

PROCESELE INTEGRAȚIONISTE
ȘI DEZVOLTAREA SOCIAL-ECONOMICĂ

**FOOD SECURITY STRATEGY OF THE REPUBLIC OF
MOLDOVA (2023 - 2030) IN THE CONTEXT OF
CONCEPTUAL THEORETICAL AND PRACTICAL
APPROACHES TO POPULATION FOOD SUPPLY**

**STRATEGIA DE SECURITATE ALIMENTARĂ
A REPUBLICII MOLDOVA (2023 - 2030) ÎN CONTEXTUL
ABORDĂRILOR CONCEPTUALE, TEORETICE
ȘI PRACTICE ALE APROVIZIONĂRII POPULAȚIEI
CU PRODUSE ALIMENTARE**

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SUMMARY

The article analyzes the „Food Security Strategy of the Republic of Moldova (2023 - 2030)” in the context of existing international scientific and practical approaches to agro-industrial complex reform. It is mentioned that the strategy for ensuring food security, mechanisms for ensuring physical and economic accessibility of food do not fully comply with scientific approaches and international standards; the problem of improving the standard of living of the population is not solved, and the increasing level of poverty and the significant decrease in production, primarily of animal products, do not ensure the most important right of the population - the right to decent food. It is argued that the acute problem of providing food for the population requires Moldovan science and practice to carry out a thorough and comprehensive scientific study of all aspects of food security and to fully reflect them in the strategy for providing the population with the quantities of food necessary for an active and healthy life.

Keywords: *strategy, science, problem, supply, food, affordability, standard of living, food security.*

REZUMAT

În articol este analizată „Strategia de securitate alimentară a Republicii Moldova (2023 – 2030)” în contextul abordărilor științifice și practice internaționale existente privind reforma

complexului agroindustrial. Se menționează că strategia de asigurare a securității alimentare, mecanismele de asigurare a accesibilității fizice și economice a alimentelor nu respectă pe deplin abordările științifice și standardele internaționale; problema îmbunătățirii nivelului de trai al populației nu este rezolvată, iar creșterea nivelului de sărăcie și scăderea semnificativă a producției, în primul rând a produselor animaliere, nu asigură cel mai important drept al populației – dreptul la alimentație decentă. Se argumentează că problema acută a asigurării populației cu hrană necesită din partea științei și practicii moldovenești o cercetare științifică aprofundată și cuprinzătoare a tuturor aspectelor asigurării securității alimentare și reflectarea lor deplină în strategie pentru a oferi populației hrană în cantitățile necesare pentru o viață activ- sănătoasă.

Cuvinte-cheie: strategie, știință, problemă, furnizare, hrană, accesibilitate, nivel de trai, securitate alimentară.

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Introduction. A feature of the Republic of Moldova was the radical nature of the reform of agriculture, which began in the early 90s. 20th century The purpose of the proposed reforms is to ensure the transition from an overly centralized, command system of governance to a democratic one, based primarily on economic methods, on an optimal combination of various forms of ownership. The reform of agrarian relations was proposed as the main element of the agrarian reform - the demonopolization of state ownership of land, the recognition of land as a commodity and the establishment of a real pluralism of state, group and private property in agriculture. Such was the scientific logic, the scientific and practical approach to reforming agriculture in Moldova.

At the same time, the reforms of the 90s in the field of agriculture, the transfer of land and property of collective and state farms to private ownership, the transition to a small-scale farming system of management by allocating peasants 1.5-2 hectares of land located on different land plots led „to the destruction of the single economic space of the agricultural sector” [1]. In the future, the low level of agricultural land consolidation, cooperation of agricultural producers in the field of production, storage, marketing of products and building sustainable relationships with processors and other partners, small-scale, poorly mechanized farm production led to a sharp decrease in the efficiency of agricultural production, a significant decline in agricultural production. products, a drop in yields for major crops, a reduction in the number of livestock and poultry to a critically minimal level. As a result, agricultural production is now *half* of what it was in 1989. Moldova is among the most vulnerable countries due to the lack of its own food. Every year, the Republic of Moldova imports approximately 30% of the amount of milk consumed, 40% of the amount of butter consumed and 60% of cheese and curd products. Imports of chicken, beef and pork have increased significantly [11].

The problem began to be exacerbated by the emerging negative trends in the food supply of the population of the countries of the world, European countries, in the Moldovan region in terms of reducing the volume of agricultural production and its significant rise in price. All this has increased the number of hungry people in the world.

According to Moldovan scientists-economists, one of the problems of the agrarian sector of the Moldovan economy is the lack of clear *scientifically based* directions for the strategic development of the agro-industrial complex.

In this regard, the adoption in November 2022 of the Food Security Strategy of the Republic of Moldova for 2023-2030 has become an extremely relevant and encouraging factor not only for the development of the country's agro-industrial complex, but in general for the strategic development of the Republic of Moldova. The strategy is said to be a medium-term government policy document reflecting the government's strategic vision and priorities for ensuring the country's food security.

