

ARTICLE

**Current status of the Food Security system in Mongolia
new policies, and expected outcomes****Enkhmaa Deleg^{1*}, Sugar Nergui², Tuyatsetseg Jambal², Enkhtaivan Batbold²
and Amarjargal Avidsuren³**¹*Department of Food Security, Institute of Food Research
Mongolian University of Science and Technology, Ulaanbaatar, Mongolia*²*Department of Biotechnology and Nutrition, School of Industrial Technology,
Mongolian University of Science and Technology,
Ulaanbaatar, Mongolia*³*Graduate School of Business, Mongolian University of Science and Technology,
Ulaanbaatar, Mongolia*

ARTICLE INFO: Received: 13 Feb, 2024; Accepted: 24 June, 2024

Abstract: The national food security system in our country is not established well and continues to remain weak. Failures within the system have caused malfunctions and distortions in government policy implementation, leading to unexpected policy shifts. These faults are the main causes of time loss, inter-agency misunderstandings, lack of coordination, information flow deficiencies, and a shortage of skilled human resources. These issues can have a negative impact on food security in Mongolia, resulting in the shortfall of government policy implementation. Coordination of food security activities among government organizations in Mongolia has been unsatisfactory due to the weak system. Government services have not adequately reached organizations at the middle and primary levels in the Mongolian rural provinces. This research paper aims to evaluate the national food security situation based on policies in Mongolia's food sector over the past decade, their implementation, encountered problems, and involved stakeholders. The research findings show that our country's food security system is not well-established, leading to compromised food security, highlighting the urgent need for developing necessary legal and policy documents to effectively implement state food security policy.

Keywords: *food security strategy, its implementation, security systems, organizational structure, administrative and professional functions;*

INTRODUCTION

Mongolia relies on imports for 48 per cent of its food supply, posing a risk to its food independence. By 2021, the country had already spent one billion USD

on food imports [7]. While meat, wheat, flour, and potatoes are produced domestically, other food items are imported to meet the demand.

***Corresponding author, email: enkhmaadeleg@gmail.com <https://orcid.org/0009-0004-0756-9539>**



The Author(s). 2023 Open access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

Modern research is based on the results of the research conducted in the 1980s and 90s and is based on a more comprehensive concept. Generally, food security primarily include food availability, access, and consumption process, which must be stable [11]. Therefore, community food security (CFS) includes food security, sustainable agriculture, rural development, and sustainable development [12].

Global attention towards food security has heightened due to various significant events like the COVID-19 pandemic, climate change, increased natural disasters, migration, and conflicts, such as the war in Ukraine. Mongolia is no exception to this growing concern. Strengthening the nation's food security system is crucial for both internal and global food security. This research paper aims to assess the current state of Mongolia's food security system, focusing on the supply chain, new policies, and their expected outcomes. The country's vulnerability to external conditions contributes to food insecurity and potential shortages. Therefore, promoting domestic food production, utilizing local food products, and supporting food producers are vital steps in addressing these challenges. An evaluation of the National Security Concept's implementation in 2022 revealed that food safety goals remain unmet, with implementation levels at just 46 per cent after 12 years, highlighting the critical nature of the matter. The assessment indicated that only 50 per cent of the legal framework was established, 60 percents of policies implemented, and 50 per cent of the implementation structure set up [5]. These shortcomings prompted the choice of this research topic, focusing on analyzing food safety policies, enhancing future implementation strategies, and establishing an effective implementation framework.

MATERIALS AND METHODS

The research employs analysis, review, synthesis, and modeling methods at policy and institutional levels. Strengths, weaknesses, resources, and opportunities in implementing public policy at National Food Security Institutions were assessed, highlighting potential risks and threats via a SWOT analysis. PESTEL analysis was employed to assess the impacts of political, social, economic, legal, technological, and environmental factors on food safety assurance efforts. The study focuses on implementing government policies and enhancing the institutional system structure for food security [2, 4, 8, 9].

RESULTS AND DISCUSSION

Legal framework of food security and its implementation status

In the food and agriculture sector development policy, the following strategic documents outline the key goals and activities in this regard:

1. Vision-2050: Contains a total of 9 goals and 79 activities.
2. New Revival Policy: Includes five goals and 11 activities.
3. Five-Year Basic Development Plan of Mongolia (2021-2025): Lists 9 goals and 62 activities.
4. Directions (2020-2024 Action Program of the Government of Mongolia): Outlines 6 goals and 46 activities.
5. 2023 Development Plan of Mongolia: Specifies five goals and 23 activities.

The latest policy, adopted by the Parliament of Mongolia under resolution No. 36 (2022), mandates actions in the following:

- Improving the legal framework for food, agriculture, and light industry,
- Enhancing management and organization within these sectors,
- Advancing agricultural production,
- Boosting livestock production, and
- Developing food production.

The aim of these efforts is to promote the growth of a more robust and self-sufficient Mongolian food and agriculture industry [15]. Despite the introduction and enforcement of various governmental policies to ensure food security, diseases and malnutrition persist among the population [1]. Many Mongolians lack essential nutrients in their diet, leading to ongoing health issues due to insufficient education on proper nutrition. According to the Fifth National Nutrition Survey [3], deficiencies in vitamins and micronutrients are prevalent, influenced by social status, poverty, unemployment, and a lack of nutritional knowledge. An evaluation of Mongolia's National Security Concept shows that one half of the legislative documents concerning "Food security" have been revised or newly enacted.

