



AgriSafetyNet

Agricultural Safety Through Lifelong Learning

2019-1-SK01-KA202-060645

Module 0 INTRODUCTION



Co-funded by the
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Module 0 - Introduction

In a European Union of 27 Member States, it is vitally important to consider the future of the primary production sectors, especially agricultural, livestock, fishing and aquaculture activities, as well as the development of the agri-food industry.

In the European Union, agriculture and fisheries are constantly facing **transformation processes** derived from enlargements/decreases of member states, liberalization of world trade, reforms of community policies, technological development, increased environmental demands and the emergence of new demands for food quality and food safety by consumers.

The relevance of this sector is increasingly evident, as a fundamental part of the market for the supply of food products to citizens, as well as for its role in preserving the environment and protected areas and in fostering rural environment. It is also an economic support in terms of employment, especially in rural areas and with a tendency to depopulation.

In Europe, as in the rest of advanced economies, the economic importance of the agricultural sector is relatively low compared to industry and, above all, to services. It is estimated that around **22 million people are employed in the agricultural sector in Europe** and most of them (almost 96%) carry out their activity in family businesses that represent a number of **more than 10 million farms**. What is produced in the EU agri-food sector guarantees food security for 500 billion people across Europe.



Module 0 - Introduction

1. Characteristics and problems of the agricultural sector (Characteristics)

Area: The structure of agriculture in the Member States of the European Union (EU) varies depending on differences in geology, topography, climate and natural resources. In Europe, agriculture and livestock constitute almost three quarters of the surface used in the EU, being almost 175 million hectares (40.0% of the total land area), which translates into an average size of 16.1 hectares per farm. France and Spain present the highest percentage of the agricultural area, with 15.9% and 13.3% respectively, while the United Kingdom and Germany presented percentages just below 10.0%. In terms of farms, Romania owns a third (33.5%) of the total farms in the EU, followed by Poland (13.2%), Italy (9.3%) and Spain (8.9%). The average size of a farm is sixteen hectares ("Superficie agrícola por país. Unión Europea", 2018)



