

Forum: SISMUN – Youth

Issue: Addressing food insecurity caused by heat waves in the Indo-Pakistani region

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Introduction

Food Insecurity in the Indo-Pakistani region has recently become one of the most severe issues due to its impact on different vital parts of human life. Soaring temperatures in Europe, Africa, and Asia have severely impacted agricultural production, which lead to some significant problems, namely food insecurity. As awareness on the issue of food insecurity increased around the world, several measures have been taken in. However, recent data and statistics have shown that a deadly heatwave in the Indo-Pakistani region caused crop losses of up to 35 percent and lead to a ban on wheat exports. Furthermore, this crop losses in India Pakistani region have intrigued devastating consequences for public health. Early reports indicated an estimated 90 deaths were happened in Indo-Pakistani region every month and the probability of events such as excess deaths and hospitalizations increased by a factor of about 30 compared to the last decade.

It is important to recognize that food insecurity is caused by both human and environment related factors. Out of the various factors accountable for the food insecurity in Indo-Pakistani regions, inconsiderate planning and mismanagement of agricultural sources, absence of agricultural institutions, corruption, inflation, environmental and territorial problems, climate change, and intrusion of seawater are some of them. These multifaceted factors of food insecurity are prominent in the Indo-Pakistani region. Based on the survey that was conducted by World Food Programme (WFP) in 2018, more than 36.9 percent of the population in Pakistan faces food insecurity. Simultaneously, in India, more than 21.25 percent of the population suffers from food insecurity problems. Therefore, addressing the issue of food insecurity in Indo Pakistani region requires more attention and contribution from all nations.

Definition of Key Terms

Food Insecurity

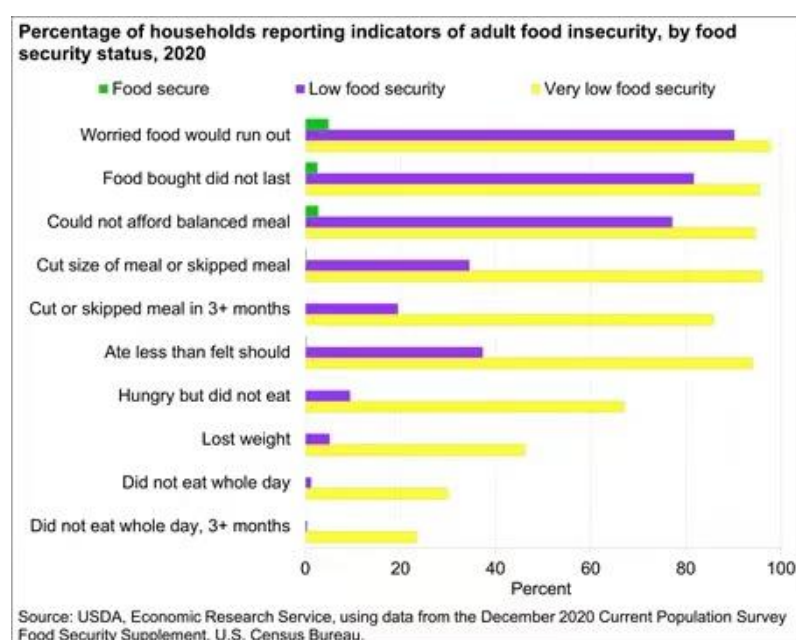
Food insecurity can be defined as the disruption of access to food due to a lack of economic status and other factors. Food insecurity may be long-term or temporary. Even though hunger and food insecurity are closely related, food insecurity mainly refers to a lack of available resources for food at the household level, not an individual level. Food insecurity can be further divided into two standards, which are Low Food Insecurity and Very Low Food Insecurity. Throughout the survey, if eating patterns of one or more household members are disrupted due to the lack of money and other resources for food, it will be count as very low food insecurity.

Low Food Insecurity

Low Food Insecurity is one of the categories of food insecurity that was initially implemented by the USDA. If the reduced quality, variety, or desirability of diet is reported with little or no indication of reduced food intake, it can be classified as Low Food Insecurity.

Very Low Food Insecurity

Very Low Food Insecurity is the other category of food insecurity which classifies the type of food insecurity by the ranges of severity. If multiple indications of disrupted eating patterns and reduced food intake are reported, it can be classified as Very Low Food Insecurity.



Caption #1: Chart of Percentage of Households Reporting Indicators of Adult Food Insecurity, by Food Security Status, 2020 (USDA)

Heat Waves

Heat waves are certain periods of abnormally hot weather lasting more than two days. Heat waves can have hazardous effects on people due to their exposure to a large area which leads to some potential problems such as aggravation of water, food, and biodiversity insecurity.