However, regulations on food production, trade, availability, and nutrition are still incomplete. An assessment of food security initiatives indicates a 46.1 per cent implementation rate. Mongolia's food sources include both local and imported goods, with food import costs contributing to inflation. In 2019, 47.4 per cent of essential food items were locally produced, while 52.6 per cent were imported, suggesting a loss of food sovereignty when imports surpass 50 per cent. Consequently, it appears that Mongolia has forfeited its food independence, leading to an unstable supply. Although reliance on imported food is declining gradually, the country's food autonomy remains uncertain, as depicted in Figure 1[7].

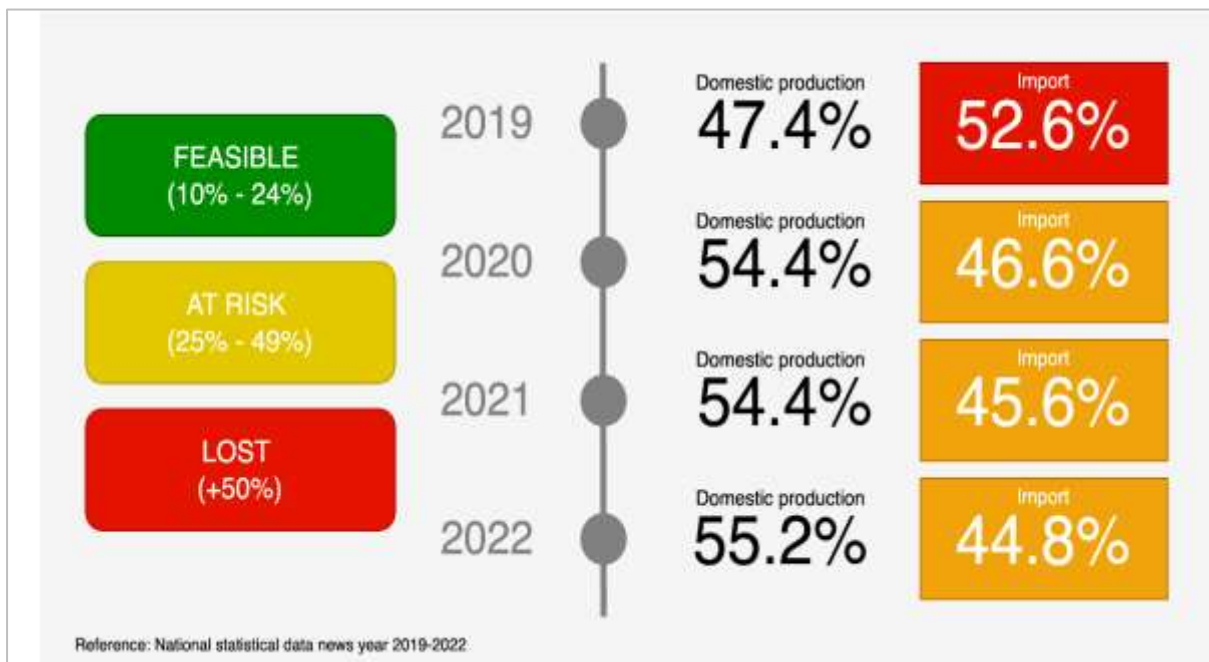


Figure 1. Food security and food independence [7]

According to data reflecting the daily recommended intake of calories and nutrients [17], about 75 per cent of the population's diet comprises flour, baked goods, various grains, potatoes, vegetables,

legumes, fruits, vegetable oil, and sugar. This indicates a heavy reliance on imported cultivated plants and plant-based foods as a primary dietary source, despite some

improvements in local production of vegetables, dairy, and decreasing imports.

However, the nation continues to depend heavily on imports. Compliance rates with the Food Product Safety Law vary across different stages of the food chain: domestic production percentages stand at 44.3 per cent for animal husbandry, 58.8 per cent for poultry farming, 80.6 per cent for food transportation, 76.1 per cent for flour production, and 61.3 and 61.7 per cent for packaged plant-based and pickled goods production [10], respectively. Household food security plays a vital role in ensuring food access. In Mongolia, grains, meat, and dairy constitute 85 per cent of urban and rural diets, contributing significantly to calorie intake, with wheat products alone making up over 60 per cent of this intake, leading to rising obesity and overweight rates [6]. A 2017 UN Food Program [19] report showed that 6.3 per cent of Mongolians experienced hunger, while the National Nutrition Survey [3] the same year indicated significant food insecurity in 23 per cent of all households due to government policy shortcomings and inadequate dietary awareness among citizens. The excessive consumption of meat, wheat flour, and dairy has resulted in high rates of obesity and nutrient deficiencies, creating a dual challenge of nutrition-linked health problems that persist despite regulatory efforts.

Effective policy implementation necessitates government, provincial, local, and district involvement to review the existing policies and plans. Without engagement from organizations at all levels, enforcement becomes unattainable.

Often, there is a lack of coordination among administrative functions horizontally [14, 16]. A similar challenge exists within our country's administrative entities. The legislation specifies that the functions and funding of local self-governing bodies should align with their actual needs. However, a gap in practice obstructs the execution of this law. Thus, there is a need to harmonize legislation with reality. Given this scenario, it is vital to pinpoint where law enforcement is falling short. This entails scrutinizing the policy document's objectives and goals during its implementation process to identify the obstacles. A precise evaluation of social, economic, and political alignment with the current context is also crucial. Consequently, it is essential to amend the Law on Administrative Units to address the current confusion and distortions in its provisions and to rectify overlooked issues from the legislative process.

