"Climate change decimates food security in Somalia"



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Climate change decimates food security in Somalia

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The NGOs and institutions participating in the initiative were distributed in 9 governorates: Cairo, Gharbia, Beheira, Alexandria, Beni Suef, Sohag, Luxor, Qena and Aswan.

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Introduction:

The climate changes sweeping the world affect all aspects of life on Earth, so the world's attention has turned to the crucial impact of these changes on human life, and on his ability to continue living. The change in the world's climate is translated into climatic phenomena represented in heat waves, droughts and sea level rise, and then we find that these climate changes affect the agricultural production across all regions, especially poor areas that will expose to the highest levels of instability in food production.

There is no doubt that the issue of climate change is one of the main challenges facing the African continent due to its effects and repercussions that exceed the capabilities of many African countries in dealing with it, and adapting to its various and multiple effects to be added to the series of challenges and crises afflicting the continent's people, such as: the prevalence of poverty, food insecurity, diseases and epidemics, conflicts and disputes.

Given the reality of the difficult and unfair equation of the climate issue in Africa, as it is the least causing global warming, but at the same time the most affected by climate change, especially with the weak economic capabilities and the fragility of infrastructure in most countries of the continent, especially Somalia.

Rising temperatures, changing rainfall patterns, rising sea levels, and growing drought in Somalia are negatively affecting the humanitarian conditions of the country's population, who suffers from widespread poverty rates and famine, high rates of displacement and asylum due to environmental damage, and the epidemics.

The issue of food security is one of the important and main issues facing Somalia, especially in light of climate change, as these changes cause a shortage of water, unavailable agricultural land, widespread hunger and food shortages, health threats, environmental degradation and pollution.

Due to the importance of food security and the challenges it faces, it has become an critical axis in the 2030 Sustainable Development Goals because of its link to the process of economic development on the one hand and social stability on the other hand, it is an issue with multiple aspects that are directly and indirectly related to a number of sectors, but it is mainly related to the agricultural sector, especially in light of the limited natural resources and the continued population increase, and thus the increase in demand for food. Therefore, the report addresses all topic related to climate change and its impacts on food security, especially at the Somalian level, through some axes, which are:

- 1. Definition of food security.
- 2. Definition of climate change.
- 3. Causes of climate change.
- 4. Repercussions of climate change in Somalia, especially on food security.
- 5. Models of malnourished children in Somalia.
- 6. African and international efforts to adapt to the effects of Climate change and confronting food insecurity.
- 7. Recommendations.

1) Definition of food security:

There are several definitions of food security, including the following:

- The Food and Agriculture Organization of the United Nations (FAO) defines food security as security achieved when all individuals have, at all times, the economic and social capacity to obtain adequate food and security with all its nutrients, to meet their nutritional needs and preferences for an active and healthy life.
- The definition of the World Summit on Food Security in 1996 states that food security is achieved when all people, at all times, have the physical, social and economic means to obtain sufficient, safe and nutritious food that meets their nutritional needs and food tastes for an active and healthy life.
- The Arab Organization for Agricultural Development (AOAD) also defines food security as follows: It is that the country produces as much food as possible, in a way that takes into account the comparative advantage of that state in the production of the food commodities it needs, within the limits of its resources and components, and that its products are able to compete with foreign products, and that its agricultural or other exports have a comparative advantage in their production, and that it provides individuals with sufficient food in the quantity and type necessary for activity and health, taking into account Fair distribution of food to all members of society, especially those with limited income.
- The World Health Organization also defines food security, which is achieved when all individuals at all times, have the possibility of physical access to their nutritional needs and preferences to practice an effective and healthy life, and the concept has expanded to include food safety and balance in food components.

The organization also pointed out that there are two levels of food security, absolute and relative food security:

- ✓ Absolute food security, is the production of food locally equal to or exceeds local demand, and this level is similar to self-sufficiency, but absolute food security is difficult to achieve at the present time, as no country can rely on itself in managing its needs. Hence, it is necessary to benefit from international trade, and the specialization it imposes on countries in the production of goods in which they enjoy competitive comparative advantages.
- Relative food security, is the state's ability to provide foodstuffs in whole or in part, and to ensure the minimum nutritional needs regularly.

2) **Definition of climate change:**

Although Climate changes are natural phenomena that occur every several thousand years, they represent a challenge facing humanity. So, the countries began paying attention to these changes at the end of the nineteenth century, as many scientists have confirmed that the earth's climate is constantly changing, and in a way that will have a negative impact on the lifestyle of the earth's inhabitants in all respects, and **since that time a lot of definitions of climate change have been provided, including**:

- The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "a change attributable directly or indirectly to human activity, which alters the chemical composition of the atmosphere at the global level, and is in addition to the natural climate variability observed during similar time periods. Therefore, the convention distinguishes between climate change due to human activities and climate variability due to natural causes.
- Definition of the Intergovernmental Panel on Climate Change as all forms of changes that can be expressed in a statistical description, which can continue for decades in a row resulting from human activity, or resulting from the internal interactions of the components of the climate system. This definition adds the characteristic of the continuity of the phenomenon of climate change, which, although its causes are immediate, but the continuation of its negative effects will extend to future generations.
- The phenomenon of climate change is also defined as an imbalance in the usual climatic conditions such as heat, wind and rainfall patterns that characterize each region on earth, the state for environmental affairs.

3) Causes of climate change:

There are reasons that led to the development of the phenomenon of climate change and the emergence of global warming, as the emission of greenhouse

gases into the atmosphere, although they are natural and necessary for life and preserve heat, in increasing and uncontrolled quantities, leads to an increase in heat in an abnormal way, and thus a change in the entire climate system.

These reasons are divided into natural and other human causes as follows:

First: Natural causes of climate change:

Many scientists and researchers confirm that natural factors have an important role in climate change, including:

- Solar cycle: It means periodic changes in the Earth's orbit around the sun, and the resulting change in the amount of solar radiation that reaches the earth, which affects the climate.
- Volcanoes: a natural phenomenon that affects the temperature and climate of the earth, through the thermal energy released from it to the atmosphere, raising the temperature of air, water and soil. It also leads in many cases to fires in cities and forests, which increases the release of carbon dioxide, the gases released, with lava that prevent sun rays from reaching the earth, trap the heat radiated by the earth and oceans to the atmosphere and prevent it from reaching outer space. Moreover, some gases associated with volcanoes break down ozone gas molecules, which plays a key role in protecting the earth from the impact of harmful ultraviolet rays from reaching the earth.

However, although volcanoes release more than 130 million tons of carbon dioxide every year, human activities release more than 130 times this amount, according to the U.S. Geological Monitoring Center's Volcanic Hazard Program.