Figure 1: Map of Europe, Pixabay



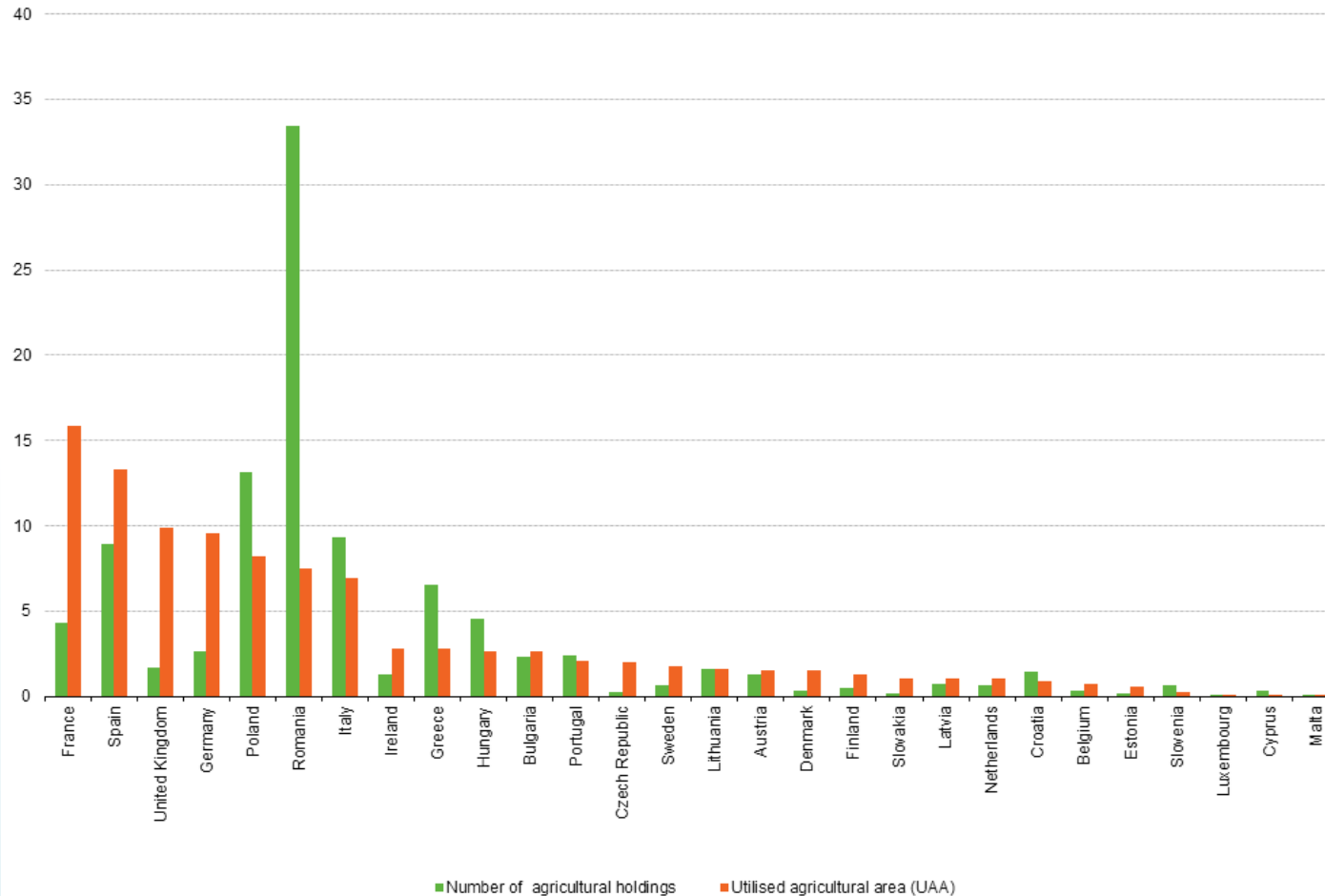
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Source: Eurostat (online data code: ef_kvaareg)

Figure 2: Key indicators – share in EU-28 total, 2013 (%), Eurostat (online data code: ef_kvaareg)



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Sectors: In Europe we find four predominant types of economic sectors in the agro-livestock sector. The main farms are based on: dairy farming, cereals, oilseeds and protein crops. Depending on the country, the data may change, giving more importance to other sectors such as vineyards (France and Italy), livestock (Greece) or greenhouse horticulture (Malta).



Figure 2: Four predominant economic sectors in agri-livestock sectors

Climate: Given its diversity of agricultural soils and climates, Europe produces a wide variety of products.

Rural development: There is a European trend of “back to rural”, which implies a socioeconomic revitalization of rural areas and an increase in labor diversification and development in rural areas. Many young people belonging to agricultural families and who left their localities to study and work are gradually returning to their places of origin to continue and modernize family businesses or to start businesses (CARACTERÍSTICAS Y PROBLEMAS DE LA ACTIVIDAD AGRARIA EN ESPAÑA. LA CONFORMACIÓN DE LAS ESTRUCTURAS AGRARIAS EN CASTILLA Y LEÓN, n.d.).

Employment: In the EU, 96% of farms are family-based, most of which with single legal owner. Even so, the number of permanent agricultural workers is almost 22 million people across Europe, the vast majority employed on a full-time fixed contract.



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Changes in consumption trends: European citizens, and the world population in general, are experiencing important changes in their diet and food consumption. As for consumption, in recent years some dietary changes occurred. For example, the consumption of red meat has increased considerably in the last five decades and Europeans eat more poultry, fish and seafood, fruits and vegetables ("La agricultura en Europa: cómo conseguir que los alimentos sean asequibles, sanos y respetuosos con el medio ambiente", 2014). This implies that agricultural companies have to invest on the diversification of their production to adapt to the new standards of consumer demand. Ecological agriculture is being highly demanded by end consumers and this represents a change in agricultural production models.



