



**A POLICY BACKGROUND PAPER ON CENTRAL ASIA'S FOOD
INSECURITY**

FOOD AND NUTRITION SECURITY FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

Food insecurity is a significant threat to many developing nations and comprises the nations' inability to afford or access quality food for their dietary needs. This situation is rampant in the nations of the Central Asian region, including Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, and Tajikistan. The adversity facing the citizens in these countries has since proved the urgency of exploring the situation through detailed research to propose an appropriate remedial strategy to mitigate the challenge. In this regard, this study endeavored to explore the potential solution to the widespread food insecurity by illustrating the relationship between the effects of hunger and malnutrition in the region and the respective causes to help in future planning and further research. Hence, the research examines three specific objectives: to examine food security in Central Asia's selected five countries: Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, and Tajikistan; to determine the rationale for persistent food insecurity in Central Asia, to recommend effective remedial measures to Central Asia's food insecurity.

Driven by the gravity and urgency of eradicating food inadequacy in the selected study area, a detailed exploration of facts from recent research literature was undertaken. This step helped to illustrate the concept of food security in a more vivid manner by considering the case of the selected five countries of the Central Asian region to depict the real scenario. The research adopted five research questions that helped gather the data on the adopted critical areas of the study.

This study considered establishing facts on the selected areas to fulfill their significance as intended by the researcher. The study aims to establish a set of considerations in the affected countries' future planning on food insecurity eradication campaigns. Ultimately, the study explored the food security situation



in each of the five selected countries detailing the effects of hunger and malnutrition on the nationals. However, strict attention was drawn to establishing the common effects and causes across Central Asia to draw an inclusive conclusion for comprehensive recommendations.

The researcher undertook to explore the essential facts by prioritizing the acquisition of facts on the nations' hunger and widespread malnutrition situations. Later, the corresponding causes were established to help suggest relevant remedial measures. In this regard, the researcher established three main causes as limited farmers' support from government and relevant institutions, limited research for appropriate agricultural practices, and low capacity to develop evidence-based agricultural policies. Nonetheless, the research established a significant hope in resolving the food crisis in the region from relevant previous research literature and reports from relevant agencies like FAO and the World Bank. The noted indicators of positive progress in the campaigns against hunger and malnutrition included intensifying research and policy-based planning on food security issues. Based on these findings, the researcher raised various recommendations that would address food insecurity in the context of all the five selected countries from Central Asia.

Key words

Food insecurity, malnutrition, undernutrition, evidence-based policies, self-sufficiency, sustainable agriculture.

1.0 Introduction

Food insecurity and malnutrition are notable issues in most developing nations¹. These two closely related problems affect the parts of the world where socioeconomic and political limitations grossly compromise economic development due to poor governance and lack of evidence-based policies². These are common attributes of governance failure in many parts like Central Asia, where political leaders often fail to prioritize support for the critical areas that support economic stability³. Most Central Asian governments are commonly known for their undesirable neglect of the agricultural sector, yet their nations' food-related needs would be addressed most effectively by advancing the national support to farmers

¹ C. W. Kalansooriya, W. G. V. Gunasekara, and A. P. G. S. Jayarathne, "Food Security in Urban Households: The Role of Women in an Asian Context," *Economy* 7, no. 1 (2020): 11–18, <https://doi.org/10.20448/journal.502.2020.71.11.18>.

² FAO et al., "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2020: Affordable Healthy Diets to Address All Forms of Malnutrition for Better Health" (Budapest, 2021), <https://doi.org/10.4060/cb3849en>.

³ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment" (Budapest, 2019), <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>.



and researchers in agriculture and the related areas⁴. Besides, the countries in this region are suffering from the limited application of relevant policies on food security and poverty eradication⁵.

Policies aimed to initiate and enhance campaigns against poverty, and food insecurity should be inclusive to ensure all essential stakeholders participate in the involved initiatives⁶. This step eliminates doubts in the organizational system involved in policy implementation. Nevertheless, excessive dependence on irrelevant policies that cannot apply in the socioeconomic and political context of the region is a significant hindrance to most Central Asian countries' progress in the fight against rampant poverty, often characterized by hunger and malnutrition⁷. This situation is unbearable in the region, especially Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, and Tajikistan⁸ (appendix A). Nevertheless, the need for stability and security in other forms of societal aspirations necessitates urgent remedial measures to address the food crisis that widely affects many nations in the Asian region, especially the Central parts of the continent⁹.

A state of societal stability necessitates guaranteeing security for the citizens so that they may have the confidence to unleash their potentials toward their nations' socioeconomic and political prosperity¹⁰. Nevertheless, the success involved in this case derives extensively from the people's food security¹¹. Many recent studies on the rationale and effects of food insecurity illustrate that neglect for effective policy on food programs causes sluggish progress in succeeding against hunger and poverty¹². Similarly, many Central Asian governments' failure to consider the adversities facing their citizens due to food shortage and malnutrition delays the aspired success in the campaigns against food insecurity and malnutrition¹³.

⁴ G T Aigarinova and G K Shulanbekova, "Legal Backing of Food Security-as a Major Component of the National Security of the Republic of Kazakhstan," *Procedia - Social and Behavioral Sciences* 81 (2013): 510–13, <https://doi.org/10.1016/j.sbspro.2013.06.468>.

⁵ Brian Thompson, J. Cohen Marc, and Janice Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences," in *The Impact of Climate Change and Bioenergy on Nutrition* (Springer, Dordrecht, 2012), 21–41.

⁶ Carlo Azzarri and Alberto Zezza, "International Migration and Nutritional Outcomes in Tajikistan," *Food Policy* 36, no. 1 (2011): 54–70, <https://doi.org/10.1016/j.foodpol.2010.11.004>.

⁷ Kalansooriya, Gunasekara, and Jayarathne, "Food Security in Urban Households: The Role of Women in an Asian Context."

⁸ Ayan Orazov et al., "Role of Camel Husbandry in Food Security of the Republic of Kazakhstan," *Agriculture* 11, no. 7 (2021): 614.

⁹ Eleonora Dupouy and Mirjana Gurinovic, "Sustainable Food Systems for Healthy Diets in Europe and Central Asia: Introduction to the Special Issue," *Food Policy* 96 (2020): 101952.

¹⁰ Gulzada T. Shakulikova and Baidalinova Ainur S., "Agriculture Financing--a Basic Premise for Ensuring Food Security in Kazakhstan," *Journal of Applied Economic Sciences* 13, no. 1 (2018): 216–26.

¹¹ Aigarinova and Shulanbekova, "Legal Backing of Food Security-as a Major Component of the National Security of the Republic of Kazakhstan."

¹² Thompson, Marc, and Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences."

¹³ Dupouy and Gurinovic, "Sustainable Food Systems for Healthy Diets in Europe and Central Asia: Introduction to the Special Issue."



Furthermore, most governments in the region are beginning to prioritize revamping their governmental initiatives to better their existing food security policies to achieve satisfactory food security for their citizens to meet the vital dietary requirements for a healthy population¹⁴.

