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THE INTERACTION BETWEEN RISKS AND VULNERABILITIES IN ROMANIAN AGRICULTURE AND ITS IMPACT ON AGRICULTURAL ENTREPRENEURS

Case
Study

Keywords

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Abstract

Agricultural activities are affected by the decisions that farmers make every day. The factors that are decisive in making decisions cannot be foreseen with great accuracy. The purpose of this study is to explore the psychosocial and contextual factors that are related to agricultural entrepreneurs. Respondents were given the opportunity to be as honest as possible about what they believe is preventing them from achieving high performance in managing their agricultural activities. The risk and stress factors and, respectively, the methods of measuring their impact were taken into consideration, choosing various characteristics such as the typology of the factors, the duration of the manifestation, the intensity of the felt effect, the frequency of the contact of the people with the factors. The study found that there is concern and attractiveness for this economic sector, but entrepreneurs are faced with various phenomena that most often tend to decrease their performance.

INTRODUCTION

Agricultural activity is characterized by manual labour, long hours, uncertainty and high stress (Glasscock, Rasmussen, Carstensen, & Hansen, 2006). Being recognized as one of the most dangerous occupations - "Farming is recognised as one of the three most dangerous occupations in the world" (ILO, 2015), considerable research has focused on the health and physical safety of farmers. However, it is also recognized that the characteristics of agriculture can create environments where the risk of poor mental health outcomes is higher than that of many other occupations.

Agriculture activities are stressful and have a multipurpose effect on the lives of agricultural families. There are several uncontrollable factors that affect farmers, such as adverse weather conditions, financial markets, time constraints and premature degradation of equipment (ASHC, 2016). Stress related to agriculture comes from a variety of factors (Hounsome, Rhiannon, Hounsome, & Gareth, 2012) and some of them include work imbalance - life, isolation, socioeconomic inequalities and lack of access to health services - especially in countries without universal healthcare.

The main factors of agricultural production, weather and climate, represent a permanent source of disruption to ecosystem services (Howden et al., 2007) and implicitly they induce variable food production (Selvaraju, Gommès, & Bernardi, 2011).

Although farmers are known to have a relaxed and healthy lifestyle, in reality their life is demanding, stressful and risky (Kearney, Rafferty, Hendricks, Allen, & Tutor-Marcom, 2014). Climate change, the pace of development of the agricultural industry, the lack of real credit facilities, the way too low market prices for agricultural products, as well as other issues have resulted in an increase of both physical and mental stress among farmers (IS, 2015).

Several studies confirm that there are some stress factors - machinery breakdowns, crop prices, weather impact on plant development etc. - that influence only farmers (Bin, 2008). A stressor is a "chemical or biological agent, environmental condition, stimulus or event that triggers stress in an organism" (Howden et al., 2007) which determines the person's adaptation to the new situation and which affects both psychological and physical happiness. According to Deary, Willock, & McGregor (1997) the level of stress is different depending on age and gender. Thus, it has been observed that people under 50 have a higher level of stress, and men are less stressed compared to women. Also, stress can be caused even by the farmer who becomes more careful with the changes

and modernization of agriculture (Stepanyan & Blasoni, 2005). The unfavourable economic climate could lead to the sale of the land passed down over the generations which generates an additional stress due to emotional attachment (Lobley, Johnson, Reed, Winter, & Little, 2004).

The level of stress may also depend on the type of agricultural activity performed.

Technology, available capital and education, and respect for the environment and nature are elements that influence the choice of a certain type of agriculture (Cristache, Vuță, Marin, Cioacă, & Vuță, 2018). Thus, mixed farms have been found to have a higher degree of stress caused by balancing workloads with differing timetables, while crop farmers experienced a lower level of stress (Parry, Lindsey, Barnes, & Taylor, 2005). Farmers may also experience chronic stress caused by the unpredictability and disastrous consequences of the climate (Lobley et al., 2004).

There are other stressors, such as political regulations, excess workload, lack of skilled workers, economic problems that are universally valid among farmers (Freeman, Schwab, & Jiang, 2008). According to Hill (2007), work overload is considered to be a major stress factor as farmers have to manage their business, which means they have multiple roles in their company.

Agricultural policies, rules and regulations that give preferential biases to large-scale operations can also be a stress factor, as they influence market prices and economic benefits (Dongre & Deshmukh, 2012). In any case, what should be kept in mind is that farms are usually incorporated into larger social, economic and political contexts. There is an increased interest in understanding and integrating factors at several levels that can affect farmers' health. For example, the International Labor Organization and the World Health Organization have defined psychosocial hazards as the interactions between work environment, workplace content, organizational conditions and capabilities, needs, culture and other personal factors that may influence health (ILO, 1970). Similarly, the European Union has adopted a holistic approach to occupational health and safety, including work-life balance, life-long training and learning, career development, motivation and leadership (EU-OSHA, 2016).

Agricultural systems and field crop production are deeply influenced by the following factors:

- The quantity of precipitation by inter-annual and intra-seasonal variability and its distribution;
- The water deficit in the soil during the period of development of the plants that may lead to the reduction of the production and the decrease of the yield;
- High temperatures that can have serious consequences on agricultural productivity, food security and farm incomes.

Climate variability already has an impact on agricultural systems and climate change threatens agriculture biodiversity. This is why climate risk management is needed to integrate into the long-term strategy for adapting agriculture to climate change. To assess the impact of agriculture adaptation, climate change projections are needed to turn into relevant actions at local level. Actions involve defining current development priorities, short-term planning processes and reducing farmers' vulnerabilities. The impact of immediate interventions is more attractive to policy and decision makers because they can be verified in short term.