Food Availability

Food availability is one of the main concepts of food security. Food availability can be defined as the availability of appropriate quality and abundant quantity of food, supplied through imports or domestic production. An increase in food availability in a specific region is a potential way to solve food insecurity, so retaining food availability is vital to humans.

Stability

The meaning of the word stability is the state of being balanced or comfortable. However, in terms of food insecurity, stability means the circumstance that the population does not lose access to food as a consequence of cynical or unexpected events such as climatic crises or seasonal food shortages.

Indo-Pakistani Region

The Indo-Pakistani region is the disputed region of Kashmir that was divided through the Indo-Pakistani War of 1947 and its surrounding regions. After the war from 1947 to 1948, the disputed region got divided into the regions of Pakistan-administered Kashmir and Indian-administered Kashmir. Geopolitically, the Indo-Pakistani region includes the countries of Sri Lanka, India, Pakistan, Nepal, Maldives, Bangladesh, and Bhutan.

Background Information

In the current situation, not only the Indo-Pakistani region but also the regions worldwide are suffering from a lot of societal and environmental problems caused by food insecurity. However, food insecurity is primarily a consequence of human activity rather than a problem caused naturally. Therefore, it is crucial to know the causes of food insecurity such as rising temperature and its following repercussions to take effective measures.

Factors that cause climate change leading to heat waves

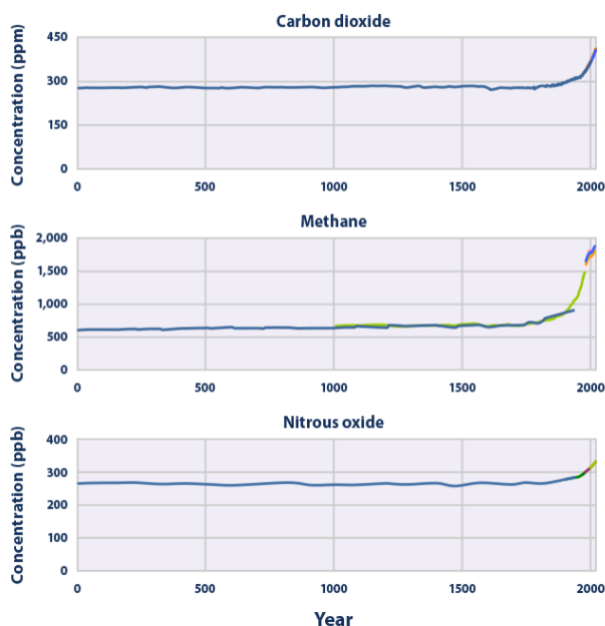
One of the consequences from human activities is climate change, and it has resulted in detrimental effects on Earth such as heat waves. The reason why heat waves have negative impacts on

Earth is that heat waves can lead to rising temperatures, which can further lead to a tremendous number of side-effects such as drought, mortalities, etc.

Greenhouse gases

One of the major causes of climate change is greenhouse gases. In fact, concentrations of the key elements of greenhouse gases have all increased since the Industrial Revolution which was initially caused by human activities. Since then, mass production with higher qualities soon led the world to build a considerable number of factories that can significantly emit a lot of elements such as carbon dioxide, methane, nitrous oxide, etc. According to the United States Environmental Protection Agency (EPA), methane, nitrous oxide, and carbon dioxide concentrations have never been higher throughout the past 700,000 years. Particularly, India and other major countries in Indo-Pakistani region emit about 3 gigatons (Gt) of greenhouse gases each year. These tremendous amounts of greenhouse gas emissions can therefore cause heat waves which increase the earth's surface temperature. Adding on to the increased concentration on Earth's atmosphere, human activities have released over 50 billion tons of carbon dioxide, methane, and nitrous oxide into the atmosphere annually. Statistics of EPA showed that the carbon dioxide concentrations have increased from approximately 270 parts per million (ppm) in the 17th century to 414 ppm in 2020. Moreover, nitrous oxide concentrations have also risen a lot, from approximately 270 parts per billion (ppb) during a pre-industrial level to 332 ppb in 2019.

Global Atmospheric Greenhouse Gas Concentrations Over Time



Caption #2: Graph of Global Atmospheric Greenhouse Gas Concentration Over time (U.S. EPA)

Transportation

Transportation is one of the vital infrastructures for humans, and the demand for transportation has increased significantly since the industrial revolution. Even though the convenience of using transportation such as vehicles is undeniable, its effect on the environment is also unneglectable. In fact, a typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year, and in 2021, greenhouse gas emissions from transportation accounted for 17 percent of global greenhouse gas emissions. Furthermore, in India, the number of motor vehicles has increased by about 67 million from 1980 to 2003. This caused the greenhouse gas emissions per capita in India to increase by 1.8 metric tons until 2018. Furthermore, the bordering countries such as Pakistan and Sri Lanka had 1 and 0.8 metric tons of gas, respectively. This dramatically increased gas emissions mainly caused by transportation soon contributed to the rising temperature of the Earth's surface. With all these consequences, it is urgent to implement effective measures to prevent further minor problems such as food insecurity and natural disasters.