Besides, there is an impressive shift in the attention expressed toward essential adjustments in agricultural sectors, including research intensification and funding to upscale agricultural output¹⁵. Furthermore, the advice is taken from significant regional, and global agencies' reports like World Bank (WB), World Health Organization (WHO), and Food and Agriculture Organization of the United Nations (FAO) is often considered more keenly to bring a turnaround to the destructive trends¹⁶. Furthermore, considerable attention is drawn to tackling environmental challenges that inhibit favorable climate for farming and agricultural production¹⁷. For instance, there is increased advocacy for greener energy to enhance environmental sustainability, which extends the longevity of agricultural productivity of land and other resources used in farming¹⁸. Such initiatives are effective responses to mitigating climate change by checking atmospheric destruction through greenhouse gas emissions¹⁹.

2.0 Study Background Information

2.1 The Food Security Concept

A society that enjoys food security primarily meets the nutritional needs of its people according to the United Nations' relevant agencies' proven required dietary standards²⁰. Food security is the aspiration of every community that craves to exploit its members' full potential for socioeconomic and political development²¹. There are many adverse health effects associated with malnutrition and starvation, which inhibit proper human health²². For instance, distorted mental health resulting from inadequate food or poor dietary practices urged by food insecurity

¹⁴ Ibid.

¹⁵ Ibid

¹⁶ Qiqi Li and Guilin Liu, "Is Land Nationalization More Conducive to Sustainable Development of Cultivated Land and Food Security than Land Privatization in Post-Socialist Central Asia?," *Global Food Security* 30 (2021): 100560, <https://doi.org/10.1016/j.gfs.2021.100560>.

¹⁷ Shelley Mcguire, "FAO, IFAD, and WFP. The State of Food Insecurity in the World 2015: Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress. Rome: FAO, 2015," *Advances in Nutrition* 6, no. 5 (2015): 623–24, <https://doi.org/10.3945/an.115.009936.faster>.

¹⁸ Thompson, Marc, and Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences."

¹⁹ Kedar Mehta et al., "The Energy Situation in Central Asia: A Comprehensive Energy Review Focusing on Rural Areas," *Energies* 14, no. 10 (2021): 2805.

²⁰ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

²¹ Aigarinova and Shulanbekova, "Legal Backing of Food Security-as a Major Component of the National Security of the Republic of Kazakhstan."

²² Andrew D Jones, "Food Insecurity and Mental Health Status: A Global Analysis of 149 Countries," *American Journal of Preventive Medicine* 53, no. 2 (2017): 264–73, <https://doi.org/10.1016/j.amepre.2017.04.008>.



may cause stress and depression to the affected people²³. The victims become worked up and cannot contribute well toward essential economic activities that enhance food production like agriculture²⁴. Sustainability in agricultural production is a crucial factor influencing the ultimate success of combating food crises through efficient agricultural production methods²⁵.

Nonetheless, every governmental initiative focused on achieving an appropriate proportion of food quantities needed for the citizens while considering the various dietary requirements for a healthy nation's feeding necessitates effective agricultural production. The farming initiatives involved in food production need to prioritize sustainability in all the involved processes²⁶. Achieving this goal requires the indulgence of all stakeholders, including the government and the community, to ensure responsible use of the resources required in the campaigns against food shortages²⁷. In this regard, the essential initiatives involved in establishing the rationale behind the food shortages and malnutrition within the Central Asian region required considering enhancing responsibility and accountability in governance and agricultural research to enhance efficiency given farming constitutes most developing nations' basic source of food for the citizens.

2.2 Defining Food Security in the Context of Central Asia

Understanding the level of food insecurity in the Central Asian region can be challenging without reference to relevant organizations and agencies. For instance, the table included illustrates the percentage and number of people who could not afford the three selected diets (with 63 percent of income spent on food) in the Central Asian region in 2017 (Appendix E-F). Besides, many of those affording some food each day do not get a proper diet for themselves and their families, as indicated in the case of Tajikistan's share of the average cost of nutritious diet per household member in 2017 (Appendix D). Although the levels of food insufficiency vary from one nation to the other, the overall view illustrates worrying insufficiency that calls for invigorating agricultural activities within the region to speed food production. The hope that this trend can be managed effectively is illustrated in the FAO report of 2019, where Central Asia indicates impressive drops in the population's undernourishment prevalence (Appendix G).

²³ Ibid.

²⁴ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

²⁵ Oliver Watson, "An Oasis without Water: A Hydro-Social Investigation into How Agricultural Water Use and Management Influences Water Scarcity in the Ferghana Valley, Central Asia" (Lund University Centre for Sustainability Studies (LUCSUS), 2017).

²⁶ Li and Liu, "Is Land Nationalization More Conducive to Sustainable Development of Cultivated Land and Food Security than Land Privatization in Post-Socialist Central Asia?."

²⁷ Issataeva Akerke Galimzhanovna, "Kazakhstan and Global Problems of Our Time: Studying the World Experience," *StudNet* 3, no. 4 (2020): 276–83.



The Central Asian countries experienced a drastic shift in the ownership and use of land after gaining independence from the Soviet Union, where the state planned the land. Eventually, households had to seek resources on their own to fund food production through agriculture. Land ownership is hardly based on the community or the nation but on the households, contributing to the resultant food crisis as many households could not meet the proper land use costs²⁸. For instance, research shows that the food-secure households in Uzbekistan in 2011 had an average of 0.036 hectares of land, while those victimized by food insecurity owned 0.03 hectares. This trend depicts a direct relationship between accessibility to land, which is the major factor of food production, and the amount of food produced through farming per household in Central Asia, as many affected nations share most many similarities in factors affecting their food and nutritional sufficiency.

Given that all agricultural endeavors within the Central Asian region need proper availability and access to reliable water for crops and livestock enhancing agricultural food production through various farming methods is often influenced by the supply and use of water flowing through the region. In this regard, the Ferghana Valley found in the Central Asian region forms a crucial part of the regional agricultural lands. This Valley experiences a considerable amount of agricultural activities that usually involve water, accounting for about 90% of the total water used in the area. In this regard, water distribution and consumption management have a significant role in the prevailing food insecurity²⁹. There is a need to adopt efficient water use in all food production activities while applying acceptable farming techniques that support environmental sustainability campaigns³⁰.

Moreover, research indicates that institutional responsibility directly influences effectiveness in supporting sustainable agriculture through sound funding and proper research³¹. The situation illustrates that the governments' failure to consider handling food insecurity as a threat to national security is one of the perpetual causes of the rampant malnutrition and hunger-related causes in the Central Asian region. Nevertheless, there has since been a limited association of food insecurity with civil security, limiting effective illustration of the necessary urgency required in handling food insecurity and nutritional challenges in most

²⁸ Boris Gojenko, I-u Leonhaeuser, and G Stulina, "Land Use , Food and Nutrition Security – Case Study in Rural Uzbekistan," *Land Use, Food and Nutrition Security–Case Study in Rural Uzbekistan*, no. 1611-2016–134568 (2013).

²⁹ Watson, "An Oasis without Water: A Hydro-Social Investigation into How Agricultural Water Use and Management Influences Water Scarcity in the Ferghana Valley, Central Asia."

³⁰ Mehta et al., "The Energy Situation in Central Asia: A Comprehensive Energy Review Focusing on Rural Areas."