The current state of the system of public institutions involved in ensuring food safety

Chapter 3 of the Constitution details regulations regarding Mongolian State governance, covering the Mongolian Parliament, the President, the Government, and the Judiciary. Nevertheless, the focus of this study excludes the Judiciary. Stakeholders in this research comprise the Parliament, the Government, and the President's Office (refer to Figure 2).

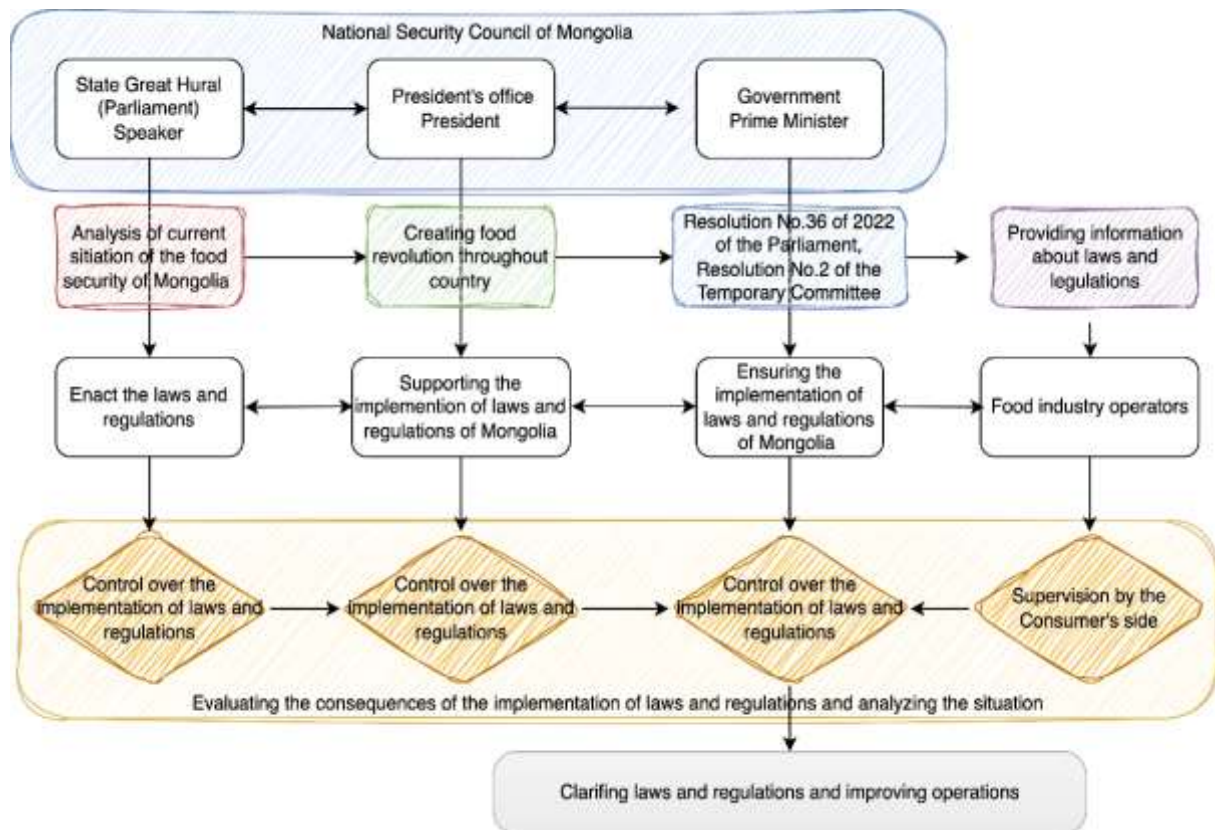


Figure 2. State policy for ensuring food safety, its processes and systems

As shown in Figure 2, if Mongolia's food security is threatened, the National Security Council will promptly meet to discuss and decide on the necessary actions. Parliament, as the top legislative body, approves and enacts the national food security policy and related decisions to ensure the National Security Council's directives are carried out. The Government and the Office of the President are charged with making these determinations. Afterward, authorized oversight bodies

assess the policy outcomes and conduct systematic evaluations to analyze the situation. Figure 3 shows that by 2022, Mongolia's institutional framework for food security lacked a well-established horizontal organizational structure for policy implementation. There is a lack of coordination among government agencies involved in policy enforcement, fragmented information flow, insufficient monitoring measures, and decreased professional expertise.

