Assessing the Zero Hunger Target Readiness in Africa in the Face of COVID-19 Pandemic

Olutosin A. Otekunrin¹*, Oluwaseun A. Otekunrin², Folorunso O. Fasina³, Abiodun O. Omotayo⁴ and Muhammad Akram⁵

¹Department of Agricultural Economics and Farm Management, Federal University of Agriculture, Abeokuta (FUNAAB), Nigeria; ²Department of Statistics, University of Ibadan, Ibadan, Nigeria; ³Emergency Centre for Transboundary Animal Diseases, Food and Agriculture Organization of the United Nations (FAO-ECTAD), Dares Salam, 14111, United Republic of Tanzania; Department of Veterinary Tropical Diseases, University of Pretoria, Onderstepoort 0110, South Africa; ⁴Food Security and Safety Niche, Faculty of Natural and Agricultural Science, North-West University, Mmabatho, South Africa; ⁵Department of Eastern Medicine, Government College University, Faisalabad, Pakistan

*Corresponding author: otekunrinolutosin@yahoo.com

Abstract

Sustainable Development Goal 2 (SDG 2) is hinged on achieving zero hunger target globally by 2030. Many developing countries, especially African countries, are challenged with extreme hunger that are often caused or compounded by bad governance, conflicts and climate change. In this paper, we assess Africa’s readiness towards attaining the zero hunger target by 2030 in the face of COVID-19 pandemic. Patterns of Global Hunger Index (GHI) and each of its indicators across Africa are compared before the pandemic (2000-2019). The effect of the pandemic on the hunger situation in Africa is discussed by highlighting the mitigating measures put in place by selected African governments. We have found that most African countries have recorded steady reduction in their child mortality rates but high prevalence of undernourishment, stunting and child wasting indicates significant challenges hampering the achievement of the zero hunger target. The study recommends that African governments should prioritize sustainable agricultural practices and give serious attention to the formulation and implementation of policies that reduce hunger against the COVID-19 pandemic.

Keywords: African countries; COVID-19 pandemic; food security; global hunger index; zero hunger

Cite this as: Otekunrin, O. A., Otekunrin, O. A., Fasina, F. O., Omotayo, A. O., & Akram, A. (2020). Assessing the Zero Hunger Target Readiness in Africa in the Face of COVID-19 Pandemic. Caraka Tani: Journal of Sustainable Agriculture, 35(2), 213-227. doi: http://dx.doi.org/10.20961/carakatani.v35i2.41503

INTRODUCTION

Often used outside scientific context, the term ‘hunger’ is specified as ‘an uncomfortable or painful sensation caused by insufficient consumption of food and ranges from short-term physical discomfort to severe, life-threatening lack of food’ (GFN, 2019). Food and Agriculture Organization of the United Nations (FAO) defines hunger as ‘an uncomfortable or painful physical sensation caused by insufficient consumption of dietary energy and becomes chronic when the person does not consume a sufficient amount of calories (dietary energy) on a regular basis to lead a normal, active and healthy life’ (FAO et al., 2019). To end hunger, a broad definition of the phenomenon including calorie deficiencies (chronic hunger), micronutrient deficiencies (hidden hunger) and related problems needs to be considered (Gödecke et al., 2019). According to FAO et al. (2019), more than 820 million people in the world are still prone to hunger and this

* Received for publication May 6, 2020
Accepted after corrections July 16, 2020
condition draws attention to the huge task of achieving the Sustainable Development Goal 2 (SDG 2) target by 2030.

Specifically, SDG 2 (Zero Hunger) aims to address the importance of food security and nutrition within the wider agenda and calls member states to ‘end hunger, achieve food security and improved nutrition and promote sustainable agriculture’ by 2030. The five principal targets and three implementing mechanisms of SDG 2 are highlighted in some documents released by the United Nation (UN, 2017a, 2017b; Otekunrin et al., 2019b). The principal targets of SDG 2 include: (1) end hunger and ensure access to safe, nutritious and sufficient food; (2) end all forms of malnutrition; (3) double the productivity and incomes of small-scale food producers; (4) ensure sustainable food production systems and implementing resilient agricultural practices and (5) maintain the genetic diversity of seeds, plants and animals. To reach the goals by 2030, some mechanisms have been proposed, including: (1) increasing investment through enhanced international cooperation; (2) correcting and preventing trade restrictions and distortions in global agricultural markets and (3) adopting measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information.

In Africa, hunger remains endemic in almost all sub-regions with the Prevalence of Under-nourishment (PoU) reaching a record of 22.8% in sub-Saharan Africa (SSA). The number has been increasing consistently in Africa where it almost peaked 260 million people in 2018, with over 90 million living in SSA (FAO et al., 2019). The challenge of ending global hunger and especially hunger in the African continent is pivotal, particularly to achieving sustainable development. The prevalence of malnutrition (multiple burdens) poses a major hindrance to reaching this target with serious implications on human health and environment (Global Panel on Agriculture and Food Systems for Nutrition), 2016; Fanzo, 2019; Otekunrin et al., 2019b; GNR (Global Nutrition Report), 2020). Notably, five African countries (Democratic Republic of Congo, Ethiopia, South Sudan, Sudan and Nigeria (northern part)) are among the ten (10) countries experiencing the worst food crisis in 2019 (Food Security Information Network, 2019).

Non-compliance or partial implementation in the investment of 10% of their Gross Domestic Product (GDP) in agriculture as contained in the African Union’s (AU) Comprehensive Africa Agriculture Development Program (CAADP) in 2003 is one of the reasons for the exacerbated food insecurity and hunger in Africa (da Silva, 2019; UNECA (United Nations Economic Commission for Africa), 2020). Also, about 60% of African arable land has been degraded due to deforestation and over-exploitation, climate extremes and variability, leading to increased pressure on the continent’s fragile agricultural system. Sustainable agriculture is, thus, one of the important agricultural practices for achieving zero hunger in Africa (United Nations General Assembly, 2015; FAO, 2017b).

