

**THE INFLUENCES DEGREE OF VARIOUS FACTORS  
ON THE DEVELOPMENT OF AGRICULTURAL ENTERPRISES  
OF MOLDOVA REPUBLIC**

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**ABSTRACT**

*Agriculture sector in the Republic of Moldova is the main and strategic brunch for the national economy. During the 2020-2022 years, we studied the factors influencing the development of enterprises in the horticulture sector in the Republic of Moldova.*

*The research was carried out within the project: "Impact of macromedia and geographical factors on bankruptcy and business performance of economic entities in the agri-food sector in the Republic of Moldova", project code 20.80009.0807.26, according to contract with NARD. The study was conducted by interviewing approx. 1000 companies from agri-food (vegetal, animal, postharvest, processing, HORECA sectors etc.), inclusive approx. 800 enterprises from Horticulture brunch.*

*As a result of the study it was established: economic factors / risks obtained an average rating of 3,94 points on the scale of 5 pt.; technical and technological factors / risks obtained an average rating of 4.1 points on the scale of 5 pt.; ecological factors / risks obtained an average rating of 4,06 points on the scale of 5 pt.; legislative-legal factors / risks obtained an average rating of 4,05 points on the scale of 5 pt.; information factors / risks obtained an average rating of 4,02 points on the scale of 5 pt.; moral factors / risks obtained an average rating of 4.04 points on the scale of 5 pt., qualification of staff factor / risk obtained an average rating of 4.08 points on the scale of 5 pt. and other factors, such as the COVID-19 pandemic, the war in Ukraine, etc.*

**INTRODUCTION**

The Republic of Moldova ranks among the countries with an economy formed by the agro-food sector. According to the statistical data of the NBS, the majority of the population of the republic has the basic occupation related to agriculture.

The traditional branches in the agro-food sector are:

- the plant culture sector - fruit growing, viticulture, vegetable growing, post-harvest and processing of vegetable and fruit production, etc.

- livestock sector - breeding of cattle for meat and milk, pigs, sheep, poultry for meat and eggs, etc.

Lately there has been a development of some enterprises and a stagnation of other enterprises. This being influenced by several factors, including climate changes at the local and global level, the demographic situation, the political situation in the country and in the region, external trade relations, etc. (Balan et al. 2021, Oprea et al. 2014, BNM 2022, POCA 2018)

The purpose of the studies reflected in this paper refers to highlighting the level of influence of various risk or progress factors on the development of enterprises in the agri-food sector of the Republic of Moldova.

## **MATERIAL AND METHODS**

The study from this article was based on the results of the project "Impact of macro-environmental and geographical factors on bankruptcy and business performance of economic entities in the agri-food sector in the Republic of Moldova" under the State Program (2020 - 2024), registered code 20.80009.0807.26 and is summarized as:

- studying the specialized literature;
- highlighting the entities in the agri-food sector for conducting surveys;
- assessment of risk factors of entities in the agri-food sector;
- analysis of survey results;
- processing survey results.

In the period from 2020 to 2022, approx. 1000 entities from the Republic of Moldova, which carry out one or more activities in the agri-food sector (vegetal, animal, postharvest, processing, HORECA etc.), were interviewed based on the questionnaire developed by the research team. In regional profile, they represented - Northern Region - 343 entities or 34,23%; Central Region - 457 entities or 45,61% and Southern Region - 202 entities, or 20,16%.

Specialized software (*Statistica*) and *MS Excel* were used to process the experimental data

## **RESULTS AND DISCUSSIONS**

In the specialized literature (Paladi & Erhan 2018, Nicolaescu et al. 2022), there are several classifications of risk factors. They are grouped into several groups:

Risk group by origin main factors: 1. Subgroup of economic risks; 2. Subgroup of political risks; 3 Subgroup of technical-technological risks; 4. Subgroup of ecological risks; 5. Subgroup of legislative-legal risks; 6. Subgroup of information Risks; 7. Subgroup of moral risks;

Risk group by their occurrence: 1. Subgroup of retrospective risks; 2. Subgroup of current risks; 3. Subgroup of prospective risks;

Risk group according to the nature of the record: 1. Subgroup of external risks; 2. Subgroup of internal risks;

Risk group according to the sphere of appearance on which the fields of entrepreneurial activity are based: 1. Subgroup of risks in the field of production; 2. Subgroup of risks in financial activity; 3. Subgroup of commercial risks; 4. Subgroup of intermediate risks.