Figure 3: Vegetables sold at a market, Pixabay



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1. Characteristics and problems of the agricultural sector (Problems)

Surface: The surface destined to the agricultural sector is suffering the effects of urbanization and changes in lifestyle, reducing the spaces destined for agriculture to very rural and unattractive and sometimes unproductive areas. Agriculture also competes for soil with energy generation (biofuels).

Intensification: In order to make their land profitable, farmers adopt intensified cultivation methods with the help of mechanical tools and the application of fertilizers and pesticides, which severely reduce the biodiversity of farmland and increase contamination of the soil, rivers and lakes.

Climate and Environment: Climate change is increasingly affecting agricultural production. Farmers need to adapt to future sudden changes in seasons and extreme weather events. Therefore, farmers have to adopt economic protection measures or innovation in detecting changes in the climate that not all farmers can achieve. Furthermore, farms have to ensure compliance with environmental protection laws and measures. ("What will be the new face of European agriculture in the coming years?", 2020)

Rural development: Even though advances in agricultural techniques can foster the modernization of the sector, there are some challenges constraining the development of rural areas: the poor training of agricultural entrepreneurs, the advanced age of farm owners, the lack of physical infrastructure and social problems of agriculture and the greater difficulties in accessing product markets.

Age: Currently, only 11% of European farmers are under 40 years old and around 31% of farmers and ranchers are over 65 years old.

The agricultural sector is one of the oldest in Europe



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Training: Most of the European Union farmers and ranchers have not received formal training in agricultural activities: 70% have only practical experience, 20% have received basic training and 8% have attended a full agricultural training course. It is highly worrisome that more than 80% of those over 65 do not have any type of training.

Digitization: Added to the worrying number of professionals trained in this field, it is worth mentioning that producers are not prepared for the technological and digital systems that are being developed for this sector. These technological advances aim to support better work methods, productions of plant origin and animal with greater efficiency and less environmental impact in crop production and animal farming.



Figure 4: Digitalization, Pixabay

Increased demand: As the world population increases, the demand for food products also increases. Europe is the largest global exporter and importer of agri-food products (Institute for European Environmental Policy, 2018), which could lead to an increase in prices and a great increase in all segments of society, particularly families with few resources.

Bureaucracy: From a policy perspective, it is increasingly difficult for farmers to understand and abide by all the laws that are being imposed both at the national and European level. The EU Common Agricultural Policy plays an important role in future agricultural development, just as recent reforms have almost entirely abolished the relationship between aid to farmers and their production volume.



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2. Typical shortcomings of farming enterprises and their relationship with work accidents in agriculture

When approaching both fatal and non-fatal accidents in agriculture, forestry and fishing, we can assess what the main shortcomings of farming enterprises are and how to tackle them. In the year 2017 there were 148,326 non-fatal and 408 fatal accidents in the agriculture (Eurostat ([hsw_n2_01](#)) and ([hsw_n2_02](#))), forestry and fishing sector, adding up to 4.8% of non-fatal accidents and 12.5% of fatal accidents in the work place in the European Union. Work accidents in agriculture are more serious than in other fields, as its ratio fatal/non-fatal is higher than average.

There are some particularities in agriculture that must be taken into account when assessing shortcomings of farming enterprises. The first characteristic we are going to focus on is the age of the workers suffering from the accidents. As mentioned before, only 11% of the workers are under 40 years old. This would answer why the percentage of people over 55 having a work accident exceeds the European average that much. While the European percentage of people having a non-fatal work accident aged 55-64 is the 15.8% and amongst those aged over 65 is 1.2%; the average of workers in agriculture, forestry and fishing in a work accident is 19.8% for the age range 55-64 years old (a surplus of 5% compared to the European average in all activities) and 5.2% for the age range over 65 years old (a surplus of a 4%).