- **Dust storms:** in arid and semi-arid regions that suffer from the deterioration of vegetation cover, lack of agriculture and rainfall, such as the Khamasin winds and the dust they raise suspended in the atmosphere.
- **Cosmic rays resulting from the explosion of some stars**, where they hit the upper atmosphere of the Earth and lead to the formation of radioactive carbon.

Second: Human causes of climate change:

Since its inception on earth, man has brought about tremendous changes in nature and the environment, some of which were positive and led to the development of humanity, and some of which were negative and led to the deterioration of the environment, and have become a clear challenge to humanity because of the accompanying weakening of development in all fields, and these reasons include the following:

- Excessive use of natural resources, especially non-renewable such as fossil fuels, whose extraction, refining and use result in the release of large quantities of carbon dioxide, whether directly such as the use of cars and generators, or indirectly through the consumption of services and products whose production requires the use of fossil fuels, and energy production activities are responsible for the emission of gases by 24%, which are resulting from the burning of fossil fuels to produce electrical energy, and gases emitted from cement production plants and battery factories, which change the concentration of carbon dioxide by 35%, which is one of the most heat-retaining gases in the atmosphere, and this amount is still increasing continuously by 4% annually.
- Elimination of green spaces: the use of land for construction and urban expansion affects the physical and biological specifications of the earth's surface, followed directly by emissions resulting from cutting and removing forests, burning their wood and using it as fuel, which is the largest source of absorption of greenhouse gases, especially carbon dioxide, but the high percentage of greenhouse gas emissions is due to the ability of trees to trap a large proportion of carbon dioxide, which is released in the event of logging, and industrial, agricultural and transport activities are equal in Percentage of emissions from waste.
- Agricultural sector: it causes the emission of some types of greenhouse gases, which come from deforestation, enteric fermentation of animals, manure left in the fields, chemical fertilizers used, and rice farming practices. Deforestation and land degradation have limited the sector's ability to absorb carbon dioxide from the atmosphere or isolate, and 40% of these gases come from intestinal fermentation of ruminants, which is the main source of methane emissions. The volume of emissions constitutes manure left in pastures 16%, followed by the use of industrial fertilizers 12%, and rice cultivation 10%.
- We must also point out that scientific research confirms that climate change is the result of global warming, due to the increase in warm gases, especially carbon dioxide resulting from previous human activities, this additional rise in the concentration of gases will lead to a rise in the temperature of the earth and the atmosphere.

4) <u>Repercussions of climate change in Somalia, especially on food security:</u>

The general impact of climate change:

a. Drought:

Nowhere is this phenomenon more evident than in Somalia, one of the world's most climate-affected countries and suffering from the worst drought in more

than 4 decades, as rainfall has been abundant for 5 consecutive seasons, and the water shortage crisis in the early nineties was most severe when famine killed some 260,000 people.

A report by the United Nations Humanitarian Relief Information Network (IRIN) described Somalia's current water scarcity as a "historic drought" and considered it a stark example of the impact of climate change in the world on one of its developing countries that have been simultaneously ravaged by climate change and armed conflict.

The report emphasized that drought and conflict over water resources has become one of the main causes of armed conflicts in Somalia, the latest of which was the armed conflict that erupted in the Galmodo region of Somalia last August that left at least 20 people dead, and warned that this incident was not the first of its kind.

The report stressed the concern of the United Nations that fighting over water will become a regular if the world does not rush to extend a helping hand to the government of Somalia to help it overcome the effects of climate change.

The report pointed out that in December 2022, Somalia had entered its fifth dry year, and that the lack of rain forced millions of Somalis to flee their areas of residence, and the lack of rain destroyed grazing, dairy production and the meat industry, and taking into account the deteriorating market situation, Somalis are suffering from difficult living conditions and food prices are beyond their means. At least 15 million Somalis are facing problems accessing food, and 300,000 Somalis are at risk of famine in Somalia's driest Bay region.

The number of Somalis affected by drought increased from 2-3 million in December 2021 to 7-8 million in August 2022, and the number of displaced people and displaced from their original places of residence inside Somalia due to drought and lack of livelihood increased to one million and 170 thousand and 842 Somalis during the period from January 2022 until the end of last September, including 68 thousand and 393 displaced people who were stranded in the northern Somali regions by the end of last September, an increase of 30% over the number recorded in the previous August.

According to data released by UN humanitarian missions operating in Somalia. According to UN relief data, one million and 25,000 Somali women are suffering from displacement resulting from displacement from droughtstricken areas in Somalia. Ethiopia, Kenya and Somalia have suffered five rain-poor seasons since October 2020, with aid groups calling them "the worst drought in 40 years".

An estimated 43,000 people died in Somalia from drought last year, while the United Nations says 22 million people are at risk of hunger in Ethiopia, Kenya and Somalia, the focus of the new study. The causes of drought are complex, but a team of international climate scientists from World Weather Attribution (WWA) found that increased greenhouse gas emissions make drought at least 100 times more likely.

b. High Temperature:

The trend of warming for up to 30 years for the period 1991-2020 was higher than it was from 1961-1990 in Somalia, and much higher than those rates from 1931 to 1960.

c. Rainfall rates:

Rainfall rose more than usual, accompanied by flooding, which drowned many people, and forced large numbers of population to displace.

d. Sea level rise:

Along the tropical coasts, the coast of the South Atlantic and the coast of the Indian Ocean Western Somalia, which is about 3.6mm/year and 4.1mm/year, respectively, higher than the global average, as a result of high temperatures and thawing.

e. Children's suffering:

The true toll is unknown and likely to be significantly higher, because large areas of Somalia are under insurgent control, and officials and aid workers cannot access them.

In the area around Galkayo, 550 kilometers northwest of the capital Mogadishu, more than half of children are malnourished. Across the country, more than 350,000 Somali children were treated for malnutrition in 2022, rising to 1.5 million at the beginning of 2023, according to information monitored by the Specialized Energy Platform. About \$1.2 billion in aid has flowed into Somalia, mostly from the United States, but that amount is \$1 billion less than what is needed for the 7.6 million people in need of assistance, according to the U.N. Office for the Coordination of Humanitarian Affairs.

In 2022, Somali Red Crescent Society teams reported seeing increasing numbers of malnourished children in need of nutritional support. Malnutrition is exacerbated by infectious diseases, as the malnourished person becomes more susceptible to infection and infection in turn exacerbates malnutrition.

Measles is endemic in Somalia, but in the first half of 2022 alone the country reported twice as many measles cases as in all of 2021.

From January to August 2022, MSF teams admitted more than 5,460 children with measles to all their facilities operating in Somalia, and Baidoa experienced a new wave of measles. About 30 percent of the children they treat are over five years old. It is from newly arrived families in the area. Cholera broke out in Baidoa in April.