Risk group according to the specialists and skilled labor.

Analyzing the risk factors group in Agriculture we can concluded - the risk group according to the main factors of occurrence we can mention that:

- the subgroup of economic risks, especially the market has a contribution as a risk factor between 3 and 5. The average value obtaining 4.06 points. The price of the factors of production has a contribution as a risk factor between 2 and 5. The average value obtaining 3.91 points. The financial assets have a contribution as a risk factor between 3 and 5. The average value obtaining 4.07 points. The exchange rate has a contribution as a risk factor between 3 and 5. The average value is 4.3 points. Inflation has a contribution as a risk factor between 3 and 5. The average value obtaining 3.96 points. Grants have a contribution as a risk factor between 2 and 5. The average value is 4.33 points. The system of taxes and fees has a contribution as a risk factor between 2 and 5. The average value obtaining 4.07 points. Other risks of this group have a contribution as a risk factor between 2 and 5. The average value is 3.94 points. The average rating of this subgroup obtained 4.08 points (Figure 1 a).

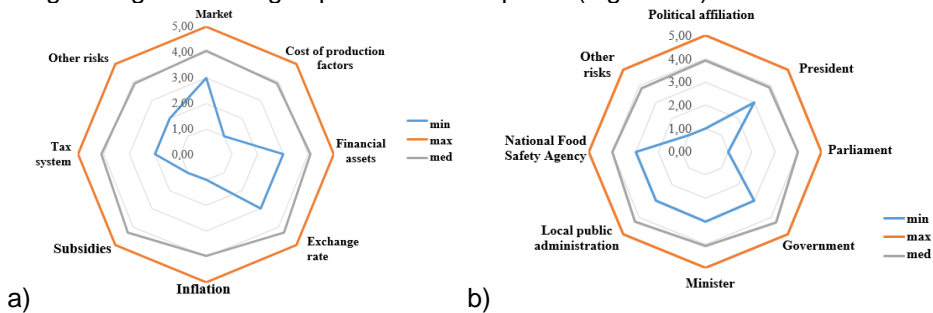


Figure 1. Diagram of the economic (a) and of the political (b) risks assessment

- the subgroup of political risks, Political affiliation has a contribution as a risk factor between 1 and 5. The average value obtaining 3.92 points. The president has a contribution as a risk factor between 3 and 5. The average value is 3.89 points. Parliament has a contribution as a risk factor between 3 and 5. The average value is 4.0 points. The government has a contribution as a risk factor between 3 and 5. The average value is 4.3 points. The Ministry has a contribution as a risk factor between 3 and 5. The average value is 4.04 points. The local public administration has a contribution as a risk factor between 3 and 5. The average value obtaining 4.26 points. ANSA has a contribution as a risk factor between 3 and 5. The average value obtaining 4.0 points. Other risks of this subgroup have a contribution as a risk factor between 3 and 5. The average value is 3.88 points. The average rating of this subgroup obtained 4.04 points. This is easy to see from the risk assessment chart (Figure 1b).

