

WHAT ARE THE MAIN IDENTIFIED NEEDS AND OCCUPATIONAL HEALTH AND SAFETY ISSUES IN WORK ON SHEEP FARMS?

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Abstract

This article fills a gap in the international academic literature, regarding security and safety at work in sheep farms, as well as the main health problems of workers in this type of farms in Romania. The issue of safety and physical and health of sheep farm workers has been little studied in general. The issue of health and safety at work on sheep farms is presented from a multi-actor perspective, promoted within the Safe Habitus project. To identify the main needs and work risks in sheep farms, as well as the causes of workers' illnesses, qualitative research was carried out based on observations, workshops, semi-structured interviews and visits to sheep farms. The main results refer to negative experiences from current activity in sheep farms; needs of the workers; the risks of worker injury and illness and the main health problems. In the current activity of sheep farms, workers (sheep owners or employed staff) face various negative experiences related to work in variable weather conditions, waking up in the morning, early involvement of children in the farm activity, a negative image of shepherds' children. Workers in this activity sector have a large series of specific needs: increased support for small farmers, the lack of labor force, especially the qualified one, lack of identity documents of temporary workers and refusal to work in a legal framework, the distribution of communal pastures in relation to the livestock owned by breeders, lack of school education on occupational safety. The workforce on sheep farms is prone to illness due to hard work and long hours, lack of protective equipment, handling chemicals, outdated equipment and animals, living conditions and poor hygiene. The identified health problems are closely related to lifestyle: alcoholism, rheumatism, digestive problems and diseases of the spine. National and international programs and regulations are needed that also consider the social aspects of sheep farm work, as well as the introduction of farm work safety education at all levels of education.

Key words: workforce, safety, security, healthy problems, sheep farming

INTRODUCTION

The issue of health and safety in agriculture and animal husbandry work in Romania should concern researchers in the field, considering that Romania ranks first in the E.U. regarding the large number of people employed in agriculture. Agriculture is one of the employment sectors that involves major health and safety risks in Europe.

The analysis of the structure of the population employed in agriculture in Romania shows an accentuated aging process. Ever since the early 2000s, people aged 55-65 and over represent around 55% of the total number of workers in agriculture [11]. A report from the European Commission shows that there is a

marked aging of the agricultural workforce in Romania, respectively, over 44% of people over 65 years old [4].

With 13.5 million hectares of land used for agriculture [4], in Romania, agriculture is an essential part of the rural economy, providing jobs and income for locals and generating food products needed by the entire population [10].

The sheep breeding sector in Romania has a thousand-year tradition, being the source of income for many families, which has determined that the country to be ranked the 2nd in the EU in recent years, from the perspective of the sheep herd owned (10,087,400 heads in 2021) (Figure 1).

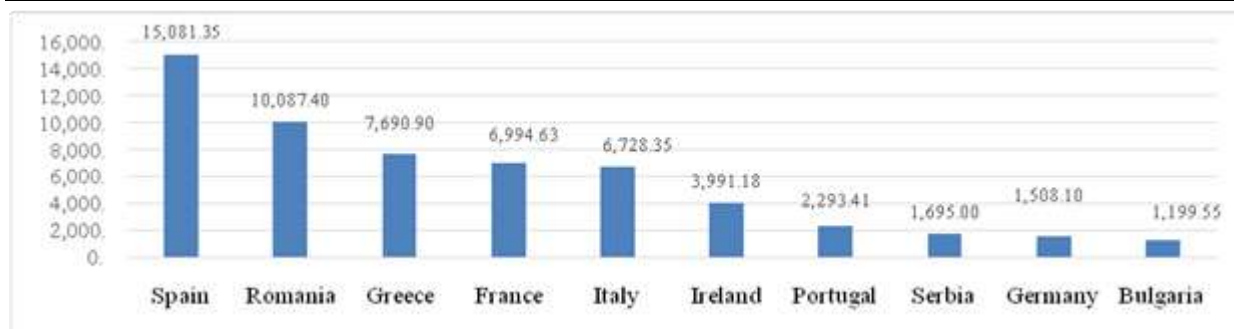


Fig. 1. The number of live sheep registered in 2021 in top 10 EU states (thousand heads animals)
 Source: Own design based on [6].