From May to August 2022, their teams recorded 14,112 cases of measles at their 15 oral fluid reimbursement centers and admitted 989 patients to their cholera treatment center. MSF has sought to prevent the spread of the disease in areas inhabited by displaced people, so their teams have implemented water supply and chlorination services and dug wells to increase clean water resources. It also built 344 latrines, carried out health awareness activities and distributed materials. Basic that includes soap and water cans on 3,700 homes.

The cases of acute malnutrition received by Banadir Hospital increased in 2017, with more than 300 cases recorded in May, all of them children, of whom 21 died, according to the head of the hospital's childhood and maternity department.

The head of the childhood department said that the most important factors that contribute to cases of acute malnutrition are food shortages, poverty and the spread of diseases in displaced communities such as measles, diarrhea and cholera, and that the capacity of the hospital does not tolerate the large number of cases of malnutrition it receives.

Due to overcrowding, when a child's condition improves slightly after receiving therapeutic nutrition, doctors are forced to pressure the parents and discharge him from the hospital, although the child returning home does not usually have food to help him recover his strength, so he suffers from weakness that may return him to the hospital.

> <u>The impacts of climate change on food security:</u>

More than a quarter of a million people died of starvation in Somalia in 2011, half of them children under the age of five, and the situation is now much worse, despite global commitments not to allow the 2011 famine to happen again.

The United Nations predicts that a large number of people in Somalia will be in starvation due to one of the consequences of climate change: severe drought. Somalia is home to 16 million people and has a rich pre-empire history. The Somali people produced beautiful rock art in the third millennium BC, traded with ancient Egypt, and established important mosques in Mogadishu between the seventh and thirteenth centuries, but recently, the Somali people have suffered from wars, locust epidemics, floods, epidemics, and now severe drought and hunger.

Despite historical levels of drought and hunger, Somali civil society continues to look for ways to support people at risk of famine; however, additional assistance is needed. For an area to be declared famine, there must be strong evidence of very high levels of child malnutrition (more than 30%), very high levels of mortality (per 10,000 people, more than two die every day), and severe levels of hunger (more than one in 5 households living without food).

In 2011, humanitarian aid agencies and civil society organizations launched the UN Zero Extreme Hunger Charter in New York, which clearly outlined 5 steps that must be taken to avoid famine. Since then, it has been endorsed by the United Nations, world leaders and dozens of humanitarian organizations, but the scenario of the 2011 famine is closer to being realized and perhaps even more severe due to drought. The past four rainy seasons in Somalia have seen very low levels of rainfall.

Clearly, the fifth season's performance is also substandard, and this situation cannot help crops grow to their full potential, herds of Somali herders, goats and cattle do not have enough vegetation to eat, there is no water available to drink, and millions of livestock have already died in the current drought. Somalia ranks second (after Niger) in terms of vulnerability to the adverse effects of climate change, which is likely to cause increased drought in Somalia, affecting a larger area of land, while reducing regular rainy seasons.

It is difficult for anyone to cope with the extreme hardships caused by prolonged drought, especially if there is little or no safety net to support people in difficult times. In fact, food prices are now higher than they were during the 2011 famine. Somalia has an emerging social safety net called Paxnano, which aims to build a bridge beyond the humanitarian approach, addressing issues of food security and immediate nutrition; but it is still in the pilot phase. The country is divided into 3 parts: south-central Somalia, the self-proclaimed region of Somaliland and the autonomous state of Puntland in the north. However, Somali governments have learned some lessons from past disasters.

In 2021, the National Desert Locust Control and Control Center was established, along with the Puntland Drought Coordination Centre, which predicts droughts and extreme weather events.

The center warned Somalis and the world of the seriousness of the drought expected in early 2020, and they continued to repeat these warnings as the situation deteriorated, largely unheeded until very recently, and while the efforts of the international community have intensified in recent years, the plan for life-saving support still lacks millions of dollars. Drought is expected to force 6.7 million people across Somalia into acute food insecurity, a technical term that means people are on the verge of hunger. This means that large-scale international assistance is needed, by supporting preventive and resilience-building initiatives, such as the rehabilitation of water points and the establishment of small greenhouses, such initiatives will enable Somalis to prepare for difficult times and overcome the worst effects of climate change.

Perhaps most importantly, rich countries must compensate Somalis for the catastrophic effects of climate change on their lives. This compensation, known as "financing for loss and damage" in UN circles, was a key theme at the previous COP27 summit held in Egypt last November. Loss and damage refer to the harms of climate change that cannot be prevented, mitigated or even prepared for, such as drought and rising sea levels that destroy all lifestyles. Somalis produce very little greenhouse gas emissions compared to the world's high-income countries, yet they suffer some of the worst effects of climate change, as evidenced by the current drought and hunger crisis. COP27 must compensate Somalis and the many millions of others around the world who are severely affected by climate change, and the countries and companies most responsible for climate change must take responsibility for them.

Hence, Climate change has significantly exacerbated food insecurity, unsustainable food systems and the consequent poor nutrition safety and spread of disease, manifested in a number of manifestations:

a) <u>Health - food risks:</u> Climate change is associated with population growth, as this growth is followed by an increasing demand for food, and then there is a trend to intensive use of agricultural chemicals, such as pesticides and fertilizers, with the aim of increasing agricultural production as well as enhancing livestock, and this may lead to the destruction of more than half of Somalia's crops by these harmful insects and diseases, thus reducing food production per acre, as well as doubly affecting ecosystems and

reducing soil quality due to increased erosion. The use of chemical pesticides is associated with chemical pollution, as it may lead to many diseases, mainly cancer, reproductive problems and respiratory damage.

Also, the health consequences of climate change reach an increase in infections caused by malnutrition, and the Corona pandemic and climate change led to the lack of access to adequate food for about a third of the population of Somalia during 2020, while half of the population was unable to obtain healthy food, in addition to that a large number of the population faces hunger, and undernutrition rates among children have risen alarmingly.

b) <u>Repercussions on land and animals</u>: High temperatures affect water security, which leads to the change of arable land in Somalia, which in turn affects food safety, in addition to the impact of climate change on ecosystems by disrupting the balance between crops on the one hand and harmful pests on the other. In addition, livestock production is negatively affected by climate change, as evidenced by the death of livestock in Somalia due to increasing droughts.

On the other hand, floods and heavy rains negatively affect the health of animals due to the diseases transmitted by these natural phenomena, for example, the outbreak of Rift Valley Fever in Somalia in 2015 and the possibility of the emergence of other diseases such as West Nile virus and schistosomiasis are due to climate change, all of which affect the meat produced, threatening food safety.

c) <u>Multiplier effects on women in Somalia</u>: Climate change and its consequent food safety repercussions are having a greater impact on women, who play a pivotal role in food systems, with a report by the United Nations Intergovernmental Panel on Climate Change indicating that women are more likely to develop chronic diseases and higher levels of obesity.