³¹ Aigarinova and Shulanbekova, "Legal Backing of Food Security-as a Major Component of the National Security of the Republic of Kazakhstan."



countries in the region³². Furthermore, limited involvement of all stakeholders in hunger eradication campaigns through supporting efficient agriculture for higher food production jeopardizes success in addressing food insecurity³³. All concerned parties, including farmers, agricultural institutions, researchers, and the government must be allowed a fair share of space to extend their support in the quest for food security.

2.3 Controlling Food Insecurity

Managing food shortages requires maximum cooperation among institutions and community members, with every stakeholder's efforts enhanced³⁴. For instance, effective farming methods that ensure proper water and energy use play a role in ultimate agricultural production³⁵. Therefore, there is a need for sound awareness campaigns to sensitize the communities in the Central Asian region to acknowledge environmental conservation for agricultural sustainability³⁶. For example, excessive dependence on oil fuel in various agricultural activities contributes to the increase in the amount of greenhouse gases, leading to global warming and consequent climate change that adversely affect agricultural campaigns³⁷. Maximum cooperation from all the stakeholders and the sustainable use of agricultural resources in the Central Asian countries are essential considerations for achieving food security aspirations³⁸.

The ever-worsening food insecurity in the Central Asian region necessitates an urgent shift from the traditional perspective of farming where little attention was paid to environmental sustainability, requires urgent consideration³⁹. Farmers need to uphold responsible water use and application of cleaner energy in the farming activities that involve machines to help mitigate climate change since that also contributes to the region's unpredictable food production patterns on farms⁴⁰. Besides, governments and relevant institutions in the Central Asian region need to advance awareness campaigns to sensitize the masses on the need to farm

³² Cullen S. Hendrix and Brinkman Henk-Jan, "Food Insecurity and Conflict Dynamics: Causal Linkages and Complex Feedbacks," *Stability: International Journal of Security and Development* 2, no. 2 (2013).

³³ Kalansooriya, Gunasekara, and Jayarathne, "Food Security in Urban Households: The Role of Women in an Asian Context."

³⁴ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

³⁵ Mehta et al., "The Energy Situation in Central Asia: A Comprehensive Energy Review Focusing on Rural Areas."

³⁶ Watson, "An Oasis without Water: A Hydro-Social Investigation into How Agricultural Water Use and Management Influences Water Scarcity in the Ferghana Valley, Central Asia." Mehta et al., "The Energy Situation in Central Asia: A Comprehensive Energy Review Focusing on Rural Areas."

³⁷ Guangqing Chi et al., "Agricultural Production at the Oblast Level in Post-Soviet Kyrgyzstan, 1990–2014: Implications of Demographic and Climate Changes," *Research in Globalization* 2 (2020): 100027, <https://doi.org/10.1016/j.resglo.2020.100027>.

³⁸ FAO et al., "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2020: Affordable Healthy Diets to Address All Forms of Malnutrition for Better Health."

³⁹ FAO et al.

⁴⁰ Thompson, Marc, and Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences."



responsibly for sustainability's sake⁴¹. Furthermore, the application of evidence-based policies in hunger eradication in Central Asian countries can help enhance good results in planning for the people's food security needs, considering that it is a critical threat to people's wellbeing.

3.0 Statement of the Problem

Achieving the required food supply that meets the needs of all citizens in a given nation's population is apparently an aspiration of every government in the developing parts of the world, especially in Asia, Africa, and a few parts of the South American continent⁴². Nevertheless, both environmental and human factors inhibit meeting this goal⁴³. Whereas governmental and institutional neglect for the agricultural sector and lack of realistic policies on food security comprise human socioeconomic and political factors, other environmental factors hinder success in the fight against food insecurity⁴⁴. For instance, the worst victims of climate change are the nations located in the parts of the developing world, while the developed nations show reluctance to reduce environmental degradation and pollution⁴⁵.

Furthermore, poor governance that is often characterized by a disregard for political goodwill's role in enhancing support for the agricultural sector through funding and research worsens the people's suffering due to hunger and malnutrition⁴⁶. This situation adversely affects several nations in the Central Asian region, necessitating some urgent response through effective research, inclusive planning, and prudent campaigns. Inclusive planning based on evidence-based policies eliminates suspicion among stakeholders, enhancing collaboration toward achieving a food-secure nation. Based on the gravity of the worsening food security in the Central Asian region due to limited research triggered by limited institutional support and the need to establish better ways of addressing the challenge, this policy background research endeavors to suggest a set of applicable remedial strategies that can help reverse the trend through effective future planning on food security in the selected region and beyond.

4.0 Objectives

⁴¹ Karolina Pawlak and Małgorzata Kołodziejczak, "The Role of Agriculture in Ensuring Food Security in Developing Countries : Considerations in the Context of the Problem of Sustainable Food Production," *Sustainability* 12, no. 13 (2020): 5488.

⁴² FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁴³ Ibid.

⁴⁴ FAO et al., "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2020: Affordable Healthy Diets to Address All Forms of Malnutrition for Better Health."

⁴⁵ Thompson, Marc, and Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences."

⁴⁶ Jannah M Wigle et al., "Drivers of Stunting Reduction in the Kyrgyz Republic: A Country Case Study," *The American Journal of Clinical Nutrition* 112, no. Supplement_2 (2020): 830S-843S.



Based on the urgency of the solution to the excruciating food insecurity in Central Asian selected countries, this background policy paper's general objective is to attempt to illustrate how the situation can be addressed by investigating the rationale for the situation in various countries inside the region and linking it to the responsible causal factors for future reference in further research and government planning. The ultimate goal of this initiative is to make worthy recommendations for managing the problem. In this regard, the research has three specific objectives: to examine food security in Central Asia's selected five countries: Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, and Tajikistan; to determine the rationale for persistent food insecurity in Central Asia, to recommend effective remedial measures to Central Asia's food insecurity.

5.0 Research Questions

Given the study objectives, this research embraced five research questions that guided data collection and findings' analysis for effective conclusions. The research questions adopted are:

- Are there common reasons for food insecurity observed across the selected five countries of the Central Asian region?
- Does governance in the selected countries in Central Asia contribute to the continued food insecurity experienced in the respective nations?
- What is the role of policy formulation and implementation in the ultimate food situation in the Central Asian selected nations?
- What is the role of the community in the continued food insecurity in the Central Asian region?
- Is there a significant progress in addressing food scarcity in the affected countries of Central Asia?

6.0 Literature Review

Food security comprises a crucial component of any nation's security⁴⁷. Nevertheless, the reports from a few nations in the developing parts of the world, like the selected countries of the Central Asian region, acknowledge the significance of prioritizing food security for the citizens since it proved to be an essential element of societal security in many contexts⁴⁸. This situation is justified by consistently observed neglect for the agricultural sector in the developing nations with little regard for the adverse effects of underproduction on farms upon progress in the campaigns against food insecurity⁴⁹. Besides, research reveals that whereas various farming activities contribute toward the poverty eradication

⁴⁷ Aigarinova and Shulanbekova, "Legal Backing of Food Security-as a Major Component of the National Security of the Republic of Kazakhstan."

⁴⁸ Galimzhanovna, "Kazakhstan and Global Problems of Our Time: Studying the World Experience."