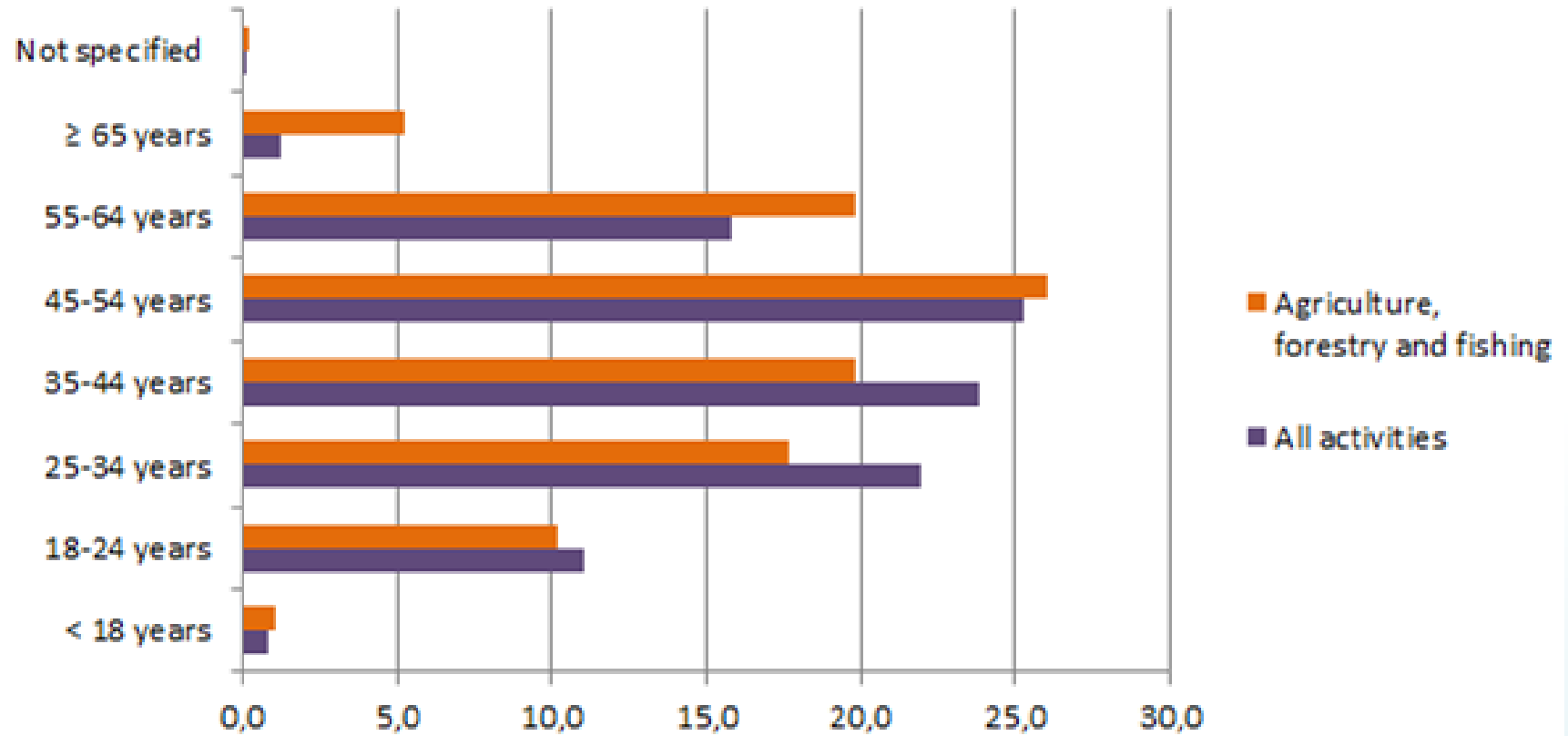


Figure 5: non-fatal accidents reported in the framework of ESAW are accidents that imply at least four full calendar days of absence from work (serious accidents), 2017, data from Eurostat Data Explorer (online data code: hsw_n2_03)