From this standpoint, the study considers that the impact of food insecurity and food safety on women takes a disproportionate picture, as this group is highly involved in the food process, as there are farmers, traders, workers and consumers who were greatly affected by the dimensions of the Corona pandemic in light of the additional burdens and cost resulting from that pandemic, and these burdens were not only material but moral, as the Food and Agriculture Organization explained that women faced a greater risk of being exposed to domestic violence during the pandemic as a result of Precautionary measures and other economic repercussions, which in their entirety increase the size of the gender equality gap. The threat of climate change affects various aspects and dimensions of food security, yet its impact remains relative; this consequently leads to an impact on agricultural products without others, as the rise in temperature due to climatic variables between 1 to 3 degrees Celsius negatively affects crops and grains, especially in Somalia due to its tropical climate. Rain-dependent crops are reduced by 50%, while agricultural production is under significant threat, negatively affecting food availability and leading to food insecurity and malnutrition in the country. The area of arid and semi-arid zones increases.

These extreme climate changes, in addition to the natural problems that Somalia suffers from, affect food security in its various dimensions, and these repercussions can be summarized as follows:

- 1. **Repercussions on food availability**: Drought negatively affects both agricultural and livestock production, and also reduces groundwater, and with less rainfall, the production of food crops used for local consumption or export decreases, and thus their prices rise and thus difficult to obtain, and Somalia suffers from drought. It has been hit by severe droughts that have affected food availability and chronic food insecurity.
- 2. **Repercussions on food quality**: Climate change affects the quality of agricultural production and food crops, as the symptoms of climate change such as high temperature and increased carbon dioxide concentration can lead to damage to agricultural crops and many diseases, and rainfall can be the cause.

In sub-Saharan Africa, changes in rainfall caused the migration of desert locusts to Somalia, which leads to destroy crops and make them lack quality. Climate change is considered the most important factor leading to the emergence and spread of diseases in livestock, because climate change increases the vulnerability of animals to diseases through direct and indirect effects, especially on livestock and cows, as well as fish, where climate change and its symptoms over the course of the oceans, seas and inland waters represent the most important causes leading to those diseases that are transmitted to humans when eating seafood, and the increase in the degree of salinity of water affects the quality of the fish revolution.

3. **Implications for food sustainability:** Ongoing climate change threats over the coming decades will affect the sustainability of food security in Somalia, through their impact on the sustainability of agricultural land and agricultural production, the impact on the sustainability of livestock production, as well as the impact on fisheries. Somali farmland is affected

if the temperature rises and crop yields fall by 5% to 10% of the main cereals.

Other symptoms of climate change, such as melting ice and rising sea levels, are affecting farmland. On the other hand, the increasing human demand for meat as food faces a climate threat to this wealth in light of heat stress and diseases that kill thousands of animals. In addition, meat production depends on the abundance of agricultural land for fodder production and on the abundance of water for drinking and irrigation, and these factors are linked and threatened by the repercussions of climate change. Climatic factors also affect the sustainability of the fish revolution, especially in light of the rise in salinity, increasing sea levels and rising temperatures, all of which are causes of various diseases that threaten the sustainability of this wealth and thus threaten the sustainability of food security.

Between January and March 2023, nearly 5 million people across Somalia suffer from worse levels of acute food insecurity, including 96,000 people facing catastrophic hunger, the Food and Agriculture Organization of the United Nations (FAO) reported in a report. 6.5 million People – more than a third of the total population – are expected to face worse levels of acute food insecurity between April and June this year, including 223,000 people facing hunger. Somalia has been on the brink of famine in recent months, due to an unprecedented drought caused by 5 seasons without rain and expectations of entering the sixth, which has been exacerbated by high food and water prices, conflict and poor access to water, sanitation and health services.

FAO added in its report that it received \$ 183 million, representing 68% of the funds requested, under the FAO Plan to prevent famine in Somalia (May 2022-June 2023), reaching more than one million people, or 47% of the target of 2.4 million. Amid the reduction of funded humanitarian aid in late 2022, approximately 6.7 million people across Somalia are expected to face a crisis (IPC Phase III), meaning "worse" outcomes than acute food insecurity between October and December 2022, according to an international report by the Integrated Food Security Phase Classification (IPC, Famine Early Warning System Network (FEWS NET), Food and Agriculture Organization of the United Nations (FAO), World Food Program (WFP).

According to a report, these projections reflect the population still in need of urgent assistance after accounting for food assistance already planned from October to December 2022, and humanitarian needs are very high due to the effects of 5 consecutive seasons of lack of rainfall. Food prices have risen exceptionally, exacerbated by conflict, insecurity and disease outbreaks (acute watery diarrhea /cholera and disease).mainly for measles).

The nutritional situation deteriorated in most parts of the country, and cases of acute malnutrition accepted among children under five continued to rise sharply. Based on the results of 29 integrated food security, nutrition and mortality surveys conducted by the Food Security and Nutrition Analysis Unit (FSNAU) and its partners in May, June and July 2022 and the Post-Acute Malnutrition Analysis (IPC) conducted in August, the total estimates on malnutrition in Somalia from August 2022 to July 2023 affected nearly 1.8 million children.

This statistic represents 54.5% of the total number of children in Somalia and includes 513,550 children likely to suffer from acute malnutrition, and the continued drought was projected to exacerbate the level of humanitarian needs during the dry Galal season from January to March 2023 in most parts of Somalia. In addition to famine occurring in two areas of the Bay region, many areas in central and southern Somalia have an increased risk of famine, due to poor rainfall, which has led to more crop and livestock production failures, as well as if humanitarian assistance does not reach the country's most vulnerable populations.

The areas and populations at increased risk of famine are the Pastoral Haad in Central and Hieran, Adon North-East and Central Pastoralism, Central Coastal Pastoral Deh, and the IDP settlements in Mogadishu, Garowe, Galexio and Dolo. The continued delivery of humanitarian food assistance is currently alleviating the size of the severely food-insecure population and potentially has prevented the deterioration of food security and nutrition outcomes in many areas, but levels of acute food insecurity across Somalia remain high and will deteriorate further if assistance is not scaled up and sustained. With limited livelihood assets, few income-earning opportunities, high food prices, low access to community support and heavy dependence on external humanitarian assistance, the majority of the estimated 3.8 million internally displaced people across Somalia are poor.