Researching the concept of food security. The concept of food security in the Strategy is viewed through the framework of four dimensions generally accepted in science and practice: physical availability of food, economic access to food, energy and nutritional value of food, and stability of the above three levels (directions) of food security. The main objectives of the strategy are to improve food security governance, external trade, the development of local markets, improved agricultural production, and the provision of food to vulnerable populations.

At the same time, it is noteworthy that the Strategy violates generally accepted scientific and practical canons and approaches to the formation of a food security system.

Firstly, the document immediately stipulates that the economic affordability of food will not be considered in the Strategy. But, in our opinion, without analyzing the social situation of the population and the prospects of its development, increasing the level of purchasing power of the population, it is impossible to form a coherent strategy to ensure food security of the country.

Secondly, the Strategy is formed, in our opinion, on an unreliable analysis and biased evaluation of agro-industrial complex condition of the country, its development prospects, practical possibility of physical provision (physical accessibility) of the necessary level of nutrition of the population in accordance with medical norms. Thus, this strategic document states that „...the necessary number of calories in the diet of the Republic of Moldova population is provided, and the level of average daily consumption of food energy for per capita food consumption constantly exceeds the values recommended by the World Health Organization” and further „...the self-supply level of the Republic of Moldova is close to 100% for most food products [8], except for some products, such as: butter, poultry meat, tomatoes, melons, potatoes, corn. Moreover, other documents make complementary remarks about the outstanding achievements in 2021 in which “...there has been the biggest increase in agricultural production in the last 30 years”. In addition, all these complementary assessments end with the Minister of Agriculture and Food in December 2022 with the statement: „The country's food security is out of danger” [9]. The question is: why to develop and adopt a Food Security Strategy if everything is so good now and will be in the future? As for the caloric intake, there is only a statement without any specifics. However, without taking into account the caloric content of food, it is impossible to calculate the amount of food needed for a complete diet for the active life of a person.

To clarify all the conceptual approaches outlined in the Strategy and the above statements, we have undertaken our own analysis, which we set out below.

Thirdly, the theoretical provisions and international practice of ensuring food security in terms of compliance of the consumption of various food products with medical standards are not taken into account. Moreover, consideration of the problems of food security without taking into account the energy value of the consumed products, but only based on the previously achieved results of the level of consumption, as provided in the Strategy, it is impossible to determine the volume of production and consumption of products necessary for an active healthy life of the population.

It is this factor - the consumption of products necessary for an active healthy life of the population - that is the most important conceptual statement of the FAO, which was announced back in 1974 at the Rome World Food Conference: „Food security is when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences, in the amounts required for an active and healthy life” [2].

The same conference officially adopted the term „food security” in its Declaration, defining it as „...a state of the economy in which the population as a whole and each individual citizen are guaranteed access to food, drinking water and other food products of a quality, variety and quantity sufficient for physical and social development, for the health and expanded reproduction of the population of the country” [5].

In this regard, let us highlight the main food security theories and practices formulated internationally on nutrition that we believe national governments should adhere to and which are not fully reflected in the Strategy: [6]

1. physical accessibility to quantitatively adequate, safe and nutritious food;
2. economic accessibility to food of adequate quantity and quality for all social groups;
3. autonomy and economic independence of the national food system (food independence);
4. reliability, i.e. the ability of the national food system to minimize the impact of seasonal, weather and other fluctuations on the food supply of the population in all regions of the country;
5. sustainability, meaning that the national food system is developing in an extended reproduction mode.

In addition;

- in the late 1990s, UN experts argued that food security is an integral element of the population's quality of life;

- the right to food, i.e. the right to have regular and free access to sufficient, safe and nutritious food, has now come to be emphasized. The right to food obliges the state to provide an enabling environment in which people can use their full potential to produce and consume foods that enable them to provide adequate nutrition for themselves and their families [10].

Thus, food security in international practice is a well-functioning system that provides all segments of the population with quality and safe food according to accepted physiological standards through domestic production and rationalization of the necessary imports for those products for which there are no domestic conditions for production.

Unfortunately, these fundamental conceptual provisions for ensuring food security at the national level are not fully seen in the Strategy, which does not provide an objective assessment of the current situation with food supply for the population of the country, does not contribute to the development of the prospects of agro-industrial complex, ensuring food security in all aspects of its manifestation.

Moreover, our comparative analysis of the internationally accepted United Nations food security concept and the one proposed in the Food Security Strategy of Moldova shows that food security, unfortunately, is viewed in a rather simplified way - as the physical supply of food to the population only at the level of previous consumption, which, as analysis shows, is at the approximate level of minimum food basket standards, without the possibility for the population to be provided with food in compliance with medical standards, without the possibility of reaching a level of food independence, without the possibility of ensuring the population's right to decent food.