Sustainable agriculture involves integrating climate information into risk management. Climate risk assessment must take into account the crop-weather relationship, weather monitoring and economic modelling and involves the following processes (Selvaraju, 2012):

- climate risk analysis and climate impact assessment;
- introducing methods of linear and non-linear optimization and risk perception by farmers;
- carrying out weather measurements;
- including modern tools for analyzing climate data;
- counseling sessions for farmers;
- facilitating access to modern communication technologies.

Some studies analyzed farmers' perception of climate change adaptation, which allowed the investigation of psychological motivational concepts and of the factors that influence the attitude of agricultural workers (Luu et al., 2019).

Other risk factors related to adverse psychological outcomes among farmers include high workload and lack of clear job descriptions (Carruth & Logan, 2002), low levels of job control, which, together with increased demands, are associated with poor quality of life and mental health (Landsbergis, Grzywacz, & LaMontagne, 2014) and the unpredictability of weather patterns, economic conditions and government regulations.

MATERIALS AND METHODS

The context of the activities of agricultural entrepreneurs in Romania

Romanian agriculture has gone through multiple and profound changes over the last century, which has become more intense in the last 50 years. From the agrarian reform, when the poor peasants in Romania took over the means of production and land, regardless of its destination in 1991 (land fund reform), a process that has not yet ended, there has been a crucial period which fundamentally modified the relationship between the factors of production in this branch of the

national economy, namely the collectivization, in 1949 - 1962.

All these have caused a major instability in this economic branch with major effects reflected in the performances and the contribution to the GDP of Romania. In addition to this unfavourable history, many other factors that favoured or even constituted sources of stress with adverse effects on productivity in this area acted on the human resource involved in agriculture. After 1990, the relocation of the property to the land fund caused the fragmentation of agricultural holdings and farms (most were abolished after 1990), a process with long-term negative effects (over 20 years). The reconstruction of farms on large areas is very difficult, primarily because of the psychology of the people who have become owners of the means of production in the field and for whom the property right in which to exercise all their duties has become an objective on which does not give up easily. Although large farm sizes would be prerequisite for their efficiency, however, small farms are more adaptable to the market.

Private property on the land fund increased from 1.89% to 1.96% of the total national private property.

The agricultural market in Romania was developed especially for niche crops such as: truffles (in greenhouses), industrial plants, vegetables and biological cereals, crops of exotic plants adapted, noble varieties of grapes for quality wines, etc. but also of the cereal crops and vegetables on large areas due to the clarification of the ownership situations on the lands and the appearance of the farms of medium and large size, especially with foreign capital.

Regional situation of agricultural holdings

Statistical data shows that South Muntenia region owns 16.91% of the agricultural area used at national level as a farm (INS, 2016). In 2016 both used and unused agricultural holdings located in this region hold 20.02% of the national cultivated area. Compared to the land areas with specific destinations at national level, South Muntenia Region holds a significant share.

From the point of view of animal breeding, according to the same study, South Muntenia Region recorded 14.74% of the total number of livestock farms in the country. The structure of the crops and the livestock, compared to the values registered at national level are presented in Table 1. For the livestock the comparison was made based on the data expressed in LSU (Livestock Unit) - standard unit of measure which allows the aggregation of different animal species and categories for the purpose of their comparing.

The South Muntenia Region benefits from plains suitable for arable land, kitchen gardens and for pigs, poultry and goats farms, hills for permanent

crops and livestock farms, and mountains for sheep and bovine farms. Regarding the share of different forms of legal organization of activity in agriculture in the Southern Region of Muntenia compared to their number at national level, agricultural holdings without legal personality or individual agricultural holdings represent 20.76%, authorized individuals, individual companies, companies family 6.67%, agricultural holdings autonomous administrations 18.11%, agricultural companies / associations 23.56%, commercial companies with majority private capital 25.56%, commercial companies with majority state capital 12.69%, the data are presented in Table 2. At the regional level, individual agricultural holdings hold a share of 98.5% of all agricultural holdings, representing over 20% of such holdings at the national level. Few farmers wanted to organize themselves in the form of authorized natural persons or individual companies, for reasons that will be analysed with the answers of agricultural entrepreneurs, on the same topic. Of the forms of organization with legal personality, the largest share is held by commercial companies with majority private capital, about 1.28% per region. However, at national level, they represent over 25% of the total of such companies. Starting from these data, it was considered that the analysed region has a complex structure of agricultural production, it contains entities that cover all forms of organization and a very good potential. From this point of view, the study is considered relevant for the research objective, namely to identify and evaluate the intensity of stressors specific to agricultural entrepreneurs.

Methodology

At the Southern Region of Muntenia, a mixed analysis was performed, both quantitative based on statistical and qualitative methods.

The general objective of the research refers to the identification and measurement of stress factors that create vulnerabilities and risks that can negatively influence the achievement of the agricultural entrepreneurs' performance.

The specific objectives were those regarding the influence of the size of the worked surfaces, of the livestock, of the forms of property, of the level of education, of the way of organizing the household but also of the physical, chemical, natural and anthropic factors on the stress felt by farmers.

The hypothesis from which it started was that the agricultural entrepreneurs, due to the specificity of the occupied position but also of the economic branch in which they operate, face many stressors that can affect their performance.

The quantitative research was based on the collection of data from respondents from the territory of the region based on a structured questionnaire, with closed questions. The sample of

questioned agricultural entrepreneurs was randomly selected.

The research strategy is deductive and predictive because stressors are intuited by the researcher and verified through questions.

The questionnaire considered farms and livestock farms in the South Muntenia Region and contains a total of 11 questions.