⁴⁹ Hendrix and Henk-Jan, "Food Insecurity and Conflict Dynamics: Causal Linkages and Complex Feedbacks."



efforts in the nations faced with food insecurity, there are limited considerations for sustainable farming practices that ensure responsible use of the available resources for efficient agricultural production⁵⁰.

Certain inevitable environmental hazards like floods and droughts often push the affected Central Asian nations into perpetual food insecurity⁵¹. Nevertheless, a significant share of the cause of this incredible food insecurity has been attributed to irresponsible institutional and governmental planning, lack of evidence-based policy formulation, and improper policy implementation in the various affected nations⁵². According to recent research into the potential causes of hunger cases in central Asian countries, institutions and governments have a significant share in the people's sufferings related to food shortage due to the lack of enough responsibility and accountability in discharging their leadership roles⁵³. For instance, FAO's recent research indicates that 13% of the world population in developing countries is malnourished⁵⁴, and the reasons are cited include irresponsible governance and lack of political goodwill⁵⁵.

Furthermore, public security for the citizens in various nations depends extensively on food security as most conflicts have been linked to food shortage problems⁵⁶. The search for food has the effect of tempting people to dare law by engaging in illegal activities which threaten public security. In other words, the seemingly unbearable urge to overcome hunger and health failure due to malnutrition exert overwhelming pressure on the victims of food shortages in most developing parts of the world, including the Central Asian region⁵⁷. Mental and psychological frustrations may also push the victims into practicing undesirable activities, which may devastate the environment and societal stability⁵⁸. In this regard, many researchers observe that the initial steps of restoring public security require focusing on resolving people's food insecurity⁵⁹.

Lack of adequate support for research into responsible farming methods and limited governmental support for agriculture in the central Asian region continues

⁵⁰ Pawlak and Kołodziejczak, "The Role of Agriculture in Ensuring Food Security in Developing Countries : Considerations in the Context of the Problem of Sustainable Food Production."

⁵¹ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁵² Ibid.

⁵³ Mariko Kawabata et al., "Food Security and Nutrition Challenges in Tajikistan: Opportunities for a Systems Approach," *Food Policy*, no. January (2020): 101872, <https://doi.org/10.1016/j.foodpol.2020.101872>.

⁵⁴ Pawlak and Kołodziejczak, "The Role of Agriculture in Ensuring Food Security in Developing Countries : Considerations in the Context of the Problem of Sustainable Food Production."

⁵⁵ Farahanna Abd Razak, Ida Baizura Bahar, and Rosli Talif, "The Impact of Food Policy on Food Insecurity in Developing Countries," in *National Research & Innovation Conference for the Graduate Students in Social Sciences 2014, 2015*.

⁵⁶ Hendrix and Henk-Jan, "Food Insecurity and Conflict Dynamics: Causal Linkages and Complex Feedbacks."

⁵⁷ Ibid.

⁵⁸ Jones, "Food Insecurity and Mental Health Status: A Global Analysis of 149 Countries."

⁵⁹ Ibid.



playing a critical role in the affected countries' citizens' affliction due to hunger and malnutrition⁶⁰. However, based on the data derived from recent studies on food security, most governments in the central Asia region are adopting new reforms and implementing structural changes in their agricultural sectors to ensure inclusivity in planning and responsible farming practices. Besides, there is a renewed consideration for research in agriculture and more realistic policy-based planning⁶¹. These illustrations further affirm the discovery of the major problems ailing the campaigns against food insecurity in the affected Central Asian countries. Furthermore, such establishments point to the research gap that persisted for long in establishing the rationale for the perpetual food shortage in Central Asia.

7.0 Findings

7.1 Food Insecurity Situation in Central Asia

7.1.1 Kazakhstan

Kazakhstan is one of the Central Asian countries where food insecurity is prevalent⁶². Some studies have pointed to the need for intensifying funding to revamp the agricultural sector. For instance, research conducted by Shakulikova et. Proved that emphasizing the agricultural sector's funding was a sure remedy to taking the country's food insecurity through a turnaround⁶³. The researchers further emphasized that the urgency of reversing this ignominious situation necessitates a drastic action for salvage. According to them, the fate of Kazakhstan's food insecurity solution rests in the hands of scholars and researchers, the concerned international organizations, and meticulous dependence on the related global statistics for effective policy formulation and implementation. Besides, a study by Orazov et al. on the nation's malnutrition indicates the need to intensify campaigns toward delivering the nation from food insecurity⁶⁴.

According to their research aimed to evaluate the country's food situation for ten years up to 2019, there were substantial signs of positive progress in the fight against food shortage. Still, the scores did not match the 2050 Sustainable Development Goals projected by FAO WHO⁶⁵. The study showed that the nation had exceedingly low self-sufficiency in dairy products at 0.1% (Appendix B,*b-e*). Other signs include growth in camel breeding despite the country's comparatively low population of camels (Appendix B,*f*). Despite this promising trend in food security, where the recent FAO statistics show a drop in the world's population

⁶⁰ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁶¹ Dupouy and Gurinovic, "Sustainable Food Systems for Healthy Diets in Europe and Central Asia: Introduction to the Special Issue."

⁶² Orazov et al., "Role of Camel Husbandry in Food Security of the Republic of Kazakhstan."

⁶³ Shakulikova and Ainur S., "Agriculture Financing--a Basic Premise for Ensuring Food Security in Kazakhstan."

⁶⁴ Orazov et al., "Role of Camel Husbandry in Food Security of the Republic of Kazakhstan."

⁶⁵ Ibid.



under hunger devastation and undernourishment from 23% to 13%, the government and relevant institutions should revamp the country's campaigns toward ensuring a hunger-free Kazakhstan⁶⁶.

7.1.2 Kyrgyzstan

Kyrgyzstan is one of the five nations most affected by food insecurity and malnutrition in the Central Asian region (Appendix A). The country is comparatively disadvantaged in the region, given it has not attracted many researchers' attention to establish the potential of its natural endowment regarding agricultural potential (Appendix C). Besides, the country's mountainous relief and relatively infertile land are a significant hindrance to agricultural production through crop farming⁶⁷. Nevertheless, these limitations do not impact the country's agricultural productivity more than socioeconomic and political factors. This comparison can be illustrated in the article by Chi et al.⁶⁸. A recent study done to examine the country's agricultural production in livestock and crop farming between 1991 and 2014 revealed that Kyrgyzstan experienced drastic changes involving political leadership, climate, and demographics, adversely affecting the essential attention needed for revamping the effort needed to enhance agricultural production⁶⁹.

Given Kyrgyzstan's limiting relief factors and unfavorable climate for agriculture, recent World Bank reports indicate that the country ranked second poorest among the Central Asian countries⁷⁰ (Appendix A and C). The country's major population share (65%) lives in rural areas⁷¹. Unluckily, the mountainous relief, hostile climatic conditions, and general economic backwardness in the rural areas inhibit proper farming, making the country feature among the world's most economically backward countries⁷². Besides, the country's declaration of independence from the Soviet Union in 1991 meant the acquisition of selfhood toward obligations that the Soviet Union's government otherwise addressed. The resultant situation caused an immediate decline in farming activities due to the newly initiated country's limited economic capacity to meet the costs related to farming. Furthermore, limits on certain crops like tobacco that fetched the country's

⁶⁶ Mcguire, "FAO, IFAD, and WFP. The State of Food Insecurity in the World 2015: Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress. Rome: FAO, 2015."