It should be noted that the difference between physiologically necessary norms for a healthy

life according to medical standards and the norms of the minimum food basket of food provision for the population of Moldova is quite significant, Table 1.

Table 1. Threshold indicators for the consumption of staple foods, kg/year [3].

Products	Real safety threshold (according to medical regulations)	Minimum physiological set (minimum consumer basket in Moldova)
Bread and bakery products	105	136.5
Potato	170	115
Vegetables	124	101.7
Fruits and berries	78	67
Sugar	33	13.2
Milk and dairy products	393	137.04
Meat and meat products	80	31.8
Fish and fish products	18	9.36
Eggs	294	199
Vegetable oil	13	9.12

The following should be noted in connection with this table:

- firstly, the food security of the state must provide the population with food in an amount sufficient to meet their needs and food preferences, in amounts necessary for an active healthy life, which corresponds to a daily consumption norm of 3,500 kcal, compared to international consumption standards;

- secondly, the Decision of Government of the Republic of Moldova 285 of 30.04.2013 [3] on approval of the Regulation on calculation method of subsistence minimum (Annex to the Regulation), established the minimum norms for food products included in the food basket for subsistence minimum (annual average, in kg per person). Pursuant to the Regulation, the caloric content of the food ration required for a person per day amounts to 2,399.8 kcal, proteins to 79.1 g, including 33.3 g of animal proteins, 82.8 g of fats and 330.2 g of carbohydrates;

- thirdly, and it should be particularly emphasized that the level of the minimum subsistence level „food basket” in Moldova of 2399.6 kcal/day is lower than the minimum level in the world - 2600 kcal/day and is close to the level of 2150 kcal/day, which according to FAO [6] is the boundary of hunger and permanent malnutrition, beyond which health damage is possible. In fact, in 2021, the average caloric intake per person was 2606 kcal/day, which is at the minimum allowable level set by FAO, almost in the amount of the minimum food basket, including the consumption of proteins, fats and carbohydrates. Indeed, the Strategy provides for the consumption of meat 2.5 times, milk and dairy products 2.8 times, fish 1.9 times, eggs 1.5 times less than the amount of nutritious food.

Thus, the Food Security Strategy of Moldova, already on the conceptual level, does not provide an answer to the possibility for the agro-industrial complex to reach the level of full nutrition necessary for an active healthy life (3500 kcal/day), but only provides an approximate level of the minimum consumer basket - prevention of chronic malnutrition. That is, in fact,

provision of food security in Moldova for the main food items is envisaged only at the level of minimum threshold values - marginal values, below which there will be violation of physiological and rational nutrition, normal development process of various elements of reproduction, which will lead to formation of negative, destructive tendencies in the field of national security in the food sector.

This minimum-consumption approach (without estimating the caloric value of nutrition) to food provision of the population leads to the erroneous conclusion in the Strategy that „... the self-supply level of the Republic of Moldova is close to 100% for most food products, except for some products, such as: butter, poultry meat, tomatoes, melons, potatoes, corn. Moreover, the Strategy states, for example, that the population is supplied with 100.6% of domestically produced eggs, in fact eggs are produced per capita almost at the level of the minimum consumer basket. The situation is similar for other food products of foodstuffs”.

In this regard, to clarify the situation with the actual food supply of the population, let us consider the volume of production by the most important types of agricultural products, which give the opportunity to ensure the physical availability of safe and nutritious food sufficient in quantitative terms. It should be stressed that, in world practice, a methodology has been adopted for operational analysis by ten commodity food groups, namely cereals and leguminous products (bread and bakery products), meat and meat products, milk and dairy products, eggs, fish and fish products, vegetable oil, potatoes, sugar, fruit and berries, vegetables. This is explained by the fact that these products in the diet of the population provide 90% of the energy requirement (kcal).

In relation to these international recommendations, we will conduct our analysis of the production of basic food products from 1991 to 2021.

Table 2. Production of main products in farms of all categories (comparative analysis 1991 - 2021), thousand tons [6].

Products	1991	2002	2011	2014	2015	2017	2018	2021
Cereals of all categories	3203	2587	2498.2	2922.4	2206.4	3354.8	3421	4690
Sunflower	169.5	317	427.4	547.5	484.8	803.8	788	960.1
Sugar beet	2261.5	1129	588.6	1356	538	876.3	703	757.8
Potato	290.5	325	350.8	268	158.2	197	175	218.3
Vegetables, total	989.2	397	361.5	327.2	245.8	309.5	283	232.0
Fruits and berries, total	1471.5		973.2	497.3	485.5	666.4	894	876.0
Fish	-	-	-	-	-	12.08	12.08	12.9
Meat and meat products (in carcass weight)	365.9	120	117.9	122.2	130.6	117.5	122	117
Milk and dairy products	1511.4	604	560	524.7	519.7	485.2	411.7	264.9
Eggs (pieces)	1129	671	705.2	645	628.8	707.2	688.7	578.4

The data in Table 2 show that the complementary statements in statistical compilations about the outstanding achievements of Moldovan agriculture in 2021, in which „...there was the largest increase in agricultural production in the last 30 years” [10], are, to put it mildly, exaggerated.