The other characteristic that is specific to the agricultural field and that has an impact on the accidents at work is the type of company. As previously mentioned 96% of the agricultural businesses in Europe are family run, and amongst the non-fatal work accidents by company size (only taking into account those whose size is known), 60% of the work accidents happen in enterprises of 9 or less employees and 78% of them happen in enterprises of under 50 employees.

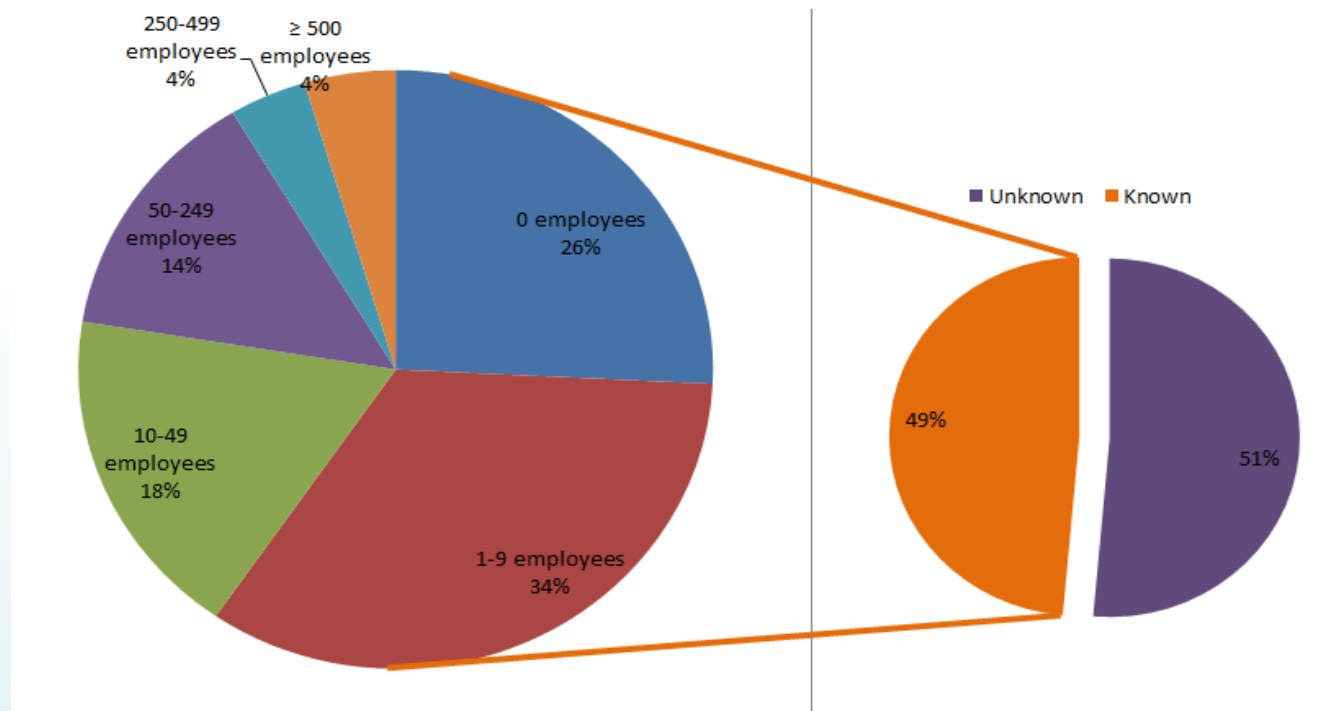


Figure 6: non-fatal accidents reported in the framework of ESAW are accidents that imply at least four full calendar days of absence from work (serious accidents), 2017, data from Eurostat Data Explorer (online data code: hsw_n2_05)



When we refer to fatal accidents at work, the percentage of small enterprises (amongst the ones whose size is known) in which the accident occurs is even higher: 65% have 9 or less employees and 87% have fewer than 50 employees. Comparing this statistics to the average of accidents at work in all activities, there are ten times more non-fatal accidents and 4 times more fatal accidents in agricultural enterprises than the average found in other sectors.

