DOI: https://doi.org/10.59503/29538009-2025.2.16-15

METHODOLOGICAL ISSUES OF FOOD SECURITY MANAGEMENT

Alireza Arik Adkanian
European University of Armenia, Ph.D. Student
adkanian@gmail.com
https://orcid.org/0000-0002-8322-2623

Abstract: Economic interpretations of food security within researchers are mostly related to the problems of assessment of the current conditions, but not management processing, emphasizing the existing food security sectors in the country. However, considering the current geopolitical dynamic changes, it becomes necessary to develop and implement food security management systems that will withstand modern challenges and ensure food security. The article proposes a cyclical model of food security management, aiming to implement continuous reforms in management functions.

Keywords: food security, management, security risks, sustainable food production, food consumption culture

JEL code: D7

Research goals: introduce a participatory food security model, that will respond quickly to stakeholders' expectations.

Research novelty: a food security management cycle model has been developed, based on key performance indicators that serve the interests of stakeholders.

Introduction

Food security management requires a participatory approach from stakeholders and, as a rule, is not implemented from a single center. In this regard, it is important to set management objectives in such a way that they reflect the objectives of all stakeholders in ensuring food security (Prosekov, A., Y., Ivanova, S., A. 2018). Moreover, for the implementation of effective management, it is also necessary to define measurements of management objectives, which can act as key performance indicators. Monitoring these indicators creates an opportunity to identify threats to food security and make management decisions to prevent the impact of risk factors (Campi, M., Dueñas, M., Fagiolo, G. 2021).

Research results

The “Rome Declaration on World Food Security” (UN, 1996) recognizes: “The right of everyone to access safe and nutritious food, in accordance with the fundamental right to be free from hunger.” The term “Food Security” was first used at the World Food Summit in 1974, which was defined as: “Maintaining the stability and availability of food products in markets for all countries of the world.” However, at the current stage of development of public life, the perception of food security has significantly expanded and in 1996 the World Food Summit defined food security in a new, expanded formulation: "Food security is a complex of legal, organizational, logistical and other measures aimed at providing the population with sufficient, safe, nutritious food of the required quality and quantity, acceptable to the socio-cultural and historical characteristics of the society, which is accessible to every

member of society and can be consumed by him at any time and in any situation (including during emergencies and martial law) in order to lead a healthy and prosperous life."

From the above definition, it becomes obvious that effective food security management is included not only in the framework of national, but also supranational issues, as it is directly interconnected with the UN Sustainable Development Goal 2 to end hunger, ensure improved food security and promote sustainable agriculture by 2030, to which the governments of the countries are committed and are taking concrete actions to implement it (Mohammad, A., Alshuniaber. 2020).

Therefore, food security management is inclusive in nature and ensures the implementation of not only national, but also supranational goals (see Figure 1).

Figure 1. The hierarchy of food security management targets[1]

[1] *Created by the author*

Globally, the goals of food security management are:

- ✓ to ensure access to safe and nutritious food for all,
- ✓ to ensure sustainable consumption approaches,
- ✓ to promote the production of safe foods in terms of the conservation and protection of nature and biodiversity,
- ✓ to ensure food security resilience to socio-political shocks and natural disasters (Allee, A., Lynd, L., R., Vaze, V. 2021).

From a national level perspective, food security management issues are targeted in the following key areas:

- ✓ advancing the country's position in the international global food security index,
- ✓ early identification and neutralization of threats to food security,
- ✓ ensuring levels of food availability, accessibility and self-sufficiency,
- ✓ creating a system of accountability for effective food security management and risk neutralization,
- ✓ ensuring the formation of food security reserves and the harmonious operation of food distribution infrastructure in emergency situations.

Therefore, the main goal of food security management at the national level is to ensure physical and economic access to food that meets health standards for all groups of the population, as well as to create prerequisites for resisting adverse changes in the domestic and external markets and the negative consequences of possible emergency situations (L., Magda, R. 2022).

In parallel, food security management is also faced with local security issues, such as:

- ✓ ensuring the level of self-sufficiency in essential food products (calculated by energy value),
- ✓ ensuring at least a minimum level of access to food products,
- ✓ ensuring access to a minimum food basket, managing food waste and ensuring an appropriate level of literacy among consumers (Tshughuryan, A., Mnatsakanyan, H., Grigoryan, L. 2025)

Thus, it turns out, that the food security management system is not organized from a single common center, but on the contrary, is participatory in nature, involving a variety of stakeholders (see Figure 2), each of which pursues different management goals (Food security global index 2022).