Ending hunger in Africa requires the strengthening of sustainable food production systems and implementation of resilient agricultural practices to ensure increased agricultural productivity and improved capacity for mitigation against climate extremes and other natural disasters (Wickramasinghe, 2014). Sustainable food production system is highly important to keep a country stable at all times especially in a pandemic, such as the COVID-19. In this paper, we assess Africa’s readiness towards attaining the zero hunger target by 2030 by reviewing the patterns of Global Hunger Index (GHI) scores and the indicators across Africa in 2000-2019 before the emergence of COVID-19 pandemic, the possible implications of the outbreak on the African continent and the mitigation measures to cushion the effect of the pandemic in Africa.

MATERIALS AND METHOD

This review relies mainly on the available secondary data sources (FAO et al., 2019; Africa Centre for Disease Control, 2020; CRS, 2020; WHO, 2020a, 2020b). Other sources, relevant to this study, have been succinctly and carefully consulted. These sources include selected peer-reviewed journal articles, textbooks, handbooks, conference proceedings, bulletins, magazines and online materials. At the end of the discussion,
recommendations to achieve global zero hunger target are presented.

RESULTS AND DISCUSSION

Hunger in Africa

The major factors aggravating hunger in Africa are poverty, severe pre-and post-harvest losses due to high incidence of pests and diseases, unemployment (mostly among youths), conflicts, wars, insurgencies, climate extremes and variability, migration and corruption (da Silva, 2019; Otekunrin et al., 2019a). Several nations, like the Central African Republic (CAR), Somalia, Chad and South Sudan, that have been engaged in prolonged crises, have very high undernourishment and under-five mortality rates when compared to those that are not affected by conflict (FAO, 2017a; FAO GIEWS (FAO Global Information and Early Warning System), 2017; UN IGME (United Nations Inter-agency Group for Child Mortality Estimation), 2017; UNHCR (United Nations High Commissioner for Refugees), 2018; Otekunrin et al., 2019a).

High incidences of pests and diseases have also contributed to the reduction of harvests, high food prices and loss of livestock. Cassava mosaic and brown streak virus are the major diseases affecting cassava (Manihot esculenta), the main food crop in the Great Lakes region of East and South Africa, while the fall armyworm (Spodoptera frugiperda) is the major pest of maize (Zea mays) and sorghum (Sorghum bicolor) in South Sudan (FAO, 2018). Bird Flu (Avian influenza) caused huge economic losses for poultry farmers in many African countries during the 2006-2008 and 2015-2017 outbreaks (Otekunrin, 2007; Ntsomboh-Ntsefong et al., 2017; Fasamni et al., 2018; Otekunrin et al., 2018).

It is also important to note that poverty, corruption and conflict events have been identified to be positively associated with hunger in most African countries. African countries with high percentage of total population in extreme poverty, high Corruption Perceptions Index (CPI) ranks and high number of conflict events have higher GHI scores. It was also reported that there is a positive association between the prevalence of stunting and the attainment of SDGs in Africa by 2030 (Smith and Haddad, 2015; Otekunrin et al., 2019a; Otekunrin et al., 2019c).

Patterns of GHI Scores in Africa before COVID-19 Pandemic

The GHI is a tool fashioned to measure hunger at global, regional and national levels (Wiesmann, 2006). The GHI was created in 2006 by researchers from the International Food Policy Research Institute (IFPRI). Later, GHI became a joint project of Welthungerhilfe and Concern Worldwide. GHI scores are calculated every year to identify and assess progress and setbacks in fighting hunger. It is also used to compare levels of hunger among countries as well as to highlight countries where hunger is at its peak (von Grebmer et al., 2019). The scores are computed using four indicators, namely undernourishment, child wasting, child stunting and child mortality. Detailed procedures for computing GHI scores are described in von Grebmer et al. (2019), Otekunrin et al. (2019a) and Otekunrin et al. (2019b). The GHI uses a 100-point GHI severity scale where 0 is the best score (no incidence of hunger) and 100 is the worst. In terms of GHI, a country can be categorized as low (< 9.9), moderate (10.0-19.9), serious (20.0-34.9), alarming (35.0-49.9) and extremely alarming (≥ 50).

Table 1 shows the GHI scores for African countries for year 2019 with their corresponding 2019 GHI ranks. Some African countries are not captured in Table 1 because of insufficient or lack of data for the four GHI indicators. These include Burundi, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Libya, Somalia, Seychelles, Cape Verde and South Sudan. The Central African Republic (CAR) has the highest GHI score of 53.6 in Africa in 2019 and in the world (out of 117 countries), falling in the ‘extremely alarming’ category. Chad, Madagascar and Zambia have 2019 GHI score of 44.2, 41.5 and 38.1, respectively, which are in ‘alarming category’, while Ghana, South Africa and Egypt with 2019 GHI scores of 14.0, 14.0 and 14.6, respectively, are in ‘moderate’ category. Nigeria, Rwanda and Sudan with 2019 GHI scores of 27.9, 29.1 and 32.8, respectively, are in the ‘serious’ category, while Tunisia, Morocco and Mauritius with scores 6.2, 9.4 and 9.6, respectively, are in the ‘low’ category.
Patterns of GHI Indicators in Africa before COVID-19 Pandemic

Prevalence of Undernourishment (PoU)

Most African countries have witnessed steady reductions in their PoU values since 2000 (Figure 1). For example, Algeria, Morocco, Senegal and Cameroon moved from 10.7%, 6.8%, 28.7% and 30.8% in 2000 to 3.9%, 3.4%, 11.3% and 9.9%, respectively, in 2019. The PoU in Africa has consistently experienced reductions in values since 2000 in North Africa and some other African countries. The values were reduced from 2000 to 2019, especially in North Africa and some other African countries, like Algeria (10.7-3.9%), Morocco (6.8-3.4%), Cameroon (30.8-9.9%), Senegal (28.7-11.3%), Togo (31.1-16.1%) and Ethiopia, (52-21.4%). Some countries, including Nigeria (9.3-13.4%), Uganda (27.7-41%), Morocco (6.8-3.4%), Madagascar (34.4-44.4%) and Central African Republic (CAR) (42.5-59.6%), had a proportion of undernourished population that increased in 2019, compared to the values in 2000, while the North African countries (except Libya) had the lowest value from 2000 to 2019 in Africa (< 5%).