Moreover, the comparative analysis carried out in this Table 2 from 1991 to the present shows that during the period of formation and development of Moldova’s independence, the reform, post-reform and modern periods of development of the agro-industrial complex for the main food products, a steady decline in their production (except grain and sunflower), especially in livestock products, is observed. Thus, the production of meat and meat products fell by 3.3 times in 2021, milk by 5.7 times, eggs by almost 2 times, fruit and berries by 1.7 times, vegetables by 4.3 times and sugar beet by 3 times in comparison to 1991. We present the data in comparison to 1990 and 1991, as it was only in that period that food security and food independence of the country were ensured in Moldova [14].

As far as sunflower seed production is concerned, its volume has increased significantly (by 5.7 times). Sunflower accounts for about 25.2% of the total sown area in Moldova. Over 66% of Moldova’s sunflower crop is exported, with the rest-becoming raw material for local processors. Trans - Oil Group, which controls 85% of grain elevator capacity in Moldova, account for about 90% of the total processing volume [6].

As the analysis shows, in Moldova a quarter of the arable land (25.2%) is used for the cultivation of sunflowers (in 2021, compared to 2000, the area under sunflower cultivation increased by 1.7 times), which has little relation to food security in Moldova and provision of food to the population. Moreover, such extensive cultivation of sunflowers places an additional load on the degrading soil, disturbing crop rotation and depriving it of nutrients. In terms of food security, this sharp increase in the area under sunflower cultivation reduces the possibility of increasing the food supply to the population. On the contrary, the diversion of land resources in recent years to these technical crops has led to a sharp reduction in sown areas (more than twice as much as in 2000) for fodder crops and a significant reduction in the production of animal feed (in 2021, 1.9 times less fodder was produced than in 2000). In addition, fodder has doubled in price over the last three years. In 2022 only, fodder increased by 50 % [11].

The increasing volume of grain production and its use also does not provide an advantage in increasing the fodder base of cattle breeding, as grain is mainly exported, reducing the profit of the agro-industrial complex. It is known that the processing of grain into livestock feed and then deep processing of livestock products into meat products significantly increases the financial and economic efficiency of grain production.

As a result, as of January 1, 2021, almost the entire livestock sector (cattle - 83%, cows - 93%, pigs - 42%) has shifted to peasant farms (which are not industrial production of animal products, because they do not and a priori cannot have an appropriate technological and feed base), and are just an additional income of farmers (aging in age and decreasing in number. The average age of agricultural workers, as estimated by Minister Bohl, is 60) to their main task - to feed themselves. About half of the villagers grow produce for personal consumption. Animal owners produce about 90% of the milk with 1-2 cows.

According to official statistics, households account for 94% of total milk production, 43% of total livestock and poultry production (live weight) and 58.9% of total egg production [15].

It is not surprising, therefore, that the main strategy of livestock development with a fo-

cus on peasant smallholdings leads to an annual reduction in livestock and poultry (Table 3), which results in reduced meat and milk production, and their shortages are replaced by ever-increasing imports. For example, a quarter of the meat consumed in the country and over 50% of milk and dairy products [11] were imported in 2021, mainly from Ukraine. In addition, Moldova is among the largest buyers of Ukrainian cheese and butter. More than 50% of the butter consumed is imported, and what is produced in Moldova is mostly made from imported milk [6]. Thus, as economic experts note „...although Moldova is an agricultural country, basic foodstuffs are highly dependent on imports” [6].

Table 3. Livestock and poultry farms of all categories, thousand heads.

	1990	2002	2011	2017	2018	2021
Cattle (cattle) including:	1112	405	204	182	167	104
Cows	402	272	144	122.9	113	68
Pigs	2045	449	478	439.0	406	348
Bird	24625	14119	3404	4351	3800	3815

As can be seen, for the last 30 years the number of cattle has decreased more than 10 times, cows and pigs - almost 6 times, poultry - 6.5 times. With a constant reduction of livestock, there is no food independence in providing meat and milk to the country’s population. Unfortunately, to date, the Ministry has not found a solution to this problem, and there is no solution in the Strategy.

This comparative analysis of the main types of agricultural products production and use of agricultural land, availability of livestock in the context of ensuring food security in Moldova is confirmed by our analysis of food production per capita in comparison to their consumption in accordance with medical norms of nutrition and the minimum consumer basket (Table 4).

Table 4. Production of main products per capita, kg [6].