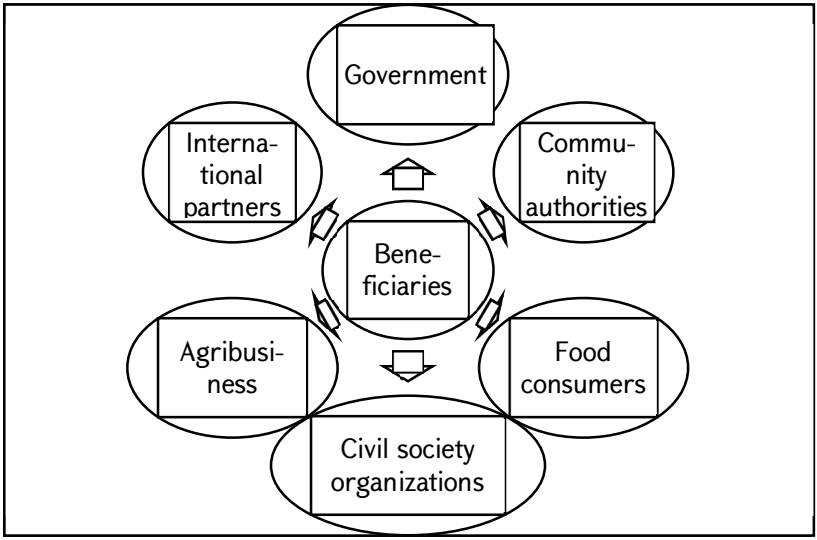

Figure 2. The scope of stakeholders in participatory food security management[2]

[2] *Created by the author*

Therefore, it is considered appropriate to classify food security management objectives not only according to target groups of beneficiaries, but also according to measurability indicators (see table 1). In such a case, food security management beneficiaries are given the opportunity to monitor indicators of achievement of objectives (Khachatryan, N., Khachatryan, K. 2025), which are measurable, and thereby take measures to prevent food security threats (see figure 3).

Table 1. Categorization of food security management objectives by target beneficiary groups and indicators

Targets		Goal attainment metrics	Beneficiaries
Global (E1)			International Fund for Agriculture development (IFAD) World Food Summit Food and Agriculture Organization (FAO)
Food affordability	E_{11}	Food affordability level (%)	
Food availability	E_{12}	Food availability level (%)	
Durability and safety	E_{13}	Ability to withstand emergency situations %	
Stability and security	E_{14}	Level of food production based on sustainable development principles %	
National (E2)			
Food presence	E_{21}	National food balance (dollar value)	Government, Community authorities, Civil society organizations, Food consumers
Food self-sufficiency	E_{22}	Self-sufficiency rate %	
Food storage	E_{23}	Food security level %	
Food security threats mitigation	E_{24}	Ability to prevent food security threats (points)	

Local (E3)			
Food consumption culture	E_{31}	Food production and consumption losses rate (%)	Government Population
Adequate food intake	E_{32}	Food intake with energy value requirement (points)	

Consequently, the definition of key performance indicators (KPIs) for food security management areas and monitoring their achievement by different groups of beneficiaries is important. In this case, the degree of actual achievement of objectives also creates an opportunity to identify food security risks and their management directions (see table 2).

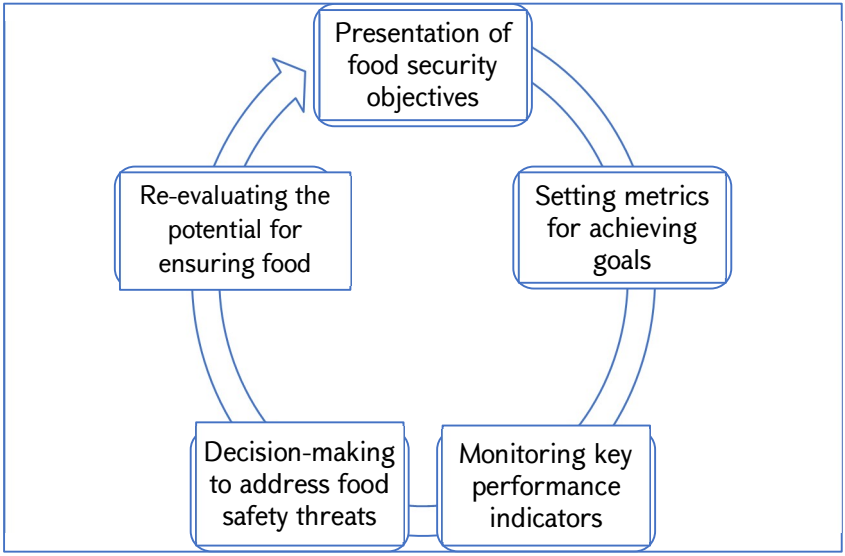

Figure 3. The cycle approach of food safety management

Thus, in Table 2, we propose food security indices, that represent not only undernational, but also national and even local assessments. In our opinion, the proposed indices can complement the global food security index and provide more information to various stakeholders for targeted management decision-making.

Table 2. Achievements of food safety management objectives in terms of risk identification

KPIs	Targets	Achievements	Performance %
E_{11}	92	86	0.93
E_{12}	95	82	0.86
E_{13}	96	84	0.85
E_{14}	75	62	0.82
Global targets achievements index			0.865
E_{21}	94	82	0.87
E_{22}	82	63	0.77
E_{23}	86	71	0.82
E_{24}	10	8	0.80
National targets achievements index			0.815
E_{31}	7	9	0.77
E_{32}	82	75	0.94
			0.855

Conclusion

Thus, food security management should be organized on a participatory basis, taking into account the goals of all stakeholders. Moreover, the management process will be considered more effective if it is organized in a cyclical approach (see Figure 3), since based on geopolitical and domestic situational changes, food security requirements are periodically revised.