The questions were designed to provide as much information as possible about work capacity, vocational training, property relations and respondents' activity. The characteristics of the respondents according to the geographical areas within the region, the age range, training, gender, etc., highlighted by the answers corresponding to the questions in the first part of the questionnaire aimed to argue the representativeness of the sample for the proposed study.

For the transmission of questions and the collection of answers, the SurveyMonkey platform was used, which also provided a primary processing of the answers.

The authors' processing of the data was done both on the basis of the synthesis tables and the graphs that provide comparative information.

The confirmation of the factors, but also the measurement of their intensity as a source of the stress caused to the agricultural entrepreneurs, was made with the help of the answers to the questions in the second part of the questionnaire. The transition from the identifying questions of the categories of subjects to those pursuing the objective of the analysis became fluid, without a major change in the approach that influences the quality of the answers.

The answers allow a qualitative study of the data using an inductive research strategy.

The data were obtained from the collection of 276 answers to the questions transmitted online and will be presented during their analysis in the chapter three – "Results".

RESULTS

Analysis of the main characteristics of agricultural entrepreneurs

The form of ownership, which also implies the type of legal liability on the economic facts of the people involved, is presented in the Figure 1.

The most important ones involve and affect the individual level or the management, being the first 4 forms of manifestation of a property attributor on the capital goods. These are the most vulnerable to risks and are determined by strict levels and implicitly affect the work productivity in agriculture. Individual agricultural holdings, which do not have any association forms, hold the highest share of respondents (58.20%). This is due primarily to the small areas that can explore small

livestock on farms, most often for their own needs. Another factor that predominates, therefore, might be property and the reluctance of the people from the rural area towards aspects for bureaucracy, which implies another form of legal organization and could become a stress factor. There were taken measures for the organization of agricultural owners under other legal forms of manifestation of property relations, but without greater results. However, the efforts of central or local public authorities to change the legal form of farmers has led to a significant increase of authorized natural persons (9.02% of the answers) and individual companies according to 13.11% of those who did part of the questionnaires.

A major influence on the forms of ownership practiced in agriculture had the Romanian cultural model, which was marked by the five decades of centralized economy, developed a predominantly dual characteristic of the people in this sector. The agrarian reform of 1945, through which the areas of private property were reduced to a maximum of 50 ha led to the appropriation up to five ha of more than 900,000 peasant families. Between 1964 and 1990, the size of private property was greatly reduced by Decree no. 115/1959: "The households of the middle-class peasants who work the land themselves, together with the members of the family with whom they run the household, not exploiting foreign labor, although in some years they are forced to help, with a small number of days, with other peasant workers, for the termination of other peasant workers time for some agricultural work to be done in the short term" (BO, 1959). The same decree, moreover stated: "The owners who suffer the provisions of art. 1, paragraph 2 or 3, will show what area of land themselves and the members of the family can work with and propose to which collective farms or other socialist agricultural organizations would be used for the extent of the land (BO, 1959).

In this way, the remaining areas owned by individuals were very small, usually gardens near the house. << The Plenary C.C. of the P.M.R. from 1961 informed about 89,000 peasants arrested, of which 37,000 midfielders and 7000 poor, only for the time segment 1950–1926. It is worth mentioning that in the "Agricultural Register", the rural population was registered in: Chilean household with land of over five hectares, medium household with 3.5 - 4.5 hectares, small household of 1.5 - 2.5 hectares, and those who only had a garden and a house were called "poor peasants". >> [26], the latter being those who remained owners on the small areas of land held.

At the same time, through the intensive industrialization in 1950, the number of people employed in this economic sector has increased. "The labor force in the years of socialism is noted by the continuous, almost linear

increase of the share of the number of employees in the total employed population. Therefore, if in 1950 the employees owned only 25.3% of the employed population, in 1970 their share had doubled (51.7%), reaching in 1989 at 73.5%. [...] Another phenomenon specific to the communist period was the rapid reduction of the labor force in agriculture by migrating the population from the village to the city, as an impact of industrialization" (Andrei, 2018).

These data partially reveal a process of migration of the employed population from agriculture to industry. In fact, many post-1950s industry employees keep in touch with the agricultural land in the vicinity of the home, working with family or alone, after work hours or on holidays. They gain a dual status: employees in industry and semi-farmers, a situation that was maintained in and after 1990. In the first years after 1990, the phenomenon becomes larger, until the massive restructuring of the Romanian industry. Although later, with the reconstruction of agricultural properties prior to 1945, some of the employees in the industry become owners of agricultural land, not giving up the work in factories. This situation has also influenced the structure of the respondents, where it is seen that in over 50% of these agricultural activities they have a secondary character (Figure 2).

The main motivation for these people to carry out activities in other fields is the risk associated with agricultural production, which, in Romania, due to poor technology but also to other agro-technical work is very high. Maintaining the dual status allows them to reduce the risks of an exclusive income from this branch and also from the associated stress. But this statute determined, on the other hand, the maintenance of a close relationship with the agricultural property which, after the 1990s was manifested by a major reluctance to lease or any other form of association and to an increase of the population employed in agriculture at one time.

The psychology of the Romanian agricultural worker is based on the property relationship with the land which he works on, and this relationship is seen as an objective in itself and is a tradition (Figure 3).

Among the characteristics of the exercise of private property are the emotional implications of the people who have a form of ownership over the means of production in agriculture. This fact determines the pregnant manifestation of both stress with its extremely distressed form and eustres. Therefore one can consider that these people are the most subject to extreme emotional experiences, with implications on the physical and mental health on the one hand but also on the economic performances on the other. For this reason the questionnaire was addressed exclusively

to the persons involved both patrimonial and lucrative in agriculture.