⁶⁷ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁶⁸ Chi et al., "Agricultural Production at the Oblast Level in Post-Soviet Kyrgyzstan, 1990–2014: Implications of Demographic and Climate Changes."

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."



substantial income hampered effective economic establishment and ultimate prosperity of the agricultural sector, triggering food insecurity for the nation.

7.1.3 Tajikistan

Tajikistan is one of the countries located in the Central Asian region where the study aims to explore the prevailing food security situation (Appendix A). The country has considerable levels of nutritional inadequacy as a major share of its population is still faced with food crises (Appendix D, *b*). According to research conducted by Kawabata et al., Tajikistan's food security situation is appealing for urgent remedial steps that should consider, among other crucial concerns, the nation's access and affordability of proper dietary needs⁷³. Furthermore, these researchers hold that Tajikistan's government should focus more on establishing more realistic food security policies to ensure the population is free from hunger and undernutrition⁷⁴. Tajikistan's dehumanizing food insecurity levels revealed through studies indicate limited access to quality food that meets the dietary requirements for a healthy nation.

Although there are other climactic challenges with the country's relief that inhibit proper indulgence in effective crop farming and livestock rearing, much of what causes many of Tajikistan's citizens to fall victims to the country's chronic food shortage is attributable to the country's poor policy implementation. Whereas research points to some efficient remedial strategies for mitigating food inadequacy in the country, some researchers like Kawabata et al. observe that the country's policy implementation is a hindrance in the fight against food insecurity. For instance, the negligence of statistics from UN agencies like FAO and WHO in the government's strategic planning of hunger eradication hampers timely solution for the problem, leaving many citizens vulnerable to the food insecurity tribulations⁷⁵. Many victims suffer from dietary challenges associated with malnutrition-undernutrition, underweight, and obesity⁷⁶.

7.1.4 Turkmenistan

Turkmenistan is one of the notable countries in the Central Asian region when it comes to its chronic economic and political challenges that have perpetually placed the country in abject misery (Appendix A). Unlike most of the Central Asian countries' challenges inhibiting proper crop farming and livestock rearing to mitigate food insecurity, the country attributes much of what ails food production to perpetual political oppression in governance that has lasted for about 25 years

⁷³ Kawabata et al., "Food Security and Nutrition Challenges in Tajikistan: Opportunities for a Systems Approach."

⁷⁴ Chi et al., "Agricultural Production at the Oblast Level in Post-Soviet Kyrgyzstan, 1990–2014: Implications of Demographic and Climate Changes."

⁷⁵ Kawabata et al., "Food Security and Nutrition Challenges in Tajikistan: Opportunities for a Systems Approach."

⁷⁶ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."



since the country's independence from the Soviet Union⁷⁷. Food eradication campaigns necessitate the indulgence of other regional and global agencies like FAO, WHO, and WB. The country's tyrannical political leadership led to its apparent closure from the rest of the surroundings, and the global community plays a critical role in general economic backwardness.

Poor governance, characterized by greed for power and material wealth, makes government leaders oppress the citizens. At the same time, they loot the nation's natural gas reserves' wealth for personal gains, leaving many citizens in extreme poverty⁷⁸. Unluckily, the country's major gas importer, China, found a better alternative trade partner, making Turkmenistan's gas-dependent economy stagger. The country's GDP experienced a drop by 31% in the hydrocarbons' prices⁷⁹. While other countries in the Central Asian regions were affected by searing food insecurity due to climate, relief, and general economic backwardness, the Turkmen attribute their afflictions to dictatorial political leadership. This tyrannical regime cut the nation off the rest of the region and other world partners in trade and diplomatic relations⁸⁰. Consequently, the leaders succeed in frustrating the people due to limited access of the neighbors and the international community in the country's affairs⁸¹.

7.1.5 Uzbekistan

Uzbekistan is one of the countries in the Central Asian region that were selected for this study. A significant share of the Uzbeks population is faced by hunger and general food insecurity due to socioeconomic factors that ultimately hinder effective use of land to grow various food crops. Ever since Uzbekistan broke from the Soviet Union, the country began experiencing difficult economic times especially because of a shift from a planned economy to a market-based economy⁸². The government initially planned land use, and eventual change in the land ownership system placed most farmers in a difficult situation to ensure continuity in food production⁸³. Much of the country's population practice cotton farming in most of the arable parts, shrinking the available space for other crops, especially the food crops⁸⁴. This trend triggers the country's chronic malnutrition due to a lack of a balanced diet.

⁷⁷ Paul Stronski, "Turkmenistan at Twenty-Five: The High Price of Authoritarianism," *Carnegie Endowment for International Peace*, 2017.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁸¹ Stronski, "Turkmenistan at Twenty-Five: The High Price of Authoritarianism."

⁸² FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁸³ Gojenko, Leonhaeuser, and Stulina, "Land Use, Food and Nutrition Security – Case Study in Rural Uzbekistan."

⁸⁴ Gojenko, Leonhaeuser, and Stulina.



Besides, the country's larger population share (about 60%) lives in the rural areas where they suffer the effects of economic backwardness due to the country's imbalance in income distribution among the citizens. Given the country's 30% population living in abject poverty, affording modern means of farming that would assure the population adequate and healthy food remains a challenge over time. Ultimately, the majority of the people living in the rural areas lack the capacity to contribute significantly to the country's economic growth and development due to widespread poverty. Although Uzbeks partly depend on rice and wheat farming for their revenues, the country's economy occasionally suffers from fluctuations in commodity prices⁸⁵. In this regard, a study done by Clement et al. explores and shares major determiners of the two crops' price fluctuations as both market-specific and widespread (macroeconomic) factors

7.2 Rationale for Food Security Crisis in Central Asian Region

7.2.1 Limited Farmers' Support from Government and Relevant Institutions

Farmers need to be able to afford efficient farming methods so that food production can be effectively achieved⁸⁶. However, most nations in the selected Asian region experience unstable leadership. The leaders involved barely perceive the interest to eradicate food insecurity in their countries. For instance, Turkmenistan's government has experienced power exchange between dictatorial regimes that meant little for the people's welfare, leaving the citizens' critical economic and welfare needs in trouble due to isolating the nation from the global community⁸⁷. Furthermore, having broken from the Soviet Union, where the governance involved a planned system of national affairs, including land use, some nations were relatively unable to survive on their own economically, leaving agricultural sectors undermanaged⁸⁸. These situations attracted food shortage and widespread malnutrition cases, subjecting a substantial share of the respective countries into abject poverty⁸⁹.

7.2.2 Limited Research for Appropriate Agricultural Practices

The limited government's support for farming experienced in most Central Asian countries occurs in failure to fund research aimed to establish more effective land management and farming methods to enhance the fight against food insecurity. A shift in the national governance from planned system to market

⁸⁵ Yadira Mori Clement, Anik Bhaduri, and Nodir Djanibekov, "4.5 Food Price Fluctuations in Uzbekistan: Evidences from Local Markets in 2002–2010," *Restructuring Land Allocation, Water Use and Agricultural Value Chains*, 2014, 275.