There were reductions in PoU in all African sub-regions (Figure 2), except the West Africa region, which had its PoU increase from 12.3% (33 millions) in 2005 to 14.7% (56.1 million) in 2018 (FAO et al., 2019; von Grebmer et al., 2019). African countries experienced fluctuating values for the prevalence of stunting before the outbreak of COVID-19 pandemic (Figure 3). For example, the Central African Republic (CAR), Madagascar and Nigeria had higher stunting prevalences of 47.4%, 46.1% and 37%, respectively, in 2019 compared to those in 2010. It was also reported that there is a positive association between the prevalence of stunting and the attainment of SDGs target in Africa by 2030 (Otekunrin et al., 2019c).

Considering the progress achieved across the African continent, many countries recorded remarkable reductions but CAR had the highest increase in stunting prevalence among all reported countries (2000 (44.4%) and 2019 (47.4%). Ghana, Cameroon and Kenya have recorded steady reductions in their stunting prevalence values since 2000 (30.6-18.8%, 38.2-31.7% and 40.8-26.2% respectively) (von Grebmer et al., 2019).

### Table 1. GHI Scores for Africa (2000, 2010 and 2019)

| Rank | Country           | 2000  | 2010  | 2019  |
|------|-------------------|-------|-------|-------|
| 23   | Tunisia           | 10.7  | 7.6   | 6.2   |
| 42   | Morocco           | 15.7  | 10.2  | 9.4   |
| 43   | Mauritius         | 15.9  | 14.1  | 9.6   |
| 47   | Algeria           | 15.6  | 10.6  | 10.3  |
| 59   | Ghana             | 29.0  | 18.2  | 14.0  |
| 59   | South Africa      | 18.1  | 16.1  | 14.0  |
| 61   | Egypt             | 16.4  | 16.3  | 14.6  |
| 64   | Gabon             | 21.1  | 16.7  | 15.8  |
| 67   | Senegal           | 37.3  | 24.1  | 17.9  |
| 74   | Eswatini          | 28.9  | 26.7  | 20.9  |
| 75   | Gambia            | 27.3  | 22.3  | 21.8  |
| 76   | Cameroon          | 41.2  | 26.1  | 22.6  |
| 78   | Malawi            | 44.7  | 31.4  | 23.0  |
| 79   | Lesotho           | 32.5  | 26.3  | 23.2  |
| 80   | Botswana          | 33.1  | 28.4  | 23.6  |
| 81   | Togo              | 39.1  | 27.1  | 23.9  |
| 82   | Benin             | 37.5  | 28.1  | 24.0  |
| 83   | Mali              | 44.2  | 27.5  | 24.1  |
| 84   | Côte d’Ivoire     | 33.7  | 31.0  | 24.9  |
| 84   | Namibia           | 30.6  | 30.9  | 24.9  |
| 86   | Kenya             | 36.5  | 28.0  | 25.2  |
| 88   | Burkina Faso      | 47.4  | 36.8  | 25.8  |
| 90   | Mauritania        | 33.5  | 24.8  | 26.7  |
| 91   | Guinea            | 43.7  | 30.9  | 27.4  |
| 93   | Nigeria           | 40.9  | 29.2  | 27.9  |
| 95   | Eswatini          | 42.4  | 34.1  | 28.6  |
| 96   | Mozambique        | 49.1  | 35.8  | 28.8  |
| 97   | Ethiopia          | 55.9  | 37.2  | 28.9  |
| 98   | Rwanda            | 58.1  | 32.9  | 29.1  |
| 99   | Guinea-Bissau     | 42.4  | 31.0  | 29.6  |
| 100  | Angola            | 65.6  | 39.7  | 29.8  |
| 101  | Niger             | 52.5  | 36.5  | 30.2  |
| 103  | Sierra Leone      | 54.4  | 40.4  | 30.4  |
| 104  | Uganda            | 41.2  | 31.3  | 30.6  |
| 105  | Djibouti          | 46.7  | 36.5  | 30.9  |
| 106  | Congo (Rep.)      | 37.8  | 32.2  | 31.0  |
| 107  | Sudan             | -     | -     | 32.8  |
| 109  | Zimbabwe          | 38.7  | 36.0  | 34.4  |
| 112  | Liberia           | 48.4  | 35.2  | 34.9  |
| 113  | Zambia            | 52.0  | 42.8  | 38.1  |
| 114  | Madagascar        | 43.5  | 36.1  | 41.5  |
| 115  | Chad              | 51.4  | 48.9  | 44.2  |
| 117  | Central African Republic (CAR) | 50.5 | 41.3 | 53.6 |

Source: Authors’ collation from von Grebmer et al. (2019) and Otekunrin et al. (2019a)

Note: Countries with the same 2019 GHI have the same rank (for example, Ghana and South Africa; Côte d’Ivoire and Namibia are both ranked 59th and 84th, respectively)
Figure 1. Prevalence of undernourishment in African population (%) in 2000-2019
Source: Redrafted from von Grebmer et al. (2019)

Figure 2. Prevalence of undernourished population in the world and across Africa
Source: Redrafted from FAO et al. (2019)

Figure 3. Prevalence of stunting in children under 5 (%) in Africa in 2000-2019
Source: Redrafted von Grebmer et al. (2019)
Figure 4 demonstrates that Kenya, Lesotho, Burkina Faso, Ghana and Rwanda had steadily reduced their child wasting prevalence rates since 2000, from 7.4% to 4.2%, from 6.8% to 2.8%, from 15.6% to 8.6%, from 9.9% to 4.7% and from 8.7% to 2.1%, respectively (von Grebmer et al., 2019). However, there are fewer cases of COVID-19 among children with milder symptoms but the country’s responses to the disease outbreak can have grave consequences for child nutrition and educational outcomes (FAO et al., 2020). It is difficult to predict the precise impact of the pandemic on the health and nutritional status of under-five children in Africa but what is certain is that the children of the vulnerable and poor households will witness unprecedented health deterioration while COVID-19 pandemic lasts.