Working on a sheep farm involves diverse and multiple tasks (starting from the production and preservation of fodder, animal care, valorization of production, etc.), which also makes the risks and health problems quite high compared to other fields of activity.

The study published by Coman et al (2024) highlights the general tendency in Romania to reduce the area cultivated with the main agricultural crops and the labor force in agriculture [3].

The most important skills needed by today's agricultural workers are digital skills and knowledge of modern farming practices. In addition, workers must have skills of effective communication, teamwork, environmental protection and knowledge of agricultural legislation [7]. The demand of the agricultural labor market places an increasing emphasis on well-established digital skills, competencies and professional experience [9]. For a sustainable and efficient agriculture, change, innovation and technology are essential [18].

The current age structure of the rural population, the differences in the quality of life between urban and rural areas, as well as the existence of better-paid jobs in urban areas, make the attractiveness of agricultural jobs limited [14,15,17].

Several elements contribute to the employment structure within a country, and opportunity structures certainly influence how people assess the attractiveness or unattractiveness of various employment sectors.

According to the data published by Mărcuță et al (2023), on January 1, 2022, the population employed in agriculture, forestry and fishing

in Romania was 846,500 people, predominantly male [12].

Labor productivity in agriculture depends on several factors, such as: land use, farm structure and size, technological equipment, production technologies, demographic structure and demographic changes occurring in rural areas [16]. About 90% of the approx. 3.5 million existing farms in Romania use less than 5 ha and are subsistence farms [4].

The age structure of the total population of 2,887 million people implied in agriculture in Romania indicates an aging population and a very low interest among younger generations in working in agriculture (Figure 2).

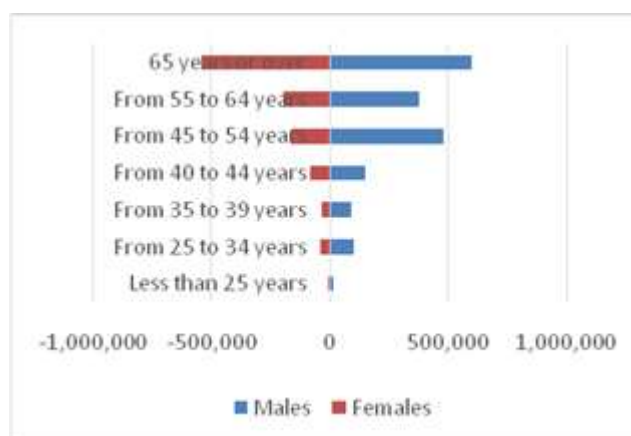


Fig. 2. The age structure of the people employed in agriculture in Romania
 Source: own design, after [5].

Choi et al (2024) classified the causes of accidents in agricultural work environments, using an innovative technique, the 4M tool (machine, media, man, management). The purpose of this technique was to suggest the main directions for the creation of prevention measures. The authors pointed out that there are few studies on the causes of accidents in

agricultural work. The most common causes identified are: improper handling of agricultural machinery, working in poor conditions, insufficient education and lack of legislation and regulations [2].

Wheeler and Nye (2024) shows that there are very few studies investigating farm accidents or farm health and safety risks among women. Among the causes identified are: long working hours, manual work, work with animals, underestimation of injury risks and lack of training [19].

A study of 313 dairy farms in Ireland to identify factors that contribute to a better working environment for farmers shows that social sustainability on farms is particularly important. It is influenced by the type of farm and its characteristics, the structure of the working day, the attitude of the farmer, the facilities on the farm, current work practices and human resource management [8].

