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Batch: May Online

Feedback:

outline is fine

well organized and relevant

command over basic language is fine

kindly try to be rich in content

try to enhance its length



# Outline

## 1. Introduction:

### 1.1 Thesis Statement:

climate change alters precipitation patterns and increases the frequency of extreme weather events, it impacts global food security by reducing crop yields, threatening livestock, and increasing the vulnerability of rural communities.

good in basic

## 2. Definition and types:

2.1 Changing of weather patterns are linked to human activity.

2.2 Availability of food to people that meets their nutritional requirements.

## 3. History:

3.1 Facing calorie-deficient diets by residents of developing countries.

## 4. Current Scenario:

4.1 Causing significant disruptions in food productions and supply chains.

5. Factors which reflects the growing food insecurity owing to climate change:

5.1 Threatening global food security by extreme weather events.

5.2 Rising global temperature are altering the growth patterns.

5.3 Changing in precipitation patterns

5.4 Reducing the fertility of farmlands by soil degradation and erosion.



5.5 Facilitating the spread of pests and diseases.

5.6 Increasing costs of production and market instability.

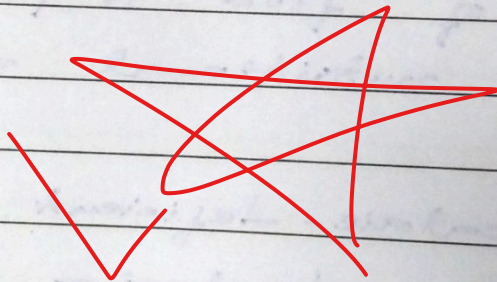
5.7 Disrupting food distribution networks and supply chains.

## 6. ~~Suggestions:~~

6.1 Adapting agricultural practices for ensuring global food security.

6.2 Implementing robust policy and governance.

## 7. Conclusion:





# The impact of climate change on global food security.

Climate change alters precipitation patterns and increases the frequency of extreme weather events. It impacts global food security by reducing crop yields, threatening livestock, and increasing the vulnerability of rural communities. There are many factors which are endangering global food security. First, extreme weather events are threatening global food security by reducing crop yields. Second, rising global temperature is altering the growth patterns of crops and reducing their nutritional value. Third, precipitation patterns are leading to prolonged droughts and unpredictable rainfall which affect agricultural productivity and threaten food security. Fourth, climate change exacerbates soil degradation and erosion, reducing the fertility of farmlands. Fifth, climate change is facilitating the spread of pests and diseases that attack crops and livestock posing a significant threat to food security. Sixth, economic impacts including increased costs of production and market instability are exacerbating food security. Seventh, climate change disrupts food distribution networks and supply chains leading to increased food prices and reduced access of food in vulnerable regions. By examining the various dimensions of climate change and their



implications for food security, this essay highlights the critical importance of addressing these challenges to ensure a sustainable and resilient global food system for future generations.

Climate ~~change~~ avoid repetition of ideas is ~~any change~~ in the ~~weather~~ that can be linked, directly or indirectly, to human activity that changes the composition of the atmosphere around the world. Food security means a geographical area where every person is meeting its nutritional requirements at all the time. Availability of food to people should be according to food preference of the people and considers all economic and healthcare perspective. transition from one idea to another one is fine

After the world food summit in 1996, when intergovernmental parties agreed to cut in half the number of hungry people in the world by 2015, food security has become a ~~global issue for policymakers~~. About 815 million people in developing economies, mostly from south Asia and sub-Saharan countries are facing calorie-deficient diets. According to Global Report on Food Crisis it was estimated that about 124 million people are facing worse food insecurity because of climatic events and severe



There has been a frequency and a marked increase in the events such as droughts, floods, heatwaves, and hurricanes. These events have caused significant disruptions in food production and supply chains. In East Africa, severe droughts led to widespread crop failures, while catastrophic floods in the Horn of Africa severely damaged agricultural lands, affecting millions of people. In 2022, Pakistan and China experienced floods in agricultural lands, affecting millions of people.

Additionally, extreme weather events are threatening global food security by reducing crop yields. According to the Intergovernmental Panel on climate change, climate change is likely to cause a 10-25% decrease in crop yields in parts of Asia and Africa by 2050. In 2022, a severe drought in the United States led to a 30% reduction in wheat production, while floods in Pakistan destroyed over 40% of the country's agricultural land, affecting rice and sugarcane production. Similarly, a heatwave in Europe in 2023 resulted in a 20% drop in corn and sunflower yields. Hence, addressing the challenges posed by extreme weather is crucial to ensuring global food security and sustaining agricultural productivity.