Farmers who, besides the land owned by themselves, have taken over areas most of the time adjacent to the lease, have had as motivation the increase of the profit on the background of a lower increase of the expenses in relation to the increase of the income. In this case, the motivation of a higher profit exceeded the potential stress caused by the fear of being unable to pay under the conditions of making some productions inferior to the one provided in the lease. Also, in order to mitigate this risk, farmers can sign insurance policies, but at the level of 2019 only 21% of the agricultural crops in Romania are insured. In order to encourage farmers to mitigate the effects of producing risks that may affect their performance with the help of insurance, a subsidy program for insurance premiums has been developed.

The large number of farmers working exclusively on the land they own is explained by the increased weight of the areas under five ha (Figure 4).

The risks faced by farmers cultivating small areas owned are primarily those related to the technical equipment necessary for the activity carried out. Generally, these farmers have a low financial resource, which does not allow them to purchase agriculture machinery and installation. On the other hand, due to the small surfaces, the machines recover their value more difficultly. At small farms the fixed costs per unit of product are high, which implies the vulnerability of the financial result. This phenomenon can be identified as a stress factor by agricultural entrepreneurs because a poor technology increases the risk determined by the weather conditions but also by the potential invasions of pests.

Small farms have the advantage of flexibility of the crops depending on the evolution of the demand; the relatively reduced human resources consumed which simplifies the compulsory bureaucratic system, simplifying the system of taxation and state control. Probably the biggest advantage is the sole control held by the owner with all the advantages that this aspect implies, such as the freedom of decisions and the complete appropriation of the usufruct.

The organization as an individual enterprise or legal entity was encouraged by financial mechanisms and facilities provided by state-authorized bodies, such as accessing government or community support funds.

Following the analysis of the answers it was found that there are few agricultural entrepreneurs who have economic entities with a different legal regime than that of the natural person. One of the explanations for this phenomenon is that as the legal nature of the economic agent imposes a more complex organization, the difficulty of its administration increases. Limited liability

companies require complex decisions, good knowledge of the legal and economic aspects, all accompanied by bureaucracy.

In order to avoid bureaucratic stress, most entrepreneurs do not readily accept to register as legal entities. People with high school education or higher education are the ones who, most often, go to a higher level of legal organization of the farm.

If one would analyse the structure of the respondents having as a classification criterion the level of the studies, it would be found that the highest weight is held by people with bachelor's degree studies, followed by those with high school education and those with vocational education (Figure 5).

This distribution is due to the ease of working with the computer of the people with secondary and higher education. At the same time, these entrepreneurs are willing to allocate the time needed to answer the questions due to increased empathy ability towards the people who launched the study but also because of the understanding of the importance and especially that they can be potential beneficiaries of the study result.

Over 54% from the rural population had secondary or higher education, according to the statistical data in 2018. The percentage corresponds to the European average and creates the premises for the proper development of entrepreneurship in the rural area. But this percentage is not enough. They need to be well informed and receive entrepreneurial education precisely in order to decrease the potential stressful effect of the regulations in the field they must respect but also to increase the desire for progress in the activity they undertake.

Although the entrepreneurs who deal with the cultivation of plants predominate among the respondents, they are closely followed by those who carry out mixed activities, that is, the raising of animals. The high number of those who cultivate plants comes as a natural result of the ownership of the land areas retracted under the conditions presented above. The development of mixed activities comes both from the complex needs of the producers and from the instinctive reaction to diminish the risk by diversifying it, also as an anticipated defense reaction to a potential stressor. Among the most important benefits of animal breeding are the low vulnerability to the local climatic conditions and the increased profitability of most crops.

Due to the specific nature of the agricultural activity which involves physical work performed in sometimes difficult conditions, but also due to the need to take risks, the number of women working as entrepreneurs is about half that of men (Figure 6).

The phenomenon is a result of the cultural model of the traditional European and classical Romanian society, in which women were not encouraged to

entrepreneurship, especially in areas that involved physical labour in difficult conditions.

From the point of view of the distribution of the respondents according to their age in the activities of this economic sector, it is noted that most people have little experience in the field, which shows that there is a rediscovery of the economic potential of agriculture. Another factor that explains the lack of experience is given by the transformations that took place following the economic crisis from 2007 to 2010. The temporary lag of manifestation in agriculture of the economic crisis is due to the inertia of changing individuals.

The analysis shows that most people employed in agriculture that answered the questionnaire, are between 36 and 45 years old and followed by those between 46 and 55 years old. They are most often people who practiced other activities in other economic branches. Due to short-term factors such as: layoffs in industry and services, the development of the agricultural products market and the confirmation of the profitability of investments in this branch, they made the decision to highlight the land holdings. Beside them, as it was shown above, there are also the people who work their own land to supplement the income obtained from other activities.

Regardless of the motivation that determined them in making the decision to be active in agriculture, those in the 36-55 age range represent individuals who are fully capable of working from a physical point of view. Considering this characteristic, psychically, the persons concerned are willing to engage in various economic activities, to take risks and to act in order to increase the incomes of their own households. This is the age range in which active people have the ability to withstand the highest level of professional stress generated by all the specific factors they face. As those people grow old, their stress resistance decreases and they are willing to give up entrepreneurship. These people will quit being active, only to keep their farm property. In this case, they will lease all or part of the land they own or give up by selling the farms. It can be stated that from this point of view there is a Gaussian distribution of respondents to the questionnaire for assessing the psychosocial risks for agricultural entrepreneurs, according to age (Figure 7).