Products	Medical nutritional standards 3500 kcal	The need for a minimum consumer basket 2399.8 kcal		2002	2012	2017	2018	2021
Bread and bakery products	105	136.56	171	140.6	116	122	119	116.7
Vegetable oil	13	9.2	14.1	14.3	28.2	24.4	29.9	29.2
Sugar	13.2	33	48.9	46	23.4	36	21	32.1
Potato	170	115.08	68	90	51	55	49	72.2
Vegetables, total	124	95.28	270	109	65	87	80	84.9

Fruits and berries, total	78	66.96	206	90	107	187	252	104.7
Fish	18	9.36	-	-	-	4.42	4.51	4.6
Meat and meat products	80	30.84	84	24	33	33	43.4	41.7
Milk and dairy products	393	134.4	346	167	147	136	116	94.4
Eggs (pieces)	294	199	259	185	175	199	245	206

Table 5. Analysis per capita consumption of basic foodstuffs according to production and consumption thresholds [6].

Products	Medical nutritional standards 3500 kcal	The need for a minimum consumer basket 2399.8 kcal	Production food 2021	Consumption food 2021
Bread and bakery products	105	136.56	116.7	116.7
Meat and meat products	80	30.84	41.2	54.2
Milk and dairy products	393	134.4	94.4	232.3
Vegetable oil, l	13	9.2	29.2	12.4
Sugar and confectionery	13.2	33	32.1	22.6
Potato	170	115.08	42	44.4
Vegetables	124	95.28	84.9	124.1
Fruits and berries	78	66.96	104.7	69.8
Fish and fish products	18	9.36	4.6	19.6
Eggs, pcs.	294	199	206	217.3

Thus, as the comparative analysis (Table 5) shows, food products produced in Moldova in comparison to the required medical norms for adequate nutrition of the population on the main types of food products, their production is much lower than the required nutritional standards, especially for livestock products. Thus, the production of meat in 2021 was almost 2 times less than required, milk and dairy products - 4.1 times less, eggs - 1.4 times less, potatoes - 2.4 times less, vegetables - 1.4 times less than the medical norms for good nutrition. Moreover, the production of milk and dairy products, fish, potatoes and vegetables is much lower than the minimum consumer basket, which leads to an increase in imports. Thus, it should be stated that for all basic food products the physical availability of food security in the Republic of Moldova is not ensured in the current period, despite some positive changes in crop production (Table 5).

And the statement in the Strategy that „...food availability is not a serious problem for the Republic of Moldova, as the food needs of the population are largely covered by domestic production, and the gap between available and necessary is provided by imports” is erroneous [9].

Firstly, the lack of domestic production, as we have already shown, is rather large; secondly, imported products are always more expensive than domestic production, which reduces the already low affordability (purchasing power) of food for the population. Thirdly, in the current difficult conditions the situation in Ukraine, from where the main imports of dairy and meat products come, may cease, which will create difficulties in providing food for the population.

And in general, having the natural, climatic, human, resource capacities to produce our own food to ensure food security and not considering this potential opportunity negates the point of adopting the Strategy as the main document to ensure the country's food independence.

The most important component of food security is the economic availability of food. Although the Strategy avoids considering the issues of economic affordability of food security, we believe that without considering this issue there will not be a complete picture of food security of the country.

Table 6. Consumption of main products per capita, kg [6].

Products	Medical nutritional standards 3500 kcal	The need for a minimum consumer basket 2399.8 kcal	2017	2018	2021
Bread and bakery products	105	136.56	118.8	119.9	116.7
Vegetable oil	13	9.2	12.5	11.9	12.4
Sugar	13.2	33	17.7	17.4	22.6
Potato	170	115.08	45.1	43.4	44.4
Vegetables, total	124	95.28	112.9	113.1	124.1
Fruits and berries, total	78	66.96	50.3	55.0	69.8
Fish	18	9.36	18.7	16.3	19.6
Meat and meat products	80	30.84	49.6	54.1	54.2
Milk and dairy products	393	134.4	218.5	233.3	232
Eggs (pieces)	294	199	191.9	199.6	217.3

Thus, the consumption of basic livestock products in 2021 was significantly lower than medical nutritional standards and basically corresponded to the parameters of the minimum consumer basket. Thus, meat was consumed 1.5 times, milk and dairy products 1.7 times, eggs almost 1.4 times, potatoes 3.8 times less than the norms of active life.

The problem of the affordability of food is even more complex if these data are compared to the population's expenditure on food (Tables 7-9).

Table 7. Cost of food based on actual consumption (2021) [20].

