linked food insecurity to mental health. The findings also indicated many women, mostly during pregnancy, and people living with HIV/AIDS were severely affected by mental stress and anxiety.

Furthermore, Maria Sassi (2015) analyzed the underlying causes of undernourishment, food availability, access to food and its utilization. She argued that the solution to food insecurity in the Sahel must come from local and subregional responses rather than from the international aid groups or a policy based on international development policies.

According to Catherine Raga et al. (2022), scientific analyses show that the wind and dry air from the Sahara impede the rainfall in that region; this phenomenon can reduce any chance for rain to come on time but also not in sufficient quantity to allow agriculture and the farmers to harvest in abundance. This meteorological aspect can lead to climate change. This may hinder food production with less available arable land to produce more local crops. However, this situation can be mitigated by investing in irrigation, introducing modern agricultural equipment, and training farmers to use these tools in

agriculture. In addition, the CILSS (Centre International de lutte contre la Sécherèsse au Sahel, French translation), which is an interstate organization to control drought in the Sahel, indicates that drought destroyed agriculture and farm livelihoods from 1640-1680 in that region. Many European travelers reported food insecurity in their journals from the Sahel region during the same period. Consequently, before today's climatic debate, drought was known by the people in the Sahel, but they always managed it and continue to do so. Therefore, climate change is real but not necessarily an insurmountable pillar of food production in the region.

Boubacar Barry (1988) argued that the Sahel region was devastated by drought and food shortages during the 15th and 16th centuries. He further demonstrated that this situation stemmed from the slave razzias that destroyed agriculture and led to war and political instability in West Africa and the Sahel region. Consequently, food insecurity became the norm in the farmers' lives in that region during this troubled time in Africa.

Food Insecurity in Sahel During the 20th Century

In the 20th century, another great drought caused by a rainfall deficit over several years hit the Sahel. This drought started in 1968 and ended in 1973; even though the year 1973 was a wet year in the region. Climatic variations caused this great drought and the consequences were dramatic. The region lost many people, and the herds were greatly affected. An estimated 50,000 to 200,000 people died in eastern Burkina Faso during this great drought (UN report, 1980s). The causes of this great African drought are unknown; however, recent research indicates that drought could result from global and local climate patterns. Recent analysis of that drought explained that starting in 1968, a series of droughts hit the Sahel from the West to the east and ended in the 1980s. The consequences were tragic, with over 100 000 people dying due to food shortages and disease. This situation created a fear that the Sahel may become an endless desert. It also led to the mismanagement of natural resources and increased overgrazing. Some argued that overpopulation in the region had increased the deterioration of the environment there. This latest aspect still is not endorsed by local people.

By 1985, the wettest years arrived due to climate variation, not climate change in the region (Giannini, 2007). This climate variation played a significant role in droughts, according to Giannini. The author argued that recent studies showed that changes come from the global sea temperatures (SST) which play a big role in climate variations over the region of Sahel.
However, Nicole Ball (1978) argued that the lack of economic autonomy constituted the major cause of the degradation of the region's ecosystem. Her study further demonstrated that specific policies, initiated under the colonial administration continued under independent governments in the region. These policies reduced the ability of West African farmers and herders to exploit their environment with an adequate safety margin. To combat the aftermath of this disaster,

international and local agencies began to be interested in the region's situation. These aid groups did not promote economic autonomy nor ecological stability for the countries in the region. Therefore, food shortages and ecological erosion continued to degrade food and alimentation dynamics in the Sahel for many years to come.

In addition, many authors indicated that food insecurity in the Sahel leads to many health issues that became prevalent in that region during the 20th century. These health issues include malnourishment and increased morbidity among children and pregnant women. For instance, Nalley et al. (2018) indicated that food insecurity or food shortage is a prevalent concern across Sub-Saharan Africa which is among the medium-income countries in the world. The researchers indicated the drought that hit the Southern African region in 2014 and 2015 affected some 22% of South Africa's population, making them severely food insecure. The findings attribute the causes of this drought to many factors, including the currency instability across African nations. This situation exposed many countries to the risk in global wheat exchange markets.