✤ Corona pandemic and Food Safety:

The agricultural sector and food production witnessed a state of cracking in light of the outbreak of the Corona pandemic, as it led to disruption in food supply chains and changes in different food prices, which increased food insecurity in Somalia, and despite this, there is an inverse relationship between the virus and the outbreak of food diseases, as evidence indicates that since the beginning of the pandemic in 2020 the outbreak of foodborne diseases has decreased, and this can be attributed to increased awareness around the world and measures Taken towards sterilization and hygiene.

The Corona pandemic has significantly led to negative dimensions on many sectors, apart from the turmoil witnessed by the health sector, economic policies have been severely affected with the development of that pandemic, as the economic recession has exacerbated food security in the country due to what it is already suffering from declining production and increasing population density, which requires the development of programs and policies for social protection by working to increase production to address the risks of increasing the food gap and the subsequent cases of food poverty and insecurity within the country.

The disruptions in food supply chains caused by the pandemic have led many people working in the agricultural sector not to follow proper food safety practices, and adherence to protocols for agricultural and food regulations has become more difficult, but this has led to a new outlook on food safety, food security, food policy and climate change.

✤ <u>Declaration of famine:</u>

The UN expects famine to be declared soon in three isolated areas of Somalia, and the classification is for areas where at least a fifth of households face severe food shortages. At least 30% of children are acutely malnourished, and at least two out of every 10,000 people die every day from hunger or a combination of hunger and disease caused by drought and climate change.

The Somali government has so far avoided taking this step, fearing it could be interpreted as failing to provide for the basic needs of its people and using it to undermine its fragile grip on power. More than 12 women interviewed in the camps spoke of neighbors, friends or relatives dying from food and water shortages in rural areas or being killed in battle. Some women said economic pressures on their families cost them their marriage, while others reported an increase in gender-based violence, sexual crime and child marriage.

Conflicts have been the main driving force of food insecurity in a number of African countries, often occurring in conjunction with other factors such as unfavorable climatic and economic conditions. Most undernourished people in sub-Saharan Africa live in conflict-affected countries, and nutrition outcomes are usually worse than those living in non-conflict-affected countries. Despite the improved security situation in Somalia, internally displaced persons remain vulnerable to food insecurity.

Shocks from natural disasters and human-induced shocks (economic shocks) have had a devastating impact on agriculture and livelihoods in Somalia,

plunging vulnerable households into crisis. The frequency and severity of natural hazards in Somalia has increased in magnitude and exacerbated with severe impacts on agriculture and food security for the Somali population.

Somalia's natural resources are under increasing pressure from a range of sources, such as the growing demand for land for agricultural and non-agricultural purposes. Somalia faces a major challenge: to preserve biodiversity and relieve pressure on its vast natural resources on the one hand, and to generate growth, employment and adequate food for its growing urban population on the other. The FAO Regional Conference for Africa in 2018 emphasized the importance of biodiversity conservation and the sustainable use of natural resources for food security.

5) Models of malnourished children in Somalia:

• In September 2022, the United Nations Children's Fund (UNICEF) said that the number of children in Somalia suffering from acute malnutrition had risen to more than half a million, a level that exceeds the country's 2011 famine, when tens of thousands of children died.

The United Nations has warned that parts of the country will face famine in the next months as the Horn of Africa faces a rainfall absence for the fifth consecutive season.

UNICEF said more than 700 children had died in feeding centers across the country, and many of these centers are operating at full capacity and children are receiving treatment on the ground, adding: "There are children in critical conditions and, without treatment, may die within hours".

• In October 2022, the United Nations Children's Fund (UNICEF) warned of unprecedented death rates in Somalia due to acute child malnutrition, saying the country was facing its worst drought in years.

A spokesperson for the organization referred to a child is diagnosed every minute with malnutrition and needs to be treated in Somalia, where severe drought threatens to cause child deaths on a scale not seen in half a century, emphasizing a news briefing in Geneva that the situation in Somalia already looks worse now than it was in 2011, when famine killed more than 250,000 people in the Horn of Africa country. Meanwhile, a survey by humanitarian agencies shows that acute malnutrition is worsening among children displaced by drought and conflict in part of central Somalia on the brink of famine.

• In March 2023, the United Nations indicated that it is estimated that there will be about 43,000 "additional" deaths in Somalia during 2022, half of them among children under the age of five, due to severe drought.

A total of 135 people are expected to die every day in the first half of this year due to the drought crisis. This was reported in a joint report by the Somali Ministry of Health, WHO and UNICEF.

Dr. Rahman Malik, WHO Representative in Somalia, said: "We are racing against time to prevent preventable deaths and save lives, in addition, we have seen widespread deaths and diseases amid the protracted hunger and food crisis. We will see more deaths from disease than expected from hunger and malnutrition combined if we do not act now. The price of inaction means that children, women and the vulnerable will pay with their lives".

• **Basra Ahmed Kabadal brought** her children to a Somali Red Crescent Society clinic near Borama for malnutrition tests. Her 3-year-daughter, Nimko Adabikadir Hassan, was diagnosed with moderate malnutrition. **Kabdal said** her family used to eat tomatoes and onions with corn and sorghum before the drought. They also drank milk and ate meat from livestock. But crops are not growing, livestock are being spent because of the lack of water, and they need to sell their livestock to buy food and necessities from the local market.

She added: "What worries us most is the loss of livestock and the lack of food, as it takes two hours to walk to the water distribution center and we have to form a long line to get water".

• Halima Mohamud Abbah visited the Somali Red Crescent Society clinic in a village near Berbera with four of her children because she was worried about the weight of her young child and 4-year-daughter Mardier Abdullah Ali. While Mardier's height, weight and circumference of the middle of her upper arm were measured, Halima spoke about some of her concerns, saying: "There is drought, water for livestock is limited and there is not enough for crops". When Mardier's results came out, she was found to be marginally malnourished.

Halima adds: "I am worried about the health of my children. If it continues like this, it will result in bad things... Death of cattle and humans".

• **Baby Somaya** does not stop crying in the lap of her mother, Fatima Maao, because of the severe malnutrition that prevents her from being able to breastfeed, prompting paramedics at Banadir Hospital in Mogadishu to feed her by injection.

According to her mother, Somaya's birth coincided with drought in many areas, including the Lower Shabelle governorate from where they came, where the family lost most of their livestock.

Over time and the repercussions of the drought intensified, the family and the rest of the population face great difficulties in light of the acute shortage of food and water, and since children are the weakest link, Somaya could only

survive with difficulty, while her family can only find one meal every two days, and in an amount that is not enough young and old.

As her condition deteriorated four months ago, benefactors helped her family take her and her mother eight days ago to Banader Hospital, and her mother says they are now seeing improvement after receiving therapeutic feeding, and that she began to move her eyes, which were staring at the sky before she was rescued.