To educate teenagers about farm accident prevention, researchers in Australia have developed an interactive educational game platform that also contains more than 50 lessons. It can be included in the school curriculum, can be completed in the classroom or from home using the mobile phone [13].

The article employs a social science-specific approach to produce empirically based knowledge relevant to understanding the status of safety and security in agricultural work, and the main health issue, with attention given to the sheep farming sector in Romania.

MATERIALS AND METHODS

The research is based on: bibliographic study of the national and international specialized literature on the security and safety of work in farms, as well as the health of agricultural workers; observations of the authors made on the occasion of 3 workshops on the topic of security and safety in work on sheep farms; observations and field visits made to sheep breeding farms in Sibiu County; interviews conducted with members of a community of practice (CoP) which is made up of people

representing different stakeholders in this field.

Within the SafeHabitus project, a community of practices (CoP) was established, it includes stakeholders interested in the topic of occupational safety and security, and the health of workers in sheep farms in Sibiu and Braşov counties, Romania. The community of practices includes representatives of local administrations, sheep breeders' associations, farmers, researchers and teaching staff from high school and university education.

To deepen the research regarding work in sheep farms, five semi-structured interviews were also carried out in year 2023 with some of the members of the CoP. The Romanian CoP administrator carried out five interviews with representatives of the CoP CG, including three representatives from the private, one from the public sector, a researcher, and an end user. The interviews were transcribed by two researchers, and the results obtained were analysed, systematized and allowed drawing some conclusions.

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1. What are the main grievances and needs identified in working on sheep farms?
 2. What are the main causes of work stress and the main sources of sickness among workers in sheep farms?
 3. What are the main risks and causes of accidents at work on sheep farms?
 4. What are the main health problems faced by workers on sheep farms?
 5. What changes are needed to improve the occupational safety and health of workers on sheep farms?

Fig. 3. Research questions
Source: own design.

Several visits were made to sheep farms in Sibiu County, identified in such a way that the number of animals in the farm is greater than 500 heads.

Within this general research framework, we are primarily interested in answering the **research questions** (Figure 3).

RESULTS AND DISCUSSIONS

Results obtained from CoP meetings

Within the CoP meetings, three workshops were organized in the 2023-2024 interval. Some of the main preliminary conclusions drawn during the CoP meetings are presented below.

The main dissatisfactions/negative experiences identified are: the impossibility of capitalizing on wool production; waking up very early in the morning; milking in adverse weather conditions; the involvement of sheep children in farm work from a very young age; the negative perception of the urban community regarding sheep farming and sheep's children; the need to stay home during the holidays over the year, while the employees spend the holidays with their families; sheep owners work "continuous flow" and must be permanently present on the farm; sheep owners must put employees first, at the expense of their own family; the best shepherds go to work on farms abroad, where they are paid very well; the risk of being accused of poaching, when defending against the attack of large carnivores; there is an extremely low ratio of children from sheep breeders' families, who choose to continue the family tradition; negative perceptions of association/cooperation due to frequent conflicts between sheep owners or between sheep owners and the local community.

In countries with a high rate of poverty, the use of child labor in farms is a current problem. Various interventions aimed at reducing the proportion of children working in agriculture have been tested. The most effective interventions provided livelihood support, educational programs and public awareness campaigns [1].

The main identified needs are: supporting small farmers, difficulties in finding human resources, lack of qualified workers in the field; the lack of responsibility of the employees, who have to manage significant resources (large herds with high economic value or substantial machinery); inconsistency between the actual number of animals and its reporting; the re-appropriation of communal pastures should be done in proportion to the size of the sheep herd; educating the shepherds to regularly go to the doctor, lack of

health insurance and sometimes also of identity documents for employees; lack of education among employees; the reluctance of shepherds to engage with a work contract, which would also lead to the need to assume responsibility at work; the lack of merging of lands makes it impossible to apply rational grazing, parcelled it by using the help of an electric fences; lack of training in general school on issues of labor and fire protection.

