

Impact of Food Scarcity on National Security of Pakistan

By

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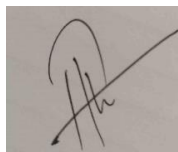
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List of Abbreviations

BISP – Benazir Income Support Program

CPI – Consumer Price Index

DAP – Diammonium Phosphate (Fertilizer)

FAO – Food and Agriculture Organization

FOA – Framework for Operational Analysis (Note: Please confirm the intended meaning of FOA in your document)

FSC – Food Security Cluster

GDP – Gross Domestic Product

HEIS – High-Efficiency Irrigation Systems

IFPRI – International Food Policy Research Institute

IPC – Integrated Food Security Phase Classification

IPCC – Intergovernmental Panel on Climate Change

MAF – Million Acre-Feet (Water Measurement)

MSP – Minimum Support Price

NIPS – National Institute of Population Studies

OCHA – United Nations Office for the Coordination of Humanitarian Affairs

OECD – Organization for Economic Cooperation and Development

PARC – Pakistan Agricultural Research Council

PBS – Pakistan Bureau of Statistics

SDG – Sustainable Development Goals

SDPI – Sustainable Development Policy Institute

SSA – Sub-Saharan Africa (Region with High Food Insecurity)

UNCCD – United Nations Convention to Combat Desertification

UNICEF – United Nations International Children's Emergency Fund

USAID – United States Agency for International Development

USC – Utility Stores Corporation (Provides Subsidized Food)

WFP – World Food Program

Abstract

Food scarcity has become a critical challenge for developing countries, particularly Pakistan, a nation with the fifth-largest population and an agriculture-based economy. Despite this agricultural foundation, the country struggles to ensure the availability, accessibility, and affordability of adequate and nutritious food due to climate change, water scarcity, soil degradation, mismanagement of resources, population growth, and poor governance. These challenges not only deepen poverty and malnutrition but also impact health and social stability. Pakistan is already facing extreme political instability, economic crisis, social unrest, and geopolitical rivalries. In this scenario, food scarcity adds to the existing challenges faced by the country. As food insecurity worsens, it fuels unrest, increases economic disparities, and undermines public trust in governance, ultimately threatening national cohesion and state stability.

This thesis aims to examine the impact of food scarcity on Pakistan's socio-economic landscape and analyzes how food scarcity is worsening due to poverty and creating challenges for the governance and overall security of the country. The research contends that food scarcity fuels discontentment among people regarding existing socio-economic policies, increasing economic disparities, unrest and protest, and a weak political system. With the application of Barry Buzan's Securitization Theory, the thesis emphasizes how food scarcity can be seen as a non-traditional security threat that needs attention and extraordinary steps. It argues for the integration of food security into national security planning and calls for policy transformation emphasizing sustainable agriculture, improved water management, and inclusive governance. The findings contribute to the discourse on non-traditional security and propose actionable policy recommendations for addressing food scarcity in ways that strengthen Pakistan's internal stability and regional peace.

Keywords: Food Scarcity, national Security, Pakistan, securitization theory, non-traditional

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Chapter 1: Introduction

Food scarcity also refers to food insecurity reflects a condition when there is a lack of access to sufficient food to fulfill the requirements of the population. This situation threatens the food security of a country. Food security refers to continuously having enough safe, nutritious food available to all residents of a country. It is required for both survival and the proper functioning of society. The link between food security and national security is an emerging phenomenon, even though it was traditionally regarded as a matter of agricultural policy and economic development. Food insecurity is worsened in countries like Pakistan as a result of a combination of geopolitical events, environmental degradation, and socioeconomic vulnerabilities.

Pakistan is the fifth most populated country in the world. With its rapidly growing population, Pakistan is facing severe socio-economic challenges that hinder its food security. The agricultural sector is one of the major pillars of Pakistan's economy. It supports millions of its population in fulfilling food requirements, employment, and economic well-being. Agriculture in Pakistan faces three primary issues: Climate change, soil erosion, and lack of water resources. Natural calamities are impacting agricultural production as a result of flooding and drought becoming prime causes of food scarcity, as well as low crop yield. Different factors are brought together to lower productivity levels, which are a result of poor infrastructure and traditional methods of farming combined with less access to modern technological resources. Food shortages combined with political unrest, poverty, and inequality in Pakistan generate serious issues for food resources as well as social stability. Access is limited by poverty and unemployment levels.

In addition to domestic issues, regional and global variables, including Pakistan's economic ties with its neighbors, domestic and regional political conflicts, and transnational threats like terrorism, all have an impact on the country's food security. The complex challenges of food insecurity demand a multimodal strategy that promotes resilience and sustainable development by tackling the fundamental socioeconomic, environmental, and geopolitical problems.¹

Pakistan can reduce the risks associated with hunger and malnutrition—thereby ensuring peace and prosperity among its citizens—by prioritizing food security and investing in long-term solutions. Understanding the complexity of food scarcity or insecurity and its consequences may help to prioritize the food insecurity problem in Pakistan.

1.1. Concept of Food Security

Food security is guaranteed as long as everyone has access to enough nutritious food that meets their dietary requirements and tastes without compromising safety. Since the early 1970s, when the term "food security" was first used in policy, definitions have changed. The currently accepted definition of food security was first provided by the FAO in 1996 and later refined in their annual report on food security, "The State of Food Insecurity in the World 2001".² Food security is a scenario in which all people have physical, social, and economic access to adequate, safe, and nutritious food that fits their dietary needs and food preferences for an active and healthy life.

Over time, food security has been defined as four pillars: availability, access, utilization, and stability. Four dimensions of food security have been identified at various levels. (1) Availability (National); (2) Accessibility (Household); (3) Utilization (Individual); (4) Stability – can be

¹ Michael Kugelman, "Pakistan's Flood Crisis Could Become a Food Crisis," *Online*, September 2022, <https://foreignpolicy.com/2022/09/08/pakistan-floods-food-security-crisis/>.

² M. Brklacich and S. Leybourne, "Food Security Concepts," in *Environmental Change, Adaptation, and Security* (Dordrecht: Springer International Publishing, 1999).

considered as a time dimension that affects all the levels. To achieve complete food security, all four dimensions must be preserved. More recent advances have emphasized the importance of sustainability, which can be viewed as the fifth (long-term) factor of food security. The generally acknowledged World Food Summit (1996) definition emphasizes the multidimensional character of food security, which includes food access, availability, consumption, and stability.³ It has enabled policy responses that are focused on the promotion and recovery of livelihood possibilities.

The Food and Agriculture Organization has developed a comprehensive definition of food security based on four pillars. This will aid in examining the state of food security in various parts of the world, particularly in Pakistan. Food security exists when all people have continuous physical, social, and economic access to adequate, safe, and nutritious food that matches their dietary needs and food preferences for an active and healthy life. This definition focuses on four interconnected pillars:

1.2. Pillars of Food Security



Source: Food & Agriculture Organization⁴

³ Materne Maetz, "Food Security and Sustainability: Should We Add a Sustainability Dimension to Food Security?," 2020, https://www.hungerexplained.org/Hungerexplained/Food_security_sustainability.html.

⁴ Saleh A. Sadeg and Khalil I. AL-Samarrai, "The Libyan Journal of Agriculture," *The Libyan Journal of Agriculture* 25, no. 3 (2020): 7–23, https://www.researchgate.net/figure/Elements-of-food-security-FAO-2014_fig2_339145962.

1.2.1. Availability:

Food availability is ensured by adopting sustainable agricultural techniques, implementing efficient food distribution systems, and providing adequate storage and processing facilities. This pillar aims to boost agricultural productivity, improve market access for smallholder farmers, and reduce food losses and waste along the supply chain. Sufficient quantities of suitable quality food must be provided constantly through domestic production or imports (including food aid), as well as a robust food production system capable of coping with shocks and stressors.

- (a) Sustainable Agricultural Practices: Sustainable agricultural practices are key to ensuring food availability. These are practices that enhance soil health, conserve water, preserve biodiversity, and have limited use of synthetic inputs. Interweaving sustainable agriculture can and will both improve long-term food production and reduce pressure on environmental degradation, as well as help countries build resilience to climate change consequences.⁵
- (b) Enhanced Market Access for Smallholder Farmers: The role of small landowners usually remains unobserved, even though they contribute a lot as a group. Lack of infrastructure and limited market access, these rural producers often find it difficult to make a consistent profit from their agricultural production. Improvement of transportation infrastructure, along with localized distribution centers, may assist in linking agribusiness with growing consumer bases in urban population centers. Also, focused microfinancing and mobile platforms with real-time pricing information can facilitate risk management for family operations. A diversifying range of stable income

⁵ Naveen Kumar Arora, "Agricultural Sustainability and Food Security," *Environmental Sustainability* 1 (2018): 217–19, <https://link.springer.com/article/10.1007/s42398-018-00032-2>.

sources can then stimulate further sustainable intensification of crop production and livestock holdings, yielding greater food security gains.⁶

- (c) **Reduction of Food Losses and Waste:** From production to consumption, food losses and waste occur at various stages of the supply chain. These losses can be significantly reduced by addressing storage, transportation, and processing inefficiencies. To reduce spoilage and contamination, this requires investing in appropriate storage facilities, transportation infrastructure, and post-harvest handling procedures.⁷
- (d) **Investment in Research and Innovation:** Innovation in agricultural research and new ideas in farming have a crucial impact on enhancing the food supply. This includes high-yielding crops, resilient livestock breeds, and sustainable farming solutions. Investment in new and innovative research, services for farmers' education, and efforts to implement new methods can help farms produce more and increase the amount of food available.⁸
- (e) **Promotion of Value Chains and Agribusiness:** Improving farm supply chains and encouraging farm businesses can improve the food supply chain. This involves helping farmer groups make it easier to get supplies and loans, and connecting farmers with companies that process, sell, and export food. Growing agribusinesses can create jobs, boost rural economies, and help increase the overall food supply.⁹

⁶ Muhammed A. Usman and Mekbib G. Haile, "Market Access, Household Dietary Diversity and Food Security: Evidence from Eastern Africa," *Food Policy* 113 (2022), <https://www.sciencedirect.com/science/article/abs/pii/S0306919222001439>.

⁷ UNEP, "Food Loss and Waste Must Be Reduced for Greater Food Security and Environmental Sustainability" (New York, 2020), <https://www.unep.org/news-and-stories/press-release/food-loss-and-waste-must-be-reduced-greater-food-security-and>.

⁸ Alex Maier, "R&D Investment Critical for Food Security," 2023, <https://ceat.org.au/rd-investment-critical-for-food-security/>.

⁹ Aladdin D. Rillo and Suryo A. Nugroho, "Promoting Agricultural Value Chain Integration in Central Asia and the Caucasus" (Tokyo, 2016), <https://www.adb.org/sites/default/files/publication/214121/adbi-pb2016-4.pdf>.

- (f) These measures might help in resolving the issue of food availability; consequently, food supply might become stable and sufficient, and help meet the current and future generations. Moreover, it will help in improving overall food security and the Sustainable Development Goals.

1.2.2. Access

Accessibility of food includes economic and physical access to affordable, adequate, and socially acceptable food. It also includes ensuring equitable access to food for vulnerable populations and addressing obstacles such as poverty and poor infrastructure. Several factors, including income levels, transport infrastructure, market prices, and socio-cultural values, determine food accessibility. These factors highlight the necessity of addressing the issues of poverty, inequality, and social exclusion. As food accessibility is affected by multiple socioeconomic factors, food security requires guaranteeing that access to adequate and nutritious food, resources, and opportunities is accessible to all individuals and communities.

- (a) One such key factor in achieving food accessibility is the income level, since higher-earning individuals and households possess much greater purchasing power for nutritional and sufficient food. Another significant factor that influences accessibility is food item market prices. Price fluctuations have a direct effect on food item affordability, and it has a devastating effect in the case of low-income individuals.¹⁰ Moreover, the transport infrastructure also contributes significantly to defining simple access to the food markets and distribution centers, particularly in rural regions.

¹⁰ Jef L. Leroy et al., “Measuring the Food Access Dimension of Food Security: A Critical Review and Mapping of Indicators,” *Food and Nutrition Bulletin* 36, no. 2 (2015): 167–95, <https://doi.org/https://doi.org/10.1177/0379572115587274>.

(b) Social and cultural norms significantly influence food access through dietary preferences, food taboos, and traditional food practices. To ensure equitable access to food, poverty, disparity, and social exclusion must be addressed first. Poverty reduction strategies include jobs and income support schemes, which can enhance people's purchasing power.¹¹

To ensure the consumption of sufficient nutrient food to support health and general well-being, Food must be consumed in a certain way. This pillar highlights the significance of safe food handling procedures, nutrition education, and access to sanitation and health care facilities, clean water, and health services.

1.2.3. Utilization

To ensure the consumption of sufficient nutrient food to support health and general well-being, Food must be consumed in a certain way. This pillar highlights the significance of safe food handling procedures, nutrition education, and access to sanitation and health care facilities, clean water, and health services. The ability of individuals to consume food in such a way as to promote optimal health and well-being is referred to as utilization. This entails ensuring that food is varied, encouraging breastfeeding and healthy eating habits, countering nutritional deficiencies, and using supplements in the framework of food security.¹² In this context of food security, utilization of food refers to a holistic approach to guaranteeing that food is not only available and accessible but also efficiently utilized to support optimal health and well-being among individuals and communities. This pillar focuses on several key aspects:

¹¹ Philip Schleifer and Yixian Sun, "Reviewing the Impact of Sustainability Certification on Food Security in Developing Countries," *Global Food Security* 24 (2020), <https://doi.org/10.1016/j.gfs.2019.100337>.

¹² Raïfatou Affoh et al., "The Impact of Climate Variability and Change on Food Security in Sub-Saharan Africa: Perspective from Panel Data Analysis," *Sustainability* 14, no. 2 (2022), <https://doi.org/10.3390/su14020759>.

- (a) Dietary Diversity: It is very significant to encourage individuals to consume healthy food from multiple food groups to ensure their health. Encouraging dietary diversity guarantees that people get enough of the macronutrients (such as proteins, lipids, and carbs) and micronutrients (like vitamins and minerals) needed for different body processes.¹³
- (b) Addressing Micronutrient Deficiencies: Micronutrient deficiencies, also referred to as hidden hunger, can have serious health repercussions. The most vulnerable populations, such as pregnant women, infants, and young children, are more prone to this. The effective strategies to counter micronutrient deficiencies include the use of staple foods with essential micronutrients (e.g., iodine, iron, vitamin A) and supplementation programs targeting at-risk groups.¹⁴ These measures aim to guarantee that individuals get adequate amounts of vital nutrients that are essential for their overall health and well-being.
- (c) Promoting Sustainable Food Systems: Utilization also includes the promotion of a sustainable food system that emphasizes a sustainable environment, social equity, and economic viability. Organic farming, agroecology, and conservative agriculture methods are some of the sustainable food production methods that help in the preservation of biodiversity, ecosystem services, and natural resources. Moreover, it also helps in promoting the production of nutritious foods. Communities can contribute to maximum

¹³ Mehretu Belayneh, Eskindir Loha, and Bernt Lindtjørn, “Seasonal Variation of Household Food Insecurity and Household Dietary Diversity on Wasting and Stunting among Young Children in A Drought Prone Area in South Ethiopia: A Cohort Study,” *Ecology of Food and Nutrition* 60, no. 1 (2020): 44–69, <https://doi.org/https://doi.org/10.1080/03670244.2020.1789865>.

¹⁴ Shahkamal Hashmi et al., “Association between Dietary Diversity and Food Insecurity in Urban Households: A Cross-Sectional Survey of Various Ethnic Populations of Karachi, Pakistan,” *Risk Manag Healthc Policy*. 14 (2021): 3025–3035., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8294809/>.

food security through the effective utilization and availability of food resources for current and future generations by adopting sustainable food systems.¹⁵

1.2.4. Stability

The food systems have to be stable and resilient to shocks and pressures, be it economic fluctuations, natural disasters, conflict, or climate change. These include encouraging sustainable agricultural practices, creating social safety nets, and improving long-term food security through institutions and policies.

This is increasingly important, offering farmers and food producers the tools they need to ensure stability and resilience in their local food systems to protect food security, whatever the circumstances, from climate change to shocks such as a pandemic.

(a) Promotion of Sustainable Agricultural Practices: Promoting sustainable agricultural practices is extremely important in making food systems resilient. They reduce environmental damage while maintaining a healthy ecosystem and the preservation of natural resources. Techniques like agroecology, conservation agriculture, and integrated pest management are great tools for improving agricultural resilience to climate change and extreme weather by restoring soil fertility and conserving water and biodiversity.¹⁶

(b) Building Social Safety Nets: Social safety nets are valuable instruments to safeguard groups at risk from food scarcity during emergencies or crises. Such nets can take the form of programs such as cash payments, food coupons, or assistance in the distribution of food, which provide timely assistance to vulnerable populations.

¹⁵ FAO, “Sustainable Food Systems Concept and Framework,” 2018, <https://www.fao.org/3/ca2079en/CA2079EN.pdf>.

¹⁶ UNEP, “Food Loss and Waste Must Be Reduced for Greater Food Security and Environmental Sustainability.”

- (c) Strengthening Institutions and Policies: Effective governance systems and policies contribute to the stability and resilience of food systems. These involve establishing strong regulations, market rules, and trade policies that provide equal access to resources, healthy market competition, and sustainable food production and distribution. Institutional strengthening in handling food security, such as agricultural support services, food safety bodies, and emergency management units, enhances their capacity to manage crises and facilitate efficient responses.¹⁷
- (d) Climate Change Adaptation and Mitigation: Climate change poses a significant threat to food security by changing weather, causing more extreme weather events, and impacting how crops grow. Farmers can use strategies like growing different crops, managing water better, and agroforestry to handle climate change and keep their farms productive. Also, reducing greenhouse gas emissions through better land use, using renewable energy, and protecting forests helps with global climate change and food security over time.¹⁸
- (e) Promotion of Food Sovereignty and Resilience: Enabling local communities to manage their food systems and resources is at the heart of achieving food security and resilience. By enabling smallholder farmers to use indigenous food culture and setting up local food markets, we can enhance the self-sufficiency of the community, retain the cultural identity, and insulate food systems from external shocks and pressures. When food systems possess all these essential elements, they are more resilient and stable, hence ensuring food security

¹⁷ *ibid*

¹⁸ Jeetendra Prakash Aryal et al., “Climate Change and Agriculture in South Asia: Adaptation Options in Smallholder Production Systems,” *Environment, Development and Sustainability* 22 (2020): 5045–5075, <https://link.springer.com/article/10.1007/s10668-019-00414-4>.

for all in every scenario of uncertainty and adversity.¹⁹ A comprehensive strategy that incorporates social, economic, and environmental factors is required to create a sustainable food system for both the current and future generations.

1.3. Causes of Food Scarcity

Food scarcity is a worldwide issue that affects everyone due to its complexity and wide-ranging effects on both individuals and entire nations. Environmental degradation and climate change make existing risks worse by damaging farm output and reducing food availability. Smallholder farmers in developing countries face more challenges because they don't have the resources – land, water, and technology. Farming and food distribution systems are disrupted by conflict and political instability, which worsens food insecurity in areas with social unrest. Food availability and pricing have become complex worldwide because of market volatility, global trade, and food waste. Nutritional challenges – undernutrition and overnutrition – highlight the significance of encouraging access to enough calories but also diverse and nutritious diets. Rapid population growth and urbanization put additional pressure on food systems to feed the growing urban population while preserving rural livelihoods.