The civil status is an important aspect in the analysis of the farms, especially since some of them work in the family. A number of factors have determined that the percentage of married respondents is three times higher than that of unmarried (Figure 8).

These factors include: the Romanian rural cultural model according to which people between 25 and 35 years of age marry (Iagăr, 2018); assisting in the carrying out of agricultural works, including the division of household tasks and not least the feeling

of diminishing stress by sharing tasks and support in achieving the objectives.

Families, which in most cases have children, have a much stronger motivation in the perseverance with which they engage in various activities, increase the level of accepted risk for which they are engaged in carrying out different tasks and are more inclined to take initiatives that get them involved, which offers a higher hope of raising the standard of living.

The influence of stress on the activity of agricultural contractors

Questions directly or indirectly related to potential stressors proposed that, subject to anonymity, respondents be given the chance to be as honest as possible about what they consider to prevent them from achieving high performance in managing their activities.

A first category of factors is the external ones, which action especially at the level of the agricultural entrepreneur's psyche. These factors are noticeable through the concerns and worries induced especially by identifying the ways of diminishing their effects. Their negative influence is manifested by an increased consumption of time by the farmer, additional costs for reducing the influence of the factors and especially a psychological wear and tear which most often has negative effects on the health status. The risks of the uncontrolled action of these factors are, in addition to reducing the economic performance of the farms, that the affected people look for easier methods to reduce the pressure of these stressors such as: alcohol consumption, smoking, nervous bursts on family members and with other close persons (the incidence of antisocial acts in the rural area is high) (Ivan & Maxim, 2018).

As a result of the responses, it can be stated that all the six risk factors and implicitly stressors identified exert great pressure on agricultural entrepreneurs. The intensity of the farmers' concern about these factors is shown by their hierarchy (Table 3).

The analysis of these factors was made using the weighted average number of responses for each level of intensity of manifestation. As result to the distribution of the answers, only the answers for medium intensity ("to a large extent") and high ("to a very large extent") were considered significant. In this way, it was found that the most stressful factor from the farmers' point of view is given by the insufficiently founded political initiatives (55.92%). The political instability together with the legislative one determined the fear of the unpredictability of the activity, a phenomenon considered a major source of stress by entrepreneurs. The following risk was considered "labor shortage" which resulted in an average of 36.05 concern among entrepreneurs. Unfortunately,

several factors led to the impoverishment of rural people and the aging of the workforce. A major factor was the emigration of young people to foreign countries for a better income. The third place is "Loss of crops and / or animals due to extreme weather conditions". The natural factor that has the highest risk potential and which is a permanent concern for farmers and implicitly induces major stress is the weather one.

That is, in the current context of climate change, the main factors that determine the performance of agricultural holdings and will significantly influence their orientation.

From the point of view of the agricultural contractors questioned, the deterioration of the quality of the soil as well as the decrease of the quantity of water affects them to a lesser extent than the adverse climatic conditions. Moreover, between the two factors there is a relation of conditionality, meaning that the lack of precipitation determines both the quality of the soil and the humidity of the soil, ultimately, the weather conditions are the determining factor (Table 4).

The analysis of the answers shows that farmers do not have irrigation facilities, high performance machines, advanced knowledge on crop rotation and also on the treatments of the fertile soil layer so that it preserves or even grows its properties favourable to agricultural crops. Most agricultural entrepreneurs do not have specialized entrepreneurial or agricultural studies. These factors which involve major concerns to farmers generate a great deal of stress felt by them, especially since they cannot be directly controlled. Their effects are diminished through investments.

The expenses generated by investments that reduce the impact of climate change, of extreme natural phenomena, are among the highest requested by plantations. The need for financial resources requires a series of actions from the entrepreneurs (financing, equipment purchase, insurance, commissioning, maintenance, etc.), each action being, in its turn, a source of risk factors that imply potential stressors for farmers, especially that in most cases they are not prepared in the economic-financial field.

Factors with an impact on the physical health status of agricultural contractors were analyzed through a series of five questions. The most important factors considered by the authors were chosen, so that they cover all the areas of activity of the agricultural entrepreneurs. The impact of these factors was measured as the frequency of interaction with the subjects, considering the periodicity of the exposure to the factor as the main measurement of the effect felt by the farmers.

The graph in Figure 9 represents the intensity of the effects of the physical, weather and chemical factors felt by the agricultural entrepreneurs,

determined as a weighted average according to their answers.

The stressors identified by the author were completely validated by the respondents.

The main factor identified as generating stress with potentially harmful effects on the state of health felt by those working in agriculture, is the physical fatigue, with a weighted average of 3.56% intensity of the effect felt. It is the result of poor technical endowment of the farms. Most farms have areas of up to five hectares, and the number of animals held on the farm is most often between 21-50 animals (15% of respondents) and between 101-500 animals (14.88% from respondents). Such farms do not have the capacity of self-financing to allow them modern technical facilities, so that much of the activities are carried out manually. Thus, physical fatigue is present.

The effects of this physical stress factor may have little negative influence on farm performance when the level of fatigue can be largely eliminated or diminished by daily or weekly rest. In agriculture there are periods of maximum demand, when the rest time is insufficient. It is important for such periods to manifest on shorter terms.

If it exceeds the daily capacity to recover, they may feel exhausted. In this situation their performances decrease, risking to abandon the activity.

The level of fatigue felt depends on the individual, on the physical form, the psychological resistance but especially on the degree of satisfaction felt as a result of the obtained results (the intensity of the passionate motivation). The consequences of physical fatigue over the limits of compensation of the body can be manifested both as inattention that can cause accidents and by illnesses depending on the organs or systems of organs subjected to intense stress. In extreme cases, the consequences of physical fatigue can even lead to abandonment of activity.