⁸⁶ Kalansooriya, Gunasekara, and Jayarathne, "Food Security in Urban Households: The Role of Women in an Asian Context."

⁸⁷ Stronski, "Turkmenistan at Twenty-Five: The High Price of Authoritarianism."

⁸⁸ Gojenko, Leonhaeuser, and Stulina, "Land Use, Food and Nutrition Security – Case Study in Rural Uzbekistan."

⁸⁹ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."



system necessitated by attaining independence from the Soviet Union caused many states to experience economic challenges⁹⁰. The problems faced include the economic inability to fund effective research on better farm inputs and farming techniques that would realize better food quantities⁹¹. Besides, the governments' lack of political goodwill for the citizens caused the emergence of authoritarian leaderships that minded looting national resources more than striving to liberate the nations from hunger and rampant poverty. Consequently, the common poor governance inhibits effective policy formulation and plan execution in the anti-hunger campaigns, leaving the poverty-stricken nations in worse economic situations over time.

7.2.3 Low Capacity to Develop Evidence-based Agricultural Policies

All the selected countries in this study experienced a form of economic inability to meet the people's dietary needs effectively due to widespread poverty and poor governance⁹². The existence of leaders that fail to prioritize the citizens' welfare through effective policy-based planning is a notable hindrance to the affected nations' progress toward attaining food security⁹³. Besides, tyrannical leadership experienced in some of the country's regimes like Turkmenistan leaves people and institutions intimidated, hence unable to hold their leaders accountable for effective planning on food security matters. The absence of enough research and proper government support to farmers and hunger eradication campaigns play a critical role in the countries' ultimate dependence on vague policies that hardly materialize⁹⁴. Consequently, the campaigns against food insecurity remain in jeopardy, exacerbating the nation's widespread poverty and characteristic food insecurity over time.

7.3 Mitigating Food Insecurity in Central Asia

Although socioeconomic factors like widespread poverty have a more meaningful role in the difficulty of addressing food shortage than environmental challenges like climate change, it is equally prudent for the Central Asian governments and relevant institutions to consider sustainability in policy-based planning on food insecurity eradication⁹⁵. Besides, the economic hindrances to effective campaigns against food insecurity can be tackled by a clear focus on

⁹⁰ Li and Liu, "Is Land Nationalization More Conducive to Sustainable Development of Cultivated Land and Food Security than Land Privatization in Post-Socialist Central Asia?."

⁹¹ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁹² Thompson, Marc, and Meerman, "World Food Insecurity and Malnutrition: Scope, Trends, Causes and Consequences."

⁹³ Stronski, "Turkmenistan at Twenty-Five: The High Price of Authoritarianism."

⁹⁴ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁹⁵ Dupouy and Gurinovic, "Sustainable Food Systems for Healthy Diets in Europe and Central Asia: Introduction to the Special Issue."



governance review. The nations need to consider supporting leaders that prioritize the citizens' welfare, beginning with food security⁹⁶. In this regard, there is a need for effective leadership accountability to hold leaders responsible. Effective revival of integrity in leadership can impact evidence-based policy formulation and eventual plan execution in food security campaigns⁹⁷.

Furthermore, the limited application of evidence-based policies in battling hunger and malnutrition is partly linked to limited research. In this regard, this research proposes a drastic shift toward research intensification to establish the crucial links between causes and effects in agriculture and food security campaigns⁹⁸. This step focuses on suggesting more efficient methods and means of farming and food production to help eradicate hunger and malnutrition. Furthermore, decision-making processes on mitigating food insecurity need to be inclusive, drawing on board all relevant stakeholders (the farmers, the institutions involved in food security campaigns, and the government). Similarly, the planning involving these mitigate campaigns needs to consider the statistics from relevant regional and global institutions like the WB, FAO, and WFP to ensure consistency with the proven strategy⁹⁹. Above all, adequate public education must be implemented to equip the nations' citizens with the vital knowledge and understanding of the need to cooperate in the collective struggle against food insecurity.

8.0 Conclusion

The gravity of the adversity triggered by food insecurity in the central Asian region necessitates urgent corrective steps. Given the important role of objective scholarly research in establishing the rationale of the devastating challenge, there is a need to invigorate campaigns for research support from governments in the affected nations. This step will enable experts to participate in the noble task of reversing the perpetual food insecurity in the victim nations of Central Asia. Besides, the research approach that prioritizes objective review of the problem by exploring the rationale of the food inadequacy and eventual evaluation of the adversity situation is necessary for revamping scholarly efforts in solving hunger and malnutrition-related problems in Central Asia. In this regard, this research established various common effects and causes of food insecurity in Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, and Tajikistan.

⁹⁶ FAO et al., "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2020: Affordable Healthy Diets to Address All Forms of Malnutrition for Better Health."

⁹⁷ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."

⁹⁸ Hendrix and Henk-Jan, "Food Insecurity and Conflict Dynamics: Causal Linkages and Complex Feedbacks."

⁹⁹ FAO, "Regional Overview of Food Security and Nutrition in Europe and Central Asia 2019. Structural Transformations of Agriculture for Improved Food Security, Nutrition and Environment."



Consequently, the selected five countries from the Central Asian region display certain similarities in the causes and effects of food insecurity. The congruence revealed helps to establish a common remedy that effectively addresses the situation in all the countries. Although there are minor physical challenges concerning climate and relief that impact the levels of agricultural development in the Central Asian region, limited farmers' support from the governments of the respective affected nations plays a more critical role in the success realized during the campaigns against food insecurity. This trend often results from the countries' economic backwardness and lack of political goodwill among most leaders in the region. Ultimately, inadequate support from the government, relevant agencies, and institutions contributes adversely to the research quality levels achieved in agriculture and general food production initiatives.

Nevertheless, it is possible to reverse the prevailing undesirable food security trends in Central Asia. Many governments began prioritizing efficiency in the agricultural sector to stir food production. Besides, there are deliberate efforts to intensify vital research on effective land use policies to enhance sustainable crop farming and livestock rearing. Upscaling funding in agriculture and enhancing people's access to vital factors of production are gaining more attention in many nations in the region. These indicators show the likelihood of achieving a turnaround in the approach to campaigns against food insecurity. Nevertheless, ensuring effective planning and subsequent efficient policy implementation necessitates a corresponding shift toward proper governance. Acquiring leaders who consider their nation's interests constitutes a significant step toward achieving lasting food security in Central Asia. The lack of political goodwill is the basis of all inefficiency in countries victimized by food insecurity in Central Asia.