To address these interconnected challenges, a comprehensive strategy that incorporates initiatives to increase agricultural productivity, sustainable food systems, access to resources and markets, social safety nets, and address the root causes of poverty, inequality, and environmental degradation. Governments, international organizations, civil society, and the private sector need to work together to find long-term solutions for food security for all. According to the Global Hunger Index, 735 million people will be undernourished worldwide in 2023. A large proportion

¹⁹ Arnel M. Borras and Faisal Ali Mohamed, "Health Inequities and the Shifting Paradigms of Food Security, Food Insecurity, and Food Sovereignty," *International Journal of Social Determinants of Health and Health Services* 50, no. 3 (2020): 299–313, <https://doi.org/10.1177/0020731420913184>.

of this population resides in poor countries. Poverty is the major source of food insecurity in developing countries. South Asian, South African, and Sub-Saharan countries have the highest number of malnourished people and food insecurity.²⁰

The increase in population indirectly affects food security, but the effect of poverty is greater than that. As we saw in the famine of Bengal in 1943. According to Nobel Laureate Amartya Sen, “starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there not being enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes”.²¹ We discovered that population growth increased the strain on environmental degradation, socioeconomic causes, and climatic change, all of which contribute to food insecurity in the state or region. Despite the abundance of food available, food insecurity persists in many locations. This illustrates other issues such as poverty, access, and purchasing power, as opposed to population increase.

i- Poverty

Poverty, or poor income, is the leading cause of food insecurity. If people are unable to afford food, food insecurity will rise. This is typically exacerbated during economic crises; the post-pandemic cost-of-living issue has increased the cost of food as well as other necessities, making life more expensive in general. Wages are not increasing at the same rate as utility prices and inflation, forcing more individuals to fall into poverty. Poverty and food insecurity are closely linked. This viewpoint emphasizes that food insecurity is a direct outcome of poverty. When you are hungry, you can't do anything. As a result, you will remain poor and hungry. Hunger and

²⁰ Global Hunger Index, “The Power of Youth in Shaping Food Systems” (Bonn, 2023), <https://www.globalhungerindex.org/pdf/en/2023.pdf>.

²¹ Amartya Sen, *Poverty and Famines An Essay on Entitlement and Deprivation* (New York: Oxford University Press, 1982).

poverty are inextricably linked, with hunger contributing to disease generation. Hunger decreases immunity to most diseases, making people more susceptible to illness. Poor people are generally unable to generate or purchase enough food to feed themselves, making them more susceptible to sickness.

ii- Population growth

Population increase is frequently seen as one of the root causes of food insecurity. As the world's population grows, so does the demand for food, putting pressure on food production systems to keep up. The world's population currently stands at 8 billion. Increased population leads to increased need for food. If there is an increase in demand for food goods (either for resources or for consumption), the amount of available food will be limited. Access to food is limited in the developing world; also, developing countries have greater birth rates, which may mean that food supplies become even more stretched. Population growth increases competition for critical resources, including land, water, and energy. This competition may result in overexploitation of natural resources, soil degradation, and water scarcity, all of which can reduce agricultural output and jeopardize food security. The world population will reach 9.8 billion by 2050 in the metropolitan centers of less developed countries, and the FAO forecasts that global food production should be raised by 70% by 2050 to fulfill population demands.²²

Rapid population increase frequently promotes urbanization and infrastructural development, resulting in the conversion of agricultural land into urban and industrial regions. This encroachment on arable land limits available agricultural acreage, aggravating food shortages.

²² FOA, "Global Agriculture towards 2050" (Rome, 2009), https://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Global_Agriculture.pdf.

iii- Environmental Degradation and Climate Change

Desertification, water contamination, and air pollution can impair a region's food production capacity. Human actions that affect the environment disturb the natural circumstances that support agricultural productivity. This results in a reduced food supply for the local population, creating food insecurity. Climate change is another factor putting more strain on our food supply. The number of people experiencing acute food insecurity surged from 135 million in 2019 to 345 million in 82 nations by June 2022, as the war in Ukraine, supply chain disruptions, and the ongoing economic consequences of the COVID-19 pandemic pushed food prices to all-time highs.²³ Global food insecurity had already been increasing, owing in great part to climate events. Global warming is altering weather patterns, resulting in heat waves, torrential rains, and droughts. Around 80% of the worldwide population in danger from crop failures and famine caused by climate change lives in Sub-Saharan Africa, South Asia, and Southeast Asia, where farming households are disproportionately poor and vulnerable.

Rising temperatures also increase evapotranspiration from plants and soils, and crops require adequate water to survive. Climate change has a negative influence on agricultural production by reducing water resources, increasing extreme occurrences like floods and severe storms, heat stress, and increasing the incidence of pests and diseases.²⁴ Climate change exacerbates and magnifies the dangers to food security for the most vulnerable countries and populations. Four of the eight primary risks associated with climate change listed by IPCC AR5 (Intergovernmental Panel on Climate Change, Annual Report 5) have direct implications for food security:

²³ World Bank, “What You Need to Know About Food Security and Climate Change,” 2022, <https://www.worldbank.org/en/news/feature/2022/10/17/what-you-need-to-know-about-food-security-and-climate-change>.

²⁴ *ibid*

- Loss of rural livelihoods and income
- Loss of marine and coastal ecosystems and livelihoods
- Loss of terrestrial and inland water ecosystems, and livelihoods
- Food insecurity and breakdown of food systems

The most susceptible countries and populations, such as those in arid and semi-arid regions, landlocked countries, and small island developing states, are among the first and most severely affected. Climate change will also have a broader impact on trade flows, food markets, and price stability, thereby introducing new threats to human health.²⁵ To protect the capacity of food systems to sustain global food security, a significant increase in efforts to respond to climate change is required immediately.

iv- Conflict

Few human activities can compare to the damage produced by armed warfare, but diplomatic and commercial disputes can also result in widespread food shortages. In the event of an armed conflict, people who are uprooted from their land to leave the fighting may find themselves in food-insecure situations, unable to tend to their lands or labor and relying on food from assistance agencies. Access to food is sometimes used as a weapon, with warring factions targeting food sources or attempting to starve civilians. Trade wars occur when two governments create barriers to trade with one another, which can raise the price of everything, including food. Trade wars are especially destructive if a country already relies on imports to meet its food requirements. In some cases, access to food is used for political or personal benefit. Governments might supply food in

²⁵ IPCC, “SPECIAL REPORT: SPECIAL REPORT ON CLIMATE CHANGE AND LAND” (USA, 2019), https://www.ipcc.ch/site/assets/uploads/sites/4/2022/11/SRCCL_Chapter_5.pdf.

exchange for political support or punish citizens by limiting food access. Certain government systems, particularly those with significant central control over agricultural production, promote inefficiency and corruption, resulting in food insecurity. Almost three-quarters of those who do not have enough food live in politically unstable countries. War and other types of violence can have an impact on both individuals who are directly involved in the fighting and those who are not. For example, the Russia-Ukraine conflict (2014-present) has restricted food supplies from Ukraine to sub-Saharan African countries that rely on them.²⁶ Such supply network interruptions result in food shortages.

Furthermore, increases in fertilizer and fuel expenses enhance food prices, limiting the amount of food that poor persons and countries can purchase.²⁷ Climate change adds to food insecurity. Floods, droughts, and other shifting weather conditions destroy crops and livestock while interfering with people's capacity to work, resulting in supply-chain disruptions. Food insecurity can be both the cause and the result of conflict and political instability. Conflict and food security are inextricably linked because food scarcity causes market collapse. As a result, food availability in the market declines, causing more mayhem in the community. Because of ongoing hostilities and food insecurity, millions of innocent people are preparing to flee their native country for a better life elsewhere.

1.4. Impact of Food Scarcity on National Security

Food scarcity significantly affects national security, particularly in middle and lower-income countries, where the vulnerable population suffers the most. It worsens poverty, income inequality,

²⁶ Ernest Mugoni et al., “Russia-Ukraine and Israel-Palestine Conflicts on Sub-Saharan Africa: Supply Chain Disruption Propagation and Resilience Strategies,” *Cogent Social Sciences* 11, no. 1 (December 31, 2025), <https://doi.org/10.1080/23311886.2025.2471564>.

²⁷ Joseph W Glauber and David Laborde Debucquet, *The Russia-Ukraine Conflict and Global Food Security* (Washington: International Food Policy Research Institute (IFPRI), 2023), <https://ebrary.ifpri.org/digital/collection/p15738coll2/id/136772>.

and health outcomes, with children especially at risk of malnutrition and developmental setbacks, leading to an intergenerational cycle of poverty. Food scarcity also weakens social cohesion, as marginalized groups face greater challenges in accessing food and resources. To address these issues, comprehensive strategies are needed, focusing on poverty alleviation, sustainable agricultural practices, and equitable access to nutritious food. The World Health Organization highlights that poor health is closely linked to poverty, and addressing food scarcity is important for improving public health and reducing preventable illnesses.²⁸ Social factors like poverty and food insecurity contribute to some of the most costly and severe socio-economic issues in society.

It is widely accepted that food security and nutrition are critical to human health and development. According to studies, millions of individuals suffer from food insecurity, which is one of the most serious threats to human health. Around 238 million people in 48 less developed countries are severely food insecure in 2023.²⁹ Similarly, 735 million of the world's population was undernourished in 2023, and South Asian and Sub-Saharan African countries continue to share a significant amount.³⁰ Even though the number of people suffering from hunger has decreased internationally over the previous five years, the number of people living in food insecurity has increased in recent years (particularly since 2015). It would be a massive task to accomplish the SDGs of zero hunger by 2030.³¹ The FAO reported that one in four individuals in the Southern African Republic (SSA) were undernourished in 2017, with the prevalence worsening between

²⁸ Sisay Demissew Beyene, "The Impact of Food Insecurity on Health Outcomes: Empirical Evidence from Sub-Saharan African Countries," *BMC Public Health* 23, no. 338 (2023), <https://doi.org/10.1186/s12889-023-15244-3>.

²⁹ European Civil Protection and Humanitarian Aid Operations, "Global Food Crisis: What You Need to Know in 2023," 2023, https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/stories/global-food-crisis-what-you-need-know-2023_en#:~:text=The global food crisis is,10%25 more than in 2022.

³⁰ Statista, "Countries That Are Most Affected by Hunger and Malnutrition According to the Global Hunger Index 2023," 2023, <https://www.statista.com/statistics/269924/countries-most-affected-by-hunger-in-the-world-according-to-world-hunger-index/#:~:text=Globally%2C there are 735 million,are considered undernourished or starving.>

³¹ *ibid*

2014 and 2018. Hidden hunger, a severe form of malnutrition, affects one in three people globally. Around 9 million people die annually due to hunger and related diseases.³² There are too many malnourished children in Africa, and malnutrition contributes significantly to high newborn death rates as well as physical and mental development delays and abnormalities in SSA. According to UN data, chronic malnutrition affects 165 million stunted or underweight children worldwide. Around 75% of these children come from Sub-Saharan Africa and South Asia.³³ Forty percent of children in SSA are affected. In SSA, around 3.2 million children under the age of five die each year, accounting for roughly half of all deaths in this age group globally.

The present worldwide hunger and malnutrition epidemic is tremendous. According to WFP estimates from 78 of the countries in which it works (and where data is available), more than 333 million people will be facing acute food insecurity in 2023, with no idea where their next meal will come from. This is an astounding increase of nearly 200 million persons compared to pre-COVID-19 pandemic figures. At least 129,000 people are predicted to face hunger in Burkina Faso, Mali, Somalia, and South Sudan.³⁴ Funding deficits and support cuts threaten to reverse progress on reducing hunger and malnutrition by 2030, highlighting the need for a global commitment to eradicate these issues.

Unmet needs increase hunger and malnutrition risk, leading to lost lives and a reversal of development gains. Conflict is the primary driver of hunger, with 70% of hungry people in war-affected areas. The climate crisis is a major cause, destroying lives, crops, and livelihoods, and

³² World Food Program, “In World of Wealth, 9 Million People Die Every Year from Hunger,” online, 2021, <https://www.wfp.org/news/world-wealth-9-million-people-die-every-year-hunger-wfp-chief-tells-food-system-summit>.

³³ Sisay Demissew Beyene, “The Impact of Food Insecurity on Health Outcomes: Empirical Evidence from Sub-Saharan African Countries,” *BMC Public Health* 23 (2023), <https://doi.org/https://doi.org/10.1186/s12889-023-15244-3>.

³⁴ World Food Program, “A Global Food Crisis,” online, 2023, <https://www.wfp.org/global-hunger-crisis>.

causing hunger to spiral out of control. Global fertilizer prices have risen even faster than food prices, which remain at ten-year highs. The repercussions of the war in Ukraine, notably rising natural gas costs, have further impacted global fertilizer production and exports, lowering supplies, boosting prices, and risking crop failures. High fertilizer prices might transform the current food affordability crisis into a food availability catastrophe, with maize, rice, soybean, and wheat production all dropping by 2022.³⁵ In addition to higher operational expenses, WFP is expected to receive significantly less money in 2023 than it did in 2021, which is indicative of the increasingly difficult financial environment that the humanitarian industry as a whole is navigating. Assistance levels are therefore far lower than in 2022. It is already necessary for over half of WFP national operations to reduce the amount and range of food, financial, and nutrition support by up to 50%. Instability can result from hunger and insecure food sources. There is presently a vicious cycle of violence and famine at work in several nations across the globe. Hunger and war are fueled by each other.

“Winning the Peace: Hunger and instability,” a report published in 2017 by the World Food Program USA (WFP, USA). It was a thorough analysis of the research on “food-related instability,” or how hunger fuels conflict. Congressmen in the United States were anecdotally aware of this association at the time.³⁶ In a 2015 address, Pat Roberts (D-KS), the former chair of the Senate Agriculture Committee, declared, “Show me a nation that cannot feed itself, and I’ll show you a nation in disarray.” Others, like Senator Lindsey Graham (R-SC), have repeatedly cautioned that humanitarian relief in some of the most complicated catastrophes on the globe was

³⁵ Ibid

³⁶ World Food Program, “WINNING THE PEACE: HUNGER AND INSTABILITY” (Washington, 2017), <https://www.wfpusa.org/wp-content/uploads/2019/03/2017-Winning-the-Peace-Hunger-and-Instability.pdf>.

essential to averting more expensive—both financially and emotionally—engagements.³⁷ The correlation between food insecurity and conflict is substantial. 2022 was a year of unparalleled global famine due to Russia's invasion of Ukraine in February of that year, the COVID-19 pandemic's lasting economic effects, and an increase in harsh weather events worldwide. Unsurprisingly, worldwide unrest increased concurrently. Last year, there were at least 12,500 protests in nations where the cost of food and gasoline was rising quickly.³⁸

1.5. Challenges Faced by Low-Income Countries

Food scarcity poses significant challenges for low-income countries, worsening the existing vulnerable situation and creating obstacles for socio-economic development. Among the major obstacles are:

- (a) **Malnutrition and unfavorable health outcomes:** Food scarcity is a leading factor that affects a large number of vulnerable populations in low-income nations, causing malnutrition, health problems, and increased susceptibility to infections.
- (b) **Impaired Economic Development:** Poverty causes severe financial challenges for low-income countries, perpetuating cycles of poverty and impeding the development of human capital, thereby limiting their potential for socioeconomic development.³⁹
- (c) **Agricultural Vulnerability:** Heavy reliance on the agricultural sector is a major cause of economic challenges for low-income nations. The smallholder farmers face obstacles like

³⁷ Chase Sovia and Eilish Zembilci, “Dangerously Hungry: The Link between Food Insecurity and Conflict,” 2023, <https://www.csis.org/analysis/dangerously-hungry-link-between-food-insecurity-and-conflict>.

³⁸ UNO, “Extreme Poverty in Developing Countries Inextricably Linked to Global Food Insecurity Crisis, Senior Officials Tell Second Committee,” online, 2023, <https://press.un.org/en/2023/gaef3590.doc.htm>.

³⁹ FAO, “Global Food Security Challenges and Its Drivers” (Rome, 2023), <https://www.fao.org/3/nn735en/nn735en.pdf>.

limited access to technology, susceptibility to diseases, and climate change, exacerbated by extreme weather events.⁴⁰

- (d) **Limited Access to Resources and Infrastructure:** Many low-income nations lack resources and infrastructure that enable the smooth functioning of food production, distribution, and access to food systems.⁴¹ This constrains the smallholder farmers from selling their produce, getting the inputs, and making investments in their farms owing to market, transport, storage, and financial facilities.
- (e) **Global Market Dynamics:** Food price volatility in low-income countries may lead to food shortages, higher prices, and economic instability, which are intensified by subsidies and market failures that affect the availability and production of food.
- (f) **Conflict and Political Instability:** The above-mentioned factors are compounded by social unrest, political instability, and conflict that is prevalent in many low-income countries and which worsen food insecurity through population displacement, interferences with food production and distribution, and exacerbation of poverty and hunger:

1.6. Food Scarcity, Conflict and Fragility:

Food scarcity is often associated with fragility and conflict. Hunger and malnutrition are mainly attributed to the breakdown of food production and distribution, displacement of the population, and destruction of livelihoods in areas affected by conflict. The impact of conflict on food shortage can intensify grievances, increase social tensions, and prolong violent cycles, thus undermining the efforts being made to promote peace and security in already fragile regions.

⁴⁰ Rillo and Nugroho, “Promoting Agricultural Value Chain Integration in Central Asia and the Caucasus.”

⁴¹ *ibid*

Consequently, the vulnerable populations, especially the youths, are prone to radicalization and extremism owing to food hardships, which can be seized by these groups to gain support and influence. It also restricts the pace of human development, slows down economic development, and hence slows down the rate of development of the national income. It can also lead to political, social, and economic instability and unrest, which are all security risks.

This research study stipulates that there is a strong connection between food security and national security in Pakistan. Food security is a major concern arising out of many environmental concerns, Natural catastrophes and their aftermath, food and water scarcity, and other related issues are all considered as major non-traditional security challenges impacting food sufficiency. When coupled with other socio-economic and political pressures on Pakistan, food security concerns have the potential to exacerbate the country's already precarious situation.⁴²

1.7. Statement Of the Problem

Food scarcity significantly undermines socio-economic development in Pakistan, creating instability that complicates both domestic and external security dynamics. The resultant socio-economic vulnerabilities can exacerbate tension and fuel broader national security challenges.

1.8. Objectives of the Study

This study has the following objectives:

- 1- To examine the link between food scarcity and national security.
- 2- To examine the factors hindering securitization as a critical issue within Pakistan'
- 3- To analyze the policy options and implementation frameworks available for Pakistan to address the food insecurity problem.

⁴² Center for Naval Analysis, "NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE" (Washington, 2007).

1.9. Research Questions

This research study ponders the following questions:

- 1- How does food scarcity pose an urgent threat to the national security of Pakistan?
- 2- Why could the food scarcity issue not be “securitized by making it an urgent sector of the national security agenda?
- 3- What are the policy options and implementation frameworks available for Pakistan to address the food insecurity problem?

1.10. Theoretical Framework

Food scarcity has emerged as a major security concern in the contemporary world. Many theories are available to explain this phenomenon. However, the most appropriate theory to discuss the “food as a security” issue is the securitization theory of Barry Buzan. According to securitization theory, political issues become extreme security issues that require immediate attention when they are branded as "dangerous," "menacing," "threatening," "alarming," and so on by a "securitizing actor" who has the institutional and social power to take the issue "beyond politics." Therefore, security concerns need to be identified as problems by securitizing actors rather than just being "out there."⁴³ Food security is also emerging as a very serious concern for national security, which demands actions on an emergency basis.

To apply Barry Buzan's securitization theory to the problem of food security in developing nations, one should look at how these states conceptualize and handle food security as a security concern. It requires identifying the major determinants in the securitization of food-related concerns in developing nations. Important political figures, NGOs, foreign organizations, and government institutions may all fall under this category. Examine how each of these players frames food

⁴³ Barry Buzan, Ole Wæver, and Jaap de Wilde, *Security: A New Framework for Analysis* (London: Lynne Rienner Pub., 1997).

security as a major security problem through speech acts and communication techniques. Within the framework of securitization theory, food security can be interpreted as a procedure by which powerful players formulate and disseminate the notion that challenges to food stability, availability, and access represent security threats necessitating drastic measures. Important components of securitization, as defined by Barry Buzan and others, are included in this theoretical explanation.