Products	Actual food consumption	Unit cost of food lei/kg	Annual cost of products
Bread and bakery products kg	116.7	17.52	2044.58
Meat and meat products kg	54.2	102.0	5528.4
Milk and dairy products, liters	232.3	54.19	12588.3
Vegetable oil, liters	12.4	40.75	505.3
Sugar and confectionery kg	22.6	20.73	468.5
Potato kg	44.4	11.83	488.4
Vegetables kg	124.1	24.75	3071.48
Fruits and berries kg	69.8	14.30	998.14
Fish and fish products kg	19.6	86.67	1698.73
Eggs, pcs.	217.3	29.09	632.34
Total for a year, MDL			28024.17
Total for a month, MDL			2335.3

Thus, the existing food expenses in the amount of MDL 2335.3 (Table 7) are approximately equal to the food expenses from the minimum consumer basket - MDL 2096.5.

Table 8. The cost of food according to the minimum consumer basket (2021) [20].

Products	The need for a minimum consumer basket 2399.8 kcal	Unit cost of food lei/kg	Annual cost of products
Bread and bakery products kg	136.56	17.52	2392.5
Meat and meat products kg	30.84	102.0	3145.68
Milk and dairy products, liters	134.4	54.19	7283.1
Vegetable oil, liters	9.2	40.75	374.90
Sugar and confectionery kg	33	20.73	684.09
Potato kg	115.08	11.83	1361.4
Vegetables kg	95.28	24.75	2358.18
Fruits and berries kg	66.96	14.30	957.5
Fish and fish products kg	9.36	86.67	811.23
Eggs, pcs.	199	29.09	5788.9
Total for a year, MDL			25157.48
Total for a month, MDL			2096.5

Table 9. The cost of food according to rational nutritional standards (2021) [20].

Products	Medical nutritional standards 3500 kcal	Unit cost of food lei/kg	Annual cost of products
Bread and bakery products kg	105	17.52	1839.6
Meat and meat products kg	80	102.0	8160
Milk and dairy products, liters	393	54.19	21296.67
Vegetable oil, liters	13	40.75	529.75
Sugar and confectionery kg	13.2	20.73	273.6
Potato kg	170	11.83	2011.1
Vegetables kg	124	24.75	3069
Fruits and berries kg	78	14.30	1115.4
Fish and fish products kg	18	86.67	1560
Eggs, pcs.	294	29.09	8552.5
Total for a year, MDL			48407.62
Total for a month, MDL			4034

Thus, to have a nutritious food according to medical standards of 3500 kcal per day, MDL 4034 should be spent monthly, which exceeds the average disposable income of the population in 2021 (MDL 3510.1 per person) by 13%. Only for an employed person, with an average monthly salary of MDL 8979.8, it is possible to eat according to medical standards. But in this case the expenses for food constitute a rather big percentage of the total expenses - 48,5%. Most of the money is spent on food. Therefore, the Moldovan poverty has one distinctive feature: in Moldova even working people can become poor. The risks of absolute monetary poverty in the country are heightened by the fact that even if parents are employed, their wages may not be enough to provide at least a living minimum for each family member. In addition, there is another indicator - deprivation poverty, when a person cannot buy the goods and services necessary for life. In this calculation, the poor are those people whose income may be (by conventional standards) acceptable, but still insufficient to access many modern goods and services that are not included in the cost calculation of the basket of goods and services.

In this respect, it should be noted that the poverty level in Moldova has been increasing in recent years. Thus, in 2021 the level of absolute poverty amounted to 24.5% of the country's population, while poverty in Moldova has a pronounced rural tint - the poverty level in rural areas is higher - 32.8%. Thus, one third of the population in Moldova has no possibility to eat even at the level of the minimum consumer basket. Besides, 686.3 thousand pensioners, with an average pension of MDL 3156 [4], and an average pension of MDL 2104 for persons with disabilities, also do not have the possibility to eat even by the standards of the minimum subsistence level, including expenses for utilities and other expenses necessary for living.

And rising food prices - 40% more than in 2020 - have had an even greater impact on the financial situation of the population. Eggs have risen by 60%, vegetables by more than 50%,

sugar by 50%, even bread is 30% more expensive. Thus, people are forced to reduce their consumption basket, especially pensioners and persons with modest income [3]. With an average price increase of 30% in 2021, the wages have increased only by 15%. Thus, only half covered the purchasing power. Overall, the share of food expenses in total income is 41.9%, which is about three times higher than in the European Union.

The low-income level of the population, low pension and social benefits, constant uncontrolled growth of food prices, high energy costs do not ensure food security in its most important parameter - economic affordability of food.

Unfortunately, the Strategy does not address this problem.

And yet the affordability of food is one of the main constraints to food security.

The biggest problem that has and will continue to hamper the economy is low consumer demand: people earn too little. The urgent task is not a statistical one, but a real increase in the income of the population. The high level of poverty of Moldovan inhabitants is primarily evidenced by significant deviations in the level of consumption of basic products from medical nutritional standards.

Thus, the analysis shows that low-income levels of the population, low pension and social benefits, and the constant uncontrolled growth of food prices do not ensure food security in its most important dimension - affordability of food.