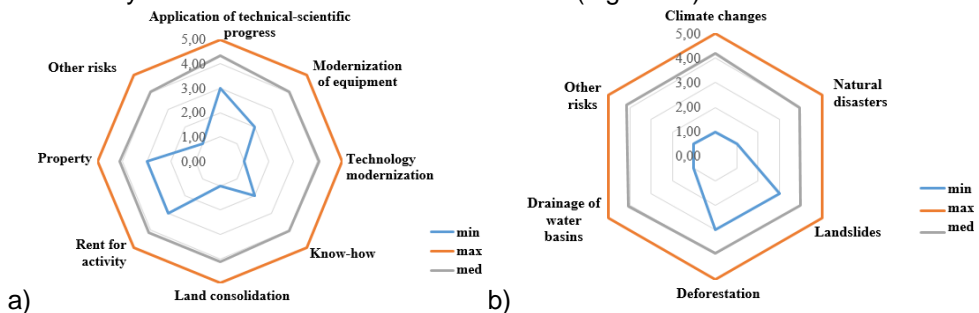
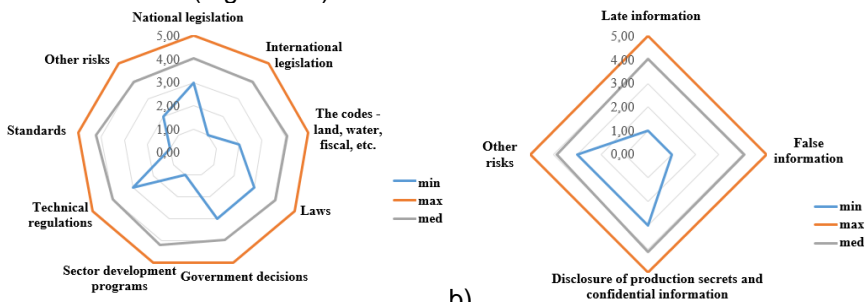


Figure 2. Diagram of the technic and technological (a) and of the ecological (b) risks assessment

- the subgroup of technical and technological risks, the application of know-how in the production process has a contribution as a risk factor between 3 and 5. The average value obtaining 4.32 points. Modernization / Renewal of equipment, machinery, equipment, etc. required for the activity has a contribution as a risk factor between 2 and 5. The average value obtaining 4.01 points. The modernization of the applied technology has a contribution as a risk factor between 3 and 5. The average value obtaining 4.07 points. The know-how has a contribution as a risk factor between 2 and 5. The average value obtaining 4.01 points. Land consolidation has a contribution as a risk factor between 3 and 5. The average value is 4.1 points. The lease / rent of the goods necessary for the activity has a contribution as a risk factor between 3 and 5. The average value obtaining 4.14 points. The property has a contribution as a risk factor between 3 and 5. The average value is 4.1 points. Other risks of this subgroup have a contribution as a risk factor between 3 and 5. The average value obtaining 4.02 points. The average rating of this subgroup obtained 4.1 points. This is easy to see from the risk assessment chart (Figure 2 a).

- the subgroup of ecological risks, Climate change has a contribution as a risk factor between 3 and 5. The average value is 4.19 points. Natural disasters (frost, hail, drought, torrential rains, etc.) have a contribution as a risk factor between 3 and 5. The average value is 3,96 points. Landslides have a contribution as a risk factor between 3 and 5. The average value is 4,01 points. Deforestation has a contribution as a risk factor between 3 and 5. The average value is 3.95 points. The drainage of water basins (lakes, rivers) has a contribution as a risk factor between 3 and 5. The average value is 4.09 points. Other risks of subgroup C.4. Ecological risks have a contribution as a risk factor between 1 and 5. The average value is 4.18 points. The average rating of this subgroup obtained 4.06 points. This is easy to see from the risk assessment chart (Figure 2 b).



a) b) Figure 3. Diagram of the legal (a) and of the informational (b) risks assessment

- the subgroup of legislative-legal risks, the national legislation has a contribution as a risk factor between 3 and 5. The average value obtaining 4,02 points. International law has a contribution as a risk factor between 3 and 5. The average value is 3,96 points. Codes - land, water, tax, etc. has a contribution as a risk factor between 2 and 5. The average value is 4,07 points. Laws have a contribution as a risk factor between 3 and 5. The average value is 4,06 points. GD has a contribution as a risk factor between 3 and 5. The average value is 3,97 points. The development programs of the sector have a contribution as a risk factor between 3 and 5. The average value obtaining 4.18 points. Technical regulations have a contribution as a risk factor between 3 and 5. The average value obtaining 3.99 points. The standards have a contribution as a risk factor between 3 and 5. The

average value is 4.24 points. Other risks have a contribution as a risk factor between 2 and 5. The average value obtaining 3.94 points. The average rating of this subgroup obtained 4,05 points. This is easy to see from the risk assessment chart (Figure 3 a).

