DOI: https://doi.org/10.59503/29538009-2025.si-1-15

FOOD SECURITY SPATIAL MANAGEMENT ISSUES: IRAN-ARMENIA CASE STUDY

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Abstract: Food security management issues have typically been interpreted within the context of specific countries. However, the implementation of spatial management in this area is also becoming increasingly important, as decisions on food security are made spatially. The article makes suggestions for improving spatial management of food security.

Keywords: spatial management, food security, food gap overcome opportunities, decision-making, private sector

JEL code: D7

Research aims: to present the possibilities of spatial management in the context of ensuring food security

Research results: spatial management has been presented as an effective means of ensuring mutual food security in neighboring countries.

Introduction

Spatial management is an interdisciplinary field focused on the rational and efficient planning, organization, and use of space and resources, primarily within urban, regional, and national contexts,

with the aim of enhancing the quality of life, environmental sustainability, and economic development (Abrantes, P., da Costa, E.M., Gomes, E. 2023). It involves integrating diverse data, managing spatial information, and coordinating competing demands from various stakeholders - including the state, market, and communities - through tools like spatial planning, land-use regulations, and Geographic Information Systems (Trygg, K. Wenander, H. 2022**)**. Currently is coming urgent to use spatial management in food security framework.

Food security exists when people have access to enough safe and nutritious food for normal growth and development, and an active and healthy life (Mersal, A. 2016). By contrast, food insecurity refers to when the aforementioned conditions don't exist. Chronic food insecurity is when a person is unable to consume enough food over an extended period to maintain a normal, active and healthy life (Gustafsson, S., Hermelin, B., Smas, L. 2019). Acute food insecurity is any type that threatens people's lives or livelihoods. Latest figures from the State of Food Security and Nutrition in the World, or SOFI, report, show that 673 million people experienced hunger in 2024. The Outlook estimates that 319 million people are facing acute levels of food insecurity in the 67 countries with WFP operations and where data is available.

Research results

In professional literature is common to present four main dimensions of food security management:

- ✓ Physical *availability* of food: Food availability addresses the "supply side" of food security and is determined by the level of food production, stock levels and net trade.
- ✓ Economic and physical *access* to food: An adequate supply of food at the national or international level does not in itself guarantee household level food security. Concerns about insufficient food access have resulted in a greater policy focus on incomes, expenditure, markets and prices in achieving food security objectives.
- ✓ Food *utilization*: Utilization is commonly understood as the way the body makes the most of various nutrients in the food. Sufficient energy and nutrient intake by individuals are the result of good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. Combined with good biological utilization of food consumed, this determines the nutritional status of individuals.
- ✓ *Stability* of the other three dimensions over time: Even if your food intake is adequate today, you are still considered to be food insecure if you have inadequate access to food on a periodic basis, risking a deterioration of your nutritional status. Adverse weather conditions, political instability, or economic factors (unemployment, rising food prices) may have an impact on your food security status (Nordbeck, R., Seher W., Gruneis, H. Herrnegger, M., Junger, L. 2023).

The World Bank Group works with partners to build food systems that can feed everyone, everywhere, every day by tackling food insecurity, promoting 'nutrition-sensitive agriculture' and

improving food safety. The Bank is a leading financier of food systems, organizing the following activities.

- ✓ Strengthening safety nets to ensure that vulnerable families have access to food and water–and money in their pockets to make vital purchases
- ✓ Delivering expedited emergency support by fast-tracking financing through existing projects to respond to crisis situations
- ✓ Engaging with countries and development partners to address food insecurity. Instruments include rapid country diagnostics and data-based monitoring instruments and partnerships such as the Famine Action Mechanism and the Agriculture Observatory
- ✓ Improving supply chains to reduce post-harvest food losses, improve hygiene in food distribution channels, and better link production and consumption centers
- ✓ Applying an integrated "One Health" approach to managing risks associated with animal, human and environmental health
- ✓ Supporting investments in research and development that enable increasing the micronutrient content of foods and raw materials
- ✓ Advocating for policy and regulatory reforms to improve the efficiency and integration of domestic food markets and reduce barriers to food trade
- ✓ Working with the private sector, government, scientists, and others to strengthen capacities to assess and manage food safety risks in low and middle-income countries

- ✓ Supporting long-term global programs to address food insecurity: The Bank houses the Global Agriculture and Food Security Program (GAFSP), a global financing instrument that pools donor funds and targets additional, complementary financing to agricultural development across the entire value chain.

However, spatial management is not considered within the scope of the above-mentioned activities, i.e. the process of controlling the use and development of space, which can refer to managing physical land and recourses, planning social and economic activities (La Rosa, D., Pappalardo, V. 2020). The specific food security meaning depends on the content, but in generally involves analyzing and deciding where and how things should be located and arranged in space to achieve a desired outcome.

In this regard, we emphasize the use of food balance, which is a system of aggregated and analytical indicators, presenting comprehensive information on the sources of the country's main types of food products, their supply and consumption trends for a given period of time. The balance shows the movement of food products from the moment of production to final consumption. It makes it possible to assess the demand for imports, determine the share of food consumption, and forecast the development of commodity markets (Sheikh, W.T., van Ameijde, J. 2022). It makes it possible to estimate import demand, determine the share of food use and predict the development situations of product markets. The balance sheet is also necessary for describing food security. The last time is determined by the level of self-sufficiency in the main types of food products and evaluate the risks associated with

insufficient nutrition (Gomes, E., Banos, A., Abrantes, P., Rocha J. 2022).

According the food balance, Republic of Armenia is currently unable to ensure security for certain food products (see Table 1). In this regard, we propose to organize spatial management, taking into account the capabilities of the Islamic Republic of Iran, and overcome these shortcomings.