The UN World Food Council has defined food security as a policy that enables a country to achieve the highest degree of self-sufficiency in food as a result of integrated efforts to increase the production of necessary food, improve supply systems, food consumption, and eliminate malnutrition and hunger.

The achievement of food security as a policy implies two lines of action: the realization of the strategic objective - the maximum possible self-sufficiency of the population in food, and the identification and prevention of destructive factors, challenges and threats to this objective.

The Food Security Strategy of the Republic of Moldova as a strategic policy proposed by the Ministry of Agriculture and Food of Moldova to ensure food security of the population has the following pronounced strategic approaches, which form negative trends affecting food security:

Firstly, the Food Security Strategy, despite unsatisfactory results in the development of the agro-industrial complex, the provision of food to the population, has not changed the model of functioning of the agro-industrial complex and approaches to providing the population with food, the attitude to land and social development of the countryside:

- despite the inefficiency of smallholder production, there is still an emphasis on home-based, virtually artisanal agricultural production in the prospective development of agricultural production. The role of households in the production of some products is referred to in the Strategy as "key". About 60% of the country's agricultural production, including 89.6% of potatoes, 81.3% of vegetables, 68.4% of grapes, 60.2% of fruits, nuts and berries, and 57.5% of maize, is produced by individual farmers, which results in low agricultural production efficiency. In Moldova, agricultural labor productivity is 40 times lower than in France, three times lower than in Russia, four times lower than in Belarus, and half as low as in Kazakhstan [17, p. 278]. In addition, the analysis shows that 49% of peasants are engaged in the production of products for their own consumption;

- there are no plans to provide food for the population of the country, although there are natural, climatic, resource and human resources;

- there are no plans to change the structure of areas under crops in order to maximize the

provision of foodstuffs for the population of the country. There is still a poorly diversified structure of sown areas: grain and industrial crops occupy more than 80% of the sown area, a quarter of the arable land occupied by sunflower crops not only violate the scientifically sound crop rotation, but also completely destroy, in the future, the fertility of the land;

- the proposed financing, as in previous years, is insufficient for the effective development of agriculture. The system of state support for the agricultural sector needs to be improved. The volume of subsidies to the sector is less than 3% of the value of agricultural output. The directions and amounts of state support for agricultural production are weakly linked to the specific changes and indicators that are planned to be achieved as a result of the use of these or those support measures;

- the social problems of the village, the increase in living standards and the purchasing power of the population are not even considered.

Secondly, no consideration has been given to improving land fertility. Soil fertility has been in constant decline for almost all years since 1990, and in some places it has been deteriorating. In recent years, soil fertility has been decreasing annually by about 0.5%. At present the average level of humus in chernozems does not exceed 3.8-4.2%, whereas a century ago it was 7-8%. Its reserves continue to deplete, rapidly approaching the critical values of soil fertility. The share of areas fertilized with organic fertilizers (the main source of humus increase) is 1.1% of the total arable land.

Thirdly, despite the practical destruction of cattle breeding the proposed measures for its revival are ineffective, both in terms of the number of proposed fattening cattle and dairy herds, insufficient funding, and the lack of policies for the development of animal feed, and therefore will not give proper results.

Thus, the envisaged funding of MDL 5.16 billion for the implementation of the Strategy measures is not sufficient, according to Moldovan experts ("investments in only 100 cattle farms with a hundred cows each will require investments of at least EUR 100 million" - former head of the Ministry of Agriculture Viorel Gherciu).

Fourthly, despite the loss of the Russian market there are no real proposals in terms of financial and marketing support for new markets for fruit and vegetable products. Small producers, who are in the majority in agricultural production, will not be able to explore new markets on their own.

Fifthly, import dependence of the food supply of the country's population persists. Moldova imported \$658.5 million worth of food products and exported only \$525.9 million. The country imported \$658.5 million of foodstuffs and exported only \$525.9 million. There are no concrete proposals to provide the population with its own foodstuffs.

Sixthly, 300,000 hectares of land in Moldova, as claimed by Moldovan experts, is controlled by four large companies that are managed from offshore zones, and this threatens the agrarian security of the country [7].

In addition, in Moldova, threats to food security are significantly associated with natural and technological, agro-ecological, macroeconomic, social and trade-related risks, which have not been addressed in the Strategy.

Technogenic factors are the environment of direct human activity:

- in recent decades in Moldova, highly fertile soils have been subjected to increasing degradation as a result of human economic activity. Currently, degradation processes of various degrees affect 56,4% of all agricultural land;

- the intensity of erosion processes in Moldova has increased, and is one of the highest in Europe. There are about 81 thousand hectares of degraded land in Moldova, which is practically unusable for agriculture or requires significant financial investment for this purpose. Erosion affects 34% of agricultural land. The area of eroded land increases by 0.9% annually;

- irrigation is a problem of national importance for the Republic of Moldova. According to statistical data, the Republic of Moldova has 2491.7 thousand hectares of agricultural land, of which only 217.8 thousand hectares are equipped for irrigation, that is just over 11% of agricultural land. In fact, due to various reasons, less is irrigated and their volume has been decreasing in recent years. And irrigation practised from artesian wells with highly saline water is detrimental to the first-class Moldovan chernozems.