Furthermore, all African countries captured in 2019 GHI have been experiencing steady reductions in their under-five mortality rates since 2000. All North African countries (except Libya) had the lowest under-five children mortality rate (< 3%). Figure 5 shows the mortality rate of children under five years old for 43 African countries (von Grebmer et al., 2019). In the face of COVID-19, malnutrition rates can become extremely high, leading to even higher fatality rates. Pregnant women, young children, the chronically ill persons and the elderly usually have compromised immune functions predisposing them to infection and at high risk of death (WFP, 2020b).
“A crisis within a crisis”- COVID-19 and Hunger

In the world today, the emergence of the novel coronavirus disease (COVID-19), which is ravaging the world in an unprecedented manner, is having monumental impacts on all areas of human endeavor more than any other occurrences in recent times. The disease was first reported from the city of Wuhan, Hubei province, China. The Chinese government officially reported the confirmed and diagnosed case to the World Health Organization (WHO) on 8 December, 2019 (Verity et al., 2020). On 11 March, 2020, WHO declared COVID-19 a global pandemic (Cucinotta and Vanelli, 2020; WHO, 2020c). As at 3 May 2020, 3,349,786 confirmed cases and a total fatality figure of 238,628 have been reported globally while the number of cases rose to 10,357,662 and 508,055 deaths on 1 July, 2020 (WHO, 2020a, 2020b).

Table 2 presents the African region COVID-19 real time dashboard as at 4 May, 2020 with 44,483 cases, 1,801 fatalities and 14,921 recoveries. The number of cases witnessed consistent rise totaling 402,581 cases, 10,165 fatalities and 193,169 recoveries on 1 July, 2020 (Africa Centre for Disease Control, 2020). Even though the trend of the spread of the disease is still low in Africa, when compared with what obtains in Europe and the Americas, the number of cases and deaths in Africa is becoming worrisome, especially in the northern (Egypt, Tunisia), southern (South Africa) and western (especially Nigeria and Ghana) sub-regions. Efforts like quarantine and total or partial lockdowns are in force in many African countries in order to control the spread of the disease.

Table 2. Africa CDC COVID-19 Dashboard as at 4 May and 1 July, 2020 (https://africacdc.org)

| S/N | Country            | Sub region | Cases 4 May | Deaths 4 May | Recoveries 4 May | Cases 1 July | Deaths 1 July | Recoveries 1 July |
|-----|--------------------|------------|-------------|--------------|------------------|-------------|---------------|-------------------|
| 1.  | Burundi            | Central    | 19          | 1            | 7                | 170         | 1             | 125               |
| 2.  | Cameroon           | Central    | 2,077       | 12,592       | 64               | 313         | 953           | 10,100            |
| 3.  | Central African Republic | Central    | 72          | 3,745        | 0                | 47          | 10            | 787               |
| 4.  | Chad               | Central    | 117         | 866          | 0                | 74          | 10            | 781               |
| 5.  | DR Congo           | Central    | 684         | 11,122       | 34               | 175         | 80            | 1,785             |
| 6.  | Equatorial Guinea  | Central    | 315         | 2,001        | 1                | 32          | 9             | 515               |
| 7.  | Gabon              | Central    | 335         | 5,394        | 5                | 42          | 85            | 2,420             |
| 8.  | Congo, Rep         | Central    | 229         | 1,245        | 10               | 40          | 25            | 473               |
| 9.  | Sao Tome and Principe | Central    | 161         | 714          | 3                | 13          | 4             | 236               |
| 10. | Comoros            | Eastern    | 3           | 303          | 0                | 7           | 0             | 200               |
| 11. | Djibouti           | Eastern    | 1,112       | 4,682        | 2                | 54          | 686           | 4,524             |
| 12. | Eritrea            | Eastern    | 39          | 203          | 0                | 0           | 26            | 54                |
| 13. | Ethiopia           | Eastern    | 135         | 5,846        | 3                | 103         | 75            | 2,430             |
| 14. | Kenya              | Eastern    | 465         | 6,673        | 24               | 149         | 167           | 2,089             |
| 15. | Madagascar         | Eastern    | 149         | 2,303        | 0                | 22          | 98            | 1,006             |
| 16. | Mauritius          | Eastern    | 334         | 341          | 10               | 10          | 315           | 326               |
| 17. | Rwanda             | Eastern    | 259         | 1,025        | 0                | 2           | 124           | 447               |
| 18. | Seychelles         | Eastern    | 11          | 81           | 0                | 1           | 6             | 11                |
| 19. | Somalia            | Eastern    | 722         | 2,924        | 32               | 90          | 44            | 932               |
| 20. | South Sudan        | Eastern    | 46          | 2,007        | 0                | 38          | 0             | 279               |
| 21. | Sudan              | Eastern    | 592         | 9,257        | 41               | 572         | 52            | 4,014             |
| 22. | Tanzania           | Eastern    | 480         | 509          | 16               | 21          | 167           | 178               |
| 23. | Uganda             | Eastern    | 89          | 893          | 0                | 0           | 52            | 837               |
| 24. | Algeria            | Northern   | 4,474       | 13,907       | 463              | 912         | 1,936         | 9,897             |
| 25. | Egypt              | Eastern    | 6,465       | 68,311       | 429              | 2,953       | 1562          | 18,460            |
| 26. | Libya              | Eastern    | 63          | 824          | 3                | 24          | 22            | 209               |
| 27. | Mauritania         | Eastern    | 8           | 4,363        | 1                | 129         | 6             | 1,622             |
| 28. | Morocco            | Eastern    | 4,903       | 12,596       | 174              | 228         | 1438          | 8,978             |
Recent report (FAO, 2019) has revealed that 820 million of people are suffering from hunger globally. Of the number of people in crises around the world, the 2020 Global Report on Food Crisis (Food Security Information Network, 2020) reported that almost 135 million people in 55 countries and territories are suffering from acute food insecurity, while 73 million of this figure are from 36 countries in Africa. With an increase in COVID-19 cases across Africa, there is a dire concern that African countries will witness further increases in the number of famished people because of the adverse effects of the partial or total lockdown of their countries on the economies.