The following factors identified as having a negative impact on the workers in the field were analyzed together taking into account that they have as characteristic the polluting physical action exercised on the workers. Extreme temperatures and dust are specific factors especially for those who work the cultivated land surfaces. The loud noise, the vibrations and the vapors from various agricultural machines or the processing of agricultural raw materials are found especially in enclosed spaces. Entrepreneurs who are most often directly productive workers in agriculture responded 3.32% to be affected by these harmful environmental factors.

Unfortunately, diminishing the influence of these factors implies additional costs that agricultural entrepreneurs hardly face because the limited financial resources often reach other destinations considered appropriate.

Physical work, which involves repetitive movements that must be performed by agricultural workers, uncomfortable working positions (bent or extended, coming or twisting), but also the lifting and handling of weights that overloads the muscular-bone system is the next category of factors indicated by the respondents as being responsible for the stress felt. These factors mainly determine physical fatigue in the short term, but if repeated, it can cause serious diseases of the locomotor system, the skeleton and the skin. In extreme situations it can lead to chronic uncomfortable pain and even deformities of the body. Usually, these conditions end with partial or total incapacity for work, temporary or permanent or, even worse, with the death of the person. However, the work capacity and performance of the person working in agriculture decrease as the fatigue or the illnesses increase.

The detection of these jobs as well as of the exposed people must cause immediate action to correct the working conditions.

The chemical pollutants as well as the biological risks that the agricultural workers face are less noticed as factors affecting them in the activities carried out.

DISCUSSIONS

Entrepreneurs from Romanian agriculture are mostly middle-aged people, between 36 and 55 years old, so with work power and considerable psychic strength, having experience in the field for up to 10 years. They run relatively small farms with areas up to five ha or up to 500 animals. In most cases the land is the property of the contractor, who works as a natural person and the predominant activities are plant cultivation or mixed activities (plant cultivation and animal raising). Most entrepreneurs are married people, who often carry on an activity in another field.

All these characteristics create the premises of a strong agricultural typology, stable due to land ownership but also to the family situation, but without the vision of development, with limited resources, little willing to take major risks.

From the point of view of the stressors, all those proposed by the author have been validated. Their grouping of questions proved correct because it allowed respondents to identify and prioritize their answers.

The methods of measuring the impact of stress factors have been used properly, choosing their various characteristics such as the duration of the manifestation, the intensity of the felt effect, the frequency of the contact of the people with the factors.

CONCLUSIONS

Following the study, it was found that there is concern and attractiveness for this economic sector at the region level, but entrepreneurs face with various phenomena that most often tend to decrease their performance.

These phenomena appear as an effect of the manifestation of factors that generate worry, anxiety, physical fatigue, discomfort, and in the long term they can give rise to acute or chronic conditions that diminish their ability to work.

Two categories of stress factors were analyzed: external and internal factors in relation to the activity performed

The main external stress factor identified relates to insufficiently substantiated policy initiatives. According to the respondents, it was found that political decision-making instability as well as decisions taken on the basis of subjective interests, without following a medium or long term program and especially without knowing sufficiently the reality and needs of agricultural workers is a constant and powerful source of stress for entrepreneurs. The stress is given by the lack of predictability of the actions of the entrepreneurs, especially since in this economic branch the production cycles have long durations, up to a year, the activity being often seasonal. Moreover, investments in both crop and livestock are made in the long term because it must be taken into account that from the time of the investment to the time of reaching the normal production capacity there must pass several years.

Because political decisions often do not have a strategy as a basis that is maintained for a long time, neither can the legislation be coherent and change very often. Hence the risk of entrepreneurs not having the necessary time to know the legal provisions that could help them in carrying out their activity or which, on the contrary, impose restrictions that can easily be violated with the repercussions of rigor. That is why many entrepreneurs do not know very well how they can benefit from state aid in various forms, which is why they cannot develop. Moreover, this phenomenon favours certain entrepreneurs who have easier access to these aids, in defense of unfair competition. It can even go as far as bankrupting some farms and the fear of bankruptcy is probably the greatest stress for an entrepreneur.

The next stress factor is the lack of labour force due to an inadequate state policy towards the young people from the rural area, the farmers having to resort to the old population from localities or to bring workers from other places This factor may cause entrepreneurs not to grow their business.

The global warming process has significantly affected the continental temperate climate that Romania benefits from. In this context, extreme

weather events occurred, most important being droughts, floods, hail, which deeply affected the crops and which are important stress factors for entrepreneurs (ranked 3rd according to the weighted average of responses). Their control can be done by the state (eg. hail) or by farmers (eg. irrigation), in both cases requiring large financial resources.

Another stress factor is the low purchase prices of agricultural products, prices determined by cheap imports, from countries with developed agriculture.