- the subgroup of information risks, Delayed information has a contribution as a risk factor between 2 and 5. The average value is 4.03 points. False information has a contribution as a risk factor between 3 and 5. The average value is 4.06 points. Disclosure of production secrets and confidential information has a contribution as a risk factor between 3 and 5. The average value is 4.12 points. Other risks of this subgroup have a contribution as a risk factor between 3 and 5. The average value is 3.87 points. The average rating of this subgroup obtained 4,02 points. This is easy to see from the risk assessment chart (Figure 3 b).

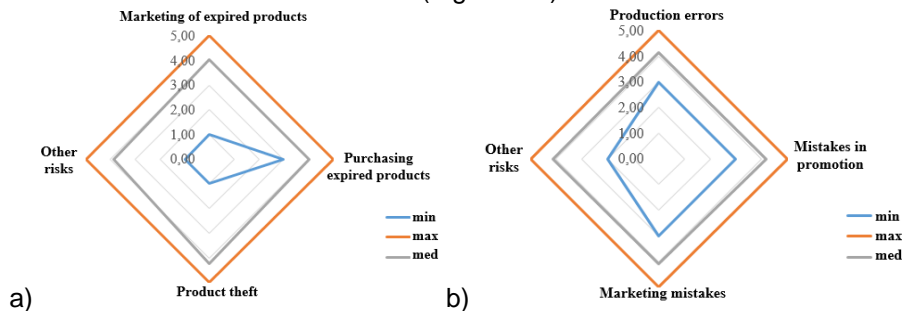


Figure 4. Diagram of the moral (a) and of the retrospective (b) risks assessment

- the subgroup of moral risks, the sale of products, goods and services with expired expiration date, which may cause harm to the consumer has a contribution as a risk factor between 3 and 5. The average value is 4.05 points. Procurement of expired products, goods and services - by false update to the seller, which can cause indirect damage to the consumer has a contribution as a risk factor between 3 and 5. The average value is 4.02 points. Theft of products, goods has a contribution as a risk factor between 3 and 5. The average value obtaining 4.23 points. Other risks of subgroup have a contribution as a risk factor between 3 and 5. The average value is 3.87 points. The average rating of this subgroup obtained 4,04 points. This is easy to see from the risk assessment chart (Figure 4 a).

Analyzing the risk factors group - the risk group after their occurrence we can mention that:

- the subgroup of retrospective risks, Mistakes that occurred in the production process - for their analysis has a contribution as a risk factor between 3 and 5. The average value obtaining 4.13 points. Mistakes that occurred in the promotion process - for their analysis has a contribution as a risk factor between 3 and 5. The average value obtaining 4.18 points. Mistakes that occurred in the trading process - for their analysis has a contribution as a risk factor between 3 and 5. The average value obtaining 4.09 points. Other risks of this subgroup have a contribution as a risk factor between 2 and 5. The average value obtaining 4.13 points. The average rating of this subgroup obtained 4,13 points. This is easy to see from the risk assessment chart (Figure 4 b).

- the subgroup of current risks, the temporary interruption of the production process has a contribution as a risk factor between 3 and 5. The average value obtaining 4.29 points. Temporary damage to the machine has a contribution as a

risk factor between 3 and 5. The average value is 4,02 points. The incapacity for work of the staff has a contribution as a risk factor between 3 and 5. The average value obtaining 4.15 points. Other risks of this subgroup have a contribution as a risk factor between 1 and 5. The average value is 4.11 points. The average rating of this subgroup obtained 4,14 points. This is easy to see from the risk assessment chart (Figure 5 a).

- the subgroup of prospective risks, the business plan has a contribution as a risk factor between 2 and 5. The average value obtaining 4.14 points. Development strategies and policies have a contribution as a risk factor between 3 and 5. The average value obtaining 4.1 points. Other risks of subgroup have a contribution as a risk factor between 3 and 5. The average value is 4,03 points. The average rating of this subgroup obtained 4,09 points. This is easy to see from the risk assessment chart (Figure 5 b).