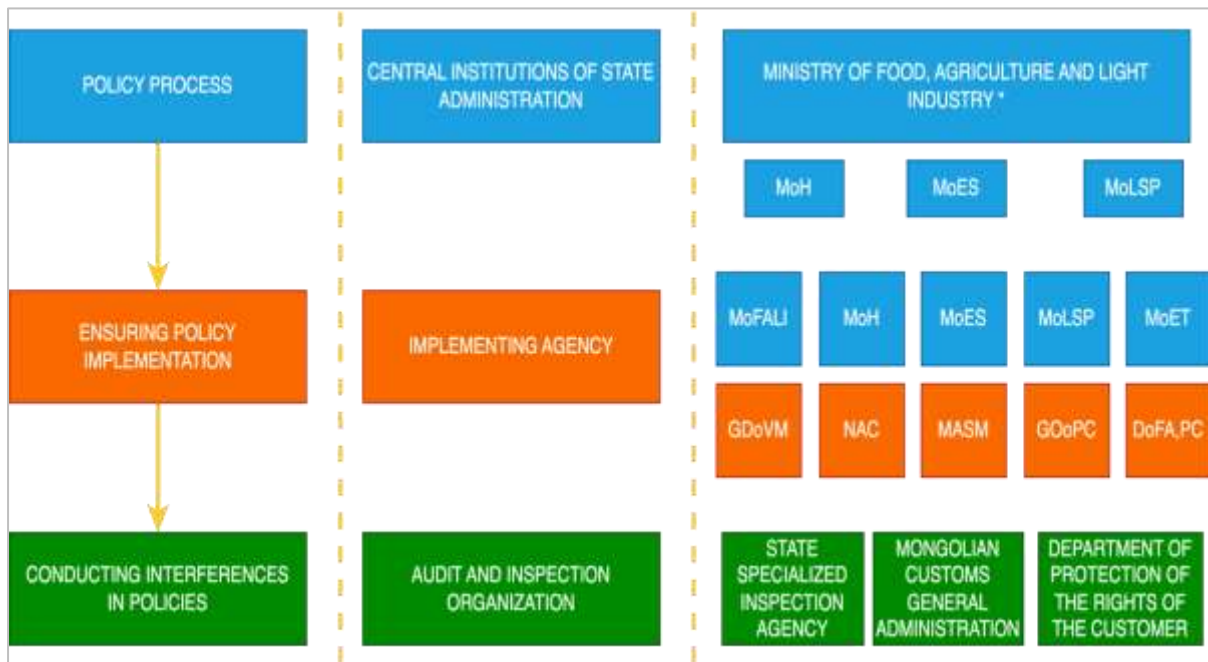


Figure 3. The current situation of institutional system for ensuring food security in Mongolia, as of 2022,

**Abbreviation: MoFALI-Ministry of Food, Agriculture, and light Industry; MoH- Ministry of Health
 MoES- Ministry of Education and Science; MoLSP- Ministry of labor and Social Protection
 MoET- Ministry of Environment and Tourism; GDoVM- General Department of Veterinary
 Medicine; NAC- National Accreditation Center; MASM- Mongolian Agency of Standardization
 and Metrology; GOoPC- Governor’s Office of Province or Capital; DoFA,PC- Department of Food
 and Agriculture, in Province or Capital;**

According to the Government of Mongolia Resolution No. 04, dated 5 January 2022, responsibilities for quarantine, hygiene, and quality control of goods and vehicles crossing the border, previously held by the General Agency of Specialised Inspection, have been transferred to the Customs Office. Additionally, Order B/08 from the head of

the State Customs Service, dated 5 January 2022, specifies the consolidation of the Export, Import, and Border Quarantine Control Department of the State Customs Service of the capital city Ulaanbaatar into the Customs Quarantine Service of the Ulaanbaatar customs office, as shown in Figure 4.

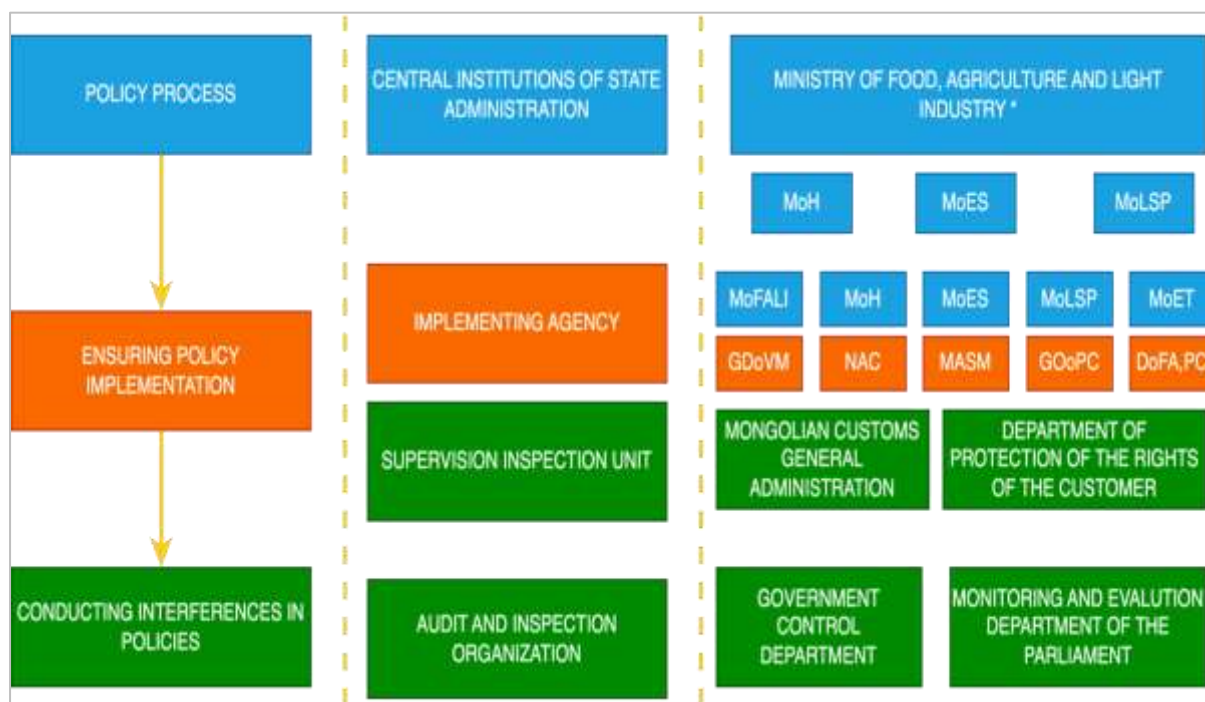


Figure 4. The current situation of the institutional system for ensuring food security in Mongolia, as of 2023