Health and nutrition of the people in food crises will be further jeopardized due to inability to access health care that is already overstretched and inability to move about to fend for themselves. High level of malnutrition among women, children and the elderly will likely worsen in poor families across Africa because of dwindling income. Furthermore, movement restrictions will lead to higher levels of malnutrition among children whose families depend on the government’s home-grown school feeding program to augment their children’s meals. Also, the livelihoods of smallholder farmers and suppliers involved in the program are at greater risk due to the disruptions that are being encountered because of the lockdown (FAO et al., 2020).

Dominique Burgeon, the Director of Emergency and Resilience Division of FAO said in a recent interview that:

As the number of infections in vulnerable countries-many populations that are already malnourished, weak and vulnerable to disease increases- ‘a crisis within a crisis’ could emerge and that in a vicious feedback
loop, will leave more people weaker and vulnerable to the disease (FAO, 2020).

Food supply chains may be adversely affected if not properly coordinated. Funds meant to develop the agricultural sector might likely be diverted to support the fight against COVID-19, especially in countries in the southern (South Africa), northern (Egypt, Tunisia and Morocco) and western (Nigeria and Ghana) regions with high confirmed cases and increasing numbers of deaths.

Mitigation measures in Africa

In African continent, there are some nature-induced mitigating factors that can hamper COVID-19 pandemic, especially in SSA. The warmer climate in most SSA has the capacity that might slow down the virus’ transmission; the age structure in Africa (mostly youths) differs in a great extent from those of the regions with huge number of confirmed cases and fatalities (European, Americas and Western Pacific) (WFP, 2020a, 2020c; WHO, 2020b). The share of people with the highest risk (by age) of coming down with severe disease or death is lower in Africa than in, for example, USA, China or Europe; less dense and predominantly rural-based population with limited travel networks both within and between countries could reduce the pace at which COVID-19 spreads (WFP, 2020a, 2020c).

Most African governments have put various measures in place to mitigate the effect of the disease on their economies and general wellbeing of their people. Some of these measures are outlined in Table 3 and Table 4.

Table 3. Financial and economic measures to mitigate the impact of COVID-19 in Africa

| African Countries | Responses to COVID-19 |
|-------------------|------------------------|
| Kenya             | Government of Kenya, through the World Bank, announced that it is making $60 million available to Kenya’s health sector to help it deal with the COVID-19 outbreak. |
| Mauritius         | The Bank of Mauritius cuts its Key Repo Rate by 50 basis points to 2.85% amid the COVID-19 outbreak, which is expected to have a significant impact on the domestic economy. |
| Ghana             | Ghana’s Central Bank cuts its interest rate to from 16% to 14.5% due to the negative economic impacts it anticipates from the spread of the coronavirus. |
| Egypt             | The President has indicated that the government will allocate 100 billion Egyptian pounds ($6.4 billion) to finance a ‘comprehensive’ state plan for combating the coronavirus outbreak. The president has also announced that the government will allocate 20 billion Egyptian pounds ($1.27 billion) to support the stock exchange. |
| Morocco           | Morocco’s King Mohammed VI has ordered the government to create a 10 billion-dirham ($1 billion) fund to upgrade health infrastructure, help vulnerable economic sectors such as tourism, maintain jobs and mitigate the social repercussions of the outbreak. |
| Seychelles        | The Central Bank of Seychelles cut its monetary policy rate by 100 basis points to 4.0%, indicating that this is the first phase of its response to the challenge from the spread of the coronavirus, which is expected to lower this year’s earnings from tourism by 70% and trigger a double-digit drop in economic growth. |
| South Africa      | South African Reserve Bank cuts its main lending rate by 100 basis points to 5.25% as it seeks to offset the drag from the coronavirus outbreak and the plunge in oil prices. It has also announced that it will begin buying an unspecified amount of government bonds as part of additional emergency policy measures aimed at easing a severe liquidity crunch triggered by the coronavirus. |
| Uganda            | The Bank of Uganda (the Central Bank of the Republic of Uganda) sold dollars in the interbank market to support the local currency, which has been experiencing a sharp depreciation due to coronavirus-related disruptions. |
| Nigeria           | The government allocates $163.6 million for the prevention and mitigation plans against COVID-19. |
Table 3. Continued

| African Countries | Responses to COVID-19 |
|-------------------|-----------------------|
| Benin             | The government allocates $102 million for the prevention and mitigation plans against coronavirus. |
| Cote d’Ivoire     | The government allocates $1.4 million for the prevention and mitigation plans against coronavirus. |
| Guinea            | The government allocates $12.8 million for the prevention and mitigation plans against coronavirus. |
| Tunisia           | Central Bank of Tunisia cuts its key interest rate by 100 basis points to 6.75%, as it responds to the negative impact of the coronavirus on the global growth outlook. The government has also announced that it will allocate 2.5 billion dinars ($850 million) to combat the economic and social effects of the coronavirus health crisis. |
| DR Congo          | The Central Bank of the Congo cuts its base interest rate to 7.5% from 9.0% in order to cushion the economic impact of the coronavirus outbreak. |

Source: CRS (2020) and WFP (2020d)

Table 4. Selected African governments’ policies to mitigate the effects of COVID-19 on food security