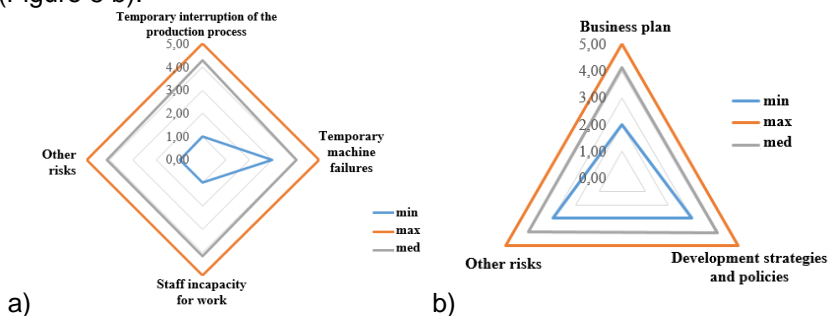


Figure 5. Diagram of the current (a) and of the prospective (b) risks assessment

Analyzing the risk factors group - the risk group according to the nature of the record we can mention that:

- the subgroup of external risks, Inflation has a contribution as a risk factor between 3 and 5. The average value is 4.15 points. The currency has a contribution as a risk factor between 3 and 5. The average value is 4.09 points. Nature has a contribution as a risk factor between 2 and 5. The average value is 4.35 points. Other risks of subgroup have a contribution as a risk factor between 3 and 5. The average value obtaining 4.08 points. The average rating of this subgroup obtained 4,17 points. This is easy to see from the risk assessment chart (Figure 6 a).

- the subgroup of internal risks, the partners have a contribution as a risk factor between 3 and 5. The average value obtaining 4.16 points. The suppliers have a contribution as a risk factor between 1 and 5. The average value is 4.11 points. Consumers have a contribution as a risk factor between 2 and 5. The average value is 4.21 points. The marketing strategy has a contribution as a risk factor between 3 and 5. The average value obtaining 4.09 points. The activity policy has a contribution as a risk factor between 2 and 5. The average value obtaining 3,97 points. The production potential has a contribution as a risk factor between 3 and 5. The average value is 4.2 points. The technical endowment has a contribution as a risk factor between 3 and 5. The average value obtaining 4.29 points. The level of specialization has a contribution as a risk factor between 1 and 5. The average value obtaining 4.11 points. The qualification of the labor force has a contribution as a risk factor between 3 and 5. The average value obtaining 4.33 points. The security technique has a contribution as a risk factor between 2 and 5. The average value obtaining 4.17 points. Other risks of this subgroup have a contribution as a risk factor between

3 and 5. The average value is 4.01 points. The average rating of this subgroup obtained 4,15 points. This is easy to see from the risk assessment chart (Figure 6 b).

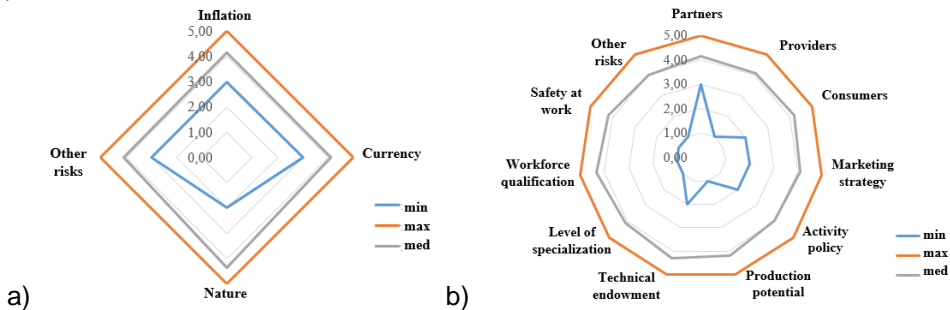


Figure 6. Diagram of the external (a) and of the internal (b) risks assessment

Analyzing the risk group by the sphere of appearance on which the fields of entrepreneurial activity are based, we can mention that:

- the subgroup of risks in the field of production, the application of know-how in the production process has a contribution as a risk factor between 1 and 5. The average value obtaining 3.94 points. Modernization / Renewal of equipment, machinery, equipment, etc. required for the activity has a contribution as a risk factor between 1 and 5. The average value obtaining 3.69 points. The modernization of the applied technology has a contribution as a risk factor between 3 and 5. The average value obtaining 4.22 points. The know-how has a contribution as a risk factor between 2 and 5. The average value is 4.23 points. Land consolidation has a contribution as a risk factor between 3 and 5. The average value is 4.1 points. The lease / rent of the necessary assets for the activity has a contribution as a risk factor between 1 and 5. The average value obtaining 4.05 points. The property has a contribution as a risk factor between 2 and 5. The average value is 4.05 points. The marketing strategy has a contribution as a risk factor between 1 and 5. The average value is 3.84 points. The activity policy has a contribution as a risk factor between 3 and 5. The average value obtaining 4.15 points. The production potential has a contribution as a risk factor between 2 and 5. The average value is 3.94 points. The technical endowment has a contribution as a risk factor between 3 and 5. The average value obtaining 3.95 points. The level of specialization has a contribution as a risk factor between 3 and 5. The average value obtaining 4.18 points. The qualification of the labor force has a contribution as a risk factor between 3 and 5. The average value obtaining 4.05 points. The security technique has a contribution as a risk factor between 3 and 5. The average value obtaining 4.17 points. Other risks of the subgroup have a contribution as a risk factor between 3 and 5. The average value is 3.92 points. The average rating of this subgroup obtained 4,03 points. This is easy to see from the risk assessment chart (Figure 7 a).

If we compare these data with the above, we will find a divergence. The majority of entrepreneurs in the agri-food sector motivate the fact that there are different classification criteria, even if it is the same indicator. This influences the results of the study.

- in the subgroup Risks in financial activity, Banks have a contribution as a risk factor between 2 and 5. The average value obtaining 4.13 points. Financial institutions have a contribution as a risk factor between 1 and 5. The average value

is 4,0 points. Other risks of the subgroup have a contribution as a risk factor between 2 and 5. The average value is 4.16 points. The average rating of this subgroup obtained 4,09 points. This is easy to see from the risk assessment chart (Figure 7 b).

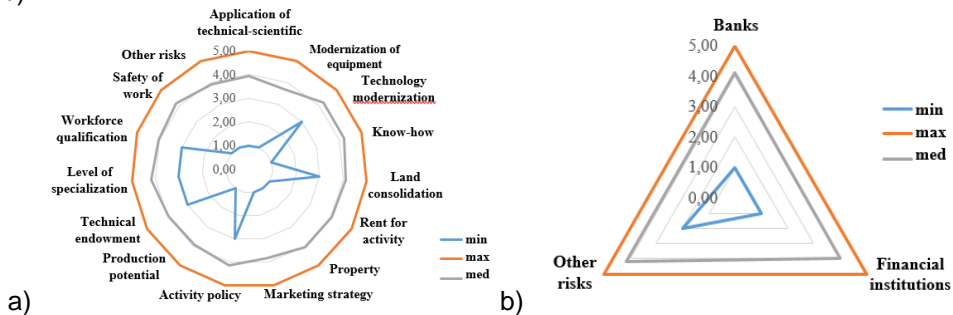


Figure 7. Diagram of the production (a) and of the financial activity (b) risks assessment

- in the subgroup risks in the commercial sphere, the auction has a contribution as a risk factor between 3 and 5. The average value obtaining 4,02 points. The wholesale trade has a contribution as a risk factor between 2 and 5. The average value is 4.16 points. Retail trade has a contribution as a risk factor between 2 and 5. The average value is 3.98 points. The insurance has a contribution as a risk factor between 2 and 5. The average value obtaining 4.08 points. Other risks of this subgroup have a contribution as a risk factor between 2 and 5. The average value is 4.08 points. The average rating of this subgroup obtained 4,06 points. This is easy to see from the risk assessment chart (Figure 8 a).