• Somali child Mohamed Abdi Sharif (4 years old) lay in Banadir Maternity and Childhood Hospital in the capital, Mogadishu, severely emaciated due to malnutrition, which made him unable to eat, and despite the modest treatment possibilities, doctors there made what they could of a great effort to change his situation, but their effort did not succeed.

Abdi Sharif, the father of Mohamed, who and his family were displaced a while ago from the city of Goryoli, a hundred kilometres south of Mogadishu, to a camp for displaced people on the outskirts of the capital, said that his son took turns with diseases, including measles and diarrhea, for two months until his condition worsened and he lost the ability to eat, forcing them to take him to the hospital.

- Yasmine Omar Moulid, aged one year and seven months, was also suffering from acute malnutrition, and her 20-year-mother, Mecca Ali Omar, says that her daughter was transferred to Banader Hospital "between life and death, and after doctors treated and fed her a little better, but diarrhea and vomiting she contracted in recent days made her condition relapse".
- In a hospital bed in Mogadishu, baby Sadiq Ibrahim lies, as he is so emaciated that he finds it hard to even cry, and is exhausted by food shortages and cried like a moan.

His mother, Fadumu Dawood, looking at her son's emaciated legs, says, "He's my only child, he's very sick". To rescue him, she made a three-day journey from the Baidoa region in southwestern Somalia, the horn of Africa country hardest hit by an unprecedented drought that sows hunger.

At Mogadishu's Di Martino hospital, Dawood watches over her son day and night and prays that he does not join the list of hundreds of children who have died in recent months from malnutrition.

- 6) <u>African and international efforts to adapt to the effects of Climate change</u> <u>and confronting food insecurity:</u>
- At the African and Egyptian Level:

The African continent seeks to confront climate change by adopting many ways, as the African Development Agenda 2013 recognized the impact of climate change on African development rates, and the continent developed an

action plan to confront climate change (2022-2032), which contributes to achieving sustainable economic growth and confronting climate change.

In this regard, two levels of African efforts to deal with the effects of climate change can be distinguished.

• The international level, which is represented in the international agreements signed by the African continent, foremost of which is the United Nations Framework Convention on Climate Change of 1992, and the Kyoto Convention of 1997, which entered into force in 2005. Then the Paris climate agreement, which was signed in December 2015 and entered into force in 2021 and aims to limit global temperature rise to 1.5 degrees.

The demands of African countries at international conferences on climate file revolved around the need for developed countries to fulfill their financing responsibilities to support developing countries in adapting to climate change, and to support African countries in the field of monitoring, early warning, assessment and prevention systems against climate change.

• **Regional level**: It is concerned with the efforts made at the level of the African continent and African countries to adapt to the effects of climate change. Chief among them was the start of the work of the Economic Commission for Africa (ECA), in 2006, to establish the African Climate Policy Center (ACPC), which began its work in 2011. To support Africa's active participation in multilateral climate negotiations, and to provide climate information for development on the continent.

Egypt has played an active role in the climate change file, as:

- ✓ It presented in 2015 during the Conference of the Parties in Paris, the idea of launching the African Adaptation Initiative, which depends on urging developed countries to fulfill their commitments to African countries to support and help them face climate change, which suffers greatly from its negative effects, and identifies the demands and concerns of the African country, including the early warning system.
- ✓ **Development of** national plans for adaptation with investment packages allocated to the private sector.
- ✓ Egypt also launched the African Renewable Energy Initiative in September 2015 in New York.
- ✓ Within the framework of Egypt's hosting of the Conference of the Parties to Climate Change (COP27) held in Sharm El-Sheikh last November, the state launched a set of initiatives and programs to support African countries and help them adapt to the effects of climate change, which mainly aims to address the social and economic effects of climate change

in the continent, the **most prominent of these initiatives was** the Decent Life Initiative, which aims to address the effects of climate change and derives from the Decent Life Initiative, which aims to improve the lives of rural communities through better adaptive capacity.

- ✓ Launching the Women and Adaptation Initiative, which aims to strengthen women's capacities towards a more resilient environment and provide more green employment opportunities in this regard, along with agriculture and food systems initiatives.
- ✓ Launching the International Initiative for Adaptation to Climate Change in the Water Sector (AWARE), which aims to establish an early warning system and protect water from the impact of climate change.
- ✓ The Just Energy Transition Initiative, the Biodiversity Initiative, and the Waste Initiative, which aim to reach the 50% target of recycling waste in Africa by 2050 and are expected to be launched during COP27.

FAO Regional Africa's priorities in the Africa region are reflected in the three regional initiatives:

- a. Accelerating action by countries to fight hunger, as Africa commits to eradicate hunger by 2025.
- b. Promoting inclusive and proven sustainable innovative practices and principles in production and post-production processes (sustainable production intensification and value chain development in Africa).
- c. Strengthening resilience among vulnerable agricultural and pastoral communities (building resilience in drylands in Africa).

Regional Initiative 1 supports countries in multispectral planning, coordinated implementation, monitoring and evaluation to achieve the commitments made by countries in the 2014 Malabo Declaration on Accelerating Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods and in the 2030 Agenda for Sustainable Development.

Regional Initiative 2 supports countries in transforming agriculture with the aim of making nutritious food accessible to all, while conserving biodiversity through the effective management of the region's natural resources, as technologies used include climate-smart agriculture, technology transfer, market access and trade. FAO also supports countries in achieving NDCs on climate change, supporting agriculture diversification and adopting a value chain approach.

Regional Initiative 3 supports countries in addressing the root causes of natural and human-induced shocks and their consequences to reduce their

recurrence, focus on drylands in Africa and work with stakeholders from the national institutional to household level, as support includes capacity development for disaster risk management, resilience, mitigation, response and recovery.

FAO's regional initiatives are in line with its strategic objectives, as these initiatives do not constitute the overall work of the Organization in the region, but rather serve as a mechanism to put the Organization's work on key priorities and demonstrate its impact. The Regional Conference for Africa 2018 underlined the importance of these regional initiatives and supported a mechanism to guide FAO's work on priorities in the region during the biennium 2018-2019.

FAO's priorities in the Region are guided by the Comprehensive Africa Agriculture Development Program (CAADP), the overarching policy framework for transforming agriculture in pursuit of economic growth, food security, nutrition and sustainable livelihoods for the people of the Region. This program has evolved over time and given greater impetus with the 2014 Malabo Declaration on accelerating agricultural growth and transformation for shared prosperity and improved livelihoods. The Malabo Declaration calls on member countries to commit to ending hunger by 2025, reducing stunting to 10% and halving poverty by 2025 through inclusive agricultural growth and transformation, and strengthening the resilience of livelihoods and production systems to climate variability and other shocks. It also calls for a recommitment to the principles and values of the Comprehensive Africa Agriculture Development Program (CAADP) and the strengthening of financing investment in agriculture.