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Table 1
Weight of agricultural activities in the Southern Region of Muntenia compared to the values registered at national level

Agricultural occupations		South Muntenia /Total
Livestock (LSU)	Bovines	11,71%
	Sheep	8,25%
	Goats	16,66%
	Pigs	16,08%
	Poultry	24,76%
	Equidae, (mules and donkeys included)	14,79%
	Rabbits (breeding females)	9,87%
Utilised agricultural area	Arable land	16,36%
	Kitchen gardens	21,11%
	Pastures and meadows	14,43%
	Permanent crops	20,55%

Source: Authors processing

Table 2
Weight of the different forms of legal organization of the activity in the agriculture of the Southern Region Muntenia compared to their number at national level

Forms of organization of agricultural activity		South Muntenia /Total
Agricultural holdings without legal personality	Individual agricultural holdings	20,76%
	Authorised natural persons, individual companies, family companies	6,67%
	TOTAL	20,67%
Agricultural holdings	Autonomous administrations	18,11%
	Companies/agricultural associations	23,56%
	Commercial companies with private majority capital	25,56%
	Commercial companies with state majority capital	12,69%

Source: Authors processing

Table 3
Risk and stress factors for agricultural entrepreneurs

Risk factors and stress for agricultural contractors	The degree of impairment	Largely	To a great extent	Final score
Insufficiently substantiated political initiatives		64.10%	6.84%	55,92%
Lack of labor		61.02%	15.25%	36,05%
Loss of crops and / or animals due to extreme weather conditions.		44.07%	7.63%	29,49%
Market prices too low for agricultural products.		44.92%	13.56%	27,50%
Lack of real lending facilities		40.68%	8.47%	21,35%
Manual labor in the absence of specialized agricultural machinery / machinery		38.98%	11.02%	16,61%

Source: Authors processing

Table 4
Environmental risk and stress factors

	To a very small extent	To a small extent	No / No	Largely	To a great extent	Weighted Average
„Unfavorable climatic conditions	0,85%	15,25%	4,24%	71,19%	8,47%	2,29
Deterioration of soil quality and quantity of water	1,69%	23,73%	10,17%	55,93%	8,47%	2,54

Source: Authors processing

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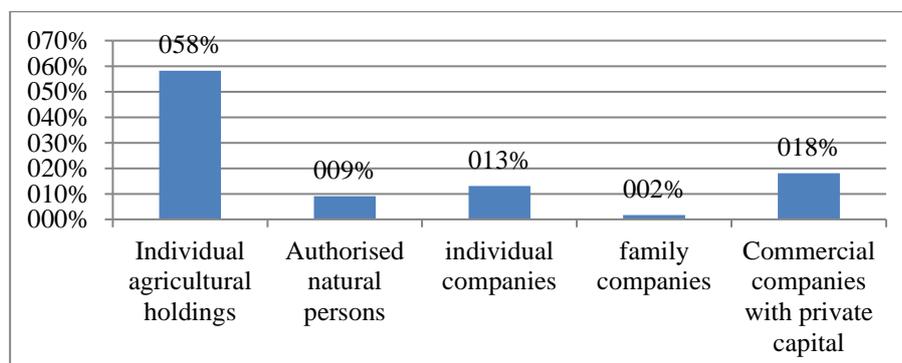


Figure 1
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Source: Authors processing

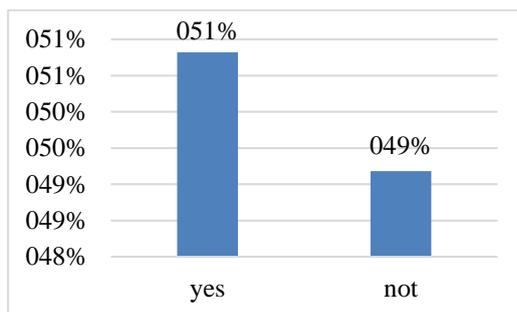


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 Source: Authors processing



Figure 3
Land ownership graph in which the agricultural entrepreneur, respondent to the questionnaire, carries out his activity
 Source: Authors processing