| Food Security Components | Domains | Selected African Governments’ Policies to Mitigate the Effects of COVID-19 on Food Security |
|--------------------------|---------|--------------------------------------------------------------------------------------------|
| Food Production          | Availability | Physical Access |
|                          |          | Food Quantity |
|                          |          | • Small scale farmers are allowed to continue operations (South Africa and Nigeria). |
|                          |          | • Farming activities, harvesting and storage of farm produce are continued to prevent wastage of agricultural produce (South Africa and Nigeria). |
|                          |          | • Production, distribution and supply of food products are continued across the country (South Africa, Nigeria, Ethiopia, Rwanda and Uganda). |
| Food Demand              | Availability | Physical Access |
|                          |          | Economic Access |
|                          |          | Food Quantity |
|                          |          | • Smallholder farmers, informal food traders, grocery stores, wholesale produce markets, food markets are to continue their activities to ensure food availability in the right quantity and quality (Nigeria). |
|                          |          | • Only shops selling food items are allowed to operate (South Sudan). |
|                          |          | • House-to-house food distribution is applied to vulnerable urban households (Rwanda and Uganda). |
|                          |          | • Temporary neighborhood food markets are established to enhance the physical access to food; food distribution targets internally displaced persons (IDPs) and refugee camps (Nigeria). |
|                          |          | • The elderly and those with disabilities are given preference in the distribution of food (South Africa and Nigeria). |
|                          |          | • The elderly and those with disabilities are given preference in the distribution of grants at cash pay points (South Africa). |
|                          |          | • Banks are to continue operations (Nigeria, South Africa). |
|                          |          | • Social grant payments and cash transfers are given to the vulnerable in the societies (South Africa and Nigeria). |
|                          |          | • Introduction of tax measures such as tax subsidy, employment tax incentive, debt relief finance schemes, loan repayment waivers, trade policies etc. is carried out |
Table 4. Continued

| Food Security Components | Domains          | Selected African Governments’ Policies to Mitigate the Effects of COVID-19 on Food Security |
|--------------------------|------------------|----------------------------------------------------------------------------------------|
| Availability             | Physical Access  | - Farming activities, harvesting and storage of farm produce are to continue to prevent wastage of agricultural goods. |
|                          | Food Quantity    | - Transportation of agricultural produce is to continue throughout the country (Nigeria). |
|                          |                  | - Distribution and supply of food products are to continue across the country (Nigeria and South Africa). |
|                          |                  | - House-to-house food distribution is targeted for vulnerable urban households (Rwanda and Uganda). |
|                          |                  | - Temporary neighborhood food markets are established to enhance physical access to food (Nigeria); food distribution as is targeted for internally displaced persons (IDPs) and refugee camps (Nigeria). |
| Availability             | Food Safety      | - Food safety policies regarding sick and stray animals, waste and fluids in markets are made (South Africa); food safety policies regarding spoiled meat, raw eggs etc. are stipulated. |
| Utilization              | Food Quality     | - Public enlightenment campaigns on general food preparation advice are carried out (Nigeria and South Africa). |
|                          |                  | - Public enlightenment campaigns on hand-washing are launched to enhance food safety; public enlightenment campaigns are aimed at educating the people on different types of nutritious foods and how to cook healthily (most African countries). |
| Stability                | Availability     | - These policies are to be reviewed periodically to enhance flexibility and efficiency. |
|                          | Accessibility    | - Regulation enforcement throughout COVID-19 pandemic period is necessary for successful outputs. |
|                          | Utilization      | - In making sure that food production systems are not hampered during this pandemic, there is a need to ensure physical access and food availability in all African countries. |
|                          |                  | - There is still lack of focus in sustainable agriculture which can boost nations’ agricultural productivity, especially in this period of COVID-19. |

Source: Jones et al. (2013); African Business Magazine (2020); GAIN (Global Alliance for Improved Nutrition) (2020); Human Right Watch (2020); National Disaster Risk Management Commission (NDRMC) and OCHA Ethiopia (2020); SAG (South African Government) (2020a, 2020b, 2020c, 2020d); SAMF (South African Ministry of Finance) (2020); WFP (2020d)

While most of the countries are on partial or total lockdown due to COVID-19 pandemic, there is an urgent need for the African region governments to redouble their efforts in expanding and improving emergency food assistance and social protection programs for cushioning the impact of the pandemic (boosting food access) on mostly poor and vulnerable mothers and children of school age. Smallholder farmers should be supported for an enhanced
productivity and the government should facilitate environment for food produce marketing and possible introduction of e-commerce channels. There is an urgent need to keep food value chain active by making concerted effort in finding solutions to logistic disruptions in order to have an unhindered movement of food commodities across the countries amidst COVID-19 pandemic.

In addition to the afore-mentioned mitigating factors aimed at reducing the effect of COVID-19 pandemic in Africa, sustainable agricultural practices also have the potential of mitigating hunger and ensuring food security. Lal (2008) and Wickramasinghe (2014) have pointed out the following sustainable agricultural practices that can ensure improved agricultural productivity in Africa:

(i) improvement in management practices, such as sustainable use of sub-soil fertigation techniques to achieve adequate level of nutrient and water supply needed for optimum growth,
(ii) reduced disturbance of soil surface to provide a continuous cover of a plant canopy or residue mulch,
(iii) use of complex cropping/farming systems which invigorate nutrient cycling and enhance the input use efficiency, and
(iv) implementation of joint agricultural development programs aimed at managing water sources, soil, bio-diversity, pest management, as well as vulnerability mapping and planning.

CONCLUSIONS

Many African countries still have high GHI scores, child mortality rates and prevalence of undernourishment, stunting and child wasting. In the face of the COVID-19 pandemic, hunger prevalence is on the increase. Thus, a lot efforts need to be done to realize the zero-hunger target by 2030. Beside the existing efforts led by the African governments, sustainable agricultural practices are recommended to mitigate hunger and ensure food security during and after the pandemic. Improving the agricultural management practices, reducing the disturbance of soil surface, using complex cropping/farming systems and implementing joint agricultural development programs are suggested.

REFERENCES

Africa Centre for Disease Control. (2020). Africa CDC COVID-19 Dashboard. Retrieved from https://africacdc.org/covid-19/

African Business Magazine. (2020). Rwanda unveils social protection for the vulnerable during COVID-19. Retrieved from https://africanbusinessmagazine.com/region/east-africa/rwanda-unveils-social-protection-for-the-vulnerable-during-covid-19/

CRS (Congressional Research Service). (2020). Global Economic Effect of COVID-19. R46270 Version 11 updated 26 March 2020. Retrieved from https://fas.org/sgp/crs/row/R46270.pdf

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. Acta Bio-Medica: Atenei Parmensis, 91(1), 157–160. https://doi.org/10.23750/abm.v91i1.9397

da Silva, J. G. (2019). From Fome Zero to Zero Hunger: A global perspective. Retrieved from http://www.fao.org/3/ca5524en/CA5524EN.pdf#page=78