Abbreviation: MoFALI-Ministry of Food, Agriculture, and light Industry; MoH- Ministry of Health MoES- Ministry of Education and Science; MoLSP- Ministry of labor and Social Protection MoET- Ministry of Environment and Tourism; GDoVM- General Department of Veterinary Medicine; NAC- National Accreditation Center; MASM- Mongolian Agency of Standardization and Metrology; GOoPC- Governor’s Office of Province or Capital; DoFA,PC- Department of Food and Agriculture, in Province or Capital;

Combining tariff and non-tariff control into a single unit within the tariff control organization’s structure contravenes the international principle of independent non-tariff control and inspection. This merger has both advantages and disadvantages. For instance:

- The system for monitoring drug residues in food products, mainly from veterinary drug use, is inadequate. There is an urgent need to enhance mechanisms for checking antibiotic residues in meat and other animal-origin produce, such as milk, eggs, honey, and others. The rise of multidrug-resistant bacteria due to animal drug misuse poses a significant public health problem by negatively

affecting human health and promoting bacterial resistance.

- Although risk-based controls have been implemented, their limited effectiveness has led to operational shortcomings and weakened food and drug supply chain oversight. The lax ethical control among inspectors has fostered societal distrust. Identifying the root cause of monitoring and inspection violations is challenging due to the suboptimal distribution of inspection subjects and the absence of clear criteria for complaint-based inspections.
- The vertical control system at the local/provincial level has been compromised, resulting in ineffective oversight.

For instance, the Capital's Agency of Specialised Inspection mirrors the structure of the Capital Governor/Mayor's Office's executive agency, with one inspector assigned to each district. This has led to a depletion of human resources and increased administrative costs. Additionally, budgetary funds are spent inefficiently because daily inspections are not closely integrated with other regulatory activities. This disconnect hinders human-centered supervision and regulation that ensures the population's safety.

Researchers contend that defining public policy is a theoretical challenge and requires practical wisdom to determine the best course of action under uncertain conditions [13]. The issue with policy

studies is that decision-making in uncertain situations can appear arbitrary. Instead, it should be a structured and logical sequence of government actions aimed at problem-solving. An example of such structured decision-making is Parliament's Resolution No. 36, approved in 2022.

Governance and stakeholder involvement in food security, their activities, relationship, risks and impacts

The PESTEL analysis shows how external factors such as political, social, economic, legal, and technological reforms and environmental changes in Mongolia affect food security (Figure 5).

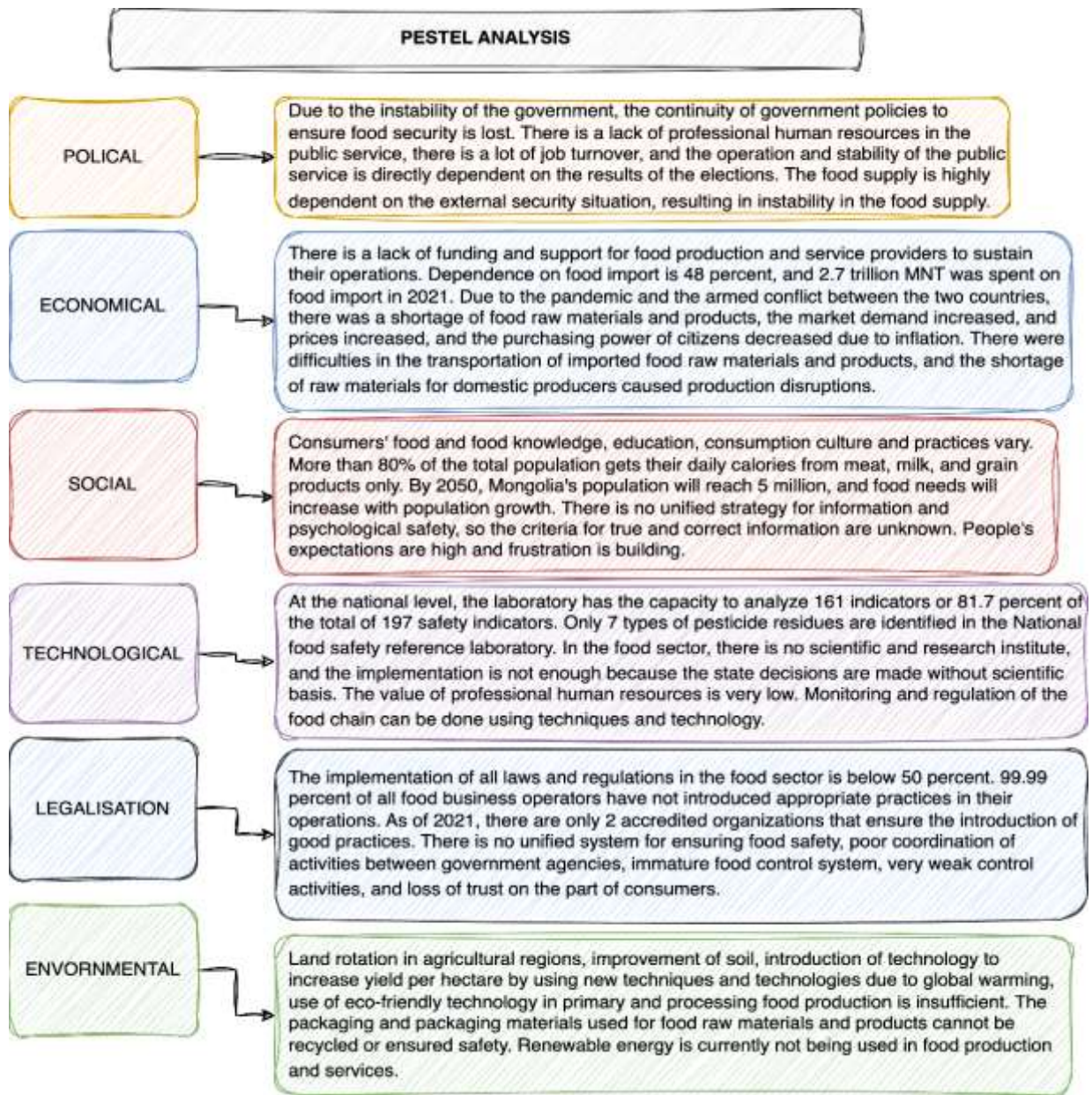


Figure 5. PESTEL analysis of Food Security of Mongolia

At the same time, it is essential to identify internal factors, such as strengths and weaknesses, available resources and opportunities, calculate possible threats and