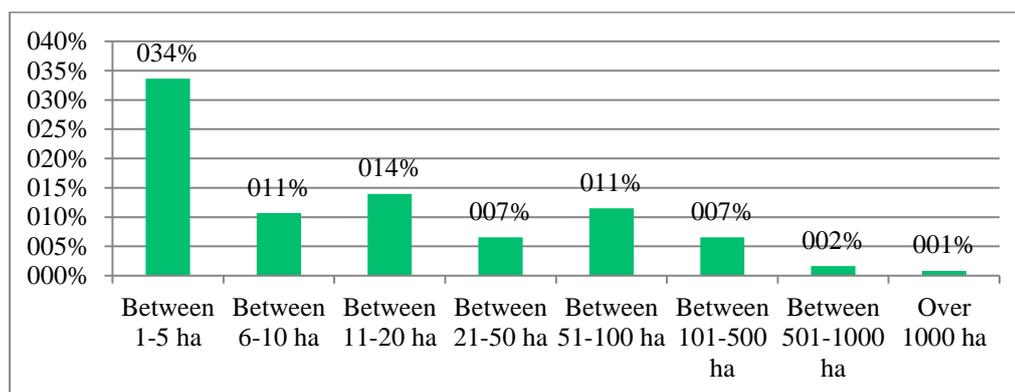


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 Source: Authors processing

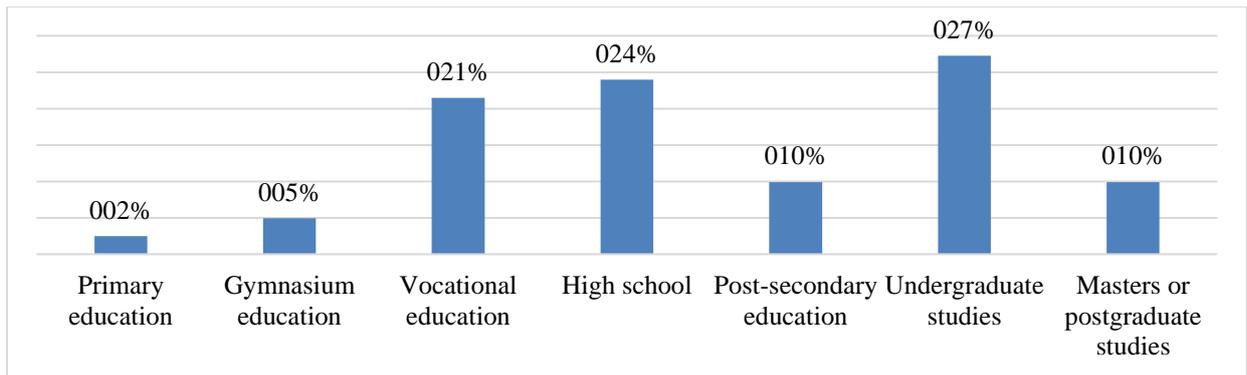


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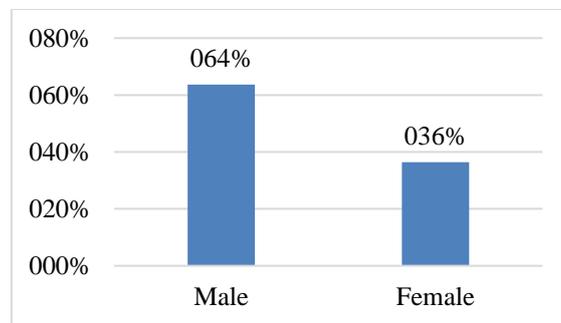


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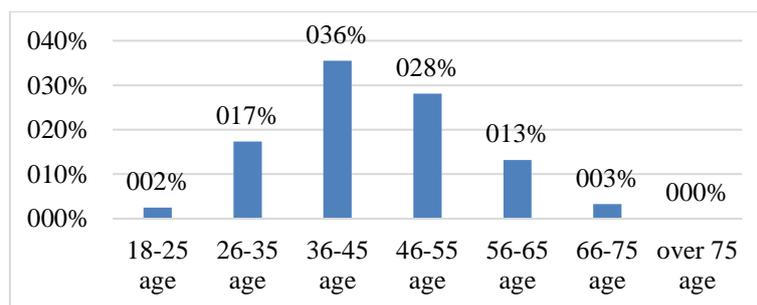


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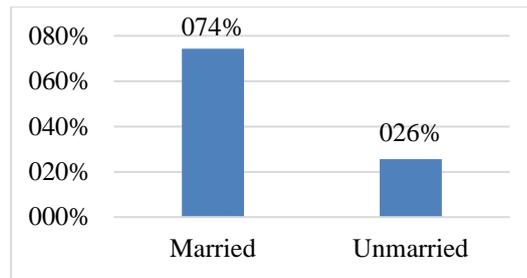


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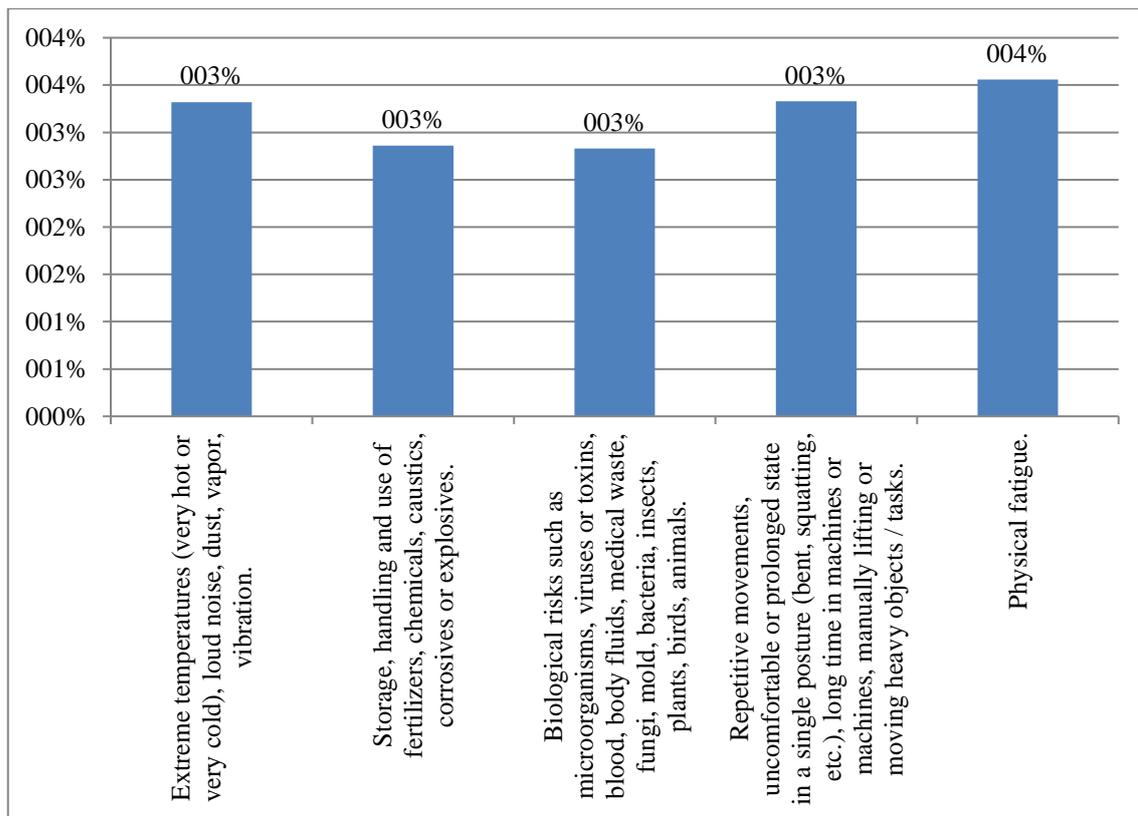


Figure 9
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Source: Authors processing