The process of securitization starts with powerful individuals who can classify certain concerns as security-related. These actors could be representatives of the government, business executives in the agriculture industry, or global food governance groups in the context of food security. The securitized problem is food security, which includes issues with food production, distribution, and accessibility. This framing casts these problems as impending threats to a community's, society's, or state's survival and well-being, going beyond conventional economic or social perspectives. The audience for securitization includes individuals who possess the power to address the raised concern. The potential audience for food security issues encompasses the general public, along with policymakers and government officials. The framing seeks to initiate responses that are both urgent and extraordinary. Food insecurity and malnutrition are more prevalent in communities that have experienced displacement, loss of livelihood, and disrupted social networks. Food insecurity is more widely acknowledged as a serious security concern as it can worsen social, economic, and political instability.

Securitization involves specific speech acts, including proclamations, laws, and official statements that authoritative actors deliver to convey the seriousness of food security issues. The depiction of food-related issues as security threats relies heavily on language expression. Utilize that delivery to convey the seriousness of food security issues.

The identification of a "securitizing move"—an event or condition that triggers food security measures—is an essential step in the securitization process. An unforeseen food shortage combined with price increases and various public attention-grabbing events collectively support the notion of food security as a security concern. The securitization of food security triggers the necessity to implement emergency protocols. The measures surpass typical policy responses by potentially incorporating additional financing, modifying governance structures, and deploying security forces to address food-related problems. The securitized issue gains political primacy, which then modifies policy responses through securitization processes. Concerns about food security may be addressed by policies that are framed in terms of national security, which may result in the reallocation of resources, modifications to laws, or the creation of unique mechanisms. Securitization may result in the centralization of decision-making and the engagement of security agencies in handling what is now portrayed as a security issue, which could have an impact on governance systems.

Food securitization may have an impact on trade agreements, diplomatic ties, and cooperative efforts with other countries to secure food supplies on a global scale. By evaluating whether the framing and ensuing policy responses contribute to addressing the underlying issues and whether the extraordinary measures taken are proportionate to the perceived security threat, academics and analysts can evaluate the legitimacy and effectiveness of securitizing food security. Understanding food security through the lens of securitization theory provides a framework for analyzing the social construction of food-related challenges as security risks and the subsequent impact on policy, governance, and international relations.

While the theoretical framework introduces the concept, this study goes further by applying the four core components of the securitization process: existential threats, securitizing actors, target

audience, and extraordinary measures. Food scarcity in Pakistan is conceptualized as an existential threat because it undermines human survival, social cohesion, and political stability. It aggravates poverty, malnutrition, and civil unrest, thereby threatening the state's overall integrity and national security. Securitization actors in this context include political leaders, such as the Prime Minister, relevant ministries, like the ministries of National Food Security and Research, the military (through the involvement in agricultural initiatives like LIMS-COE), and influential voices in civil society and media.⁴⁴ The target audience of securitization in this case comprises state institutions (including the military establishment and policy-making bodies) and the general public. The acceptance of food scarcity as a security threat by this audience is reflected in actions such as the integration of food and economic security into national dialogues, including the Islamabad Security Dialogue, and the media framing of food price inflation as a national crisis. Furthermore, the extraordinary measures taken by the state, such as military-led land reforms, emergency food assistance programs, and regulatory crackdowns on seed companies, indicate that food security has already triggered exceptional responses, even if it has not yet been systematically framed within a formal national security doctrine.

1.11. Literature Review

Theoretical and empirical work on the relationship between food scarcity and national security is becoming an increasingly important topic for researchers and academicians of international Relations. The research on this issue gained momentum only in recent decades. Food security has become extremely important for the socio-economic growth and sustainable development of the state. Udaya Sekhar Nagothu, in his edited book "Food Security and Development Country Case Studies," discusses different case studies of Asian and African countries that have been facing this

⁴⁴ Rizwan Shehzad, "PM, COAS Join Hands to Address Food Security," *Online*, July 7, 2023, https://tribune.com.pk/story/2425181/pm-coas-join-hands-to-address-food-security?utm_source=chatgpt.com.

crisis.⁴⁵ He asserts that different factors contribute to the widespread food insecurity and hunger. The numerous cases covered, when viewed through different disciplinary lenses, represent countries at varying phases of food security, each with a unique story of successes and failures in their endeavors. Along with less developed nations in Africa and Asia, including Malawi, Ethiopia, Tanzania, Myanmar, Bangladesh, and the Philippines, there are China, Brazil, and India. In each chapter, the writers focus especially on the environmental and socioeconomic issues and how they lead to food insecurity.

Many research studies have been conducted to examine this issue in the Southeast Asia region. The OECD report “Building Food Security and Managing Risk in Southeast Asia” highlights the major factors behind food security issues.⁴⁶ This paper examines practical policy responses to the issues with food security that the Association of Southeast Asian Nations' member nations are facing today and, in the future, (ASEAN). Even though the region's food security has significantly improved, 60 million people still need adequate nutrition. High GDP development, increased agricultural productivity and production, and a rapid rise in agricultural earnings have all played a significant role. Food security has rightfully remained a top policy issue for ASEAN nations. The regional policy architecture set out in ASEAN frameworks provides sound guidance, yet some of the current policies adopted by members are not helping to address food insecurity and its causes, including the formidable challenges related to climate change and the need for continued growth in sustainable food production to feed growing populations.

⁴⁵ Udaya Sekhar Nagothu, *Food Security and Development Country Case Studies*, ed. Udaya Sekhar Nagothu (New York: Taylor & Francis Group, 2014).

⁴⁶ OECD, “Building Food Security and Managing Risk in Southeast Asia” (Paris, 2017), https://read.oecd-ilibrary.org/agriculture-and-food/building-food-security-and-managing-risk-in-southeast-asia_9789264272392-en.

There are many studies available on food security in many African and South American countries as well. One of them is “The Securitization of Food Security in Colombia, 1970–2010” by Enzo Nussio and Corrine. This article not only discusses the factors contributing to food security in Colombia, but it also presents a theoretical explanation of the issue by securitizing Food security.⁴⁷ Non-traditional security has become an important part of securitization studies, especially after the end of the Cold War. Many new topics have been securitized under the ever-evolving security studies. Environmental security, water security, food security, and human security are all receiving a great amount of attention from scholars. Food security is one of them. A good amount of research is available that presents “food” as an issue of security by applying the securitization process to food security. “An Introduction to Non-Traditional Security Studies: A Transnational Approach” discusses in detail many newly emerged paradigms in security studies. This book presents a comprehensive analysis of food security as an issue of security.⁴⁸ The nature of threats to national security has shifted from military to non-military since the conclusion of the Cold War. Concerns like resource shortages, infectious diseases, natural disasters, irregular migration, drug trafficking, transnational crime, and information security have gained prominence. A thorough introduction to the ideas of non-traditional security is given in this book.

Brebbia J and Miralles Garcia present a comprehensive analysis of the interrelation between environmental issues like food security, water scarcity, and sustainable economic growth.⁴⁹ The most important issues impacting sustainable development are covered in this book. They examine how economic limitations affect these issues, accounting for social factors in addition to excessive

⁴⁷ Enzo Nussio and Corrine A Pernet, “The Securitisation of Food Security in Colombia, 1970–2010,” *Journal of Latin American Studies* 45, no. 4 (2013): 641–68, <https://www.jstor.org/stable/24544501%0A>.

⁴⁸ Mely Caballero Anthony, ed., *An Introduction to Non-Traditional Security Studies A Transnational Approach* (London: SAGE Publications, 2015).

⁴⁹ C. A. Brebbia and J. L. Miralles i Garcia, eds., *Environmental and Economic Impact on Sustainable Development* (Boston: WIT Press, 2016).

use of natural resources. Hazardous waste and harmful compounds may be released into the environment as a result of uncontrolled development. As a result, concerns about whether various development models are compatible with environmental protection are given careful consideration, especially when there may be significant contamination and toxicity involved. To assure sustainability, the book focuses on more positive and progressive solutions to the issues raised. International security and non-traditional security challenges, such as environmental issues, have been closely linked since the end of the Cold War. These dangers have been the focus of extensive governmental concern as well as academic discussion and research.

Contested Grounds brings together a number of the most eminent scholars on this contentious topic to present wildly varied viewpoints on how security, conflict, and the environment interact.⁵⁰ The book places the current topic in a historical and theoretical context by demonstrating how environmental factors have contributed significantly, if underappreciated, to historical processes and earlier geopolitical concepts. The writers present a range of, frequently incongruous, viewpoints in their answers to three questions: What links exist between the protection, degradation, and transformation of the environment and traditional ideas and institutions of natural security? How well-researched and Comprehensive case studies on transboundary resource concerns are examined, along with how political turmoil in China can be impacted by environmental degradation and the employment of military satellites for environmental surveillance. Narottam Gaan, in his book *Environmental Security Concept and Dimensions*, takes the environmental issues and their relation to state security in a broader context.⁵¹ He presents a historical analysis of the concept of state security and the developments in the concept. He gives a

⁵⁰ Deudney, Matthew *Contested Grounds: Security and Conflict in the New Environmental Politics* (New York, State University of New York Press, 1999).

⁵¹ Narottam Gaan, *Environmental Security: Concepts and Dimension* (New Delhi: Kalpaz Publications, 2004).

very interesting analysis of how the concept of security expanded over time, and now it includes both traditional and non-traditional sources. Then he gives a detailed account of environmental security and how it has become a major paradigm shift in the security debate.

Paul Harris has done a comprehensive analysis of the environment and international relations in the context of US foreign policy.⁵² Being the richest nation and the biggest polluter in the world, the United States may have a significant influence on global environmental protection initiatives. The writers cover a wide range of significant subjects, including international trade, biodiversity and whale hunting, ozone depletion and climate change, and environmental and energy security. They primarily concentrate on three topics: local and international politics, national security and geopolitics, and domestic interests and international commitments. Given that environmental issues are becoming a top priority for diplomats, this book is a topical and essential read for understanding the relationship between international relations and environmental issues. Food security is an alarming issue for all states hit hard by environmental disasters. The less-resourced countries like Pakistan require greater attention and strategies to counter the issue.

“The State of Food Security in Pakistan: Future Challenges and Coping Strategies” by Munir Ahmad and Umer Farooq presents a comprehensive analysis of Pakistan’s food security issue.⁵³ Being the fifth most populous country in the world and agrarian economy, it is in a dire situation. Deteriorating environmental conditions are greatly affecting the soil quality, water availability, and reducing arable land. In this situation, Pakistan’s government should come up with a

⁵² Paul G. Harris, *The Environment, International Relations, and U.S. Foreign Policy* (Washington: Georgetown University Press, 2002).

⁵³ Munir Ahmad and Umer Farooq, “The State of Food Security in Pakistan: Future Challenges and Coping Strategies,” *The Pakistan Development Review* 49, no. 4 (2010): 903–23.

comprehensive strategy. The severity of the issue and the government's policies are discussed in this article, with some useful recommendations for the future.

Asma Khalid, in her article "Contemporary Ecological Paradigms and Emerging Challenges of Water Security Nexus for Pakistan," discusses how aggravating ecological problems create water security issues, which eventually create severe food security issues in Pakistan.⁵⁴ She presents a comprehensive analysis of water distribution at the domestic level as well as water conflict with India and its impact on the national security of Pakistan under the theoretical prism of securitization theory.

Claudia Ringler specifically focuses on Pakistan's food security scenario and its causes. She views that, being the world's fifth most populous nation, Pakistan's water management is reaching a turning point that will eventually affect food security.⁵⁵ The fifth most populous nation in the world is faced with significant obstacles that call for advancements in agricultural water management "hardware" and "software." The water demand is rising quickly across all sectors that use it. This is causing a shortage of water. There is pressure to increase agricultural production of staples due to global food price spikes and rapid population growth, with estimates of 236 million by 2030 and 280 million by 2050.

Dr. Ikramullah Khan relates food security to the national security of Pakistan.⁵⁶ According to him, issues related to food security and economic growth work in tandem to support one another in the process of development. A state is not sufficiently food sovereign if it cannot produce the necessary

⁵⁴ Asma Siddique, "Contemporary Ecological Paradigms and Emerging Challenges of Water Security Nexus for Pakistan," *Journal of Political Studies* 28, no. 1 (2021): 133–156.

⁵⁵ Claudia Ringler and Arif Anwar, *Water for Food Security Challenges for Pakistan* (New York: Taylor & Francis Group, 2015).

⁵⁶ Ikramullah Khan, "Food Security: Understanding Pakistan's National Security Concerns," *Policy Perspectives* 19, no. 2 (2022): 89–122.

amount of food and does not have the means or the money to purchase food on the global market to close the supply and demand gap. For this reason, food security is crucial to national security. Mohammad Aslam Khan, in his work, investigates the possible and actual effects of climate change in Pakistan and looks at national plans and policies to see how well they address climate-related concerns.⁵⁷ The article also addresses mitigation and adaptation strategies, highlights the essential components of Pakistan's Climate Change Action Plan, and emphasizes the mainstreaming of these strategies into the country's development goals and policies. In her research work, Shabana Fayyaz addresses Pakistan's present state of food security, especially in the wake of the devastating floods in 2022.⁵⁸ The goal of the study is to draw attention to the connections between Pakistan's national security, food security, and human security issues. Pakistan's National Security Policy (2022-2026), which was just introduced, demonstrates the country's evolving national security agenda. Pakistan's national security interest envisions the idea that the "security of Pakistan depends on the security of its residents," but with a more people-centric perspective. In light of state development and advancement, food security—a component of human security—is becoming increasingly important to national security. Although the concept of food insecurity inherently has a humanitarian component, this study evaluates. It has been growing for decades and can provide us with a better understanding of how environmental damage may influence Pakistan's food security issue.

To give readers an idea of this expanding body of knowledge and to offer a theoretical framework for our examination of Pakistan's food security and water resources, this paper only briefly discusses a few of these sources. From this vantage point, Thomas Homer explores how Pakistan's

⁵⁷ Mohammad Aslam Khan et al., "The Challenge of Climate Change and Policy Response in Pakistan," *Environmental Earth Sciences* 75, no. 5 (2016), <https://doi.org/DOI:10.1007/s12665-015-5127-7>.

⁵⁸ Shabana Fayyaz, "PAKISTAN'S FOOD SECURITY A HUMAN SECURITY THREAT," *Pakistan Journal of International Affairs* 5, no. 2 (June 20, 2022), <https://doi.org/10.52337/PJIA.V5I2.863>.

delicate political system and ecosystem make it more susceptible to environmental stress-related degradation or depletion than more resilient states facing comparable challenges. Pakistan is prone to both structural and demand-driven scarcity.⁵⁹ The dynamic between environmental components interacting in a security context is described by Thomas Homer as follows: Five types of social effects are likely to occur if market failure, social friction, and capital availability prohibit a society from producing the level of inventiveness required to adapt to environmental scarcity: limited economic and agricultural productivity, migration, social segmentation, and disruption of established institutions. These societal repercussions are caused by more than just environmental shortages. The relationships between different ethnic groups and the state's level of independence from outside pressure groups are examples of contextual factors.

Most of the existing literature discusses food security concerns in the context of general environmental degradation and its impact on socio-economic development. Very little data is available that analyzes food security in the context of foreign policy, and more specifically in the context of the national security of Pakistan.

1.12. Core Argument

Looming food scarcity has become a major national security threat due to a lack of effort and a gap between policy and implementation. If not managed, rising food insecurity will become a major national security threat that will impact the state's stability.

1.13. Research Methodology

Pakistan is located in a region with fragile security. Its security concerns span from terrorism and political stability to economic and social development. To keep these interests intact, it is very

⁵⁹ Thomas Homer-Dixon and Jessica Blitt, . . *Ecoviolence: Links Among Environment, Population and Security* (New York: Rowman & Littlefield Publishers, 1998).

important to maintain security and political and economic stability in the region. However, this becomes too difficult due to the growing economic, social, and political cost of food security. This research study is significant in multiple ways. One, it establishes a link between food scarcity and national security. Two, it elaborates on how the food scarcity problem can be securitized. Three, the study finds a comprehensive policy mechanism to mitigate this problem.

The thesis has investigated its main questions by employing a qualitative research design with an exploratory approach. The research focuses on the complex interplay between food insecurity and national security using theoretical interpretation and case-based analysis to understand how food insecurity affects the dynamics of health issues, social security, and other issues, ultimately leading to an effect on national security in Pakistan. Establishing and strengthening the argument that food security issues pose serious threats to both traditional and nontraditional security across multiple sectors. The thesis uses both primary and secondary sources. Since the research is a desk study, Books, research articles, newspaper articles, reports, internet articles, and dissertations are some examples of the secondary sources that are to be consulted., Government reports, policy documents, and press announcements are among the other sources to be used. The research has used a deductive approach to investigate its research question and to understand and create a link between the variables of food security and its securitization in the context of Pakistan. The study is more focused on food security issues among the nontraditional security threats in Pakistan. Moreover, the impact of food security issues is discussed in the context of Pakistan's national security.

In terms of research design, this thesis identifies food scarcity as an independent variable and securitization as a dependent variable. The study explores whether and how food scarcity led to its securitization within Pakistan's policy and security discourse. The relationship between these two

variables is central: as food scarcity intensifies, the state is compelled to recognize it as a security threat, prompting securitization action and emergency responses. Thus, the research not only proposes the securitization of food scarcity but also analyzes the extent to which securitization is already underway in Pakistan. This approach ensures that the application of Securitization Theory is not merely theoretical but is used as an analytical tool to evaluate the framing, discourse, and policy responses to food insecurity in Pakistan.

1.14. Operational Definition

The details of operational definitions are as follows.

i. Food Scarcity

Food scarcity refers to the condition where a significant portion of Pakistan's population lacks regular access to sufficient, affordable, and nutritious food due to factors such as climate change, population growth, poor governance, agricultural inefficiency, and resource mismanagement. It includes both physical unavailability and economic inaccessibility of food at the household and national levels.

ii. Food Security

Food security is operationalized as a state where food is available, accessible, affordable, and nutritionally adequate for all individuals at all times. The thesis applies the FOA's four pillars model, availability, access, utilization, and stability, to assess Pakistan's food system.

iii. National Security

National security in the context of this research goes beyond traditional military threats and includes non-traditional security dimensions such as economic stability, social cohesion, political integrity, and social welfare. Food scarcity is treated as a non-traditional security threat that

undermines national security by causing civil unrest, weakening state legitimacy, and increasing vulnerability to internal and external shocks.

iv. Securitization

Based on Barry Buzan's securitization is defined operationally as the process by which state or institutional actors portray an issue (in this case, food scarcity) as an existential threat that requires urgent and extraordinary measures outside the normal political procedure. This involves:

Securitizing actors (e.g., government, military),

Target audience (e.g., policymakers, public, media),

Existential Threat (Food Scarcity)

And extraordinary actions (e.g., military involvement, emergency interventions).

v. Climate-Induced Disasters

In this thesis, climate-induced disasters are defined as extreme weather events such as floods, droughts, and heatwaves that directly damage agricultural production, the food supply chain, and livelihoods. These disasters are treated as triggers of food scarcity and as contributors to national vulnerability and unrest.

vi. Water scarcity

Operationally, water scarcity is defined as the insufficient availability of water for irrigation and drinking, which negatively affects food production. It includes both physical shortages and mismanagement of water resources, particularly in agricultural zones dependent on canal systems.

vii. Vulnerable population

In this research, vulnerable populations include low-income households, children, women, rural communities, and internally displaced persons who are disproportionately affected by food scarcity and who lack the means to adapt to resist these shocks.

viii. Agricultural Value Chain

The term is defined as the entire process of agricultural production, from input provision (seeds, fertilizers, water) to farming processing, transport, marketing, and final consumption. Disruption in this process is treated as a major contributor to food scarcity.

ix. Climate Resilience

This refers to Pakistan's capacity of its food and agricultural system to absorb, adapt to, and recover from climate-related shocks.

x. Social Safety Nets

These are public or donor-supported programs like food rations, cash transfers, or nutrition supplements aimed at cushioning the impact of food scarcity.