Fanzo, J. (2019). Healthy and Sustainable Diets and Food Systems: the Key to Achieving Sustainable Development Goal 2? Food Ethics, 4(2), 159–174. https://doi.org/10.1007/s41055-019-00052-6

FAO. (2017a). Regional Overview of Food Security and Nutrition in Africa 2017. In The food security and nutrition–conflict nexus: building resilience for food security, nutrition and peace. Retrieved from www.fao.org/publications

FAO. (2017b). SDG Indicator 2.4.1. Percentage of Agricultural Area under Productive and Sustainable Agriculture. Retrieved from http://www.fao.org/3/CA2639EN/ca2639en.pdf

FAO. (2018). Plant pests and diseases : FAO in Emergencies. Retrieved from http://www.fao.org/emergencies/emergency-types/plant-pests -and-diseases/en/

FAO, IFAD, UNICEF, WFP, & WHO. (2019). The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns. Rome, FAO.
Retrieved from http://www.fao.org/3/ca5162en/ca5162en.pdf

FAO. (2020). FAO - News Article: COVID-19: Our hungriest, most vulnerable communities face “a crisis within a crisis.” Retrieved from http://www.fao.org/news/story/en/item/1269721/fr

FAO GIEWS - Country Brief on Libya. (2017). FAO GIEWS Country Brief on Libya -. Retrieved from http://www.fao.org/giews/countrybrief/country.jsp?code=LYB

FAO, UNICEF, & WFP. (2020b). Mitigating the effects of the COVID-19 pandemic on food and nutrition of schoolchildren - World | Relief Web. Retrieved from https://reliefweb.int/report/world/mitigating-effects-covid-19-pandemic-food-and-nutrition-schoolchildren

Fasanmi, O. G., Kehinde, O. O., Lalyeye, A. T., Ekong, B., Ahmed, S. S. U., & Fasina, F. O. (2018). National surveillance and control costs for highly pathogenic avian influenza H5N1 in poultry: A benefit-cost assessment for a developing economy, Nigeria. Research in Veterinary Science, 119, 127–133. https://doi.org/10.1016/j.rvsc.2018.06.006

Food Security Information Network. (2019). 2019 Global Report on Food Crises (GRFC 2019). Retrieved from https://reliefweb.int/report/world/global-report-food-crisis-2019-update-september-2019

Food Security Information Network. (2020). 2020 Global Report on Food Crises (GRFC 2020). Retrieved from https://www.wfp.org/publications/2020-global-report-food-crisis

GAIN (Global Alliance for Improved Nutrition). (2020). The COVID-19 Crisis and Food Systems: probable impacts and potential mitigation and adaptation responses. Retrieved from https://www/gainhealth.org

GFN (Global Food Banking Network). (2019). Waste Not, Want Not - Toward Zero Hunger: Food Banks as a Green Solution to Hunger - The Global FoodBanking Network. Retrieved from https://www.foodbanking.org/why-we-exist/wastenotwantnot/

Global Panel (Global Panel on Agriculture and Food Systems for Nutrition). (2016). Food systems and diets: Facing the challenges of the 21st century. Retrieved from https://www.glopan.org/sites/default/files/Downloads/Fore sight Report.pdf.

GNR (Global Nutrition Report). (2020). Ethiopia Country Overview. In 2020 Global Nutrition Report: Action on equity to end malnutrition. Bristol, UK: Development Initiatives. https://doi.org/10.2499/9780896295841

Gödecke, T., Stein, A. J., & Qaim, M. (2019). Corrigendum to ‘The global burden of chronic and hidden hunger: Trends and determinants’ (Global Food Security (2018) 17 (21–29), (S2211912417301578), (10.1016/j.gfs.2018.03.004)). In Global Food Security, 22, 46. https://doi.org/10.1016/j.gfs.2019.09.001

Human Right Watch. (2020). Nigeria: Protect Most Vulnerable in COVID-19 Response | Human Rights Watch. Retrieved from https://www.hrw.org/news/2020/04/14/nigeria-protect-most-vulnerable-covid-19-response

Jones, A. D., Ngure, F. M., Pelto, G., & Young, S. L. (2013). What Are We Assessing When We Measure Food Security? A Compendium and Review of Current Metrics. Advances in Nutrition, 4(5), 481–505. https://doi.org/10.3945/asn.113.004119

Lal, R. (2008). Soils and sustainable agriculture. A review. In Agronomy for Sustainable Development, 28(1), 57–64. https://doi.org/10.1051/agro:2007025

National Disaster Risk Management Commission (NDRMC), & OCHA Ethiopia. (2020). ETHIOPIA : COVID-19 Humanitarian impact Situation Update No. 01. 01, 1–5. Retrieved from https://reliefweb.int/report/ethiopia/ethiopia-covid-19-humanitarian-impact-situation-update-no-01-31-march-2020

Ntsomboh-Ntsefong, G., Shariati, M. A., Khan, M. U., & Karapetkova-Hristova, V. (2017). Incidence of avian flu shocks on poor household livelihoods of poultry farmers in Africa. International Journal of Avian & Wildlife Biology (IJAWB), 2(1), 7–11. https://doi.org/10.15406/ijawb.2017.02.00008

Otekunrin, O. A., A. Ayinde, A., Otekunrin, O., & De Campos, J. S. (2018). Effect of Avian Influenza on Household Consumption of Poultry Products: Evidence from First Outbreak in Ogun State, Nigeria. Current
Agriculture Research Journal, 6(3), 328–336. https://doi.org/10.12944/jcar.6.3.11

Otekunrin, O. A. (2007). The Effect of Bird Flu on Household Consumption of Poultry Products in Abeokuta Metropolis, Ogun State. Master’s Thesis, Federal University of Agriculture, Abeokuta, Nigeria. Retrieved from https://www.researchgate.net/publication/318360191_The_Effect_of_Birdflu_on_Household_Consumption_of_Poultry_Products_in_Abeokuta_Metropolis_Ogun_State

Otekunrin, Olutosin A., Otekunrin, O. A., Momoh, S., & Ayinde, I. A. (2019a). How far has Africa gone in achieving the zero hunger target? Evidence from Nigeria. Global Food Security, 22, 1–12. https://doi.org/10.1016/j.gfs.2019.08.001