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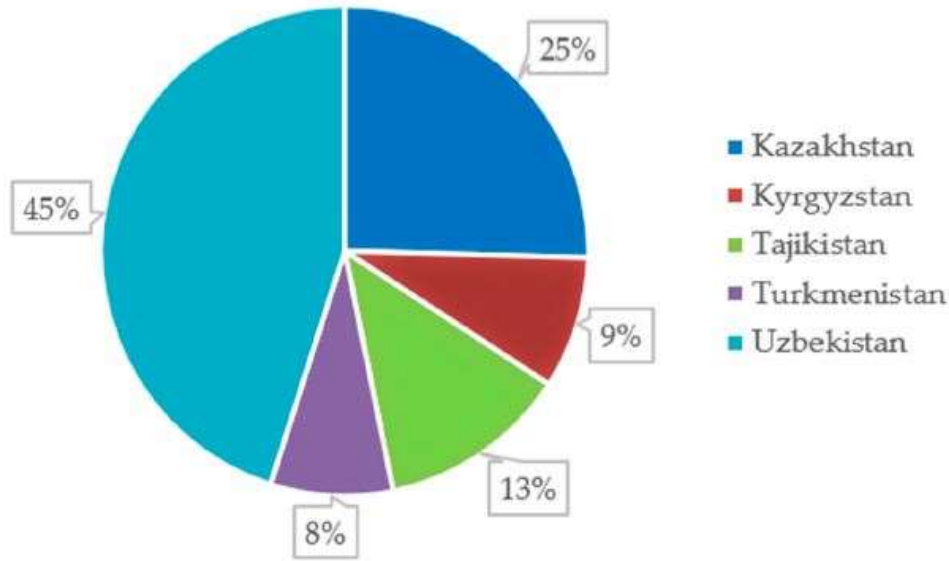
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11.0 Appendix

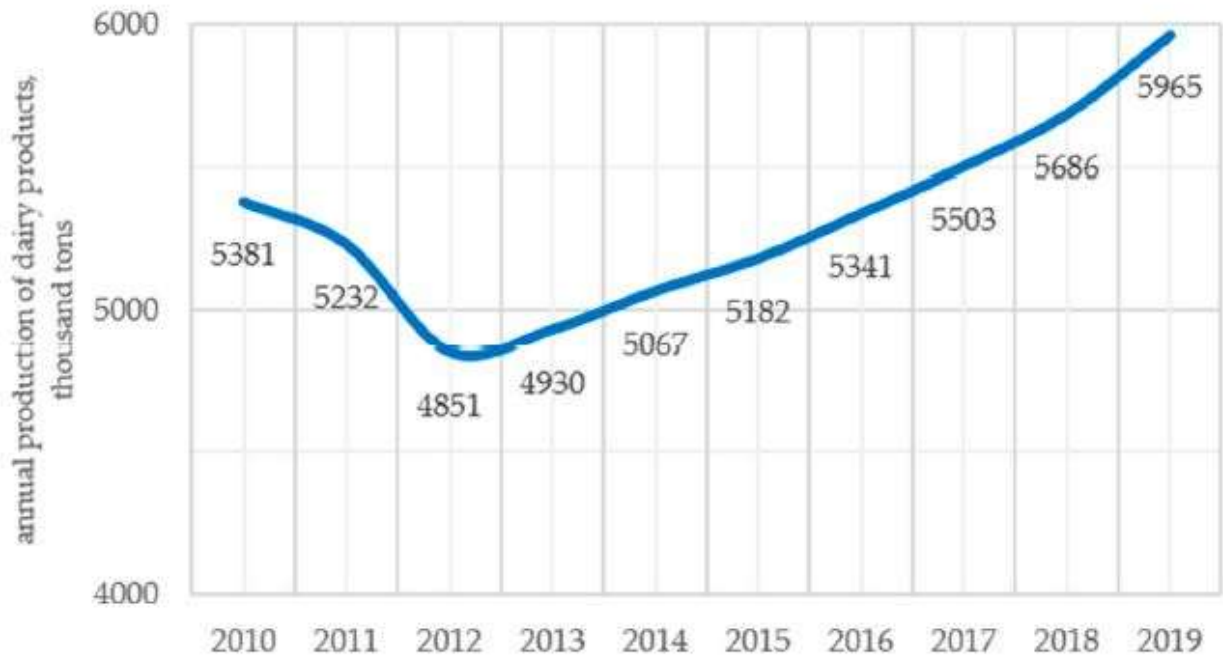
Appendix A:

A graphical presentation of the selected Central Asian Countries by regional population share (Adopted from the article by Orazov et al.; See the Bibliography)



Appendix B: Food Insecurity in Kazakhstan

a. *A graphical presentation of Kazakhstan's milk and dairy products between 2010 and 2019 (Adopted from the article by Orazov et al.; See the Bibliography)*



b. *A tabulated presentation of Kazakhstan's average self-sufficiency in dairy products in 2019 (Adopted from the article by Orazov et al.; See the Bibliography)*



	Milk Production in 2019, kg	Kazakh Population at the Beginning 2019	Self-Sufficiency in Dairy Products, %
The Republic of Kazakhstan	5965.000	18,395.567	0.1
Akmola	397.906	738.587	0.2
Aktobe	3379.937	869.637	1.3
Almaty	7928.375	2038.934	1.3
Atyrau	636.027	633.791	0.3
West Kazakhstan	2368.101	652.325	1.2
Zhambyl	3236.227	1125.442	1.0
Karaganda	4901.993	1378.533	1.2
Kostanay	4203.878	872.795	1.6
Kyzylorda	939.131	794.334	0.4
Mangystau	124.802	678.199	0.1
Pavlodar	393.200	753.853	0.2
North Kazakhstan	565.600	554.517	0.3
Turkestan	730.200	1983.967	0.1
East Kazakhstan	954.300	1378.527	0.2

c. *A tabulated presentation of Kazakhstan's Livestock population growth between 2009 and 2019 (index 100 in 2009) (Adopted from the article by Orazov et al.; See the Bibliography)*

Species	Number of Animal Species for 2009	Number of Animal Species for 2019	Index Change in 2019
Buffalo	194,135.166	204,342.419	+5.3
Cattle	1,410,028.351	1,510,995.410	+7.2
Goat	914,492.177	1,093,732.777	+19.6
Horse	58,957.285	57,419.470	-2.6
Sheep	1,101,150.948	1,237,608.071	+12.4
Camel	28,999.683	37,509.691	+29.4

Appendix C:

A map showing Kyrgyzstan and its major relief features (Adopted from the article by Chi et al.; See the Bibliography)