1.15. Conclusion

Comprehensive approaches that tackle the underlying causes of poverty and inequality, support sustainable agriculture and rural development, fortify social safety nets, enhance access to healthcare and education, and increase resilience to shocks like climate change are needed to address food insecurity in low-income nations. International cooperation, investment, and support are crucial in achieving long-term solutions and ensuring that people have more than enough food, which is also sufficient. Food insecurity is a complex issue with many dimensions that impact individuals, communities, and nations around the world. Race, poverty, inequality, violence, climate change, and economic instability are all different forms of this that are compounding

systemically. Food insecurity is associated with increased levels of social unrest, poor health outcomes, malnutrition, and impaired economic development, particularly in low- and middle-income countries. Moreover, because it can drive conflict, displacement, extremism, and cross-border tensions, it is increasingly recognized as a security issue. This requires comprehensive approaches that address root factors of food insecurity in parallel with social protection, rural development, sustainable agriculture, and peacebuilding efforts to address the issue. Building more resilient food systems and guaranteeing that everyone has access to sufficient and nourishing food are crucial for maintaining peace, security, and prosperity for both the present and future generations. This requires international cooperation and support.

With the end of the Cold War, the national security issue has emerged more as a non-military issue all over the world. With the addition of many non-traditional dynamics of security, there is now a vast array of topics being covered under security studies. Food security is one such issue that is gradually becoming a threat to the national security of many countries, including Pakistan.

Food security means "a situation in which all people have constant physical, social, and economic access to sufficient food that meets their dietary requirements and food preferences for an active and healthy life."⁶⁰ When these requirements are not met peacefully, history shows that people turn to less peaceful methods of fulfilling their food requirements, particularly when people are marginalized and face economic disparities with their neighbors. As a result, there appears to be a correlation between conflict and food insecurity.

⁶⁰ State Bank of Pakistan, "The State of Food Security in Pakistan" (Islamabad, 2019), <https://www.sbp.org.pk/reports/SpecialSections/index.htm>.

Chapter 2: Exploring the Key Factors and Underlying Causes of Food Scarcity in Pakistan

Food security is of paramount importance for developing states for several reasons. It is essential for socio-economic and political stability. It is crucial for maintaining sustainable development, lowering poverty, and advancing health. It necessitates a multifaceted strategy that includes raising food access, boosting agricultural productivity, advocating equitable distribution, and strengthening nutrition education and awareness. This stability is crucial for developing states where large portions of the population are vulnerable to even minor fluctuations in food prices. Adequate access to food reduces the likelihood of social unrest and political instability. When people cannot feed themselves and their families, it can lead to protests, conflicts, and even revolutions, as seen in various parts of the world.

2.1. Overview of Food Scarcity Issues in Pakistan

A critical aspect of this chapter is to discuss Pakistan's food scarcity situation according to the food security definition provided by the World Bank, as discussed in the previous chapter. Moreover, it concentrates on pivotal variables such as climate change, agricultural productivity, governance, and resource management, which have a direct and significant impact on food scarcity. Each variable will be explored individually to elucidate its role and contribution to the overarching issue. The discussion will also emphasize the interlinkages between these variables to ensure a coherent narrative.

Food security remains a significant challenge in Pakistan, with various factors contributing to the issue. Pakistan suffers from food insecurity because of the impact of climate change (which affects agricultural productivity), and inefficient water resource management governance (unstable political arrangements, corruption).

Pakistan, the fifth-largest state in the world with a society centered mostly on agriculture, regrettably, has significant issues with food insecurity for several reasons. For the past 20 years, the population growth rate has been a little over 2%. Moreover, inadequate water management, climate change, and harsh weather have a detrimental impact on the yields of almost all commercial crops. Pakistan has made progress in improving farming practices by implementing contemporary techniques, developing better seeds, and managing resources, but there is still a long way to go in guaranteeing food security and affordability for its expanding population.

Pakistan is also susceptible to extreme weather conditions and disasters, as evidenced by the frequent occurrence of drought since 2013. According to the UN Food Security Cluster (FSC), this phenomenon has impacted the livelihoods and household food security of individuals in parts of Baluchistan and Sindh provinces. In 2019, the FSC estimated that approximately 5 million people across 26 districts of these provinces were affected by the drought. By July 2019, the Integrated Food Security Phase Classification indicated that around 1.3 million individuals in seven drought-affected districts of Sindh Province were facing acute food insecurity at Crisis (IPC 3) and Emergency (IPC 4) levels.

In early and mid-January, the UN Office for the Coordination of Humanitarian Affairs (OCHA) reported that strong precipitation consisting of rain and snow affected around one million households in the AJK and Gilgit-Baltistan areas, along with the Baluchistan and Khyber Pakhtunkhwa (KPK) provinces. By late January, it was reportedly difficult for many impacted

households to relocate to safer areas due to road closures and bad weather, and it was also difficult for relief actors to reach homes in outlying afflicted regions.

The four decades of conflict and instability in Afghanistan have caused harm to Pakistan's resources, particularly its agricultural output, which has led to resource smuggling and illicit resource movement. Smuggling and population growth have boosted demand for food goods, which has raised the cost of staple commodities and made hunger and poverty worse. The ongoing crisis in Ukraine has further complicated the world's food supply system. Pakistan's inability to meet domestic demand for essential food commodities forces it to regularly import wheat, sugar, palm oil, tea, and a range of pulses. This contributes significantly to food insecurity in two ways. One is that Pakistan's current account imbalance gets worse by forcing the country to make payments in foreign currency, which is already hard to get. The population's susceptibility to exploitation as a result of their inability to narrow the gap that could lead to extreme poverty is the second.

2.2. Food Availability in Pakistan

Food availability has become a major global concern. Approximately one billion people globally suffer from food insecurity, with the bulk of those who are undernourished living in Sub-Saharan Africa, Asia, and the Pacific Islands. Climate change has emerged as a major factor behind food availability in different parts of the world, including Pakistan. It is among the most badly affected countries in the world due to a notable increase in the number of people living under chronic food insecurity as a result of climatic changes. Several issues are further aggravated due to climate change and contribute to food availability.

2.2.1 Climate Change Impact:

A new global threat, climate change, has catastrophic consequences for people, national economies, and national development. The entire community has been alerted by the Intergovernmental Panel on Climate Change (IPCC) to the dangers posed by greenhouse gas emissions, biodiversity loss, natural resource degradation, and global warming. Pakistan's economy is negatively impacted by these problems; hence, adaptation and mitigation strategies must be put in place. This calls for actions such as stepping up the mitigation of glacial flood risks in the relevant areas, managing floodplains holistically, improving coastal livelihoods, protecting the mangrove ecosystem, collecting rainwater, and so on. Another significant issue that is drastically reducing farm productivity is land degradation. It involves soil salinity, which seriously impairs the land's capacity for production and results in low crop yields. This is mostly because irrigation uses low-quality groundwater. In a similar vein, waterlogging significantly reduces the productive potential of land.

This loss will make the already precarious position worse in Pakistan, which is already having difficulty meeting domestic wheat demand. In addition, the production of mangos is impacted by climate change. Pakistan will not meet its output target for this year due to unfavorable weather. Aside from these, the worst effects have been caused by the lack of water, since many areas of Pakistan experience ongoing shortages. One of the worst-hit regions due to the severe water scarcity is Cholistan. People are suffering and losing their livelihoods—livestock, for example.

This is not a recent occurrence. Pakistan has long been experiencing the effects of climate change. From 2010 to 2014, there were devastating floods. The biggest natural disaster in Pakistani history, the 2010 floods, caused \$10 billion in losses and a 10% rise in food poverty. Agriculture is one of the most impacted industries, although climate change has caused extensive devastation.

Pakistan is located in a region where there would be a significant decline in crop productivity.⁶¹ A study estimates that by 2040, Pakistan's agricultural productivity will decrease by 8–10% due to climate change, with wheat being one of the main losers. A distinct study indicates that in the next years, the crops of rice and wheat, especially Basmati rice, will be most adversely affected by climate change. It projects a 15% to 18 % decrease in Basmati rice yield nationally and a 6% decline in wheat yield, excluding the northern regions.

The adverse effects of climate change on water deficiency and irrigation issues can be seen in Pakistan. Irregular rainfall systems, hotter temperatures, and extreme climatic conditions (floods and droughts) trouble the water resources for crop production. It is suggested that statistics show that Pakistan has witnessed an increase in both the frequency and intensity of natural disasters, all of which contribute to degrading the quality of water resources and irrigation infrastructure.

(i) Agricultural production

Agricultural production in Pakistan has a critical impact on the country's national income. It generates a considerable GDP share, supply of labor, and provision of the national food supply. Despite its crucial role in food security for Pakistan, several differing problems exist. The key problem is that water scarcity is getting worse and aggravated by the leakages and problems in growing plants with limited water supplies. The issues are also exacerbated by climate change, as these bring changes in weather patterns, in a way that extreme weather conditions like floods and droughts become more frequent, thus reducing agricultural yields. Traditional farming methods and disprove resort to innovative and advanced agricultural technologies wipe out the farmer's resources and output. The continuing problems of land degradation and erosion of soil

⁶¹ Shakeel Ahmad Ramay, "Climate Change Killing Agriculture," *Online*, June 6, 2022, <https://tribune.com.pk/story/2360219/climate-change-killing-agriculture>.

threaten the sustainability of agricultural production. In addition to this, insect infestation and disease can destroy much of the crops and livestock, leading to significant losses. Inefficient infrastructure, such as storage and transport facilities, together with waste of food after harvesting and during marketing, costs the economy a lot. Shunning these difficulties implies multidimensional plans that are aimed at water resources management, climate-proof agriculture, technology adaptation, infrastructure construction, and legislation initiatives. In doing so, Pakistan could increase its overall yield, additionally raise the food supply, and also increase the incomes of the masses, on whom agriculture depends.

In Pakistan, the vast majority of people are either directly or indirectly employed in agriculture, which remains the primary industry in terms of labor force participation. In Pakistan, the agricultural sector employs 37.4% of the labor force and contributes roughly 22.9% of the country's GDP. Over 70% of Pakistan's exports are products with some connection to agriculture, either directly or indirectly. With a land area of 30.5 million hectares, agriculture accounts for over 47% of the country's total land area, which is greater than the global average of 38%. Livestock makes up the largest portion of the agriculture sector (62%), followed by fisheries (0.3%), forestry (0.5%), other crops (3.3%), and significant crops (4.1%). Pakistan has two main cropping seasons, Kharif and Rabi, with 72.7 MAF of total available water.⁶²

⁶² FAO, "FAO in Pakistan," online, 2023, <https://www.fao.org/pakistan/our-office/pakistan-at-a-glance/en/#:~:text=Agriculture Sector&text=About 70 percent of Pakistan's,global average of 38 percent>.

Table 2.1: Agriculture Growth (Base=2015-16)						(%)
Sector	2017-18	2018-19	2019-20	2020-21	2021-22(R)	2022-23(P)
Agriculture	3.88	0.94	3.91	3.52	4.27	1.55
1.Crops (i+ii+iii)	4.61	-4.38	6.32	5.83	8.19	-2.49
i) Important Crops	4.27	-8.59	5.24	5.82	5.41	-3.20
ii) Other Crops	4.65	3.62	9.21	7.95	11.93	0.23
iii) Cotton Ginning	8.27	-11.23	-4.06	-13.08	9.22	-23.01
2.Livestock	3.59	3.65	2.80	2.38	2.25	3.78
3.Forestry	2.24	7.22	3.36	3.35	4.07	3.93
4.Fishing	1.57	0.78	0.63	0.73	0.35	1.44

R: Revised P: Provisional

Source: Pakistan Bureau of Statistics

Source: Pakistan Bureau of Statistics

Eighty-two percent of the area under cultivation is rainfed, and over eighty-two percent is irrigated. Winter-season crops such as wheat, barley, gram, lentils, rapeseed, and canola mustard are grown in around 60% of the rainfed areas. With 37 and 11 percent of the total crop area, respectively, wheat and rice are the two main staple crops. The two main cash crops, sugarcane and cotton, account for 0.9 and 0.3 percent of the GDP, respectively.⁶³

The State of Pakistan's Agriculture 2023 report by the Pakistan Business Council delves deeply into the issues that the country's agricultural sector faces, with a particular emphasis on five crucial areas: technology, water, financing, seed money, animal disease, and feed. The paper provides policymakers with a list of priorities for promoting agriculture as an economic driver. Enhancing crop yields, utilizing private sector investment in the industry, and cultivating fruits and vegetables to preserve water and promote rapid growth are some ways to do this.⁶⁴ In response to stakeholders' demands for information on the origins of products as well as sustainability, this highlights the importance of creating mutually reinforcing ties between successive amounts of stakeholders in

⁶³ Food & Agricultural Organization, "FAO in Pakistan," online, 2023, <https://www.fao.org/pakistan/our-office/pakistan-at-a-glance/en/#:~:text=Sugarcane and cotton are the,production of 67 million tonnes.>

⁶⁴ Pakistan Business Council, "The State of Pakistan's Agriculture 2023" (Islamabad, 2023), <https://www.pbc.org.pk/research/the-state-of-pakistans-agriculture-2023/>.

the sector and calls for appropriate investment in modern agro-technologies. Pakistan's agriculture plays a crucial role in the country's survival and development because of its socio-political interconnection and its economic and financial backward and forward linkages. All of our macro indices, including the economy's growth rates, the poverty rate, foreign exchange reserves, inflationary pressures, etc., are still determined by their performance.

(ii) Water Scarcity and Irrigation Issues

Water crisis and irrigation problems are substantial problems in the cotton sector of Pakistan, which have an impact on crops, farm households, and food security. A comprehensive analysis based on statistics reveals the severity of these challenges: A comprehensive analysis based on statistics reveals the severity of these challenges.

Water Availability: Pakistan belongs to the row of water-stressed countries, with a value per capita well under the worldwide average. Calculations by governments show that the per capita water availability of Pakistan in 1951 was 5,260 cubic meters per person. Recently, it has decreased to 1,017 cubic meters per person. The decline is mainly caused by population growth, urbanization, and the high demand for water from different sectors, including agriculture by nature.⁶⁵ The agriculture of Pakistan, in particular, is largely irrigation-dependent, having over 90% of the cultivated area using irrigation water as its source. The Indus Basin Irrigation System, a huge irrigation network globally, helps curb agricultural pursuits in the country. Inefficient water management, including significant water losses during distribution and conveyance, contributes to the growing scale of water shortages.

⁶⁵ The Nation, "Pakistan's per-Capita Surface Water to Decrease to 860 Cubic Meters by 2025," July 20, 2023, <https://www.nation.com.pk/20-Jul-2023/pakistan-s-per-capita-surface-water-to-decrease-to-860-cubic-meters-by-2025#:~:text=In 1951%2C the amount of,capita by the year 2016.>

Pakistan is quite rich in groundwater, which is used for general irrigation purposes in regions where the desertification of surface water is high. Meanwhile, the groundwater draws have become very quick, hence leading to a significant drop in water underground. According to the statistics, groundwater levels have generally gone down in many parts of the country since the beginning of the 21st century, consequently causing water resources depletion and impairing the water quality. Inefficient water use for agricultural purposes magnifies the stresses induced by water deficit on crop yield. Inefficient irrigation techniques, old irrigation infrastructure, as well as technologies that do not have water-saving abilities can lead to irrigation water waste and reduce crop production. The figures tend to indicate that the performance of Pakistan's water productivity in agriculture is accordingly lower compared to the international standards. This denotation, coupled with analysis of these figures, indicates the necessity of increasingly efficient water management practices and the adaptation of new technologies.

(iii) Soil and Land degradation:

Land degradation is often characterized as the impairment of soil structure, chemical, and biological properties of the soil by natural or human factors, conditions that have huge implications on the availability of food, water for agricultural uses, and the environment. Despite occupying 7.7 million square meters, Pakistan is facing the huge problem of land degradation, whose 20% territory converted into dry land, making the problem intensive. This country is listed as a water-stressed nation with an increasing population, hence the increasing land degradation problem.

The fundamental reason for land degradation in Pakistan is over-extraction of natural resources, particularly water & forests. With about a 40% erosion rate since the same period (1990), deforestation worsens soil deterioration, resulting in decreased yield in crop farming. In itself, this is bad enough, but the problem of overgrazing makes it worse because around 70 percent of

Pakistan's livestock graze on degraded pasture lands, which increases soil compaction, further controlling plant cover and leading to productivity depreciation. Pakistan is among the most affected nations by the degradation of land. According to a recent assessment by the United Nations Convention to Combat Desertification (UNCCD), Pakistan has lost more than 20% of its agricultural land to desertification. This is a concerning statistic given that Pakistan is already a water-stressed nation with a rapidly expanding population.

The over-exploitation of natural resources, including water and forest resources, has contributed to the increasing land degradation in Pakistan. Deforestation has also emerged as a serious issue. The Food and Agriculture Organization (FAO) reports that since 1990, Pakistan's forest cover has decreased by around 40%. Lower agricultural yields are the result of soil erosion and fertility loss brought on by this.

Overgrazing is also contributing significantly to land degradation. Although these overgrazed rangelands support almost 70% of Pakistan's cattle. Reduced infiltration rates, a decrease in vegetation cover, and compacted soil are the results of this. The net effect is a decrease in these areas' productivity.

(iv) Role of livestock and fisheries

Pakistan's agricultural industry is divided into four categories: fisheries, crops, animals, and forests. A total of 56% of agriculture's production comes from livestock, while 38% comes from the crop sector, of which the main crops account for 25% and the minor crops for 13%. Forestry and fishing each provide 2% of the total.

In 2021–2022, livestock accounted for 14.0 percent of the country's GDP and 61.9 percent of the value added to agriculture. The majority of Pakistani rural residents' economic activity is focused

on raising animals. Livestock production is the primary source of income for over 8 million rural families, accounting for 35 to 40% of their total income. Livestock's gross value added increased by 3.26 percent, from Rs 5,269 billion in 2020–21 to Rs 5,441 billion in 2021–22.⁶⁶ In this region of the world, agriculture has long been a significant industry because of a favorable climate and abundant water supplies. Pakistani farmers can grow a wide range of agricultural commodities throughout the country at different times of the year due to the country's distinct ecological zones and abundant natural resource base.

2.2.2 Policy and Governance Challenges:

Rapid urbanization, economic expansion, and population growth are all contributing to the worrisome rate at which vital arable land is being transformed for non-farm commercial uses. While vital, infrastructure development also turns fertile terrain into brick and mortar. Extremely fertile land is disappearing due to urbanization and infrastructure projects, but climate change is posing a threat to dry land arable farming, decreasing rangeland productivity, and raising sea levels, which is causing issues for coastal communities.

A national land use policy must be developed to ensure that each country's land resources are used rationally in light of these developments. Therefore, all provincial governments must develop long-term, comprehensive land use policies that address all aspects of land use, including access to land and the tenure arrangements under which it is held, as well as the security and distribution of land rights. It should include both a production and a conservation component, with the state enforcing severe regulations and, in extreme cases, outright bans to limit the use of arable land for property development.

⁶⁶ Finance Division, “Survey” (Islamabad, 2022), https://www.finance.gov.pk/survey/chapter_22/PES02-AGRICULTURE.pdf.

The absence of water governance, poor related institutions, and disunited sectoral segmentation impair the effective management of water resources in Pakistan. Unfortunately, the whole field of comprehensive legal regulation of water and efficiency of waterwise initiatives lacks proper enforcement from the side of the government, which tends to intensify the water crisis and impede water use efficiency. Indicators of water governance can show the policies that need to be implemented, that there's inadequacy in coordination among stakeholders, which leads to water inefficiencies, mismanagement, and inequitable water allocation.