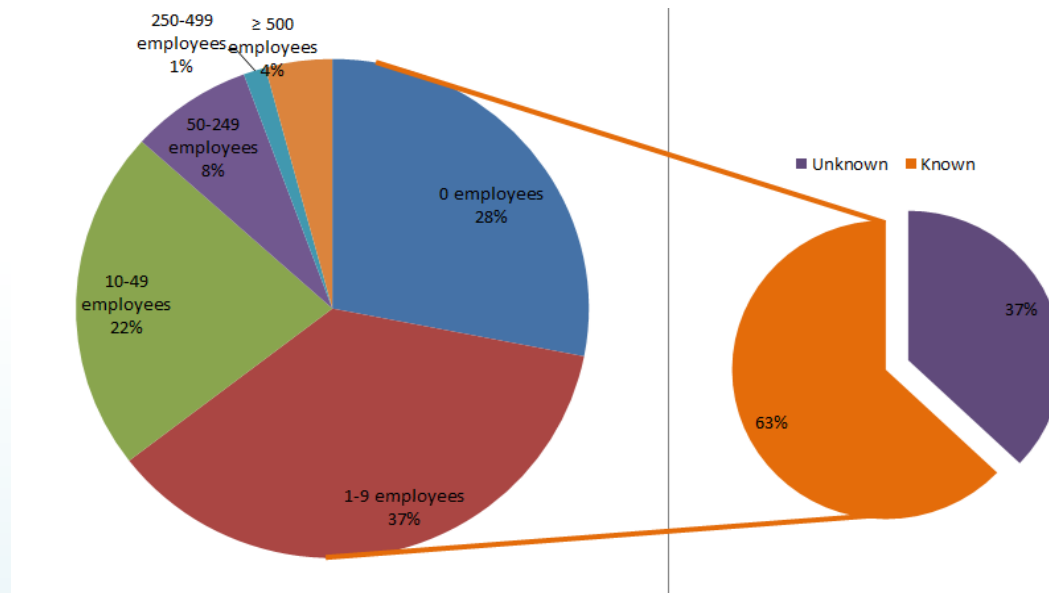


Figure 7: fatal accidents reported in the framework, 2017, data from Eurostat Data Explorer (online data code: hsw_n2_05)

We can therefore conclude that both the size and the age of the workers are a particularity in the agricultural field. This aspect needs to be taken into account when assessing the shortcomings of farming enterprises that may cause accidents at work.



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In 2005, a comprehensive research was carried out by Eurostat investigating the causes of accidents at work by (amongst others) sector of activity. Even though the data can be out-dated, it is the most comprehensive data at a European level and can help us understand the causes of these accidents, especially in relation to other sectors, as well as to identify the particularities of the agricultural sector. The breakdowns of both the non-fatal and fatal accidents below only include those who amount at least 5% of the total. The following percentages refer to the total of accidents in the agriculture, hunting and forestry sector:

- **Breakage, bursting, splitting, slipping, fall, collapse of Material Agent:** 9.7% of the non-fatal accidents and 19.4% of the fatal accidents.
- **Loss of control** (including of machinery and animals): 24% of the non-fatal accidents and 40.3% of the fatal accidents.
- **Slipping, stumbling and falling, fall of persons:** 30.8% of the non-fatal accidents and 19.5% of the fatal accidents.
- **Body movement without any physical stress** (generally leading to an external injury): 13.1% of the non-fatal accidents and 5.9% of the fatal accidents.
- **Body movement under or with physical stress** (generally leading to an internal injury): 14.3% of the non-fatal accidents and 2.6% of the fatal accidents.
- **Other:** 8.2% of the non-fatal accidents and 12.4% of the fatal accidents