FAO works with the African Union, the main regional institution representing 55 Member States in Africa. **The Planning and Coordination Agency of the New Partnership for Africa's Development (NEPAD) serves as** the implementation agency of the African Union and the African Union Commission. Sub regional bodies are the regional economic communities representing member States in Eastern, Southern, Western, Central and Northern Africa and the main multilateral institutions for financing development are the African Development Bank, the World Bank Group and the Islamic Development Bank.

The United Nations has a strong presence on the African continent through the country offices of the various United Nations programs, funds and specialized agencies, as well as in the regional centers. The United Nations Economic Commission for Africa (UNECA) is also an important interlocutor with the African Union. Other relevant institutions include African academic and research institutions and global institutions based in Africa; the Pan-African Parliament and members of sub regional parliaments; regional civil society bodies, cooperatives, producer organizations and the private sector; and the FAO Regional Office, which through its regional branch offices supports 47 FAO country offices.

At the Somali Level:

The Federal Government of Somalia, launched the Paxnano Program, in 2019. Since its launch, Paxnano has provided a platform for the government to play a new and ongoing role in providing social safety nets to families facing chronic poverty and the exacerbating effects of multiple climate-related shocks.

In the first two years of the program's implementation, more than one million people (about 9% of the population) received unconditional nutrition-related cash transfers to meet their basic consumption needs.

The features included in the Shock-sensitive Paxnano protected food security and livelihoods for an additional 600,000 people from the massive locust outbreak that hit the country in 2020 by temporarily expanding the umbrella of the original program and providing emergency cash transfers. By laying the foundations for Somalia's first state-led social safety net system, which enables the country to respond quickly and effectively to shocks and meets the needs of the poorest and most vulnerable, the "Paxnano" to help restore citizens' confidence in state institutions and contribute to the federal government's efforts to build the state.

The Paxnano-Original and Paxnano-Shocks programs provided a single platform to deliver regular, predictable and scalable cash transfers in Somalia. WFP has played a critical role in protecting food security and livelihoods, strengthening human capital, and strengthening the resilience of poor households to climate and other shocks.

During the first two years of implementation:

✓ 200,000 households (over one million individuals) benefited from predictable nutrition-related unconditional cash transfers from the "Paxnano-Original" program. Women constituted 100% of the direct beneficiaries of Paxnano-Original's unconditional cash transfers, with nearly 40% receiving mobile lines for the first time, marking a key step in promoting financial inclusion for poor women in Somalia.

- ✓ Some 100,000 households (about 600,000 individuals) have received livelihood protection through monthly emergency cash transfers in response to the locust crisis. Women constituted 72% of the direct beneficiaries of the Paxnano-Trauma program".
- ✓ Good progress has been made in establishing key service delivery systems under the Ministry of Labor and Social Affairs and in strengthening institutional arrangements. Particular emphasis was placed on the establishment of:
- a. A beneficiary targeting methodology based on evidence-based assessment and lessons learned from implementation to date, to accurately identify the poorest households and enhance program's effectiveness.
- b. The consolidated social register, including the development of a standardized registration model to ensure the harmonization of family information for all programs, facilitate the coordination and efficiency of programs, and support the Federal Government of Somalia's efforts to effectively serve its citizens.
- c. A Government-led social protection working group, chaired by the Ministry of Labor and Social Affairs to ensure alignment and coordination of the Federal Government of Somalia's social protection agenda with donor-supported development and humanitarian interventions.

World Bank Group Contribution:

The program was launched in September 2019 as a World Bank operation with a value of \$65 million funded through an international development assistance grant before settlement of arrears. In 2020, the Locust Shock Rapid Response Safety Net project was approved with a \$40 million grant from IDA to scale up the Paxnano program in response to the locust crisis.

In September 2021, the World Bank initiated two additional financing operations of \$185 million to support the continuation of the Rapid Response Safety Net to Human Capital Shocks for an additional two years (\$110 million) and the expansion of the Locust Shock Rapid Response Safety Net Project (\$75 million). Funding for the Locust Shock Rapid Response Safety Net project was part of the Regional Emergency Locust Control Program using the multi-phased programmatic approach adopted in 2020.

Paxnano benefited from an extensive partnership platform, and effective collaboration with partners provided a framework for successful implementation and increased program alignment. The World Food Program (WFP) and the United Nations Children's Fund (UNICEF) provide direct

support to the Ministry of Labor and Social Affairs for the overall implementation of the program.

Donors and development partners, including but not limited to the UK Foreign and Commonwealth Office for Development (FCO), the European Union, European Civil Protection and Humanitarian Assistance Operations, the United States Agency for International Development (USAID), UN agencies such as the World Food Program (WFP), the Food and Agriculture Organization (FAO), the Office for the Coordination of Humanitarian Affairs (OCHA), and NGOs have made joint efforts to ensure close cooperation in data sharing and coordination on proper targeting of those who are eligible.

The ongoing dialogue has encouraged harmonization and coordination with donors from humanitarian agencies on program design and targeting. Support from the Multi-Partner Trust Fund for Somalia, funded by many development partners, was instrumental in providing technical assistance and generating evidence-based knowledge to inform the design of Paxnano service delivery mechanisms (e.g., targeting beneficiaries, the Unified Social Register).

Paxnano is steadily moving towards its goal of strengthening human capital and building the resilience of 200,000 poor and vulnerable families (approximately 1.2 million individuals) across 880 villages in 21 districts. However, at the time of writing, Paxnano has extended to cover only 9% of the population.

In the future, there is an opportunity for the Federal Government of Somalia to expand the program's capacity to benefit more Somali families and create better linkages among social programs, by strengthening the unified social register, as the supply side matures.

Given the success of Paxnano as Somalia's first national social safety net program, the program is expanding its reach and coverage to respond to the current large-scale drought, as well as moving from its initial focus on rural areas to urban centers.

On the other side, the Somali Red Crescent Society (SRCS) teams across the country run fixed and mobile health clinics serving rural and remote communities in hard-to-reach areas. These clinics provide basic health care and routine immunizations, as well as screening for malnutrition and nutritional support. Staff refer cases of severe malnutrition to medical centers and large hospitals.

The ICRC is collaborating with the Somali Red Crescent Society to help victims of conflict and natural disasters in Somalia. Severe drought has hit many parts of the country and led to widespread famine, making living conditions almost impossible and putting women and children at risk.

The ICRC is working to provide urgent humanitarian assistance, raise awareness about international humanitarian law, visit detainees and reunite families separated by the conflict. The ongoing conflict is dispersing villages and families and putting them in dangerous conditions.