(i) Lack of access to markets

One of the main problems Pakistani agriculture is facing is a lack of market access. Due to a lack of infrastructure and resources, small-scale farmers in particular have little or no access to markets for their products. Small-scale farmers are unable to sell their goods at a reasonable price due to this lack of access, which restricts their income and raises the rate of poverty in rural areas.

By establishing agricultural marketing boards and offering subsidies for transportation and other inputs, the Pakistani government has attempted to address this issue, but these measures have not been successful enough to address the root cause of the issue. The government must make a more thorough and well-coordinated effort to enhance

2.3. Access to Food in Pakistan

The situation of food accessibility is not encouraging in Pakistan. Access to food stands when the population of a country has adequate access to nourished food, which is a vital aspect of life and plays its role in the level of satisfaction people can obtain. When individuals or families have problems in meeting an adequate food supply, it is almost definitely that they will suffer from nutritional deficiency. It can have a devastating impact on the well-being of the individual and the family members. Then, the prices of education, health care, and accommodation are likely to go

upwards, and some families are required to think about the elements like food first if they insist on their family with those costs. This decision eventually can lead to a new type of poverty in which families choose cheap and nutrient-poor products or lower calories. They spend less and face many health issues. In debt, their inability to purchase enough of the necessary and nutritious food also not only causes to worsens their short-term health status but severely undermines their long-term perspectives for economic development and social justice. In Pakistan, more than 40% of children under five suffer from stunting, although the average for South Asia is 31%. Stunting is most directly linked to physical and mental growth and development of the brain, which can have long-term effects on a child's health and capacity to lead a satisfying life.⁶⁷

Food accessibility conditions in Pakistan are still a matter of concern despite (but in distinction from) the attempts to resolve the associated issues. Statistics to the latest figures show that 18% of the overall Pakistani population, ie, more than 37 million people, have access to healthy foods, and a significant proportion cannot afford to have enough nutritious foods daily. Some of the issues responsible for this situation include poverty, scarce plants suitable for agriculture, e.g., land and water, and a deficit in storage and distribution facilities. Also, problems, such as malnutrition, especially among women and children (stunting), stand tall. Overall, 32% of children under 5 years of age are living with this situation. The COVID-19 pandemic exacerbated the food accessibility problems with restrictions associated with the lockdown disrupting supply chains, decreasing incomes, and making the prices of food high. The efforts taken by the government and different non-governmental bodies to meet these two challenges are considered a step in the right direction; however, they shouldn't relax as human efforts are ongoing to have food supplied before starvation

⁶⁷ ZIAUDDIN HYDER and LIRE ERSADO, "Addressing Pakistan's High Level of Stunting, Now!," *Online*, 2023, <https://blogs.worldbank.org/endpovertyinsouthasia/addressing-pakistans-high-level-stunting-now>.

creeps in. Food security is also threatened by Pakistan's inadequate infrastructure, which includes cold chain systems, transportation networks, and storage facilities. Food is frequently wasted, ruined, or destroyed during transportation when there is inadequate infrastructure, which makes it more challenging to distribute food to those in need.

2.4. Food Affordability and Purchasing Power

Food insecurity and accessibility issues become more serious with food affordability and purchasing power issues. Inflation has led to reduced living standards and issues with malnutrition, both of which are linked to health problems. Pakistan is placed 92nd out of 116 countries in the Global Hunger Index, indicating a significant level of hunger in the nation. For the second year running, Pakistan's food inflation rate is still in the double digits. The Bureau of Statistics reports that in July, it rose to a record 28.80 percent. People no longer have the same purchasing power to buy these things at the same income level. The primary economic concern facing Pakistan now appears to be the increase in food prices. It hinders development and lowers people's purchasing power. Pakistan, a growing nation, is having trouble keeping up with the rising cost of food. Given that it lowers the welfare of the impoverished, this issue needs to be addressed. Many are becoming impoverished as a result of the food inflation situation. Furthermore, the government is not offering any assistance to the populace.

Pakistan is experiencing significant rates of inflation, notably food inflation, which is negatively affecting people's access to food and purchasing power, especially for middle-class and lower-class populations over an extended period. According to the FSLA, food accounts for 72% on average of all household expenses, with 42% of households spending more than 75% of their total income on food.

One major contributing factor to Pakistan's rising food prices is the depreciation of the Pakistani Rupee. The recent political unrest in the nation has affected the devaluation of the currency as well. Due to Pakistan's net import of food, the depreciation of the rupee drove up the cost of food supplies. Devaluation raises the cost of all imported items, including soybeans, crude oil, chicken feed, fertilizer, seeds, and insecticides. The increase in the price of these imported goods affects the cost of producing agricultural commodities. The price of imported DAP fertilizer has increased by more than twice as much in the last year.

The depreciation of the exchange rate and the worldwide surge in oil prices have had a detrimental impact on production costs. The cost of completed goods is directly impacted by increases in the price of essential inputs like seeds, fertilizer, pesticides, agricultural machinery, and transportation. Prices have increased as a result of the removal of fertilizer and seed subsidies in response to requests from the IMF. The government must import DAP fertilizer at a great cost since the nation produces less fertilizer than it needs. The depreciation of the exchange rate and the worldwide surge in oil prices have had a detrimental impact on production costs. The cost of completed goods is directly impacted by increases in the price of essential inputs like seeds, fertilizer, pesticides, agricultural machinery, and transportation. Prices have increased as a result of the removal of fertilizer and seed subsidies in response to requests from the IMF. The government must import DAP fertilizer at a great cost since the nation produces less fertilizer than it needs. Price increases are the result of crop productivity being impacted by the fertilizer shortage. When canal water is scarce, diesel-powered tube wells are used. Similar to this, gasoline is needed for agricultural machinery, and high fuel prices have a direct impact on production costs. When the cost of price

increases.⁶⁸ When canal water is scarce, diesel-powered tube wells are used. Similar to this, gasoline is needed for agricultural machinery, and high fuel prices have a direct impact on production costs. Food inflation is directly related to the cost of manufacturing.

One such factor pushing higher food prices is the impact of climate change on agricultural practices and food production. Climate change threatens our primary crop production system, which includes rice, wheat, maize, cotton, and sugarcane. Temperatures are predicted to increase by 3°C by 2040 and 5–6°C by the end of the century, which will cause Asian nations to lose up to 50% of their wheat production. Pakistan will suffer more from this loss because of its location. Climate change would have a substantial influence on all of Pakistan's key crops, including wheat, rice, corn, cotton, and sugarcane, according to research done to assess this impact. The consequences of climate change significantly alter the Earth's temperature, precipitation patterns, and agricultural growth stages. The impacts of climate change on crops vary from crop to crop, even though cotton is one of the most affected one. Rice and wheat are the main staple foods and crops grown in Pakistan. Climate change has caused a discernible drop in the market price of rice and wheat in recent years, with percentages of 14.7 and 20.5 percent, respectively.⁶⁹

The Pakistan Bureau of Statistics (PBS) issued statistics on Consumer Price Index (CPI) inflation in April 2023. The data indicated that in March 2023, CPI inflation (General) in Pakistan climbed by 35.4 percent year over year. By July 2023, the percentage had marginally decreased to 29.4 percent. In March 2023, food inflation increased by 47.1 percent for consumers in urban areas and 50.2 percent for customers in rural areas year over year. However, in July 2023, there was a slight

⁶⁸ Samana Mehmood, “High Food Inflation Rate in Pakistan: Causes, Effects & Recommendations,” online, 2022, <https://www.paradigmshift.com.pk/causes-and-effects-of-food-inflation-in-pakistan/>.

⁶⁹ Areeja Syed et al., “Climate Impacts on the Agricultural Sector of Pakistan: Risks and Solutions,” *Environmental Challenges* 6 (2022): 1–5.

improvement, with rates of 40.8 and 41.5 percent, respectively. Food is widely available in markets, but because of low incomes, high rates of poverty, and general and food inflation, households' purchasing power is very low.⁷⁰ Household access to food is further restricted by the outlying locations to food markets. Flooding has made it more difficult to access food markets by causing damage to the road infrastructure, which hasn't been repaired yet.

2.5. Conclusion

Pakistan faces food scarcity as an extremely complicated phenomenon that could be classified into an interconnected spectrum, like waste, because of a lack of developed infrastructure and the role of socio-economic inequalities. It is an agricultural-based economy, but food accessibility, food availability, and food affordability for the already fifth-largest population are facing serious challenges. The onslaught of climate change over these factors just worsens them. Crop yield, availability of water that is environmental, and rural livelihoods continue to suffer unabated. Governance challenges due to the inefficient management of resource bases and lack of a coherent policy framework slow the progress in food security issues.

Though several measures have been introduced to counter the above challenges, such as modernization of agricultural practices, improved resource management, and rural development interventions, to name a few, much more remains to be done. Sustained long-term development will require an approach that integrates governance improvements, builds climate resilience, invests in infrastructure, and empowers smallholder farmers.

One of the crucial steps in reducing hunger and poverty-related malnutrition will be to improve the affordability and accessibility of food in vulnerable populations of Pakistan. Addressing these

⁷⁰ IPC, "IPC ACUTE FOOD INSECURITY ANALYSIS," 2023, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Pakistan_Acute_Food_Insecurity_April_2023_January_2024_Report.pdf.

multifaceted issues with urgency and coordinated action will not only improve the food security situation but also strengthen the country's socio-economic and political stability and pave the way towards a more secure and sustainable future.

Chapter 3: Establishing the link between Food scarcity and National security in the context of Pakistan

3.1. Pakistan's Food Scarcity: An Issue of National Security

Food scarcity has emerged as a challenging issue in Pakistan, threatening social cohesion and economic growth. There is a very intricate relationship between food scarcity and national security. Food security is ensured in a society when sufficient nutritious food is available and accessible to the majority of the population. Nonavailability, non-affordability, and non-accessibility of enough food have severe implications on individuals and households as well as on economic, political, and ultimately national security. In Pakistan, where the agriculture sector's share in GDP stands at 19.53% and agriculture provides an employment source to 45% of the population, food scarcity becomes a severe national security issue.⁷¹ The understanding that food shortages may worsen poverty fuels instability in society and threatens the capacity of the government to uphold order and governance, highlighting the connection between national security and food security.

Pakistan confronts numerous challenges to food security, including economic, environmental, and social problems. Water scarcity is a serious challenge to crop production, which is essential for food security, and is made worse by climate change and ineffective management. Although livestock and farming consume 93% of the country's water resources, competitiveness for

⁷¹ Finance Division, "Agriculture" (Islamabad, 2020), https://www.finance.gov.pk/survey/chapter_20/02_Agriculture.pdf.

household and agricultural use is increasing, which could pose a danger to national security.⁷² Economic development and food security run together hand in hand; a country is already susceptible if it can't generate enough food or does not have the financial resources to import food. Food security has been proven to be adversely affected by land distribution inequalities and farmland disintegration, which has led to the theory that land reform could be an important government intervention. Furthermore, food stability and accessibility are put at risk by rising food prices, which have increased by over 100% between 2006 and 2007. As a result, government officials must address these economic concerns.⁷³

The most important objective for Pakistan's stability over the long term is to have conversations about food security as an essential aspect of national security. Being an agricultural country, the majority of Pakistan's rural population is dependent on agriculture. This aspect makes food security a very crucial issue. With low economic development levels, less developed infrastructure, and socio-political instability, it becomes difficult to ensure food accessibility, affordability, and availability across the country, especially in the vulnerable and food-insecure population, which accounts for 29% of the total population. Such a high hunger index creates a serious threat to national security.⁷⁴ Food production and availability are in danger because of several problems the business is dealing with, including water scarcity, old farming methods, and global warming. For example, excessive reliance on outdated farming methods and a lack of investment in modern agricultural technologies reduce output and increase food insecurity. In

⁷² Government of Pakistan, "Pakistan Can Avert Water Crisis by Adopting Drip, Spray Irrigation System in Farming: President" (Islamabad, 2023), <https://president.gov.pk/news/pakistan-can-avert-water-crisis-by-adopting-drip-spray-irrigation-system-in-farming-president-2#description>.

⁷³ Ifra Chaudhry et al., "Review: Food Price Fluctuations and Its Influence on Global Food Market," *ANNALS OF SOCIAL SCIENCES AND PERSPECTIVE* 2, no. 1 (June 30, 2021): 21–33, <https://doi.org/10.52700/assap.v2i1.33>.

⁷⁴ IPC, "Pakistan: Acute Food Insecurity Situation for April - October 2023 and Projection for November 2023," 2023, <https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1156396/>.

addition, the issue is made worse by the impact of rising energy and inflation on food prices, which make food more expensive to those in the lower classes.⁷⁵ There are historical examples where the food-insecure population has staged protests. And even being used in the hands of extremist and terrorist elements. Pakistan, domestic political landscape and geopolitical situation, along with the food scarcity situation, lead to prolonged political instability in the country, which becomes a major threat to the national security of the country.

This requires programs for food security that increase production from agriculture, support distribution, and access networks, and ensure equitable access to food resources must be emphasized by the government. To reduce the effects of environmental changes and enhance resilience to disruptions to the food supply, this requires investing in infrastructure, such as irrigation and storage facilities.

3.2. Food Scarcity as a Strategic National Concern

3.2.1. The Role of Food Security in Maintaining Social Stability and National Cohesion

Pakistan is situated in a conflict-ridden region, where ensuring national security is an extremely difficult challenge for the government. As food security is closely linked with socio-political, economic, and ultimately national security, ensuring a stable and secure environment is dependent on food security. The inaccessibility of food provokes conflict. The World Food Summit's definition of food security also highlights this dimension of food security in that it is not only a

⁷⁵ Areeja Syed et al., "Climate Impacts on the Agricultural Sector of Pakistan: Risks and Solutions," *Environmental Challenges* 6 (January 2022): 100433, <https://doi.org/10.1016/j.envc.2021.100433>.

matter of health and nutrition;⁷⁶ it is also linked with the socioeconomic and political dynamics of a society and an issue of basic human rights as well.

In rural areas, where the majority of the population works in the agriculture sector, food security is closely tied to livelihoods. A study reveals that only 48% of small farming households in Pakistan are food secure, indicating a significant gap that can lead to social discontent and migration pressures.⁷⁷ The government's failure to ensure food security undermines social cohesion and aggravates the existing inequalities in the country.

3.2.2. Implications of Food Scarcity for Economic Stability, Governance, and Public Health

In Pakistan, food insecurity has a significant impact on public health, governance, and economic stability. Because hunger impacts workforce ability and output, food insecurity has the potential to hinder economic growth and productivity. A downward spiral of poverty and instability develops when the agriculture sector, which contributes significantly to Pakistan's GDP, is equally susceptible to the effects of food insecurity.⁷⁸ Additionally, since hungry and malnourished people place more pressure on social programs, food insecurity may cause an increase in government funding.

Food insecurity affects governance as well. The governments may be under pressure to respond to food crises, which can lead to turmoil in politics and distrust among the public.⁷⁹ The effects of

⁷⁶ FOA, "Food Security: Concepts and Measurement," online, 2002, <https://www.fao.org/3/y4671e/y4671e06.htm#:~:text=Food security as a concept,time of global food crisis>.

⁷⁷ Umar Ijaz Ahmed et al., "Status and Determinants of Small Farming Households' Food Security and Role of Market Access in Enhancing Food Security in Rural Pakistan," ed. Frédéric Mertens, *PLOS ONE* 12, no. 10 (October 27, 2017): e0185466, <https://doi.org/10.1371/journal.pone.0185466>.

⁷⁸ Syed Abdul Rehman Khan et al., "Disruption in Food Supply Chain and Undernourishment Challenges: An Empirical Study in the Context of Asian Countries," *Socio-Economic Planning Sciences* 82 (August 2022): 101033, <https://doi.org/10.1016/j.seps.2021.101033>.

⁷⁹ Olga Shemyakina, "War, Conflict, and Food Insecurity," *Annual Review of Resource Economics* 14, no. 1 (October 5, 2022): 313–32, <https://doi.org/10.1146/annurev-resource-111920-021918>.

food scarcity on public health are serious. Food insecurity and malnutrition cause an array of health issues, including slowed child development and increased susceptibility to diseases, which put additional strain on the health care system. As a consequence, food security is not just an agricultural problem; it is also a crucial aspect of national government and public health policy

3.2.3. The Intersection of Food Scarcity and Broader Security Issues (Terrorism, Conflict, and Civil Unrest)

The delicate link between food security and overall national security issues like extremism, terrorism, and conflict creates a dangerous security scenario. Food scarcity may fuel grievances among the vulnerable food-insecure population. This situation is prone to exploitation by radical and extremist elements to cause instability and the propagation of their ideologies.⁸⁰ Therefore, food insecurity can be regarded as a nontraditional security issue that further exacerbates Pakistan's already sensitive security situation.

Additionally, food shortages can lead to competition for resources, which in turn can escalate into violence, especially where ethnic and religious conflicts are common.⁸¹ Thus, addressing food security is essential for preventing violence and creating a safer and more secure environment, in addition to being a humanitarian issue.

3.2.4. National Security in the 21st Century: How Food Scarcity Exacerbates Traditional Security Challenges in Pakistan

Pakistan's food insecurity during the twenty-first century exacerbates traditional security challenges such as border conflicts and economic weaknesses. Pakistan's critical security scenario does not allow for looking at or delaying deliberations on the food security issue. Pakistan's

⁸⁰ Birgit Kemmerling, Conrad Schetter, and Lars Wirkus, "The Logics of War and Food (in)Security," *Global Food Security* 33 (June 2022): 100634, <https://doi.org/10.1016/j.gfs.2022.100634>.

⁸¹ Mehran Khan, "Shanghai Cooperation Organization: Opportunities for Pakistan," *Pakistan Social Sciences Review* 8, no. I (March 31, 2024), [https://doi.org/10.35484/pssr.2024\(8-I\)26](https://doi.org/10.35484/pssr.2024(8-I)26).

geographic location, hostile neighborhood, and politically unstable region pose a serious threat to its vulnerability. Pakistan's rivalry with India over Kashmir and water resources has dangerous consequences for the country's agricultural output. Moreover, Global warming exacerbates this by increasing the likelihood of natural disasters and decreasing crop yields, which puts pressure on the nation's ability to supply food for its citizens.

Economic vulnerabilities linked to food insecurity also pose a challenge to national security. A country that cannot ensure food security is inherently unstable, regardless of its military capabilities.⁸² The reliance on imports to meet food needs can create economic dependencies that undermine sovereignty and increase vulnerability to external pressures. Thus, addressing food security is not merely an agricultural or economic issue; it is a fundamental aspect of ensuring national security and stability in Pakistan.

3.3. Agricultural sector backwardness and Climatic impacts: Exacerbating Food scarcity

Fair to say that most of the agricultural activities happen out in the rural aground in Pakistan, where the majority of farmers have less formal education and are uninformed of the latest agricultural innovations that change productivity. In this context, the government is determined to step in the fill this void by empowering agricultural education. Even though there are several universities in Pakistan providing a BSc in Agriculture, no educational institutions hold internationally acknowledged research, and in addition to this, they do not contribute much to the uplift of the agricultural economy in the whole country. For instance, the communication gulf between farmers and scientists, smallholders' inability to afford high-tech gadgets, inadequate understanding of agronomic information, and the lack of good seed varieties with features suitable for stressful

⁸² *ibid*

weather conditions and pest attacks are among the issues that hinder productivity. Also, government laziness adds to the farm tradition of hanging on to outdated farming processes. Therefore, farmers find it difficult to accumulate requisite crop yields in terms of quantity and quality.