For Moldovan agriculture, the rehabilitation of irrigation systems, their modernisation and the endowment of farmers with modern and safe equipment for land irrigation is a vital issue.

The proposal in the Strategy to build open rainwater harvesting basins to increase the amount of irrigated land for Moldova with its predominantly arid climate sounds neither scientific nor serious.

Scientific factors:

- degradation of agricultural, ecological and biological science does not allow scientific planning and forecasting of development of ecological situation and soil fertility. The inefficiency of agricultural research and educational institutions hinders the modernization of the country's agricultural sector and the application of modern scientific research results and technological innovations;

- complete dependence of the agro-industrial complex of Moldova on external supplies of hybrid seeds of vegetable and plant crops, new breeding selections of animals. This breeding work used to be carried out in scientific-production institutes, breeding-hybrid centres, research stations, laboratories whose production has been irrevocably destroyed or degraded by now. There is practically no program for the restoration of breeding work, research on raising the crop yield, breeding of new species of crops, climatized for the new climatic conditions of the country to create a highly productive agriculture in Moldova. While Moldova used to be in the lead of the Soviet Union in many scientific areas of breeding new seeds of maize, wheat, alfalfa, pedigree cattle;

- lack of scientifically sound crop rotations and cropping patterns.

Trade and economic factors:

- the structure of Moldovan agricultural exports is deteriorating. Exports of high-value-added goods are decreasing and there is virtually no supply of science-based products. The export of goods made on commission has increased, as well as of primitive raw materials: wheat, maize, sunflowers, rapeseed and nuts;

- rising costs of imported food products;

- shortage of domestically produced food products (primarily meat, dairy, fruit and vegetables) on the domestic market. Moldova is turning the country into a net importer of food.

Social crisis:

- in 2021, the absolute poverty rate in the Republic of Moldova was 24.5% of the country's population. Rural residents survive on remittances from abroad, which account for more than 22% of the income of the entire rural population of Moldova;

- professional level of the rural population is decreasing. Currently, 61% of those employed in the sector do not have any special vocational education, among those employed in non-agricultural sectors there is only 28%;

- high income differentiation of the population and the presence of social groups with per capita disposable income below the subsistence minimum; thus, at the local level, about 27.2% of the population is affected by moderate or severe food insecurity (compared to 19.3% in 2014-2016), of which 4.5% are severely food insecure (compared to 1.6% in 2014-2016);

- constant sharp rises in food prices. During 2021, meat prices rose by 13.5%, eggs by 22.5%, sugar by 11.6%, vegetables by 43.8%, potatoes by 51.6% and fruit by 8.2%. In 2022 the food basket continued to rise in price at a high rate. Thus, in 2022, the most marked increase in prices was observed for the following food products: chicken eggs - 59.1%, vegetables - 56.1%, sugar - 55.7%, fruit - 48.8%, bakery products and cereals - approximately 37%, milk and dairy products, meat and tinned meat - more than 21%, vegetable oil - 8.3%;

- the discrepancy between the rise in food prices and the income of the population, with a 31.8% increase in retail prices for food products in 2021, and a 15% increase in real wages (in 2021, the minimum wage in Moldova was MDL 2,935 per month, or EUR 150) and 22% increase in pensions. The subsistence minimum amounted to MDL 2183. Of this amount, Moldovans spent about 48.5% of their income on food in 2021 [19].

Conclusions. Based on the level of the above threats according to the FAO classification, in terms of food security Moldova can still be attributed to the group of countries with a high level of leverage.

By the end of the 20th century, Moldova found itself among those states that had lost its food independence. This economic and political situation is characterised, on the one hand, by a significant decrease in domestic food production and, on the other hand, by a sharp increase in imports of food products traditionally produced in the country and the destruction of the production potential of the agro-industrial complex. At present about 40% of food products are imported to Moldova, while it is considered that with the import of 20% of food products the country already loses its food sovereignty.

At the same time, Moldova's agro-industrial complex is capable of producing all basic food-stuffs to fully meet the needs of the domestic market. There are all the potential conditions for this: climatic, natural, and resource conditions.

Thus, the acute problem of food security of the Republic of Moldova requires in-depth and comprehensive scientific research, a consistent science-based national economic and agrarian policy to stimulate the development of domestic agriculture in order to generate the highest possible level of own food production and responsible social policy aimed at providing food products to all social groups of population in accordance with the medical standards.

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