The ICRC publishes news of Somalia to make information about the conditions of the population and their humanitarian stories available in real time. Follow-up to ICRC work in Mogadishu.

There is also the Somali Humanitarian Fund (SHF), which is a pooled, multi-donor mechanism in countries established in 2010 to allocate funding to the most urgent life-saving interventions in Somalia. By combining flexibility and strategic focus, the Fund ensures timely allocation and disbursement of resources, enables effective humanitarian action and enhances coordination.

Through the Somalia Humanitarian Fund, governments and private donors can channel their contributions to a common fund that is not dedicated to providing life-saving assistance to people who need it most. Humanitarian Fund funds for Somalia are prioritized and managed locally. UNFPA supports high-priority projects for best responders – especially international and national NGOs and some UN agencies – through an inclusive and transparent process that meets the priorities outlined in the Humanitarian Response Plan (HRP).

This ensures that funding is available and prioritized locally by a Bring people closer to those in need.

The allocation of the Fund is determined by the Humanitarian Coordinator in Somalia on the basis of strategic priorities led by the inter-cluster coordination structure and upon the approval of the Fund's Advisory Board.

On a daily basis, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) manages the Social Support Fund. Since its inception, the Fund has allocated more than \$500 million to the critical humanitarian response in Somalia, gaining donor trust due to its distinct comparative advantages – the un-earmarked nature and flexibility of the Fund,

strong and well-established accountability systems and its integration into existing coordination systems.

• Somalia Humanitarian Fund priorities for 2022:

The Somali Humanitarian Fund demonstrates its comparative advantages through the non-earmarked nature of the Fund; its accountability systems; integration within existing coordination systems; and flexibility, which also allows for rapid deployment or redeployment of Fund funds in cases of sudden emergence.

The following principles and priorities guide the allocation of the Social Finance Fund in 2022:

- a. Continue to focus on life-saving humanitarian response, focusing where possible on underserved and hard-to-reach areas.
- b. Ensure centralized protection and accountability of affected persons in all interventions funded by the Humanitarian Society Foundation with a focus on women, girls and persons with disabilities.
- c. Prioritize direct implementation through international and national nongovernmental partners, accounting for at least 90% of the annual funding available to the SHF Fund.
- d. Support local partners as the best placed responders by seeking to channel at least 60% of available funding directly through national partners (if, when, and where possible). The overall objective of the Fund remains to channel funding through partners best able to implement priority activities in accordance with humanitarian principles in a timely, effective and impactful manner.
- e. Continue to support cross-cluster response integration and integration with other funding sources to support a stronger collective response.
- f. Support pipeline financing, enabling programs and other support services provided by the UN or NGOs, up to a maximum of 10% of the funds available annually.
- g. Support limited multi-year projects, where possible and feasible, for interventions and target groups.

In 2022, the Deputy Special Representative of the United Nations Secretary-General, Resident Coordinator and Humanitarian Coordinator for Somalia, Mr. Adam Abdel-Mouli, announced a new allocation of US \$17 million from the Humanitarian Fund for Somalia (SHF) to provide immediate assistance to communities in areas most vulnerable to famine. Such allocation was crucial because the number of people affected by drought had doubled since the beginning of 2022 and humanitarian workers urgently needed additional funds to meet growing needs. As, Somalia's drought has affected at least 7.8 million people, including more than 1 million people displaced from their homes in search of water, food and pasture.

The amount (\$17 million) funded immediate life-saving activities at a time when humanitarian operations are struggling to cope with the scale, scope and severity of needs. It promoted an integrated region-based response and focused on the most affected communities in Bay, Bakool and Mudug/Galmudug.

Conclusion:

This report touched on the impact of climate change on food security in Somalia, where it concluded that food security is a multifaceted concept through the availability, accessibility and exploitation of food, which are vulnerable to many influences, most notably climate change, as food security is affected by climate change through access to food, availability, accessibility, use and affordability. Agriculture and livestock play a vital role in ensuring food security in Somalia, so with less rainfall, drought and flooding, it is only natural for Somalia to face challenges related to food insecurity. In addition, high unemployment and poverty rates in Somalia limit the access and purchase of food for many families, which can further exacerbate the risks of food insecurity, so combating food insecurity in Somalia requires not a comprehensive approach but a multifaceted strategy to address the challenges facing Somalia, which vary from country to country depending on the extent to which the impact of climate change on food security varies.

The country's ability to adapt and protect its food security depends on understanding the risks and vulnerability of various foodstuffs to climate change, given the climate variability it suffers from, where lack of rainfall, drought in rivers and floods lead to shrinking arable land and pastoral areas, loss of livestock and significantly reduced crop production. However, the challenges of adapting to climate change in Somalia and most developing countries are more difficult, because these countries have weak institutions and limited access to technology, and a wide gap between the cost of climate change adaptation and the financial and learning support needed for governments is another source of concern, and there is a great need to invest in technologies that resist and manage climate change risks to food security, as well as address vulnerabilities in food systems.

Recommendations:

- 1. The need to make radical changes in the current agricultural and water policies that focus on giving the greatest attention to accelerating the growth rate in agricultural productivity, in addition to doubling spending on agricultural research, especially research related to the production and development of varieties, especially drought and heat-resistant varieties and water-saving varieties, in addition to improving animal breeds, providing veterinary care and developing fisheries.
- 2. To avoid the negative effects of temperature increase on productivity, it is necessary to work on planting high-productivity crops and redistributing crops to their growing areas and planting at optimal dates.
- 3. Renew the commitment of the international community to support agriculture, livestock production and fisheries in Somalia, and increase the amount of funds allocated for this, as investment in agriculture enhances the resilience of poor farmers and helps reduce hunger and poverty levels, especially as this country is exposed to waves of extreme climatic fluctuations between drought and flood.
- 4. Work to increase environmental awareness and reduce illiteracy rate among the population to confront climate change, adapt to what occurs as a result of it, and exploit resources in a rational manner to preserve them from degradation.
- 5. Agricultural planning that the State attaches special importance to the development of future agricultural plans, especially long-term and medium-term, and directing investment towards productive activities that serve the trend towards achieving food security.
- 6. Develop a plan to deal with any shortage or increase in water resources, and rely on renewable energy sources from solar and wind energy.
- 7. Attracting more investments and climate finance opportunities, and strengthening private sector partnership in financing green activities.
- 8. Banning pesticides and chemical fertilizers in agriculture, and moving towards natural alternatives and permanent organic agriculture.
- 9. The agricultural pattern is modified by making agricultural cycles suitable for climatic patterns, and recycling waste properly.
- 10.Rationalization of the consumption of natural resources, and educating citizens about the dangers of climate change.