Figures 4 and 5 show the main causes of workstress on sheep farms and the main causes of illness.



Fig. 4. Causes of stress in the work carried out on sheep farms

Source: own design based on CoP meetings observations.

Figure 5 presents the situation of illness in work on sheep farms. The main causes are the long work time in the farm during the day and every day of the week, handling chemicals which could affect skin quality, inadequate work equipment, poor hygiene, stress and high risk to contract animal diseases.



Fig. 5. Sources of illness in work on sheep farms
 Source: own design based on CoP meetings observations.

Figure 6 shows the risks and causes of work accidents in sheep farms.

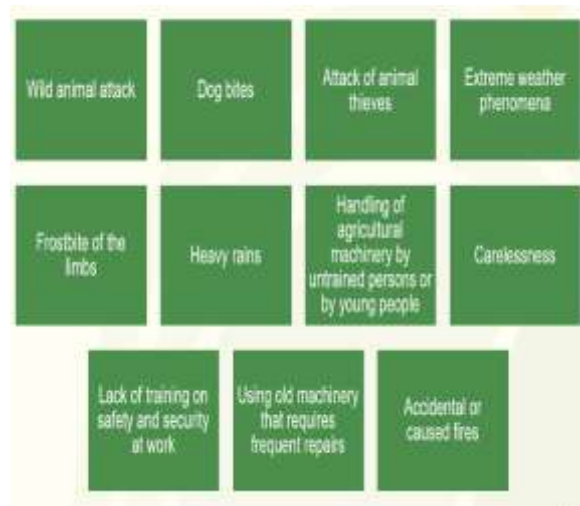


Fig. 6. Risk and causes of work accidents in sheep farms.
 Source: Own design based on CoP meetings observations.

The main health problems identified refer to: alcoholism, rheumatism, lung diseases, parasites, digestive problems (ulcers, gastritis), lumbar or cervical disc herniations due to heavy lifting.

In the case of shepherds, who spend a lot of time with the sheep, being isolated from the community, there is a risk of developing behaviours that, in the long term, have a harmful effect on health: alcoholism, excessive smoking and ignoring health problems. In addition to these, living in improper conditions during the grazing season, lack of adequate protective equipment

during rainy periods, lack of medical insurance as show in Figures 7, 8, 9, 10, 11 and 12.

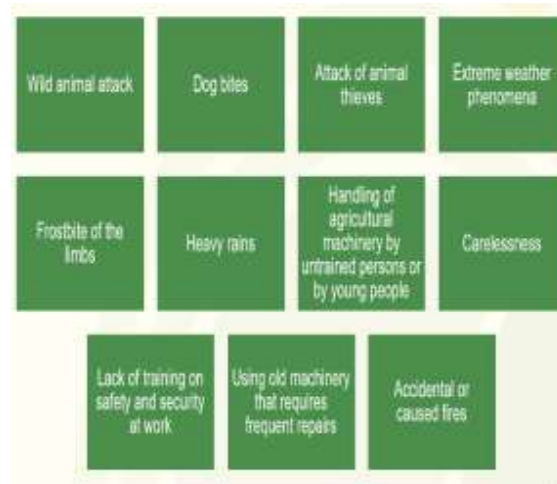


Fig. 7. Caravan used by shepherds during sheep grazing (Sibiu County)
 Source: own picture based on field study, 2024.



Fig. 8. Shelter for shepherds during sheep grazing (Sibiu County)
 Source: Original picture based on field study, 2023.



Fig. 9. Shelter for shepherds during sheep grazing - exterior details (Sibiu County)
 Source: Original picture based on field study, 2023.



Fig. 10. Living conditions during grazing (Sibiu County)

Source: Original picture based on field study, 2024.



Fig. 11. Living conditions during grazing: Interior details (Sibiu County)

Source: Original picture based on field study, 2024.



Fig. 12. Place for rest in the sunny days

Source: Original picture based on field study, 2024.