Therefore, we consider it necessary not only to make management decisions aimed at eliminating food security threats, but also to identify ways to improve the food security potential on a participatory basis of management and to implement the possibilities for their application.

References:

1. Food security global index (2022). https://impact.economist.com/sustainability/project/food-security-index/
2. FAO, IFAD, WFP, WHO, & UNICEF. (2018). The state of food security and nutrition in the world: Building climate resilience for food security and nutrition. Food and Agriculture Organization, UN; Rome. http://www.fao.org/3/I9553EN/i9553en.pdf. Accessed on 15 November 2018.
3. ***Mohammad, A., Alshuniaber.*** (2020). Food security management and assessment, international journal of agriculture and environmental research, volume 06 issue01june2020 doi: https://doi.org/10.53555/eijaer.v5i1.52
4. ***Prosekov, A., Y., and Ivanova, S., A.*** (2018). "Food security: The challenge of the present," *Geoforum*, vol. 91, pp. 73–77. https://doi.org/10.1016/j.geoforum.2018.02.030
5. **Campi, M., Dueñas, M., and Fagiolo G.** (2021). "Specialization in food production affects global food security and food systems sustainability," *World Development*, vol. 141, p. 105411, May 2021, https://doi.org/10.1016/J.WORLDDEV.2021.105411
6. ***Allee A., Lynd L. R., and Vaze V.*** (2021). "Cross-national analysis of food security drivers: comparing results based on the Food Insecurity Experience Scale and Global Food Security Index", https://doi.org/10.1007/s12571-021-01156-w/Published
7. ***Bozsik, N., Cubillos, T., JP, Stalbek, B., Vasa, L., Magda, R.*** (2022). Food security management in developing countries: Influence of economic factors on their food availability and access.

PloS ONE 17(7): e0271696.
https://doi.org/10.1371/journal.pone.0271696
8. Drivers of food security (2023), European Commission, https://commission.europa.eu
9. ***Tshughuryan, A., Mnatsakanyan, H., Grigoryan, L***. (2025). Challenges in Providing information on ESG development, pp. 385-389. https://doi.org/10.1007/978-3-031-82210-0_63
10. ***Khachatryan, N., Khachatryan, K.*** (2025). Issues of Ecosystem Services Management. In: Popkova, E.G. (eds) Technological Horizons of Decarbonization Based on Environmental Innovations. Advances in Science, Technology & Innovation. Springer, Cham. https://doi.org/10.1007/978-3-031-82210-0_70

ՊԱՐԵՆԱՅԻՆ ԱՆՎՏԱՆԳՈՒԹՅԱՆ ԿԱՌԱՎԱՐՄԱՆ ՄԵԹՈԴԱԲԱՆԱԿԱՆ ՀԻՄՆԱՀԱՐՑԵՐ

Ալիրեզա Արիկ Ադկանիան
Հայաստանի եվրոպական համալսարան, ասպիրանտ

Բանալի բառեր – պարենային անվտանգություն, կառավարում, անվտանգային ռիսկեր, պարենամթերքի կայուն արտադրություն, պարենամթերքի սպառման մշակույթ

Մեկնաբանությունները մասնագիտական գրականությունում առավելապես առնչվում են ոչ թե կառավարման, այլ իրավիճակի գնահատման հիմնախնդիրներին՝ շեշտադրումներ անելով երկրում առկա պարենային ապահովման ոլորտներին: Սակայն ներկայիս աշխարհաքաղաքական դինամիկ փոփոխությունների ընթացքում անհրաժեշտ է դառնում

մշակելու և կիրառելու պարենային անվտանգության կառավարման այնպիսի համակարգեր, որոնք կդիմակայեն ժամանակակից մարտահրավերներին և կապահովվեն պարենային անվտանգային ուղիներ:

Հոդվածում առաջարկվում է պարենային անվտանգության կառավարման շրջափուլային մոդել, նպատակ ունենալով շարունակական բարեփոխումներ իրականացնելու կառավարչական գործառույթներում:

Պարենային անվտանգության կառավարումը պահանջում է շահառուների կողմից մասնակցային մոտեցում և, որպես կանոն, չի իրականացվում մեկ կենտրոնից: Այս առումով, կարևորվում է կառավարման նպատակադրումները սահմանել այնպես, որ դրանք արտացոլեն պարենային անվտանգության ապահովման բոլոր շահառուների նպատակադրումները: Ավելին, արդյունավետ կառավարման իրականացման համար անհրաժեշտ է սահմանել նաև կառավարման նպատակադրումների գծով չափումներ, որոնք կարող են հանդես գալ որպես կատարողականի առանցքային ցուցիչներ:

Այդ ցուցիչների մշտադիտարկումը հնարավորություն է ստեղծում բացահայտելու պարենային անվտանգության ապահովման սպառնալիքները և կառավարչական որոշումներ կայացնելու ռիսկային գործոնների ազդեցության կանխարգելման ուղղությամբ:

Submitted: 15.09.2025; Revised: 01.10.2025; Accepted: 15.10.2025