risks through SWOT analysis, and then use available resources and opportunities to develop a strategy to overcome potential risks and reach the goals (Figure 6).

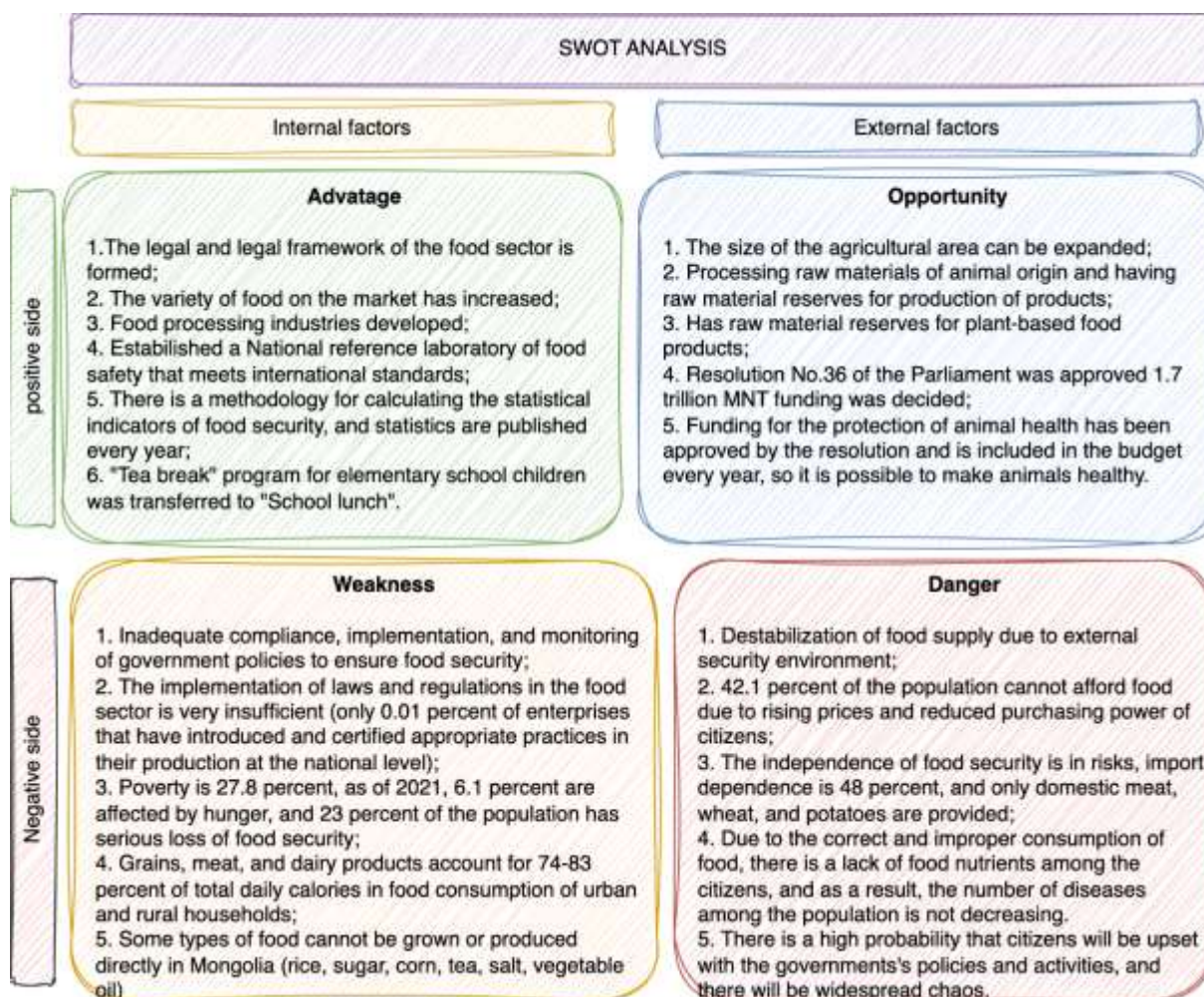


Figure 6. SWOT analysis

The analysis of external factors in SWOT analysis calculates opportunities to ensure food security, potential threats, measures to be taken in the future, and their interrelationship.

New policy mapping

Although government policy may be well-defined, it doesn't automatically guarantee correct implementation. The conventional institutional approach in

political science tends to overlook the link between government structure, functions, and policy content. The objective of state policy and efforts to tackle it should have a direct correlation. As a result, Figure 7 outlines the step-by-step procedures for formulating and endorsing sector policies and implementation strategies related to ensuring food security by the Parliament. Given the new policy direction, it is clear that a redefined government management system is essential. This necessity has given rise to the proposal of a new system.