Furthermore, rising global temperature are altering the growth patterns of crops and reducing their nutritional value. According to recent studies, the average global temperature has increased by about  $1.1^{\circ}\text{C}$  since the pre-industrial era, which has led to noticeable changes in agricultural systems. A report from the Intergovernmental Panel on climate change indicates that for every  $1^{\circ}\text{C}$  increase in temperature, the yield of staple crops like wheat and maize can drop by 5-10%. Furthermore, rising temperature is causing reduced concentrations of essential nutrients in crops. Research published in Nature shows that the levels of key nutrients such as zinc and iron in staple crops like rice and wheat have decreased by up to 5-10% due to higher temperature. This not only threatens food security but also poses risks to global nutrition.

common over basic language is fine

Moreover, precipitation patterns are leading to prolonged droughts and unpredictable rainfall which alter agricultural productivity and threaten food security. Recent data reveals that the frequency and severity of droughts have increased, with the World Meteorological Organization reporting a 20% rise in the number of severe drought events over the past 50 years. A study from the Food and Agriculture Organization indicates



most drought conditions reduction in crop yields, can lead to a 30-50% severity and duration, depending on the unpredictable rainfall of the drought. by causing both waterlogging and water scarcity, further compromising crop health and productivity. The resulting instability in food supplies poses a serious threat to food security, especially in regions heavily dependent on rain-fed agriculture.

In addition to this, climate change exacerbates soil degradation and erosion, reducing the fertility of farmlands. The Intergovernmental Panel on climate change has reported a 30% increase in soil erosion rates in various regions due to climatic alterations. The United Nations Food and Agriculture Organization released a 2023 report showing that approximately 33% of the world's soils are currently degraded, with an annual productivity decline of about 1% directly linked to climate change. This degradation undermines soil structure, reduces its nutrient content and diminishes its capacity to retain water, all of which are crucial for sustaining crop yields and ensuring food security. As a result, the combined effects of climate change and soil degradation pose a significant threat to agricultural systems and global food supplies.



Furthermore, climate change is facilitating the spread of pests and diseases that attack crops and livestock posing a significant threat to food security. According to the Food and Agriculture Organization, crop losses due to pests and diseases are estimated to reach up to 40% annually, threatening the livelihood of over 2.5 billion people who depend on agriculture. A 2023 report by the Intergovernmental Panel on climate change indicated that each degree Celsius increase in temperature could lead to a 10-25% increase in pest-related crop damage. In Africa alone, the spread of the fall armyworm is estimated to cause economic losses of 9.4 billion dollars annually, affecting staple crops like maize, sorghum, and millet. A 2024 report by the World Bank forecasts that by 2050, the economic losses from climate-related agricultural pests and diseases could exceed 220 billion dollars globally.

In addition to this, economic impacts including increased costs of production and market instability are exacerbating food security. Recent data from the Food and Agriculture Organization indicates that the world food price index rose by 3.2% year-over-year as of July 2024, exacerbating the cost pressures on producers and consumers. The world



Bank reports that the global cost of agricultural inputs such as fertilizers has surged by nearly 20% in the past year due to disruptions in supply chains. United Nations estimates that 828 million people globally are now undernourished. Resultantly, the combination of escalating production costs and market unpredictability poses a severe threat to food security, necessitating urgent policy interventions and support for the agricultural sector.

Moreover, climate change disrupts food distribution networks and supply chains leading to increased food prices and reduced access of food in vulnerable regions. Extreme weather events such as floods, droughts and storms have become more frequent and severe causing substantial damage to transportation infrastructure and crop yields. In 2023, severe flooding in northern India caused crop losses estimated at 30-31%, further straining local food supply chains. As climate change continues to affect food production and distribution, the number of people experiencing hunger and malnutrition is expected to rise, highlighting the urgent need for adaptive strategies and robust food supply chains to mitigate these impacts.

climate change is fine



Adapting agricultural practices to the changing climate is crucial for ensuring global food security in the face of ongoing environmental challenges. As extreme weather events become more common, traditional farming methods are often inadequate. Droughts in the Horn of Africa have led to a 30% decline in maize yields, demonstrating the need for drought-resistant crops and efficient irrigation techniques. By implementing climate-smart practices such as crop rotation, conservation agriculture, and precision farming, agricultural productivity could increase by 17% by 2050, according to the International Fund for Agricultural Development.

Robust policy and governance are key to ensuring global food security amidst the challenges of climate change. Governments should develop integrated policies that promote sustainable agricultural practices, support smallholder farmers with resources and infrastructure, and enhance market access. International cooperation is essential to share best practices and strengthen global food systems. Inclusive policies that involve marginalized communities and emphasize transparency and accountability can drive innovation and investment in climate-smart agriculture. By focusing on these areas, policymakers can create a



resilient food system capable of withstanding environmental and economic pressures.

climate change alters precipitation patterns and increases the frequency of extreme weather events, it impacts global food security by reducing crop yields, and threatening livestock and increasing the vulnerability of rural communities. As climate change exacerbates challenges such as reduced crop yields, water scarcity, soil degradation, loss of biodiversity and disruptions in food distribution. By investing in climate-resilient agricultural practices, enhancing water-use efficiency, protecting biodiversity, and strengthening governance and policies, we can mitigate these risks and build a more resilient and sustainable food system. Addressing these challenges requires a collaborative effort involving governments, international organizations, local communities, and private sector.