Furthermore, the authors advised increasing funding for national agriculture research centers and food crop production by local and regional farmers. Banks, Bell, et al. (2021) outlined the importance of routine health care visits to understand the needs and behavior of individuals or families who screen positive for food insecurity. Furthermore, findings indicate that health care screenings may get information about the resources people need. The authors also asserted that this method of screening might not be available widely in developing countries, making it difficult for local healthcare workers to assist this vulnerable population in the Sahel region. Preventive measures are lacking in the region according to these findings. In a similar vein, Benzekri et al. (2021) looked at the importance of food insecurity on HIV outcomes in Senegal, West Africa. Although, Senegal has a low rate of HIV among its population, the findings of this study indicate that it is important to understand the impact of food insecurity on HIV. The finding also highlights the importance of nutritional status, socioeconomic, and self-stigmatization relative to food insecurity and HIV outcomes.

In a similar vein, Rahman et al. (2021) also linked food insecurity to mental health issues in many developing countries in Africa, Asia, and Latin America. The findings outlined the effects of the COVID-19 pandemic on women and other vulnerable populations in rural areas. During the COVID-19 pandemic, many women faced food insecurity due to the general lockdown. In addition, they developed severe anxiety, stress, and other psychological traumas. Other authors indicated that food insecurity is not only a Sahelian issue; western countries also face prevalent food insecurity, mainly in big cities. In that perspective, Jesch et al. (2021) emphasized the public health aspect with respect to food insecurity in Western countries, in contrast to developing countries such as in the Sahel region. Furthermore, the authors posited that in developing countries, food insecurity is considered general economic poverty rather

than a public health threat to all populations. The findings also show that food insecurity is prevalent in the USA and England among college and university students.
Olayemi, M. Olabiyi (2020) focused his research on the relationship between food insecurity and electoral participation in Sub-Saharan Africa. The findings show that people living in food insecure areas tend to vote and participate massively in the electoral process more than those living in food secure areas. Furthermore, the author asserted that politicians use food or food insecurity as a tool to increase participation in the democratic process and a way to secure votes. Finally, other authors gathered newspaper coverage of food insecurity not only in the Sahel, but in Europe and in America, demonstrating that food insecurity is not just an African issue.

Actions Taken by West African States to Combat Food Insecurity

During colonialism, the French government tried to implement some measures to improve economic development in the Senegal River basin. They started constructing a dam to control river flooding and installing an electric power plant on the river for electricity production. None of these projects were fruitful. These economic ambitions were revived after their independence in the 1960s. Some of these projects stemmed from the organization of regional entities to better coordinate newly independent state policies regarding economic development and territorial management for food production, electricity, water, and soil management for their population around the Senegal River basin.

After the independence years, many states in the region started to implement national policies aimed at promoting economic development. Economic plans for the revitalization of rivers and valleys were initiated to coordinate their action for agricultural food production between the countries bordering the Senegal River. The first regional organization was of L'Organization des États Riverains du Fleuve Sénégal (OERS), created in 1968, regrouped four (4) states, Guinea, Mali, Mauritania and Sénégal. One objective of OERS was to regulate the Senegal River in order to avoid excessive flooding. Another objective was to create water reservoirs along the basin to control soil erosion, and the third was to improve food production via irrigation and control water-borne diseases around the river basin. Unfortunately, OERS was short-lived and few or none of these objectives were accomplished. With political differences between Sénégal and Guinea, L'OERS did not achieve several of its main objectives. Then it was disbanded in 1972.

It was replaced by another regional organization, OMVS (Organization pour la Mise en Valeur du Fleuve Sénégal) with similar objectives, and without the Republic of Guinea (Bernus & Perrot, 1993). The new organization continued to work but generated more problems. The construction projects of two dams on the river did not yield great outcomes. The dams generated artificial flooding or redirected some of the river tributaries' waters. Consequently, erosion, destruction of arable soil, and an increase in water-borne diseases led to fewer crop

productions (Timberlake, 1985). In addition, the creation of regional economic and monetary organizations (UMOA and CEDEAO or ECOWASS) did not integrate the region economically. Instead, they have increased their balkanization, negatively affecting agricultural products' circulation in the markets of West Africa. In sum, the region has become vulnerable to food shortages, poverty, and other related ills that hinder food and alimentation securities in the Sahel. Moreover, these political organizations have simply made bad choices due to their inefficiency in delivering economic development, food security, and environmental stability in the Sahel.