Consumerism

Consumerism is a preoccupation with the buying of consumer goods. It can also refer to the growth of the consumption of goods that are economically desirable. However, this growth of consumerism especially in southeast Asia and the Indo-Pakistani region can derive more pollution and have a negative impact on sustainability. To be specific, compared to the past centuries, people nowadays have more assets and affluence due to rapid urbanization and development. Therefore, people constantly purchase goods and services even though the needs are not more essential than necessities such as water, food, clothing, etc. Even though from the economic perspective, buying goods can potentially lead to the development of the economy, it still has some detrimental aspects on the environment. This is because the majority of goods require natural resources, and increased demand for goods can lead to more pollution and climate change.

Consequences of food insecurity caused by heat wave

Nutrient deficiency

Nutrient deficiency is a detrimental issue that should immediately be addressed. The common population of the Indo-Pakistani region is deficient of many nutrients such as Iodine, Vitamin-A, and Iron. These deficiencies can lead humans to a variety of symptoms and even decrease productivity. For example, Iodine deficiency is the most common cause of goiter, which leads to

symptoms of choking, and difficulty swallowing and breathing. In recent years, people having these symptoms increased a lot. According to the survey conducted by NCBI, the prevalence of Iodine deficiency patients was above 10 percent of the total population in India.

Fluctuating food prices

Fluctuating food prices are another consequence of food insecurity caused by the heat wave in the Indo-Pakistani region. During the period, people from Indo-Pakistani region couldn't receive abundant food supply, therefore people's demand for food increased highly and this caused the fluctuating food prices. This result soon negatively affected the Indo-Pakistani region's economy.

Human capital

Human capital consists of education, skill, and health, enabling people to realize their potential in a society. To increase human capital, many households provide nurturing environments that allow children to maximize their potential. However, due to food insecurity, it was harder for households to maintain healthy environments for their children. Consequently, this food insecurity problem caused children to not be able to receive sufficient education during their neonatal and early childhood years.

Major Countries and Organizations Involved

India

India, officially the Republic of India, is a country that has the seventh-largest area, the most populous democracy, and the second-largest population in the world. In the Indo-Pakistani region, India and Pakistan are the major countries located nearby, but these two countries have had a complex and largely hostile relationship since the Indo-Pakistani War that occurred in 1947. However, in April 2022, the capital city of India called Delhi registered its highest temperature of 45.6 degrees Celsius due to the climate change-induced heatwave. Furthermore, according to the Indian Meteorology Department (IMD), north-west and central India also saw their hottest April in history. Due to the rising temperature in India, major problems such as food insecurity have become an urgent issue due to the fact that it leads to further overlapping issues such as acute and chronic health problems, social isolation, and shrinking biodiversity.

Pakistan

Pakistan is also a country in South Asia that has the world's second-largest Muslim population and the fifth-largest population world. The proximity between India and Pakistan is close; however, the relationship between these two countries is inferior. Recently, Pakistan had a comparable consequence

as the one that occurred in India. In June 2022, one of the cities in Pakistan called Jacobabad hit 51 degrees Celsius due to a blistering heat wave caused by climate change. Therefore, this increasing temperature led to severe food insecurity, which also fostered challenges such as insufficient agricultural production, food unavailability, and instability.

World Food Programme (WFP)

WFP is the food assistance branch of the United Nations (UN). It is the largest humanitarian organization that mainly focuses on hunger and food insecurity worldwide. WFP has previously worked on using food assistance to build a pathway to address food insecurity issues worldwide. Since many countries in the world, especially the Indo-Pakistani region is suffering from the very low-level food insecurity caused by climate change-induced heat wave, this institution can provide and implement possible solutions to relieve the tension of food insecurity by cooperating with other institutions or governments.

South Asia Food and Nutrition Security Initiative (SAFANSI)

SAFANSI is an initiative that was formally commenced in 2010 to address food and nutrition security issues that occur in the South Asia region. The ultimate goal of this initiative is to increase the commitment of governments and other initiatives to implement more effective food and nutrition-related policies and solutions. For instance, SAFANSI provided a lot of food and nutrition security agendas during the 21st century.

Intergovernmental Panel on Climate Change (IPCC)

Intergovernmental Panel on Climate Change is an intergovernmental body of the United Nations, which mainly advances knowledge on climate change and its effects. One of the primary reasons why food insecurity occurs in diverse countries is heat waves caused by climate change. In fact, climate change has become the most controversial and crucial issue that should be addressed in advance. Therefore, to address the issue of food insecurity in the Indo-Pakistani region, IPCC's assistance is crucial to not deteriorate the circumstance.