- in the subgroup risks from the intermediate activity, Notary has a contribution as a risk factor between 3 and 5. The average value obtaining 3.89 points. The broker has a contribution as a risk factor between 2 and 5. The average value is 4.17 points. Lawyers have a contribution as a risk factor between 3 and 5. The average value is 3.83 points. Other risks of this subgroup have a contribution as a risk factor between 3 and 5. The average value obtaining 4.12 points. The average rating of this subgroup obtained 4,01 points. This is easy to see from the risk assessment chart (Figure 8 b).

Analyzing the Staff risk group, we can mention that:

- the non-professional staff has a contribution as a risk factor between 3 and 5. The average value obtaining 4,02 points. The professional staff level 3 ECTS, has a contribution as a risk factor between 2 and 5. The average value is 4.2 points. The professional staff level 4 ECTS have a contribution as a risk factor between 2 and 5. The average value is 3.78 points. The professional staff level 6 ECTS have a contribution as a risk factor between 2 and 5. The average value is 4,38 points. The professional staff level 8 ECTS have a contribution as a risk factor between 2 and 5. The average value is 4,0 points. The professional staff with other specialty studies have a contribution as a risk factor between 2 and 5. The average value is 4,09 points. Other risks of this group have a contribution as a risk factor between 3 and 5. The average value obtaining 4.23 points. The average rating of this subgroup obtained 4,08 points. This is easy to see from the risk assessment chart (Figure 9).



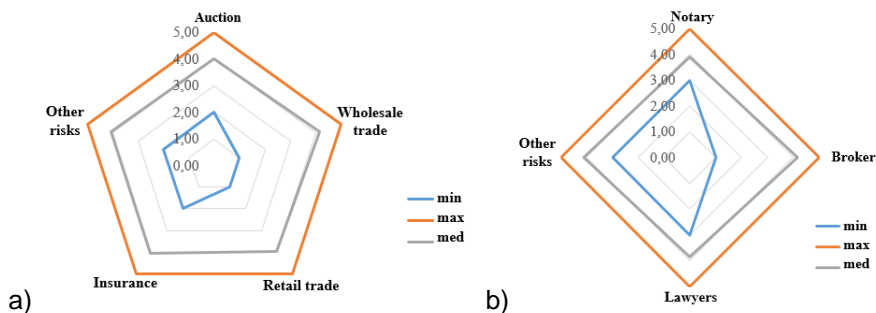


Figure 8. Diagram of the financial activity risks assessment

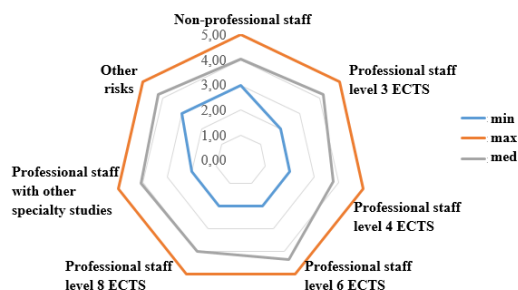


Figure 9. Diagram of the staff risks assessment

## CONCLUSIONS

The agri-food sector is important for the national economy of Moldova, but it is also a difficult one. The development of enterprises in the agri-food sector is influenced by many objective and subjective factors.

The agri-food trade of the Republic of Moldova, mainly the external one, is oriented towards the Russian market, especially the fresh production - fruits, vegetables, grapes, but also the processed one - canned vegetables and fruits, wine, etc. Since 2006, it has been influenced by global political relations, creating a negative impact through embargoes on Moldovan production - fruits, grapes, wine, etc.

The COVID-19 pandemic, as well as the war in the Ukraine, have a particularly negative influence on the economic activity of businesses. At the same time, the food industry and commerce were favored in favor of online activities.

This study allowed us to identify a series of weaknesses and strengths in the activity of entities in the agri-food sector.

This study is a pretext to propose some changes in the legislation, the tax system, subsidies, etc., to stimulate the successful activity of the producing entities in the agro-food sector (vegetal, animal, post-harvest, processing, HPORECA) and to reduce the risk of bankruptcy.

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