Pakistan is currently experiencing a serious problem in food security as a result of several issues, such as the lack of farm mechanization, the use of subpar seeds, and the absence of farming methods that are climate-resilient. Due to this, agricultural output has significantly decreased, making it necessary for the government to import expensive products, which has made food insecurity worse, especially for low-income households.⁸³ Furthermore, the production of food has decreased due to a lack of knowledge about contemporary farming methods and food safety precautions.

Pakistan's grain production fell significantly in the fiscal year 2022, mostly as a result of disastrous floods. This increased dependency on imports raised costs.⁸⁴ Pakistan's population is primarily dependent on staple crops like wheat, rice, and sugarcane for sustenance; hence, any interruptions to their production or supply networks could lead to famine. According to World Bank projections, worsening economic conditions will likely make poverty rates even worse by making it more difficult for disadvantaged people to afford higher food prices. The cycle of food insecurity and malnutrition is sustained by these socioeconomic conditions, especially for vulnerable groups. Pakistan's problems with food security have been made worse by insufficient efforts to mitigate

⁸³ Syed Muhammad Amir, Shehzad Khan, and Shakil Ahmad, "The Problem of Food Insecurity in Pakistan," *Online*, November 28, 2022, <https://www.pakistangulfeconomist.com/2022/11/28/the-problem-of-food-insecurity-in-pakistan/>.

⁸⁴ World Bank, "PAKISTAN FLOODS 2022 Post-Disaster Needs Assessment," 2023, <https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf>.

climate change. Frequent droughts, heat waves, and heavy rains have resulted in disastrous floods, which have made food shortages worse. Pakistani agriculture is mostly reliant on the country's four seasons; therefore, weather-related changes, especially in the monsoon season, can result in floods that lower crop output. The 2022 floods caused extensive damage to cattle and agricultural fields, exacerbating the state of food security.⁸⁵ Access to food during floods remains a major concern, particularly for women living in rural areas. Natural disasters have a negative impact on states and their people. But it's necessary to lessen their negative consequences. Several factors make Pakistan most susceptible to climate change, including annual heat waves, floods, and glacier melts that eventually result in food shortages. Global climate change has led to a rise in the frequency of natural disasters, especially floods in Pakistan. The promotion of climate-smart agriculture practices among our farmers urgently requires the use of technology and education. This will also help us adapt food supply chains that are stronger, more flexible, and more efficient. Food security is further complicated by Pakistan's fast pace of population expansion, as the population growth rate according to the 2023 census has reached 2.55%, and there is a growing demand for food resources than supply. The pressing need for more food supplies to meet the needs of the expanding population is highlighted by this demographic trend.

3.4. Food Scarcity: A National Security Issue in Pakistan

One of Pakistan's major national security concerns, food insecurity, is closely linked to the country's broader socioeconomic and political dynamics. A significant amount of Pakistan's population relies on the country's agricultural industry, which is susceptible to an array of issues, including water scarcity, inadequate agricultural methods, and climate change.⁸⁶ Given that

⁸⁵ *ibid*

⁸⁶ .M. Arif et al., "Climate, Population, and Vulnerability in Pakistan: Exploring Evidence of Linkages for Adaptation," 2019, <https://doi.org/10.31899/pgy10.1022>

agriculture is the main source of food production, any disturbance in this sector could worsen underlying security concerns by causing widespread food scarcity, hunger, and civil unrest. In addition, food insecurity worsens political instability; for example, food crises in many regions have sparked protests and overthrows of governments.

In addition, food insecurity worsens political instability; for example, food crises in many regions have sparked protests and overthrows of governments.⁸⁷ The political system in Pakistan becomes even more unstable when the government fails to ensure food security because it undermines public trust and creates dissatisfaction with the ruling elite. Since the military typically steps in to restore order and provide relief during crises, demonstrating its broad influence on national governance, its role in ensuring food security is equally significant.⁸⁸ Therefore, food insecurity is a complicated issue that touches on social, economic, and military facets of national security in addition to being an agricultural one.

3.5. How Food Scarcity Fits into the Broader National Security Concerns of Pakistan?

Pakistan's national security problems include food insecurity, which has a direct connection to the country's broader socioeconomic and political structure. A significant portion of Pakistan's population works in the agricultural sector, which is threatened by several factors, including low farming productivity, water scarcity, and climate change.⁸⁹ Due to our reliance on agriculture, any crisis in this sector has the potential to exacerbate already-existing security concerns by causing widespread food shortages, malnutrition, and social unrest.

⁸⁷ Marco Lagi, Karla Z. Bertrand, and Yaneer Bar-Yam, "The Food Crises and Political Instability in North Africa and the Middle East," *SSRN Electronic Journal*, 2011, <https://doi.org/10.2139/ssrn.1910031>.

⁸⁸ Humaira Khatoon, "Guardians and Governors: The Multifaceted Role of the Pakistan Army in National Development and Islamic Ethics," *Al-NASR*, December 2, 2023, 15–22, <https://doi.org/10.53762/alnasr.02.03.e02>

⁸⁹ Nasreen Akhtar, "Climate Change: Rising Security (Non-Traditional) Threat to Pakistan," *Journal of Development and Social Sciences* 4, no. III (September 30, 2023), [https://doi.org/10.47205/jdss.2023\(4-III\)91](https://doi.org/10.47205/jdss.2023(4-III)91).

Furthermore, as has been demonstrated in some situations around the world where food crises spurred protests and regime changes, food shortages can also lead to increased political instability.⁹⁰ The political environment in Pakistan may become even more unstable if the government fails to ensure food security because it may diminish public confidence and lead to disenchantment with the ruling class.⁹¹ Since the military frequently steps in to maintain peace and provide relief during times of crisis, which is a sign of its larger role in political governance, its role in dealing with food security challenges is also significant.⁹² As a consequence, food insecurity becomes a complicated issue that intersects with societal, economic, and military facets of national security, making it more than just an agricultural issue.

3.5.1. The Role of Food Scarcity in Pakistan's Foreign Relations and Diplomatic Strategies

Pakistan's political strategy and foreign relations, particularly with China and neighboring countries like Afghanistan and India, are heavily influenced by food security. Pakistan's economic stability is directly impacted by the agriculture sector's performance, and this in turn has an impact on Pakistan's diplomatic influence.⁹³ The China-Pakistan Economic Corridor (CPEC), for instance, aims to increase infrastructure investment and economic cooperation, which could encourage food security by improving trade routes and accessibility to markets.⁹⁴ As Pakistan looks to diversify its economic foundations and reduce its dependency on old donors, this trade relationship is especially important.

⁹⁰ Lagi et.al, "SSRN Electronic Journal," 1-15

⁹¹ Khuram Shahzad and Omer Farooq Zain, "Analysis the Impact of National Security Policy and Security Challenges on the Citizens of Pakistan," *ANNALS OF SOCIAL SCIENCES AND PERSPECTIVE* 2, no. 2 (December 31, 2021): 419–29, <https://doi.org/10.52700/assap.v2i2.74>. *Annals of Social Sciences and Perspective* 2, no 2 (2021), <https://doi.org/10.52700/assap.v2i2.74>

⁹² Khatoon, "," *Al-NASR*," 15-22

⁹³ Navigating Pakistan's Foreign Policy Toward G7: Trade Dynamics, Economic Challenges, and Strategic Opportunities". 2024. *Contemporary Journal of Social Science Review* 2 (04): 2006-15.

⁹⁴ *ibid*

Concerns over food security have the potential to increase conflicts with India, particularly in times of crisis when limited supplies may increase competition for agricultural and water resources.⁹⁵ Food security is an essential aspect of national security discourse because of the ongoing animosity and border issues.

In addition, cross-border relations like trade and resource sharing, which are crucial for ensuring both countries' food security, impact Pakistan-Afghanistan ties.⁹⁶ Pakistan's involvement in international food trading networks is essential to both its general economic health and food security. To increase food imports and exports for stability and maintenance, Pakistan needs to address complex trade terms and foreign policy issues. The provision of food supply by Pakistan through diplomatic means will be even more crucial for national security planning as the consequences of climate change become more urgent threats to agricultural productivity.

3.6. Linkages between Food Scarcity and Military Security in Pakistan

3.6.1. Strategic Implications of Food Scarcity for Military Preparedness and Operational Capability

Pakistan's military preparedness and operational efficiency are significantly impacted by food insecurity. Persistent food shortages can cause instability in a population, which can lead to increased crime, civil unrest, and a breakdown in social cohesiveness. Military resources may be diverted from defense to internal disorder preservation as a result of such disruptions. Additionally, the hunger of the civilian population leads to inefficiencies in agriculture and industry, which indirectly affect the resources required by the manufacturing and defense sectors. The challenges

⁹⁵ Miguel Naeje, "Modern Bilateral Relations Between India and Pakistan – Difficult Neighbourhood," *Facta Simonidis* 8, no. 1 (December 31, 2015): 155–71, <https://doi.org/10.56583/fs.194>.

⁹⁶ Sonia Bashir, "UNRAVELING PAKISTAN-AFGHANISTAN STRATEGIC RELATIONS IN THE POST-US WITHDRAWAL ERA," *Margalla Papers* 27, no. 2 (December 31, 2023): 102–14, <https://doi.org/10.54690/margallapapers.27.2.178>.

of military operations may be compounded by food insecurity in conflict zones. Long-term campaigns may be impeded by supply issues faced by troops operating in regions with limited access to food. Also, food shortages along borders could reduce the resilience of the local population, leaving it more open to outside influence and enemy exploitation.

3.6.2. The Importance of Ensuring Food Supply Chains for Military Forces, Particularly in Times of Conflict or Natural Disaster

To maintain the operational reliability of armed personnel, an effective and ongoing food supply chain is required. A regular food supply becomes even more important during times of conflict or catastrophic events since supply routes are frequently disrupted by hostile actions or damaged infrastructure. For troops deployed in dangerous or remote regions, the military requires constant supplies of high-calorie, non-perishable foods. Military logistics played a crucial role in delivering food supplies to affected areas after the 2005 Kashmir earthquake and the 2022 floods in Pakistan.⁹⁷ Nonetheless, these incidents revealed flaws in Pakistan's distribution design, highlighting the need for proactive actions, including better coordination between military and civilian organizations and the establishment of important reserves of food.

3.7. Economic and Political Stability: The Role of Food Security

3.7.1 Food Security's Direct Impact on Political Stability and Governance

Political stability and effective government are contingent on food security. Authorities are trusted, and the possibility of unrest is reduced when people have consistent access to wholesome and affordable food. On the other hand, discontent with the government usually follows food shortages, undermining the legitimacy of political leadership. In Pakistan, where a significant portion of the

⁹⁷ The Express Tribune, "Pakistan Army Launches Massive Relief Operation for Flood Victims," *Online*, August 25, 2022, <https://tribune.com.pk/story/2373124/pakistan-army-launches-massive-relief-operation-for-flood-victims>.

population depends on agriculture for livelihoods, ensuring food security is directly tied to political credibility.

Food scarcity can undermine governance by escalating public grievances, particularly among marginalized groups. Protests, strikes, or electoral backlash may be directed towards a government that is thought to be unable to guarantee food availability. In Pakistan, where economic disparity and regional inequalities are rampant, addressing food security is critical for ensuring national unity and strengthening democratic processes.

3.7.2. The Potential for Food Shortages to Spark Protests, Civil Unrest, or Exacerbate Existing Political Instability in Pakistan

Food scarcity has previously triggered protests and civil unrest in Pakistan. Increased food prices and shortages, usually fueled by inflation and poor governance, have resulted in public demonstrations and strikes. For example, food inflation during the 2008 global economic crisis precipitated widespread discontent, putting enormous pressure on the government to stabilize markets and offer relief.⁹⁸ In politically unstable areas, like Baluchistan or the tribal regions, food insecurity can act as a trigger for further unrest. The province, statistical data reveal that 63% of households are food insecure, 46% of children suffer from stunted growth, and 18% suffer from wasting as a result of malnutrition.⁹⁹ This situation has the tendency of exploitation by the marginalized communities, who point out the injustice caused by the system and may strengthen the anti-state elements.

⁹⁸ Michael Kugelman and Robert M. Hathaway, “HUNGER PAINS: Pakistan’s Food Insecurity” (Washington, 2010), https://www.wilsoncenter.org/sites/default/files/media/documents/publication/ASIA_100412_PakistFood_rptL0713_FINALVERSION.pdf.

⁹⁹ Tayyaba Razzaq, “The Complex Interplay between Food Insecurity and Conflict in Balochistan: A NonTraditional Security Perspective” (Islamabad, 2023), <https://nips.nust.edu.pk/storage/2021/09/NIPS-Tayyaba-Razzaq-Policy-Paper-April.pdf>.

3.7.3. The Socio-Economic Costs of Food Scarcity: Poverty, Unemployment, and Regional Disparities

Poverty is one of the prime causes of food scarcity in Pakistan as well as around the world. It has long-term socio-economic implications for the country. Poverty-ridden population spends most of their earnings on buying staple food, leaving less income for spending on health, education, and raising their standard of living. Chronic food scarcity also traps them in a debt cycle, perpetuating their poverty. Many research studies reveal that an increase in the price of food items leads to an increase in the headcount of people living in poverty. Rising fuel prices and electricity charges also result in the inflation of food items, sinking them into the vicious cycle of poverty. Food scarcity and poverty are also linked with unemployment.¹⁰⁰ Changing weather patterns and climatic events lead to crop loss and add to unemployment. Because of these factors, family incomes decline, and rural communities are forced to relocate to cities in pursuit of work, further taxing metropolitan infrastructure and services.

Socioeconomic inequalities are rendered worse by food shortages and regional disparities in the cost and accessibility of food. In contrast to Punjab, provinces like Baluchistan and Sindh typically face higher levels of food insecurity, which leads to uneven development and breeds animosity.¹⁰¹ Poor distribution systems, insufficient access to cutting-edge farming methods, and inadequate investment in agricultural facilities all contribute to these disparities. Interventions such as agriculture laws tailored to a given region, rural development programs, and enhanced connections between rural and urban markets are required to close these disparities. Lower levels of education are another way that food impoverishment has socioeconomic consequences. Infants and kids from

¹⁰⁰ Nadia Shabnam, Neelam Aurangzeb, and Salma Riaz, "Rising Food Prices and Poverty in Pakistan," ed. Gideon Kruseman, *PLOS ONE* 18, no. 11 (November 16, 2023): e0292071, <https://doi.org/10.1371/journal.pone.0292071>.

¹⁰¹ Muhammad Osama Munir et al., "An Evaluation Of Pakistan's Food Supply And Security," *Journal of Research in Social Science and Humanities* 5, no. 1 (June 19, 2025), <https://doi.org/10.47679/jrssh.v5i1.132>

households experiencing food insecurity are more likely to drop out of school to work or due to illness, which furthers poverty and economic stagnation.¹⁰² Women and girls are particularly affected since they are typically the ones who face the brunt of food insecurity within the family, which results in long-lasting gender differences in access to chances for income, health care, and education.

3.7.4. The Impact of Food Scarcity on Rural vs. Urban Populations and Its Role in Exacerbating Socio-Political Divides

Food insecurity is likely to deepen socio-political divides and have distinct effects on rural and urban groups of people. Unfriendly harvests or changes in the climate directly reduce food availability and incomes in rural communities where agriculture is the primary source of income. This creates a poverty trap and encourages migration to cities, which puts too much pressure on urban resources. Urban areas are particularly susceptible to supply chain interruptions and price volatility.¹⁰³ Widespread dissatisfaction may be caused by the higher cost of living in cities as well as the lack of affordable and fresh food. These distinctions impact affiliations with politics and policy agendas and fuel tensions between rural and urban areas.

3.7.5. Social Marginalization

Less fortunate and marginalized populations are frequently negatively impacted by food insecurity, which worsens social inequality. In addition to discrimination, marginalization, and limited access to resources, women, members of ethnic minorities, those living in rural areas, and

¹⁰² Shabnam et. al, *PLOS ONE*, 1-15

¹⁰³ Waqas Shair et al., “Exploring the Determinants of Food Insecurity in Pakistan,” *Pakistan Journal of Humanities and Social Sciences* 12, no. 3 (August 24, 2024): 2681–89, <https://doi.org/10.52131/pjhss.2024.v12i3.2494>

those with disabilities are the groups most at risk for food insecurity.¹⁰⁴ Thus, food insecurity has the potential to exacerbate social injustices and widen the income disparity.

3.7.6. Vicious Cycle

Food insecurity and poverty are mutually strengthening, with individuals and households living in poverty more likely to face food insecurity and conversely. Consuming high-quality food is restricted by a lack of financial means, which leads to obesity and unhealthy habits, which further impede economic chances and perpetuate poverty. By implementing comprehensive initiatives that target the root causes of hunger and poverty, such as systemic disparities, inadequate social safety nets, and limited access to healthcare and education, it must end the cycle.

All these factors considered, addressing food insecurity in Pakistan requires an integrated strategy that addresses underlying socioeconomic inequalities, improves access to healthy food, expands livelihood options, strengthens social protection, and promotes inclusive economic growth. Pakistan can work to build a more resilient and equitable society where everyone has access to sufficient nourishment to lead healthy and productive lives by addressing the interrelated causes of poverty and food insecurity.

3.7.7. Conflict and political instability

One of the main drivers of political unrest and conflict in Pakistan is food insecurity, which works through a variety of interconnected factors. To start with, the insufficient food resources expedite the aggravation of preexisting social disparities and create fertile ground for further agitation and local clashes between different religious, ethnic, and socio-economic classes. If some of the population has to do with deficient and lacking in nutrients food, bitterness and the sense of being

¹⁰⁴ FARHA D MAZHAR et al., “Food Sovereignty and Uncultivated Biodiversity in South Asia Essays on the Poverty of Food Policy and the Wealth of the Social Landscape,” *Online*, 2007, <https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/124702dc-fc0c-43e3-8dc3-772e94bc5bf8/content>.

overlooked can appear. This can be the reason why some people get discontented with answering their grievances and the social unbalance. This proceeding might be expressed in mass protests, rallies, and even violent confrontations, which tend to throw more gas on the fire and undermine the political landscape even more.

Consequently, the loss of food security would weaken democratic rule and the government. In Pakistan, where food encompasses the spine of the nation's health and the current political dialogue, the loss of confidence and trust by the people due to the government's inability to guarantee food security is what is at stake.¹⁰⁵ When citizens see the government as unsuccessful in facing the problems that they face daily, they lose hope for the system, leading to dismantlement, discontent, and sometimes calls for a regime change. Political legitimacy is the main harvester that radical ideologies and revolutionary movements nationwide use to surreptitiously have the footing to mount and governance turns out to be problematic, hence the systems and government's stability is in danger.

Secondly, food scarcity can aggravate regional tensions and conflicts, especially when it is examined on the resource-sharing bases in regions. In Pakistan, water scarcity threatens our food security and particularly in different regions that depend on agriculture. As a result, agriculture becomes risky due to the redundancy of this source of water. Competition for scarce water resources can become a real source of local tensions among different communities, provinces, or countries, adding to the already fragile stability of the region and putting relationships with neighbors into a strained position.¹⁰⁶ Furthermore, food insecurity can be a triggering factor for

¹⁰⁵ Younas Khan et al., "Exploring the Nexus between Poor Governance and Household Food Security," *Economic Change and Restructuring* 57, no. 2 (April 4, 2024): 92, <https://doi.org/10.1007/s10644-024-09679-w>.

¹⁰⁶ *ibid*

both internal and international migration, a fact that people with no other alternative as a means of escaping hunger and looking for food. Furthermore, the increased level of conflict in host communities, which is a result of the migration process, can worsen the situation and multiply resource consumption in host communities. Also, the likelihood of disputes over land, resources, and livelihoods increases.