Types of sheep farms identified are: with continuity over generations; without continuity between generations, in which the children of the shepherds choose to practice other jobs in various fields; with continuity throughout the generations, in which the children of the shepherds choose to study in the agricultural field, to have advantages in accessing European funds.



Fig. 13. Sheltering the sheep in the forest during the afternoon (Sibiu County)

Source: Original picture based on field study, 2024



Fig. 14. Young farmer continuing sheep growing (Sibiu County)

Source: Original picture based on field study, 2024.

Results obtained from the interviews

The main needs identified:

- Many farm workers do not have health insurance, leading to delays in seeking medical care due to financial constraints.
- Emphasizing preventive healthcare through collaboration between GPs and local authorities can help raise awareness and tackle health problems before they escalate.
- Awareness of increasing health and safety issues among farmers, including the importance of health insurance and compliance with legislation. Integrating these topics into school curricula and using different communication channels can raise awareness.
- Improving/renovating machinery and adopting modern farming practices can

significantly reduce health and safety risks. Financial constraints and resistance to change are significant challenges.

- Addressing poor living conditions, especially for pastoralists working in remote areas. Provision of adequate temporary shelters, hygiene facilities and protection from wild animals.
- Improving health and safety education and training programs, including sharing the stories of those with experience in the sector.
- Encouraging collaboration and dialogue between farmers, local authorities and agricultural associations to implement comprehensive solutions and address cultural barriers to change.

The main priorities identified are:

- There is consensus among CoP members that safety and health issues receive inadequate attention in agricultural education. This gap is particularly pronounced in specialized agricultural schools and universities (and primary and secondary schools in communities with many farmers have similar problems).
- Much of the knowledge about safety and health in agriculture comes from hands-on experience, experience on the farm and working with other family members, and interactions within the farming community (prevention culture is lacking at all these levels)
- There is an urgent need for comprehensive training programs covering various aspects such as handling machinery, animal interactions, fire safety and risk assessment.
- Limited financial resources prevent investment in modern equipment and machinery that could mitigate safety risks.
- The nature of agricultural work, including constant contact with animals, working in poor conditions and exposure to extreme weather, presents unique safety and health challenges.
- Resistance to modernization, both in terms of equipment and mindset, is a significant barrier to improving safety standards. Traditional practices are deeply rooted, and convincing older farmers to adopt new methods is a challenge.
- There is a need to raise the general level of

health and safety concern among sheep farmers and field workers.

- Awareness campaigns and visits to breeders should be funded and organized to explain the importance of legalizing agricultural work.

CONCLUSIONS

The most important reasons for practicing sheep farming are passion for raising sheep; sheep house breeding efficiency, recorded in large herds; the possibility of exploiting local resources and productions; employees who work for 1-2 years, to accumulate the necessary capital to create their own farm.

Based on the findings from the interviews, the focus of the CoP in Romania seems to be to bridge the gap between traditional agricultural practices and modern safety standards, prioritizing education and the need to adapt school curricula to all levels of education. Thus, in high schools and specialized faculties, it is necessary to train young people in this field and to collaborate to improve the well-being of agricultural workers, respectively, mitigating the occupational risks identified in the agricultural sector, especially in sheep farms. The most severe health risks for workers on sheep farms are possible accidents related to the handling of machinery, risks of animal handling, intensive work regime and varied weather conditions, high volume of physical work and health problems mental. Even though the activity on sheep farms is demanding and there are many dissatisfactions/negative experiences and many identified needs, a generational change is still observed in this field, which determines the change in mentality and openness to the use of new technologies and high-performance equipment. Knowing the specifics of the problems of work in sheep farms can contribute to the development of programs and projects, as well as public policies that lead to the improvement of the quality of life of workers in this field. To increase the attractiveness of the agricultural sector, in the current context of the shortage of personnel in agriculture and the growing need for technology, a social dialogue is necessary on the entire agri-food chain. The

future Community Agricultural Policy must pay more attention to the social dimension of agriculture.

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