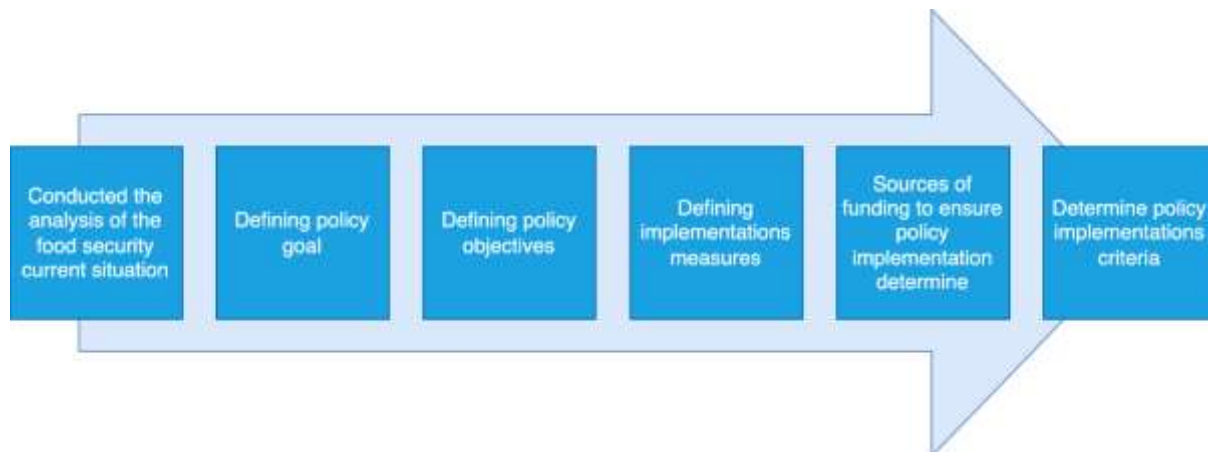


Figure 7. Map of the policy-making, approval, and implementation of Resolution No. 36 (2022) of Mongolia’s Parliament to ensure Food Security [15]

It could be said that the political process of policy-making is the essence of policy studies [18]. Every political decision becomes a state policy. For instance, on May 2, 2022, a proposal to discuss Mongolia’s food security at the National Security Council resulted in a decision to address the challenges of Mongolia’s “current food security.”

Proposal of the government management system to implement the new policy to ensure food security

Thus, the state's food security management system in Mongolia needs to fully integrate these functions, ensuring specialized implementation in its sub-components without duplication or overlap, and maintaining close cohesion among them (refer to figure 8). At the highest echelon, the President, Parliament, and

Government will collaborate in activities to uphold food security as prescribed by law. Ministries will oversee and execute tasks within legal boundaries. Green entities in the charts handle government functions related to food security effectively. Academic institutions engage in research, forecasting food issues, and incorporating advancements in food production, and training industry professionals. These responsibilities must be mandated by law.

Tasks like database creation, forecasting, and coordination are yet to be assigned. Tasks not yet assigned include database creation, forecasting, and coordination functions. Each sub-part should specialize in these functions without redundancy or overlap, maintaining close interrelationship. The charts provide a broad overview, with organization names displayed differently from their current format and without affiliations.