Timeline of Events

Date	Description of event
January, 1980	In 1980, the centre called Centre for Science and Environment (CSE) was established to raise public awareness of the global environment and food insecurity issues including in the Indo-Pakistani region.

1986 – 2005	The temperature in Pakistan rose from 1.3 to 4.9 degrees Celsius in just 9 years, a temperature considerably above the global average.
2013	The city of Ahmedabad in India first implemented and developed a city-wide heat health adaptation, which is known as a part of the heat action plan.
2020	Due to the successful approach of the heat action plan in India, Pakistan also developed its Heat Action Plan in the summer of 2015. As a result, Heat Action Plans in Pakistan have resulted in reducing heatwave-related fatalities from 24223 to 4 in 2020.
2022	Countries that are in the Indo-Pakistani region are constantly suffering from food insecurity. According to the WFP, they estimate that about 43 percent of Pakistanis are food insecure, and 18 percent suffer from food insecurity. Rising temperature-induced drought is a recent issue that defecated the wheat production.

Relevant UN Treaties and Events

- The human right to a clean, healthy and sustainable environment, 28 July 2022 **(A/RES/76/300)**
- Protection of global climate for present and future generations of humankind, 20 December 2017 **(A/RES/72/219)**
- Agricultural technology for sustainable development, 20 December 2017 **(A/RES/72/215)**
- Strengthening international cooperation in the monitoring of global environmental problems, 21 December 1993 **(A/RES/48/192)**

Previous Attempts to solve the Issue

WFP

Many organizations that are not incorporated with the UN have tried to address the issue of food insecurity in the Indo-Pakistani region. Out of all the organizations, WFP has been working in India since 1963 by implementing a new food assistance project called 'In-kind food

distribution'. This project involved the distribution of foods chosen to prevent malnutrition that can lead to nutrient deficiency. Furthermore, the goal of this assistance was to ensure that every person they serve meets the standard energy level.

SAFANSI

SAFANSI created the program to advance the food and nutrition agenda and facilitate intersectoral action among South Asia countries. Phase 1 was implemented from 2010 to 2015, and the main purpose was to catalyse the food and nutrition agenda among countries in South Asia. Phase 2 was implemented in December 2014, and the main purpose was to raise awareness, stimulate behaviour change in both people and governments, and build capacity that can effectively improve food and nutrition security. SAFANSI mainly cooperated with and assisted countries such as Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, and other countries in the Indo-Pakistani region.

Possible Solutions

Building resilience

Throughout the progress of urbanization and the industrial revolution, the concentration of carbon dioxide and other elements has significantly increased, therefore facilitating the occurrence of climate change and its leading effects. One of these effects is the rising temperature of the Earth's surface. Even though it is impossible to entirely eliminate the results of rising temperature and the heat waves, resilience has the potential prospect of cooling down the temperature and eradicating the issue of heat waves. To be specific, cities and governments can incorporate heat reduction strategies such as building green or cool roofs. In fact, building green or cool roofs bring a lot of benefits to both society and people. It can provide benefits of lowering surface temperatures and decreasing energy demand. However, the cost of building green or cool roofs is considerably more expensive than conventional roofs, so the governments and other initiatives should negotiate ways to possibly assist organizations like NGOs who have a deficit amount of capital. Furthermore, an adaptation of technology to farming can be the other example of resilience. Developing alternative ways to prevent crops and other foods from the catastrophe caused by heat waves, applying technology to the farming techniques, or discovering new types of genes that have strong resilience can also be possible solutions. Since many countries in Indo-Pakistani region are Less Economically Developed Countries (LEDC), neighboring More Economically Developed Countries (MEDC) such as India can fund to possibly apply technology.

Agendas and policies

Although there are many feasible solutions that can immediately be practiced, it is crucial to implement the most basic solution that has the highest possibility of success. It is not only important for the Indo-Pakistani regions to gradually address the issue of food insecurity, but it is also crucial to achieving national integration. To be specific, when implementing effective agendas and creating compelling policies, not only the countries from the Indo-Pakistani region but also the countries from other regions can cooperatively negotiate together to build the best and the most feasible agendas and policies for resolving food insecurity. Furthermore, a few initiatives such as WFP and SAFANSI can also share their experiences of practicing agendas and actioning plans. With all the cooperation, there is a strong possibility that the food insecurity issue in the Indo-Pakistani region will be addressed gradually and therefore have a better approach to solve environmental and social problems in a transforming world.

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Appendix or Appendices

- I. Further reading on possible solutions in addressing the issue of food insecurity in Indo-Pakistani region: <https://www.sciencedirect.com/science/article/pii/S2212096316301164>

- II. Further information about the World Food Programme: <https://www.wfp.org>