In general, food insecurity throughout Pakistan is considered an important obstacle to peace and order, with poorer implications at the social and more broadly accepted political and regional levels. To address food insecurity, it is not enough just to enact short-term intervention meant to supply immediate relief but also to try long-term strategies that aim to target the underlying causes of food insecurity, which are poverty, inequality, and inadequate infrastructure, all of these being factors that are strongly connected with the poor condition of the environment. Investing in sustainable agriculture, providing people with food options, and encouraging economic development that can include those left behind are the means to reduce the factors of conflict and instability, and build a resilient and prosperous country

3.8. Overview of the Interconnectedness Between Food Scarcity and National Security

One of the most tangible demonstrations of the link between food scarcity and national security in Pakistan was observed during the 2022 monsoon floods, which submerged vast agricultural areas across Sindh and KPK. These floods not only disrupted food supply chains but also spiked inflation, food hoarding, and civil unrest in affected regions.¹⁰⁷ In mid-2022, the IPC analysis reported that around 6 million Pakistanis were already facing acute food insecurity (IPC Phase

¹⁰⁷ UNOCHA, “2022 Flood Response Plan Pakistan” (Islamabad, 2022), <https://www.unocha.org/publications/report/pakistan/pakistan-2022-floods-response-plan-interim-report-sep-nov-2022-issued-09-dec-2022>.

3+), a figure projected to rise to 11 million as floods destroyed crops, livestock, and infrastructure. The displacement of families, loss of arable land, and rising food prices—food inflation spiked to nearly 40% in urban areas. Simultaneously, the military had to intervene in both relief operations and the protection of food stockpiles from looting, demonstrating a direct overlap between internal security and food access. Furthermore, high food prices were cited as one of the contributing factors behind urban protests in Karachi and Lahore, highlighting how unmet basic needs can manifest in political instability.¹⁰⁸ In rural areas, competition over scarce food and water resources has exacerbated tribal and ethnic tensions in parts of Baluchistan and South Punjab. These instances underline the securitization of food not just as a theoretical construct but as a lived reality, necessitating state-level policy responses that bridge agricultural planning with security preparedness.

In addition to the domestic link between food security and Pakistan's national security, another very significant impact of food scarcity is linked to globalization and climate change. Pakistan's deep integration into the global economy can be gauged by its trade-to-GDP ratio, which stood at 45 % in 2021.¹⁰⁹ Making it particularly vulnerable to international supply chain disruption (e.g., during COVID-19 and the Ukraine conflict), resulting in surges in both food and energy prices. Environmental stress has further escalated national vulnerability: the June–October 2022 floods affected an estimated 33 million people, submerged nearly one-third of Pakistan's districts, damaged approximately 2 million hectares of agricultural land, and resulted in economic losses exceeding \$30 billion.¹¹⁰ The climate-induced crisis translates into security risks, prompting

¹⁰⁸ UNDRR, “For Pakistan Flood Victims, Crises Collide to Fuel Growing Hunger,” online, 2023, https://www.preventionweb.net/news/pakistan-flood-victims-crises-collide-fuel-growing-hunger?utm_source=chatgpt.com.

¹⁰⁹ World bank, “Pakistan Trade Summary 2022 Data,” online, 2023, <https://wits.worldbank.org/CountryProfile/en/Country/PAK/Year/2022/Summary>.

¹¹⁰ UNOCHA, “2022 Flood Response Plan Pakistan.”

military-led disaster responses, sabotage of critical infrastructure, and emergency rationing programs. Meanwhile, Pakistan's rapidly growing population has intensified urbanization, with more than 38.04% of citizens now living in cities and informal settlements that often lack adequate public services. This demographic surge pressures urban infrastructure, strains governance capacities, exacerbates crime rates, and inflames social tensions.¹¹¹ Collectively, these forces demonstrate how economic globalization, climate hazards, and demographic shifts are interwoven drivers of national security challenges in Pakistan.

Food security deals with the state of having reliable access to enough affordable, nutritious food. Essentially, a pressing social concern, the lack of food security has strong economic implications. First, ensuring food security within the country may entail large fiscal costs as governments incentivize the agriculture sector to ensure food self-sufficiency and resort to social safety net programs (including direct transfers) to keep the purchasing power of the poor population intact. In case food self-sufficiency is not achieved, the country must bear a balance of payment cost to ensure food availability.¹¹² Thus, to conclude, the combined effects of increasing population, urbanization, resource scarcity, and climate change have hindered the efforts to eradicate food insecurity in the country. Although there has been progress in the matter of food production, especially regarding staple food crops such as wheat, rice, and sugarcane, the fact that an array of foods from all of the groups has been overlooked, and the benefits of a healthier diet have not been achieved. Moreover, failures in digital technology adoption, input supply, infrastructure, and

¹¹¹ Statista, "Pakistan: Urbanization from 2013 to 2023," online, 2024, <https://www.statista.com/statistics/455907/urbanization-in-pakistan/>.

¹¹² Ahmad, Munir, and Umar Farooq. "The State of Food Security in Pakistan: Future Challenges and Coping Strategies." *The Pakistan Development Review* 49, no. 4 (2010): 903–23. <http://www.jstor.org/stable/41428696>.

governance are the barriers holding the agricultural sector back from the ability to meet the population's nutritional needs.

Diversification and Investment in the production of diversifying food, agricultural infrastructure, and technology use, good distribution systems, and adoption of climate change systems are some tools that are worth using as possible solutions to the complicated food system of Pakistan. Thus, the initiation of programs that will enhance the availability of nutritious food, enable communities to grow independently, and emphasize sustainable agricultural practices is vital to the development of a food system that can withstand any challenges.¹¹³ Coordination of government departments, non-governmental bodies, the private sector, and international partners is imperative to achieve these target areas contributing to food security in Pakistan and a holistic scenario of an affluent and just food system for its people.

Concerns about Pakistan's security are expanding beyond immediate threats like disease and loss of life to include broader issues such as international relations and psychological well-being. Prolonged food shortages can fuel social unrest, deepen inequalities, and potentially lead to serious conflicts, threatening the peace and stability of the nation.. Besides the inefficient directions of food and nutrition, the community members are becoming more and more frail emotionally and lack confidence in their government officials, leading to an internal conflict among the people affected. Faced with food rationing and price fluctuations, Pakistan is also very vulnerable to conflicts and refugees flooding into the country.¹¹⁴ In this regard, food security demands more than just cutting down food scarcity; instead, it also requires a pillar that is both strong and reliable, which can catapult the country to more sustainable national security. The national food security of

¹¹³ ibid

¹¹⁴ Food Security and National Security: A Management Approach”. 2023. *Journal of Politics and International Studies* 9 (01): 59-70.

Pakistan can achieve a stable and secure future through a comprehensive strategy focused on improving food production, distribution, and management. This approach will lay the foundation for the nation's progress and long-term stability.

3.9. Conclusion

Food insecurity in Pakistan, driven by interconnected socioeconomic factors, poses a profound national security threat by eroding societal stability and resilience. High poverty rates, income inequality, unemployment, and limited access to resources restrict the ability of many households to obtain sufficient, nutritious food. This situation is also exacerbated by the rising inflation. Inflation affects the purchasing power of the population, making them more food insecure, particularly in rural areas. Another adverse effect of this scenario is that disadvantaged groups of people struggle to secure the necessities of life, besides securing adequate food. Children and women are the most affected group of households in this scenario. The impacts of food insecurity are far-reaching, fueling social instability, fostering discontent, and creating conditions ripe for conflict. As people starve, competition for limited resources, such as water and agricultural land, increases, particularly in agriculturally focused areas, resulting in local disputes that, if neglected, might escalate into larger social unrest. Rising food costs also increase dissatisfaction with government bodies, which erodes public trust and feeds demonstrations that threaten national cohesion. Losses in health and education brought on by food insecurity undermine society's resilience and create a vicious circle of economic dependency and immobility that wastes public funds, overburdens government capacity, and hinders progress. Pakistan's national stability is eventually threatened by these cumulative weaknesses brought on by food insecurity, and as food security impacts social cohesiveness, peace, and the country's ability to prosper, it becomes an essential component of national security.

Chapter 4: Addressing Food Scarcity Challenges in Pakistan: Government Interventions and Strategic Recommendations

4.1 Government Policies and Interventions to Counter Food Scarcity

Food scarcity has emerged as a complex issue in Pakistan requiring urgent attention from the government and policymakers. The government has identified the need for this and has put into practice numerous policies that aim to improve food security. This overview will outline the major policies, their aims, and the problems encountered in their execution. Pakistan, being an agrarian economy, also has chronic food insecurity, with more than 37% of the population being food insecure.¹¹⁵ For quite some time now, Pakistan has been struggling with widespread issues like poverty, malnutrition, and nutrition, and these issues have always been a matter of serious concern for public policymakers. Despite this, implementing agencies of these programs must continue their work amidst various factors like political instability, natural disasters, and bad infrastructure, which draw them out of the priority list of major players and humanitarian organizations.

Despite being an agricultural country, continuous barriers to ensuring food security have made food scarcity an acute problem, according to the National Nutritional Survey. The survey was conducted to investigate the issue of chronic and acute malnutrition among children under five years of age. On a deeper inspection of the data, it was evident that there was a particularly high prevalence of those two problems in regions such as Khyber Pakhtunkhwa-Newly Merged Districts and the Federally Administered Tribal Areas. The percentage of stunted children is

¹¹⁵ World Bank, The Economic Cost of Malnutrition in Pakistan (Washington, DC: World Bank, 2021).

48.3%, which is 8.3 percentage points higher than in the whole Khyber Pakhtunkhwa province, and equivalent to 40%.¹¹⁶

4.2. Analyzing Government Policies to counter Food scarcity.

4.2.1. Agricultural Policies

The agricultural sector has been dominant in the government's strategy for addressing food scarcity in Pakistan. To improve crop productivity and stabilize food supplies, the government has taken several measures covering everything from subsidies and credits to irrigation and infrastructural developments in the last decades. Such policies sought to modernize farming practices, help smallholder farmers, and make general farming more efficient overall. A significant proportion of the population in Pakistan is dependent on agriculture.¹¹⁷ Such prioritization for improving food security through agrarian reform manifests the government's resilience for economic stability and rural development. The emphasis on improving food security through agricultural reform reflects a broader national agenda of economic stability and rural development.

Despite this, the policy analysis shows that most of the challenges still exist that inhibit the policy's effectiveness. Some of these include traditional practices in agriculture, inadequate extension services, and limited access to improved modern technology, as well as efficient irrigation techniques. In addition, climate change also poses an increasing threat as it aggravates water scarcity and changes the seasonal agricultural cycle. In addition to these, the use of resources through inefficient bureaucracies further reduces the impact of the policy.¹¹⁸ The gap between policy formulation and actual implementation has derailed the overall goal of reducing food

¹¹⁶ UNICEF, "National Nutritional Survey 2018," 2019, [https://www.unicef.org/pakistan/media/1951/file/Final Key Findings Report 2019.pdf](https://www.unicef.org/pakistan/media/1951/file/Final%20Key%20Findings%20Report%202019.pdf).

¹¹⁷ Ministry of National Food Security & Research, *Annual Report on Food Security and Agriculture in Pakistan 2022* (Islamabad, Pakistan: Government of Pakistan, 2022).

¹¹⁸ Food and Agriculture Organization, *State of Food Security and Nutrition in the World 2021* (Rome: FAO, 2021).

shortages in the country and led to uneven gains across regions and communities. A multi-dimensional reform approach is required to overcome these deficiencies.

Improving the integration of innovative agricultural technologies and investing in climate-resilient agricultural programs can bridge the gap between existing policy interventions and the changing requirements of the agricultural sector. Increasing public-private partnerships and promoting research and development will allow for more adaptive and visionary policies that address both short-term food security issues and long-term sustainability.¹¹⁹ By learning from successful models in other countries and regional collaboration, policymakers can redirect efforts toward assisting smallholder farmers, maximizing resource allocation, and ultimately establishing a more resilient agricultural system.

4.2.2. Government Subsidies

Pakistani authorities have introduced several subsidies and support programs to increase agricultural productivity and reduce food shortages. The most significant intervention is the dispensation of agricultural input subsidies, most significantly on fertilizers, seeds, and irrigation. Subsidies on fertilizers, for instance, on urea and DAP, help farmers maintain their production expenses low and their output levels higher. In addition, the distribution of subsidized high-yield seed enhances improved production and climate change resilience. Subsidies for irrigation like tube wells and solar power-based irrigation systems are also provided by the government, which are important in enhancing water efficiency in agriculture. Besides, the Minimum Support Price (MSP) mechanism ensures price stability for major crops like wheat and sugarcane, which reduces the middleman's margin of farmer exploitation and makes him receive a fair price for their

¹¹⁹ S. Khan, M. Ahmed, and H. Ali, "Evaluating the Impact of Agricultural Reforms on Food Security in Pakistan," *Journal of Agricultural Policy* 12, no. 3 (2019): 45–67.

agricultural production.¹²⁰ These subsidies as a whole stabilize food production and provide a stable food supply to the country.

Along with direct support to increase agricultural productivity and improvement in the sector, the government must start food assistance programs. Such programs may go a long way in ensuring accessibility of low-cost food to the poorest segment of the population. Food items can be supplied to Utility Stores Corporation at subsidized rates to tackle the rising inflation. Ehsas Roshan Program might be of help in this regard. In addition, financial assistance to poor families can be provided through cash transfers in the Benazir Income Support Program (BISP). Pakistan might get assistance from international collaborators and aid agencies. The World Bank's program for socio-economic development, the FAO, and USAID are working on food security through different programs. Pakistan's collaboration with these institutions will be highly effective in this regard.¹²¹ Another major threat to food security is posed by systemic failures, mismanagement, and corruption. These evils make the entire struggle against food scarcity less effective. Fair allocation and spending of resources are extremely necessary in this regard.

4.2.3. Water Management and Irrigation

Water scarcity is still a major concern for Pakistan's agriculture sector, making irrigation and water management a priority sector. Various initiatives have been taken by the government to enhance water conservation, storage, and distribution. National Water Policy (2018) and the Sindh Water Sector Improvement Project are initiatives aimed at canal lining, drip and sprinkler irrigation systems, and effective use of water.¹²² Besides, the government is investing in the establishment

¹²⁰ Khan, Ahmed, and Ali, "Evaluating the Impact," 50.

¹²¹ World Bank, *Agriculture and Food Security in Pakistan: A Strategic Framework* (Washington, DC: World Bank, 2020).

¹²² Ministry of National Food Security & Research, *Annual Report on Food Security and Agriculture in Pakistan 2022* (Islamabad, Pakistan: Government of Pakistan, 2022).

of small and large dams, water reservoirs, and tube wells to be used for irrigation in arid zones. The on-farm Water Management Program inspires farmers to apply contemporary irrigation technology like laser land leveling and high-efficiency irrigation systems (HEIS) for water conservation.¹²³ These practices not only enhance water availability for agriculture but also prevent climate change from negatively affecting food production. Enhancing research-based agricultural innovations and sustainable water management is critical to guarantee long-term food security in Pakistan.

4.2.4. Research & Development

The government has taken noticeable measures in irrigation & water management and research and development (R&D) to promote agricultural productivity and mitigate food insecurity. Agricultural research investments are concentrated on the generation of high-yielding, climate-tolerant crop varieties, new farming technologies, and improved agricultural technologies. Pakistan Agricultural Research Council (PARC) and provincial research centers are working to upgrade seed quality, pest management strategies, and soil fertility management to increase agricultural production. Collaborations with international organizations such as the Food and Agriculture Organization (FAO) and the World Bank have helped introduce climate-smart agricultural practices, precision farming, and biotechnology innovations aimed at boosting crop production and reducing post-harvest losses. Additionally, government-funded research programs encourage sustainable farming by promoting organic fertilizers, water-efficient crops, and modern irrigation technologies.

Research studies performed in Pakistan mostly discuss the risk groups, which are children, adolescents, and females of reproductive age. In addition, the local gap for community-level record

¹²³ Food and Agriculture Organization, *State of Food Security and Nutrition in the World 2021* (Rome: FAO, 2021).

collection is evident, which is highly tends to Khyber Pakhtunkhwa region. This scarcity of data related to quality may affect all programs meant to provide details on the agenda and policies that need to be implemented in terms of understanding the causes of malnutrition and food crises.¹²⁴ The subjective nature of household-level research is among the factors that should not be neglected when evaluating the nutritional status and food security of households as well. This is because of the restrictions that such research places on the researchers who are enthusiastic to portray not only the life stories of the individuals in the household, but also include other group members who are less empowered.

4.3. National Food Security Policy 2018

The Pakistan National Food Security Policy (2018) is a comprehensive framework designed to ensure food security, promote sustainable agricultural growth, and enhance resilience against climate change and resource constraints. Changing climate patterns, water scarcity, and a fast-expanding population have emerged as significant challenges for food security. Therefore, the 2018 National Food Security Policy focuses on enhancing food distribution networks, increasing agricultural output, and supporting small communities. To boost efficiency in the agriculture sector, it stresses research and development, modern irrigation methods, and climate-intelligent farming techniques. The policy prioritizes value chain development, market reforms, and social safety nets to ensure food affordability and access to food for all levels of society. These policy reforms by the Ministry of National Food Security & Research are aligned with Pakistan Vision 2025 as well as with UNDP objectives, including the Sustainable Development Goals. The National Food Security Policy (2018) seeks to guarantee the availability and affordability of nutritious food for all by promoting investment in agriculture, enhancing governance, and

¹²⁴ ibid

supporting public-private partnerships to achieve long-term sustainability in the food systems of Pakistan.

The 2018 National Food Security Policy is a landmark event for the food and agriculture sector in Pakistan. The formation of the Ministry of National Food Security & Research further asserts the government's commitment to food security and gives agriculture its rightful place as a national priority. The creation of this ministry underscores the authorities' understanding of the urgency of addressing agricultural challenges, particularly in the wake of unprecedented climate and economic disruptions that demand immediate intervention. However, despite the policy's ambitious goals, the ministry continues to face hurdles in securing full acceptance and implementation, as political and administrative challenges often delay crucial reforms. Moving forward, effective coordination, institutional strengthening, and unwavering political will remain essential to translating policy objectives into tangible outcomes for Pakistan's food security and agricultural sustainability.

This policy, which is otherwise named the existing state of agribusiness, covers the most important issues of the industry and also proposes ways it can advance. The report highlights sector-specific issues and projects, as well as the need to overcome the shortage of investment from both the public and private sectors. On the other hand, the sector has been kept in postpositions due to the long-neglected nature of development. Water shortage, the problem with the water supply mechanism, water policies, and, more importantly, the limited water awareness, from water availability to the policy, are collectively driving the country toward an unavoidable water crisis.¹²⁵

¹²⁵ Muhammad Umar Munir et al., "Water Scarcity Threats to National Food Security of Pakistan—Issues, Implications, and Way Forward," in *Emerging Challenges to Food Production and Security in Asia, Middle East, and Africa* (Cham: Springer International Publishing, 2021), 241–66, https://doi.org/10.1007/978-3-030-72987-5_9.

The strategy emphasizes a bundle of reforms geared at bringing to an end the sorry plight the industry finds itself in, through which the associated challenges are presented. It may require higher financial commitments through both the public and private sectors to the overhaul of the water system via support at national, sub-divisional, and local levels. Policy points to the market needs of identification, attracting foreign and local participants, using modern technologies, and improving the overall performance. The targeted crop development is intended to lead to an improvement in the management of pests, an increase in expenditure for crops, and the refinement of extension services delivery.

To achieve this reform, adopting reform initiatives in governance to strengthen the systemic management of the agricultural sector seems to be the right thing. The government implements this through policies and structural reforms, partially to overcome the challenge domestically and to ensure a stable agribusiness sector.

The government, for the first time, crafted a food and agriculture policy having relevant solutions to the food and agricultural issues. Such a plan of action coming from the recently set up Ministry of Food Security and Research proves that the authorities understand the matter's vitality and are now prepared to eliminate the barriers within the agricultural field.¹²⁶ Apart from just the policy development, the ministry continues to fight the problems while waiting for approval of this policy by the minister. Constructively, this SDG has participation of civil society institutions, including SDPI and UN missions such as WFP, FAO, and UNICEF, as well as various national ministries and departments to which it consults on its undertakings.