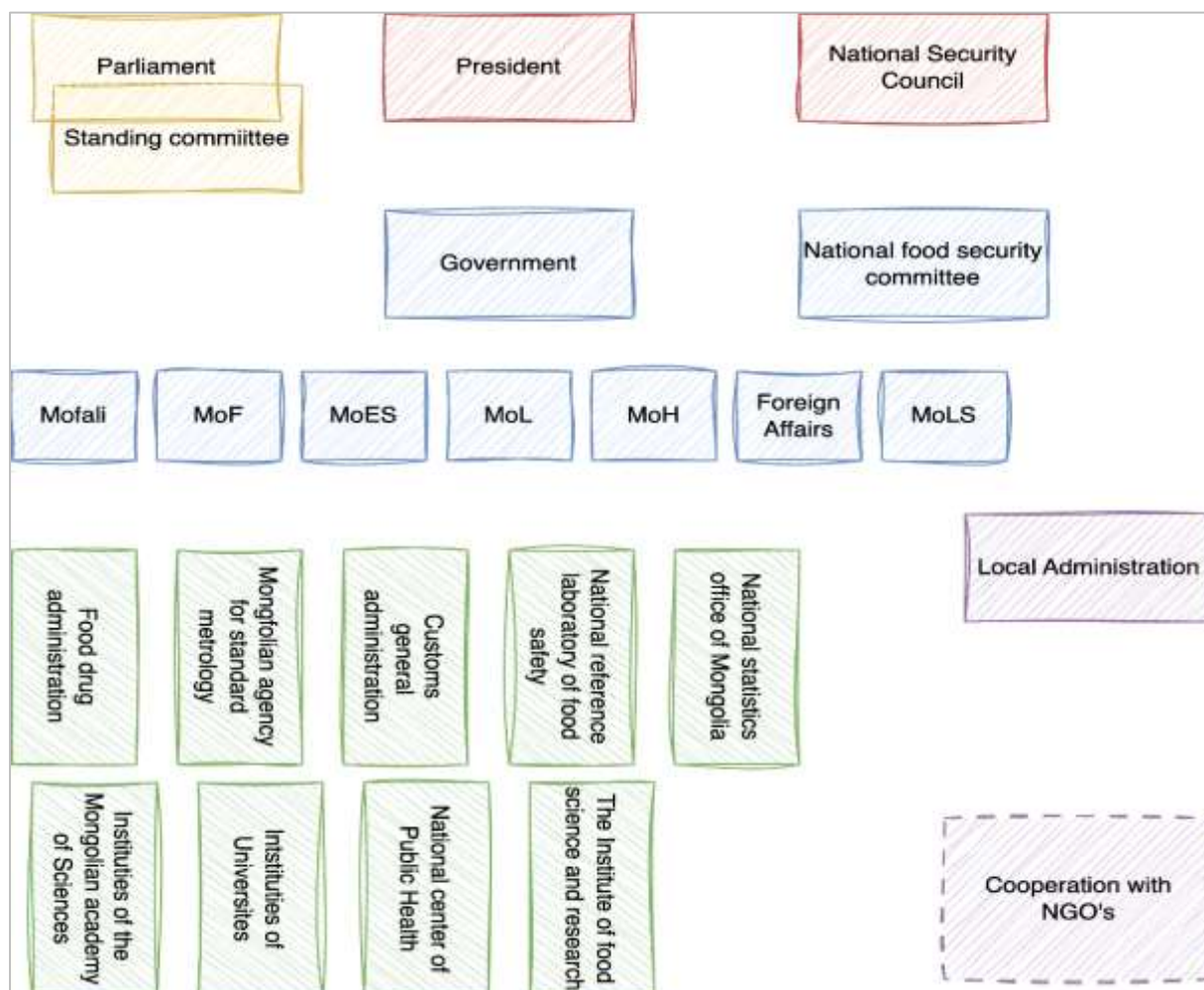


Figure 8. General view of food security management system in Mongolia

CONCLUSIONS

Mongolia's heavy reliance on food imports significantly threatens its food security and sovereignty. Despite the government's efforts to address this issue through various policies and strategic plans, including the Vision-2050 and the New Revival Policy, progress has been limited. The implementation rate of food safety goals remains critically low, with only 46 per cent achieved over 12 years, reflecting substantial shortcomings in the legal framework, policy execution, and institutional structures. The research highlights several key areas of concern as follows:

- *Strengthening the legal framework:* Laws and regulations regarding food production, trade, availability, and nutrition require further development.
- *Enhancing coordination:* Improved collaboration among government agencies at all levels is crucial for effective policy implementation.
- *Building institutional capacity:* The current system lacks a well-established horizontal organizational structure.
- *Improving monitoring and inspection:* Strengthening controls throughout the food supply chain is critical in ensuring food safety.

- *Promoting public awareness:* Educating citizens about proper nutrition and food safety practices is vital for a healthy population.

The proposed new government management system offers a more integrated approach, fostering collaboration between various stakeholders. By addressing these shortcomings and implementing the proposed system, Mongolia can strive towards a more robust and self-sufficient food system, ensuring long-term food security for its citizens.

Further research could explore specific strategies for improving implementation, such as capacity-building programs for relevant agencies or public awareness campaigns. Additionally, investigating the economic feasibility of increasing domestic food production and the potential impact of climate change on Mongolian agriculture would be invaluable areas for further study.

REFERENCE

1. Damdinsuren, L. Fundamentals of Food Security. pp. 22-28,. Ulaanbaatar. 2015.
2. Deleg, S. Food Product Cooling Technology. pp. 8-9. Ulaanbaatar. 2013.
3. Key Nutrition Concerns among the Population of Mongolia. Fifth National Survey Report. pp.10-13, Ulaanbaatar. 2017.
4. Bever, M. *Governance*, pp. 15-22, Ulaanbaatar. 2018.
5. Introduction to the 2022 Implementation Monitoring and Evaluation of the "Action Program of the Government of Mongolia for 2020-2024". pp. 7-8, Ulaanbaatar. 2023
6. Household Socio-economic Survey). National Statistical Office of Mongolia, Ulaanbaatar. 2019, 2021.
7. Food security statistical data news, pp. 11-16, National Statistical Office of Mongolia, Ulaanbaatar, 2019-2022.
8. Byambasuren, Y., Dorjsuren, P., & Tserenchimed, O. *State Policy*, pp. 125-136, Ulaanbaatar.2021.
9. Tsanjid, A. Policy research, pp. 28-29. 2023.<https://doi.org/10.12968/cypn.2023.4.28>
10. The report for the assessment of Food safety law implementation, pp. 20-24, Ulaanbaatar. 2020.
11. Simelane, K. S., & Worth, S. Food and Nutrition Security Theory. *Food and Nutrition Bulletin*, 4(3), pp. 367-379. 2020.
12. Anderson, M. (1999). Community Food Security: Practice in Need of Theory? *Agriculture and Human Values*, June 1999. <https://doi.org/10.1023/A:1007580809588>
13. Peng, W., & Berry, E. M. (Year not provided). The Concept of Food Security. *Encyclopedia of Food Security and Sustainability*, vol 2, pp. 1-7. Elsevier. <https://doi.org/10.1016/B978-0-08-100596-5.22314-7>
14. Subramaniam, M., & Bunka, C. (Year not provided). Food Security, and State: Policy Considerations for the Contemporary Food Crisis. *Policy Brief №7*, Purdue University, Global Policy Research Institute.
15. "The Concept of the National Security of Mongolia." Parliament Resolution № 48 of 2010, State Information, № 36/657, pp.39-40, Ulaanbaatar. 2010.
16. Climate Change and Nutrition in Mongolia: Risk Outlook. pp. 7-8, FAO, UNDP. 2023.
17. Order of Minister of Health of Mongolia, pp. 3-4, A/74, 2017.
18. Boweird, T., & Loeffler, E. (2014). *Public Sector Management and Governance*.<https://doi.org/10.4324/9781315693279>
19. Hunger map. <https://hungermap.wfp.org/>