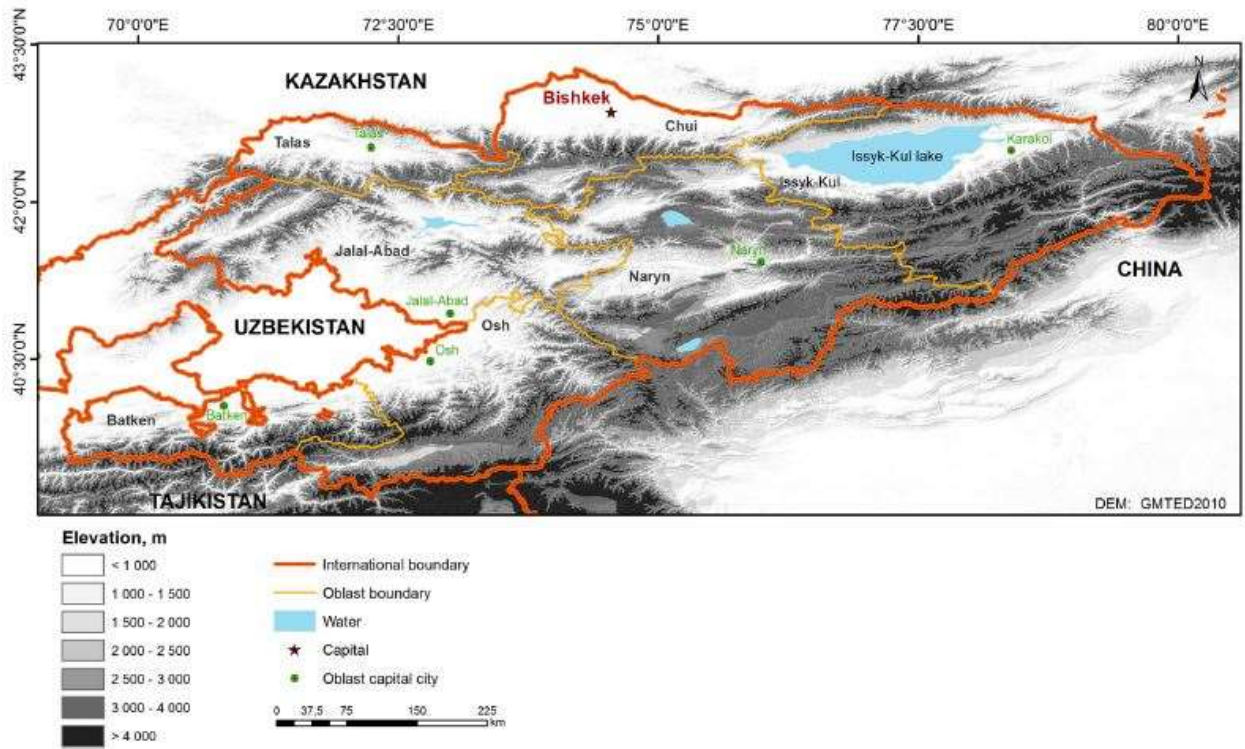
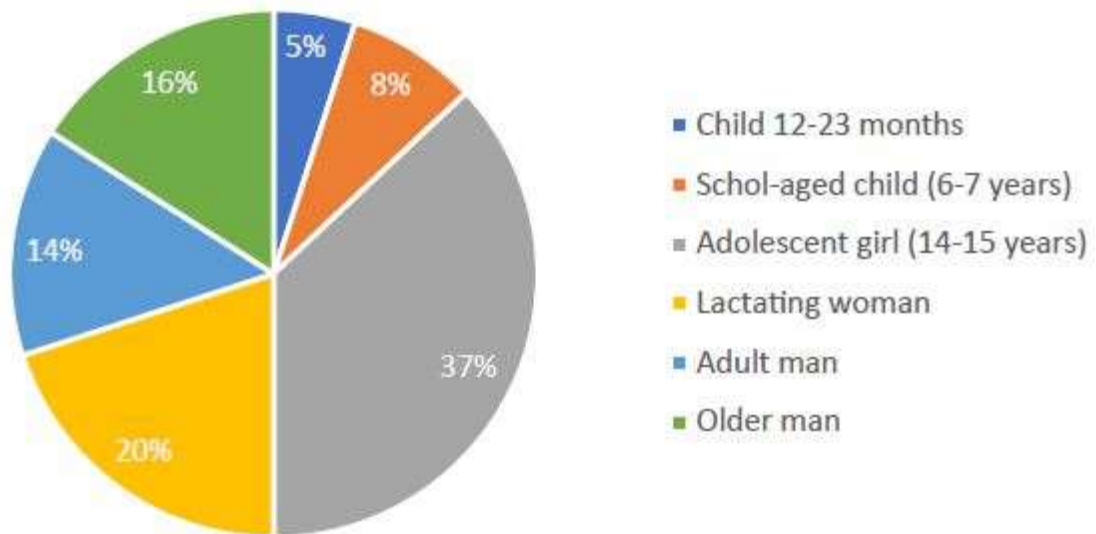


Fig. 1. Kyrgyzstan and its oblasts.

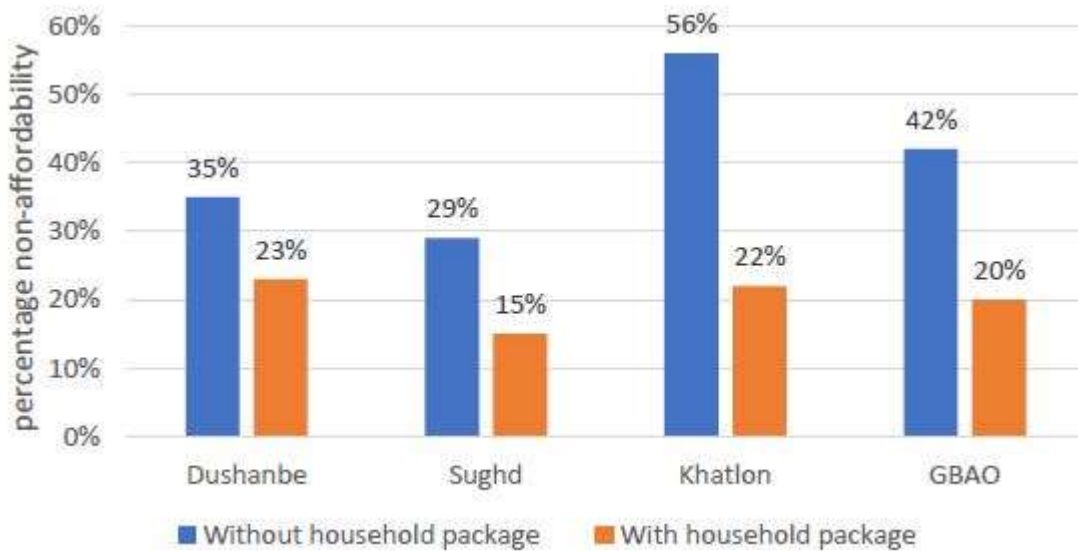
Appendix D:

A graphical presentation of Tajikistan's share of average cost of nutritious diet per household member in 2017 (Adopted from the article by Kawabata et al.; See the Bibliography)



Appendix E:

A graphical presentation of Tajikistan’s households that cannot afford a healthy diet (by region) even when household package interventions are executed (Adopted from the article by Kawabata et al.; See the Bibliography)



Appendix F:

A table illustrates the percentage and number of people who could not afford the three selected diets (with 63 percent of income spent on food) in three Central Asian countries in 2017 (Adopted from FAO’s Report of 2019: See bibliography)

Country/Group	% of population			Number of people (millions)		
	Energy Sufficient Diet	Nutrient Adequate Diet	Healthy Diet	Energy Sufficient Diet	Nutrient Adequate Diet	Healthy Diet
CENTRAL ASIA	0.3	11.03	33.2	0.1	2.4	7.4
Kazakhstan	<0.1	0.1	2.2	<0.1	<0.1	0.4
Kyrgyzstan	0.2	18.6	60.3	0.0	1.2	3.7
Tajikistan	0.8	14.4	37.2	0.1	1.3	3.3

Appendix G:

A graphical presentation of undernourishment prevalence in Central Asia compared to other selected regions and the world (Adopted from FAO’s Report of 2019: See bibliography).