¹²⁶ Ministry of National Food Security and Research Islamabad, "National Food Security Policy, 2018 (Pakistan)" (Islamabas, 2019), <https://lpr.adb.org/resource/national-food-security-policy-2018-pakistan>.

The policy includes the overall elements of this wing with the suggested development growth strategies. The report highlights the challenges facing the agriculture sector, pointing to the government's inefficiencies in proper implementation and addressing the core issue of limited private sector investment. It underscores the significant gaps in the provision of agricultural services in the country.¹²⁷ Lack of access to water, problems with water distribution, and unconnected water policies all aggravate the poor water situation.

In reality, policy has been heavily scrutinized, but it has emerged as unsound in some of the primary areas. Secondly, the climate sector was relatively more stable in the last decade; however, the policy fails to address the emergencies of floods and droughts. Though climate-smart agricultural approaches feature in the policy, it is still unclear to what extent they will be implemented. The report also misses the point about gender and food security, although it is evident that women can influence food security at the household level and food production processes.¹²⁸ Contemporarily, noticeable attention to wheat is observed, while the crop diversity is underexploited. Despite all this, food security is not there; it is in the middle of the policy. While it acknowledges the need to improve food security in Pakistan, it neglects to discuss three fundamental elements of food security: the choices and how and by whom they are used for services. Indicators that play a remarkable role in knowing the level of food security in the country do not talk about the prescribed solutions or programs for the improvement of food security. The downside of this approach is that there is a lack of holistic consideration of food security, which has received a rebuke from many, as it only looks at agriculture, which is one of the many perspectives.

¹²⁷ *ibid*

¹²⁸ *ibid*

On the other hand, agricultural development lands within the jurisdiction of the provincial government after the devolution; therefore, the domain of the new Ministry of Food Security and Research might be barely touched. The ministry's primary role is to provide a policy framework that ensures far-reaching opportunities are available for achieving food security in the country. As a result, the policy should have given detailed information and options for all the food security indicators, including market space per unit area, employment, education, water, sanitation, and nutrition. But it does not do that, showing that there is not enough self-regard among all the ministries and departments that belong to everybody. We shall say that a feedback request without an elementary level of interaction is hardly an engagement at all.

Food production in Pakistan has indeed progressed greatly during the last decades, but food security is nonetheless being threatened by a wide range of factors, including population explosion, urbanization, low consumers' incomes, as well as volatility of price trends, unreliable food production, and unproductive food distribution systems. FAO food security assessment survey of 2016 indicated that 18% of the population is unsatisfactorily fed, and according to the National Institute of Population Studies, 45% of severe stunting, 15% wasting, and 30% underweight were found. In the rural areas of the country, the percentage is higher (46%), followed by other specific regions such as FATA, GB, and Baluchistan with 58% percent, 51% percent and 53% percent, respectively. Besides, about one-half of the population lacks the required intake of Vitamin A and Iron, which are considered Vitamin A and Iron-deficient diets.¹²⁹ Economic limitations, largely after 2007, tremendously narrowed food accessibility to the poorest and most vulnerable people in the community, increasing an undernutrition level and the risk that will lead to malnutrition.

¹²⁹ State Bank of Pakistan, "Special Section 2: The State of Food Security in Pakistan," 2019, <https://www.sbp.org.pk/reports/quarterly/fy19/Third/Special-Section-2.pdf>.

Reinstating the importance of dealing with food insecurity, the Government of Pakistan is currently coming up with a national food security policy to prove that the development of agriculture must be the main focus to achieve food security. Agriculture plays a crucial role in Pakistan's economy, and it is a sector that pumps 19.5% into GDP, employs 42% of the workforce, constitutes 65% of export earnings, and makes a home for 62% of the population. On the other hand, the agriculture sector has encountered an array of complicated problems, pulling the country below the average rate with 3.3% annual growth over the last ten years.¹³⁰ Land agriculture encounters several constraints, such as moderate performance of R&D, low and erratic input supply, insufficient extension services, non-existent infrastructural investment, trade-offs for marketing and trade, sickness and disease outbreaks for crops and livestock, shortage of funding, and absence of agriculture training credit facilities.

To promote a balanced food intake, it becomes the need of the hour to diversify the production, with more of a focus on the cultivation of vegetables, fruits, nuts, oilseeds, pulses, and livestock products, because it contributes not only to the energy-based diets but also to the nutritional food security. In addition, non-farm activities such as incorporated nutrition initiatives, trade, natural resource management, non-farmer income generation, direct income support, and innovative approaches should be coordinated with the agriculture sector to fortify food security. Climate change constitutes another challenge, and the agricultural sector requires climate adaptation programs that should include soil and water conservation methods, sophisticated irrigation systems, drought-resistance techniques, and climate-smart farming practices. Such measures pave the way for building an agriculture sector that will guarantee food security in the near future against possible shocks induced by climate and economic transition.

¹³⁰ Ministry of National Food Security and Research, 2019

4.4. Policy Recommendations:

A careful review of Pakistan's National Food Security Policy (2018) reveals that although the policy offers a strong base for addressing food security via market reforms, sustainable agriculture, and climate resilience, many gaps remain at the execution level. The success of these initiatives depends on better infrastructure, more investment in new agricultural technologies, and closer cooperation between national and provincial authorities. Policymakers should thoughtfully consider these ideas to close these gaps and therefore make the policy more effective.

Prioritizing food scarcity and related issues by the government of Pakistan in policy making and implementation is extremely important, given the aggravating situation of food scarcity.

i. Invest in climate-resilient agriculture and water management:

Investment in climate-resilient agriculture and water management strategies, such as drip irrigation, mulching, and conservation agriculture, to increase agricultural productivity and decrease the exposure of farmers to climate-related shocks must be prioritized by the government.

ii. Increase Agricultural Productivity

To ensure food security, there should be development of modern farm practices and an investment in high-yield, drought-resistant variety research and development. The government should provide incentives for farmers to adopt precision farming, which maximizes the use of water, fertilizers, and pesticides. Support the establishment of agricultural extension services to educate farmers on new technologies and practices.

iii. Enhance international cooperation and coordination:

Pakistan should enhance international cooperation and coordination to address global food security challenges, including climate change, and to access international best practices, technologies, and funding to support national food security efforts.

iv. Strengthen the Water management system.

Pakistan must prioritize the improvement of irrigation infrastructure to improve water efficiency and reduce water waste. Policymakers should also encourage rainwater harvesting and promote sustainable water management practices to address water scarcity in the agriculture sector.

v. Enhancement of the storage and distribution network

Pakistan should invest in modern cold storage and warehouse facilities to reduce post-harvest losses, especially for perishable products. It should develop an efficient supply chain infrastructure to ensure that food can be distributed quickly and safely to markets across the country.

vi. Promote Crop Diversification

Pakistani policymakers should encourage farmers to diversify their crops to reduce dependency on a few staple crops like wheat and rice, which are vulnerable to climate change and market fluctuations. They must support the production of high-value crops, such as fruits, vegetables, and pulses, to improve nutrition and household incomes.

vii. Enhance the Livestock and Fisheries Sector

To ensure food security in Pakistan, it is very important to invest in veterinary services, vaccination programs, and breed improvement for livestock to increase productivity and reduce losses from diseases. Pakistan must promote sustainable fisheries management, focusing on both marine and freshwater resources, to increase fish availability and nutrition.

viii. Support Rural Development and Infrastructure

Another important step in this regard will be to improve rural infrastructure, including roads, electricity, and internet connectivity, to facilitate access to markets and enable better communication between farmers, suppliers, and consumers. Investment in rural education and healthcare is also very crucial for ensuring that rural populations can engage fully in the agricultural economy.

ix. Implement Land Reform Policies

A very critical step in this regard will be the land reforms. Addressing land distribution disparities and reducing farm fragmentation can significantly enhance food security. Policies aimed at improving land-use intensity and operational land holdings are crucial.

x. Strengthening social safety nets and poverty alleviation programs

The unprecedented challenges posed by the food scarcity situation in Pakistan call for heavy investment in ensuring social safety through social safety nets. The government must initiate programs for food vouchers, transfer of cash, school feeding programs, and poverty alleviation programs. These initiatives are very important for low-income households and vulnerable populations like women and children.

For the successful implementation of poverty alleviation programs and social safety nets, the government of Pakistan should invest on priority in these schemes and ensure that they are properly designed, targeted, and effectively implemented. Increasing transparency and accountability involved in these schemes is also a part of this strategy. Additionally, addressing the root causes of poverty and food insecurity, like inequality, and lack of access to education, health, and economic opportunities, the government needs to act to address the root drivers of poverty and

food insecurity. Through poverty alleviation programs and social safety nets, Pakistan can achieve remarkable progress toward the eradication of food insecurity and the well-being of its people.

xi. Improve Policy Coordination and Governance

The government must prioritize the establishment of a National Food Security task force. This will help in better coordination between all related agencies and stakeholders. Such steps will facilitate in gathering of food security data, formulation of policies, and implementation.

xii. Prioritize food security in national security planning:

Understanding the intricate relationship between Food scarcity and National security, the government must give priority to the food and agriculture sector in its national security planning. This issue must be addressed on a priority basis.

Food insecurity has long-term consequences on human welfare, like malnutrition, stunted growth, and reduced economic productivity. When the majority population lacks access to safe, nutritious, and adequate food, it can lead to social unrest, political instability, and conflict, and ultimately pose a threat to national security. By prioritizing food security at the highest level, Pakistan can prevent these threats and enjoy a safer and more stable future. Furthermore, food insecurity is directly related to economic security, which is a key component of national security. Since food-insecure individuals negatively affect national economic growth, it leads to lower tax revenues and greater dependence on foreign assistance. On the other hand, an economically productive food-secure population can lead to higher economic growth, improved tax collections, and less dependence on foreign aid. Pakistan can enhance its economy and reduce its vulnerability to external shocks by taking care of food security.

Pakistan's unstable security situation necessitates that food security needs to be ensured to counter terrorism and extremism threats. Pakistan's agricultural regions, particularly in the northwestern and southwestern areas of the country, are vulnerable to extremist and terrorist groups. These groups target disadvantaged as well as food-insecure populations, exploiting their desperation to recruit new members and spread their ideology. Pakistan can mitigate this extremist ideology threat and build stronger communities by solving the problem of food insecurity and advancing sustainable agricultural development.

In addition, food insecurity may fuel existing social and economic grievances, setting the stage for radicalization. Extremist groups may easily exploit this breeding ground of extremism set by the presence of poverty, inequality, and food insecurity at the same time in Pakistan. Therefore, addressing food security is not only a human security issue but also an imperative for national security. By prioritizing food security, Pakistan can significantly reduce the threat of terrorism and extremism, improve political and economic stability and prosperity, and build a more secure future for its people.

Last but not least, the problem of food shortage as a national security concern needs a concerted effort and coordination from all government agencies and stakeholders, such as government institutions, civil society, and the private sector. The approach should be on sustainable agriculture practices, climate-resilient agriculture, water management, social protection programs, and emergency response systems. Together, Pakistan can have a stable, prosperous, and secure future for its people.

4.5. Conclusion & Findings

The National Food Security Policy (2018) will remain a significant milestone in ensuring the country's food security, which explicitly prioritizes social protection mechanisms, enhanced

irrigation systems, agricultural production, and research and development. Nevertheless, despite its holistic framework, attempts at food security are still susceptible to issues like poor implementation, climate change, water shortages, and policy coordination deficits. Although the government's commitment to resolving these challenges is evident in the establishment of the Ministry of National Food Security & Research, institutional and administrative limitations continue to impede the holistic implementation of policy goals.

A careful examination of government policies reveals the importance of better policy implementation, deepened institutional coordination, and more investment in agricultural innovation. In the future, policymakers need to focus on effective water management, climate-resilient agriculture, better governance, and targeted subsidies to make food production and availability sustainable. With the adoption of the suggested measures, Pakistan will not only be able to attain national food security but also align its agricultural policy with international food security objectives and Sustainable Development Goals (SDGs). This measure will need to be reinforced to create a stable, independent, and food-secure future for the nation.

The key findings of the research are as follows;

- (i) Food scarcity threatens national security: the research establishes that food scarcity in Pakistan is no longer just a developmental or agricultural issue. It poses a critical national security risk. Recurring crises such as the 2022 floods and wheat shortages have disrupted the food system, provoked civil unrest, and strained state institutions
- (ii) Climate change exacerbates food insecurity: Climate change is wreaking havoc on Pakistan's agricultural sector, resulting in lower crop yields, changing weather patterns, and more frequent extreme weather conditions, further contributing to food insecurity.

(iii) Water scarcity and soil degradation undermine food security: Pakistan's water shortage and soil degradation are major risks to food security because they decrease agricultural productivity and raise farmers' exposure to climate shocks.

(iv) Food insecurity has far-reaching consequences for human well-being and economic development: Food insecurity has critical implications for human health, including malnutrition, stunted development, and lowered economic productivity, ultimately eroding Pakistan's economic growth and national security.

(v) Food Scarcity in Pakistan Is Driven by Structural Weaknesses

Empirical evidence indicates that the persistence of food scarcity in Pakistan is also due to poor governance, weak agricultural infrastructure, lack of investment in R&D, rapid population growth, water mismanagement, and land degradation. Despite being an agrarian economy, Pakistan remains food insecure due to ineffective policies and systemic mismanagement of natural and institutional resources.

(vi) Theoretical Finding: Partial and Inconsistent Securitization of Food Scarcity

Applying Barry Buzan's Securitization theory, the thesis finds that food scarcity in Pakistan has partially been securitized—i.e., treated with urgency and exceptional measures in some cases. But not consistently framed as a core national security issue in policy or institutional discourse. Key elements of the theory—existential threat, securitizing actors, target audience, and extraordinary measures—are evident in scattered instances (e.g., military-led land management programs, emergency ration drives), but there is no formal, systemic securitization process at the national level.

Chapter 5: Conclusion

The food security concept is complex and has four main dimensions, namely availability, accessibility, utilization, and stability. Availability of food means the physical presence of food within a region, whereas access pertains to the capacity of people to obtain food. Utilization of food means the proper usage of food, e.g., preparation, intake, and storage, to maintain nutritional health. Finally, the stability of food makes sure that the other three elements are always ensured over time. Knowing these aspects is essential to formulate proper policies to ensure food security.

Food security is extremely crucial because it is an inherent human right and critical to human well-being, economic development, and social stability. If individuals have access to enough, safe, and nutritious food, then they are likely to be healthy and productive. Food security also has beneficial effects on education since well-fed children will most likely be at school and learn well. In addition, food security is essential for economic growth, since a well-nourished workforce is productive and efficient.

The food scarcity situation in the developing world is very crucial. While hunger has been declining worldwide, several developing states are still facing food insecurity. The effects of food insecurity in these countries are wide-ranging. From stunted growth, compromised immune systems, and lowered economic productivity. Climate change, conflict, and economic uncertainty add to food insecurity in these countries. Thus, it is extremely important to emphasize the food security of these countries by adopting sustainable agricultural practices, social protection programs, and international coordination.

Pakistan is among those developing nations that are experiencing food scarcity. It has emerged as a major problem for the rapidly growing population of Pakistan. Even though Pakistan is an agricultural country, it is unable to provide adequate, affordable, and accessible food for its people. The agricultural sector of the country is exposed to climate change, water shortages, and soil erosion, which have led to decreasing crop yields and food supply. In addition, Pakistan's food system is also plagued by inefficiencies and losses in the supply chain, from production to consumption. Due to poor storage facilities, an underdeveloped transport system, and mishandling of food-preserving methods, Pakistan loses 30% of its food production annually. This causes severe financial loss not only to farmers but also to the national economy.

Poverty and inequality are primary reasons for food insecurity. Low-income households are unable to buy sufficient nutrients and food that are essential for them to live healthy lives. Poverty is a common cause of food scarcity in most developing countries, such as Pakistan, where a large percentage of the population lives below the poverty line. This renders them incapable of buying food, hence food insecurity. Moreover, income and resource inequality also worsen food insecurity since particular groups, e.g., women and the marginalized, may lack access to food and other basic resources.

Food security and national security have a complex relationship. Food security is a critical component of human welfare, and its lack can be enormously consequential to people, communities, and nations. National security, in contrast, encompasses broad-agenda items such as political stability, economic well-being, and military security. Food shortages and rising food prices, for instance, could tend to cause social unrest, political upheaval, and even hostilities, potentially undermining national security. Such a strong nexus between food security and national security could have significant implications for a country's stability, prosperity, and security.

Globalization, climate change, and demographic changes also shape the link between food scarcity and national security. Globalization has opened up new avenues for food production and trade, but has also made food systems susceptible to outside shocks, including price fluctuations and trade disruptions. Climate change is also significantly influencing food security because changes in weather and rising temperatures negatively impact agricultural production and access to food. Demographic changes, such as urbanization and population increase, are a further reason behind food shortages because they create additional challenges to producing, processing, and distributing food. To come up with the right policy strategies to promote national security and food security, an understanding of such complex dynamics is extremely essential.

Food security is irretrievably connected with the national security of Pakistan, affecting its geopolitical balance, economic stability, and social cohesion. Despite being of critical importance, wide loopholes in national security policies have left the country vulnerable to crises generated by climate change, domestic conflicts, and global market volatility. Paradigms need to be changed on how food security is given priority and integrated into the national security policy.

Policy changes must incorporate food security as a core pillar of national strength, supported by cooperation across ministries. Strategic national initiatives, including investment in sustainable agriculture, technological innovation, and infrastructure, can enhance productivity and mitigate the effects of climate change. Concurrently, the government must lead the quest for food sovereignty, reducing dependence on imports by strengthening local farmers and providing stability to local food systems.

International collaboration through alliances, foreign assistance, and worldwide partnerships may go a long way in enhancing technical know-how, economic support, and creative solutions to

structural issues. Through generating regional and international cooperation, Pakistan can overcome common food security issues while consolidating its geopolitical standing.

Finally, a holistic strategy for food security may only ensure the availability, accessibility, and affordability of food to Pakistan's population. It will also improve national stability, economic growth, and regional peace. As a central component of national security policy, food security must be given top priority for Pakistan's sustainable development and long-term resilience.

5.1. Urgency for a Comprehensive Strategy

The cross-cutting interrelationships between food security require Pakistani policymakers and stakeholders to the urgency to address this issue. To respond to the multifaceted problem of food insecurity, a holistic and integrated approach needs to be adopted. Understanding that a food-secure people is a prerequisite to a stable and prosperous country. Policymakers and stakeholders should also collaborate to come up with and apply effective solutions that tackle the underlying causes of food insecurity.

Policymakers must prioritize food security in the national security framework and need to formulate holistic strategies that address the several facets of food security. This requires investing in sustainable agriculture practices, climate-resilient agriculture, and water management, along with social protection programs and emergency response systems. The policymakers should also identify the vital role played by women in food security and make their needs and voices part of food security policy and programs. Policymakers also need to accord top priority to research and development to enhance agricultural productivity, minimize post-harvest losses, and increase food safety.

Food security requires a collective effort from Practitioners, stakeholders, civil society, the private sector, and international agencies. Each segment can play its role by assisting small-scale farmers,

enhancing sustainable agricultural practices, and rendering urgent aid to vulnerable groups. Practitioners and stakeholders must also collaborate in formulating and deploying efficient early warning systems, emergency response measures, and social protection schemes. Furthermore, they must prioritize capacity building and training to enhance the skills and knowledge of farmers, extension workers, and other stakeholders.

Finally, placing food security at the top of national security agendas involves a paradigm change in how food security is understood and addressed by policymakers, practitioners, and stakeholders. It means that food security is not merely a development or humanitarian concern but a vital national security issue. Through collaboration and placing food security at the top of the agenda, we can build a more stable, prosperous, and secure future for everyone.

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