Otekunrin, Olutosin A, Otekunrin, O. A., Momoh, S., & Ayinde, I. A. (2019b). Assessing the Zero Hunger Target Readiness in Africa: Global Hunger Index (GHI) Patterns and its Indicators. In Conference: 33rd National Conference of Farm management Association of Nigeria (FAMAN) Abeokuta 2019: Revitalization of Nigerian Agriculture to Meet the Sustainable Development Goals. Held at the Postgraduate School Auditorium, Federal University of Agric (pp. 1–11). Abeokuta. Retrieved from https://www.researchgate.net/publication/336371146_Assessing_the_Zero_Hunger_Target_Readiness_in_Africa_Global_Hunger_Index_GHI_Patterns_and_its_Indicators

Otekunrin, Oluwaseun A., Momoh, S., Ayinde, I. A., & Otekunrin, O. A. (2019c). How far has Africa gone in achieving sustainable development goals? Exploring African dataset. Data in Brief, 27, 104647. https://doi.org/10.1016/j.dib.2019.104647

SAG (South African Government). (2020a). Disability - Coronavirus COVID-19 | South African Government. Retrieved from https://www.gov.za/Coronavirus/disability

SAG (South African Government). (2020b). Essential services - Coronavirus COVID-19 | South African Government. Retrieved from https://www.gov.za/Coronavirus/essential-services

SAG (South African Government). (2020c). Food safety during outbreaks. Retrieved from https://www.gov.za/sites/default/files/pictures/FoodSafetyDuringOutbreaks.pdf

SAG (South African Government). (2020d). Social grants - Coronavirus COVID-19 | South African Government. Retrieved from https://www.gov.za/Coronavirus/socialgrants

SAMF (South African Ministry of Finance). (2020). Media Statement Tax Measures to Combat the Covid-19 Pandemic. Retrieved from www.treasury.gov.za

Smith, L. C., & Haddad, L. (2015). Reducing Child Undernutrition: Past Drivers and Priorities for the Post-MDG Era. World Development, 68, 80-204. https://doi.org/10.1016/j.worlddev.2014.11.014

UN. (2017a). Sustainable Development Goal 2: Zero Hunger. Retrieved from https://www.un.org/sustainabledevelopment/hunger/

UN. (2017b). Sustainable Development Goals. Retrieved from https://www.un.org/sustainabledevelopment/sustainable-development-goals/

UN IGME (United Nations Inter-agency Group for Child Mortality Estimation). (2017). CME Info - Under-five Mortality Estimates. Retrieved from https://childmortality.org/

UNECA (United Nations Economic Commission for Africa). (2020). Climate-smart agriculture holds the key to Africa banishing hunger by 2025. Retrieved from https://www.uneca.org/pages/climate-smart-agriculture-holds-key-africa-banishing-hunger-2025

UNHCR (United Nations High Commissioner for Refugees). (2018). Burundi Regional Refugee Response Plan – January - December 2018. Retrieved from https://www.unhcr.org/partners/donors/5a683fd7/2018-burundi-regional-refugee-response-plan-january-december-2018.html

United Nations General Assembly. (2015). Transforming our world: the 2030 Agenda for Sustainable Development :: Sustainable Development Knowledge Platform. Retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld

Verity, R., Okell, L. C., Dorigatti, I., Winskill, P., Whittaker, C., Imai, N., … Ferguson, N. M.
(2020). Estimates of the severity of coronavirus disease 2019: a model-based analysis. *The Lancet Infectious Diseases, 20*(6), 669–677. https://doi.org/10.1016/S1473-3099(20)30243-7

von Grebmer, K., Bernstein, J., Mukerji, R., Patterson, F., Wiemers, M., Ni Chilleachair, R., Foley, C., Gitter, S., Ekstrom, K., & Fritschel, H. (2019). 2019 Global Hunger Index: The Challenge of Hunger and Climate Change. Bonn: Welthungerhilfe; and Dublin: Concern Worldwide. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/2019_Global_Hunger_Index.pdf

WFP. (2020a). Economic and food security implications of the COVID-19 outbreak. Retrieved from https://docs.wfp.org/api/documents/WFP-0000114646/download/

WFP. (2020b). World Food Programme COVID-19 Messages 31 March 2020. Retrieved from https://unhabitat.org/sites/default/files/2020/04/wfp_covid_messages_31.3.2020.pdf

WFP. (2020c). Economic and Market Impact analysis of COVID-19 on West and Central Africa. Retrieved from https://reliefweb.int/report/world/economic-and-market-impact-analysis-covid-19-west-and-central-africa-wfp-regional

WFP. (2020d). Impact of COVID-19 outbreak on livelihoods, food security and nutrition in East Africa - Release 2.0, 15 April 2020. Retrieved from https://reliefweb.int/report/kenya/impact-covid-19-outbreak-livelihoods-food-security-and-nutrition-east-africa-release-20

WHO. (2020a). Coronavirus disease (COVID-19) Situation Report-104. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200503-covid-19-sitrep-104.pdf?sfvrsn=53328f46_4

WHO. (2020b). Coronavirus disease (COVID-19) Situation Report-163. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200701-covid-19-sitrep-163.pdf?sfvrsn=c20f05b_2

WHO. (2020c). WHO Director-General’s opening remarks at the media briefing on COVID-19 - 11 March 2020. Retrieved from https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Wickramasinghe, U. (2014). Realizing sustainable food security in the post-2015 development era: South Asia’s progress, challenges and opportunities. *South and West Asia Development Papers*, 1402. Retrieved from https://www.unescap.org/sites/default/files/Realising%20sustainable%20food%20security%20in%20South%20Asia%20Upali%20Wickramasinghe%20August%202014_FINAL.pdf

Wiesmann, D. (2006). *A global hunger index: Measurement concept, ranking of countries, and trends* (Vol. 212). Intl Food Policy Res Inst. Retrieved from https://www.researchgate.net/publication/5056440_A_global_hunger_index_measurement_concept_ranking_of_countries_and_trends