COVID-19 Pandemic and Food Insecurity

The COVID-19 pandemic would be considered a devastating disease if it arrived in Africa, particularly in the Sahel. With its contagious effect and the lockdowns, the pandemic would hinder any economic activities, including the agriculture sector in that region. With cultural structures, Sahelian societies would not accept a social distancing policy to avoid the spread of COVID-19. However, this pandemic did not spread over Africa. In fact, the continent was less affected than predicted by the WHO (The World Health Organization) and by other news outlets in the West. Therefore, COVID-19 did not interrupt food production nor create hunger across the Sahel. The worst fear was not realized. In fact, according to the Senegalese Agriculture Minister, Moussa Baldé, it was the agriculture sector that saved our population during the COVID -19 pandemic (Interview from Afrique Media outlet, December 2021). The Senegalese official continued to emphasize the need for the region of West Africa to modernize their agriculture sector with modern equipment and use fertilizer to increase production. Furthermore, he stressed that Africa should not be lured into dietary changes. Most African people do not consume wheat and do not need wheat exportation. Therefore, African people, with cultural and culinary history must consume local agriculture products. The African continent has the potential for such production in huge quantities due to the immense availability of arable land. Food shortages can be eradicated in West Africa and across the continent when officials make serious decisions concerning food production. They should adopt public policy decisions based on local food and alimentation directives. These decisions must focus on traditional African consumption. Policies to fight hunger or food shortages must not be based on the importation of food or on changing the dietary traditions of the region and the continent.

In summary, the Sahel region did not experience food insecurity before or during the COVID-19 pandemic. The region's food problem stems from a management issue concerning the transportation of products and their circulation among countries in the area. Food shortages in the Sahel also depend on the high price of food in the market and the instability of the weak regional currency in the international currency exchange rate. This leads to the instability of food prices and other important commodities. This situation is very detrimental to businesses in Africa in dealing with international partners. Increasing local

food production and helping farmers acquire modern agricultural equipment and fertilizer constitutes a tool that will propel West Africa's agriculture to become the grain basket of production on the continent.

Conclusions

The Sahel did not have a food insecurity problem during the past decades. The region has experienced several years of rainfall deficits from the end of the 1960s to the mid-1980s. During that period, experts argued that the causes might be attributed to the irregularity in rainfall. Others described the bad policies adopted by regional leaders with respect to land management or the lack of modern agricultural equipment in the farmers' disposition. Wars and political uncertainty in the region have generated a population movement from the farm and villages to the cities. This leads to an increase in instability with respect to food production and a threat to the safety of the people across the region. Regional cooperation and increased funding in agriculture are the best ways to meet the demands of an increased population in the near future.

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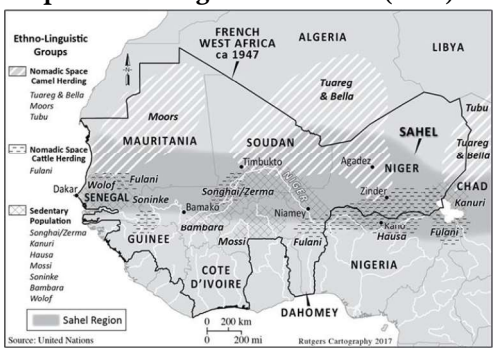
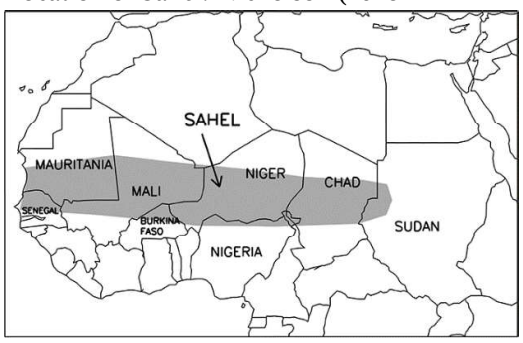
Appendix

Map of Sahel Region. Nicholson (2018)



Location of Sahel. Nicholson (2018



Rainfall Deficit

Vegetation Zone	Annual Rainfall (mm)	CV (%)	Season (months)
SaheloSahara	50–100	0	–2
Sahel	00–400	0-50	2–3
Soudan	00–1,000	0-20	3–5
Soudano-Guinean	1,000-1,600	5-20	5–8