Table 1. Degree of self-sufficiency in primary food products in the Republic of Armenia and the Islamic Republic of Iran (%)

Source: *Statistical statements of RA and IRA*

Food products	RA	IRI
Wheat	24,4	102,6
Maize	4,7	104,1
Potatoes	103,6	92,3
Rice	0	103,8
Vegetables	102,1	98,4
Cabbage	104,4	93,2
Tomato	127,4	92,6
Eggs	102,8	98,7
Beef	104,1	96,3
Lamb	106,2	89,8

In recent years, there has been a sharp increase in trade turnover between the Republic of Armenia and the Islamic Republic of Iran (see table 2). This also creates the basis for mutual exchanges within the food security framework of the two countries. In other words, in the context of spatial management, the two countries can cooperate in the areas of food product exchange

when they experience nutrition over-accumulations and under-accumulations (see Table 1).

Table 2. Exports and imports of the Republic of Armenia (1 000 US $)

Source: *Armenian Statistical Yearbook 2004, p. 557*

Items	2021		2022		2023	
	exports	imports	exports	imports	exports	Imports
Total including	3015987	5362209	5419064	8775859	8552015	12757919
Islamic Repub-lic of Iran	2,2	2,0	1,1	12	9	11

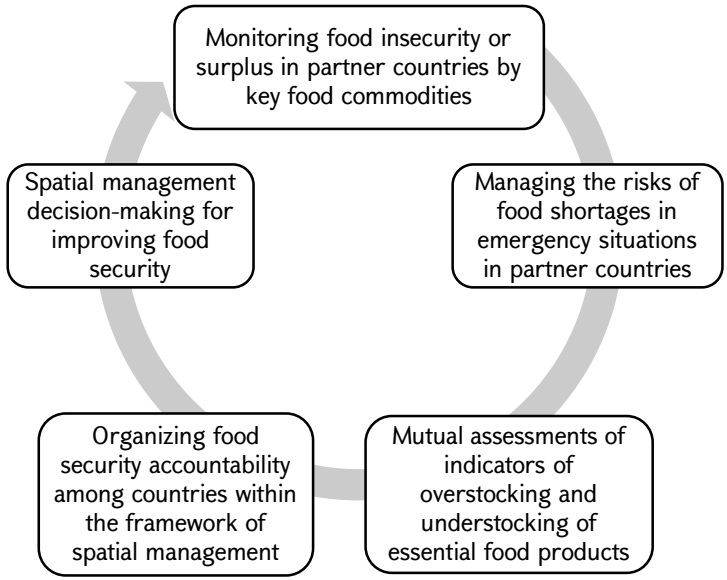

Figure 1. Food security spatial management steps[3]

[3] *Created by the author*

Conclusion

Therefore, the organization of food security spatial management is proposed to be carried out in the following circular steps (see Figure 1):

In the first step, overstocking and understocking of specific food products in the countries covered by the spatial management of food security are determined over a specific period of time.

In the second step, the risks of food product complementarity between the countries under consideration in emergency situations are assessed.

In the third step, possible directions for improving the sustainability of spatial management of food security are determined.

The proposed circular approach to food security management allows for taking into account the challenges arising from emergency situations and making operational management decisions on food shortage complementarities between collaborating countries.

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ՊԱՐԵՆԱՅԻՆ ԱՆՎՏԱՆԳՈՒԹՅԱՆ ՏԱՐԱԾԱԿԱՆ ԿԱՌԱՎԱՐՄԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ. ԻՐԱՆ - ՀԱՅԱՍՏԱՆ ԻՐՎԱՀՃԱԿԻ ՈՒՍՈՒՄՆԱՍԻՐՈՒԹՅՈՒՆ

Ալիրեզա Արիկ Ադկանիան
Հայաստանի եվրոպական համալսարան, ասպիրանտ

Բանալի բառեր – տարածական կառավարում, պարենային անվտանգություն, պարենային պակասի փոխլրացման հնարավորություններ, որշումների կայացում, մասնավոր հատված

Պարենային անվտանգության կառավարման հիմնախնդիրները որպես կանոն իրենց մեկնաբանություններն են

ստացել կոնկրետ երկրների շրջանակում: Սակայն, ներկայումս կարևորվում է նաև այդ ոլորտի տարածական կառավարման իրագործումը, երբ տարածաշրջանային կտրվածքով են որոշումներ կայացվում պարենային անվտանգության գծով: Հոդվածում առաջարկներ են արվում պարենային անվտանգության տարածական կառավարման բարելավման ուղղությունների գծով:

Այս առումով, պարենային անվտանգության տարածական կառավարման կազմակերպումը առաջարկում են իրականացնել հետևյալ շրջանաձև քայլերով:

Առաջին քայլով, ժամանակի կոնկրետ կտրվածքով որոշվում են պարենային անվտանգության տարածքային կառավարման շրջանակում ընդրկված երկրներում կոնկրետ պարենամթերքների գերկուտակումներն ու թերկուտակումները:

Երկրորդ քայլով, գնահատվում են արտակարգ իրավիճակներում քննարկվող երկրների միջև պարենամթերքների փոխլրացման ռիսկերը:

Երրորդ քայլով, որոշվում են պարենային անվտանգության տարածական կառավարման կայունության հնարավոր բարելավման ուղությունները:

Պարենային անվտանգության կառավարման առաջարկվող շրջանաձև մոտեցումը թույլ է տալիս հաշվի առնելու արտակարգ իրավիճակներից բխող մարտահրավերները և օպերատիվ կառավարչական որոշումներ կայացնելու երկրների միջև պարենային պակասի փոխլրացումների գծով:

Submitted: 16.10.2025; Revised: 31.10.2025; Accepted: 17.11.2025