Fatal Accidents

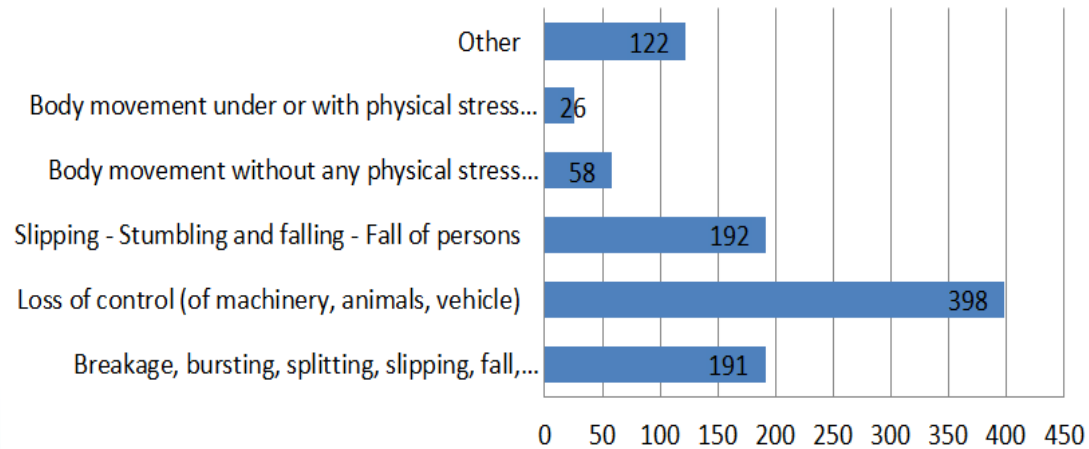


Figure 8: fatal accidents reported in the framework of ESAW by cause, 2017, data from Eurostat Data Explorer (online data code: hsw_n2_05)

Non-fatal Accidents

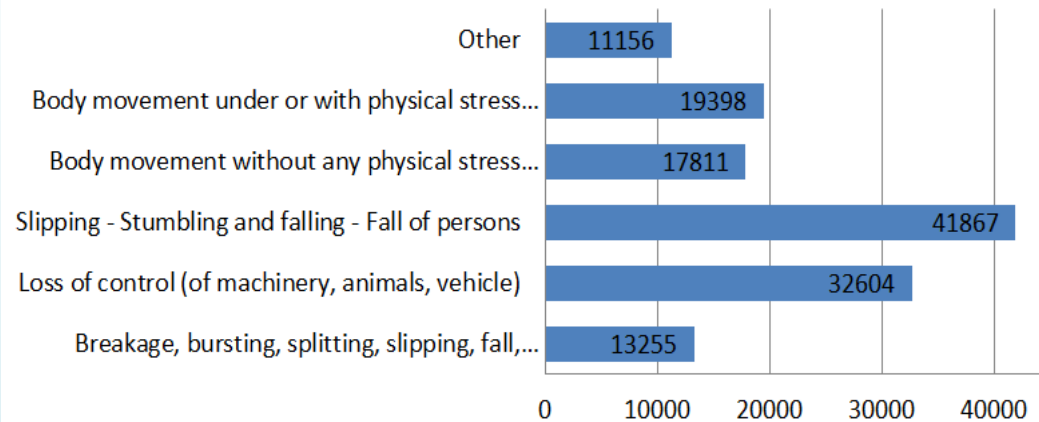


Figure 9: non-fatal accidents reported in the framework of ESAW by cause, 2017, data from Eurostat Data Explorer (online data code: hsw_n2_05)



A more specific and recent research carried out in Ireland covers the fatal accidents in Agriculture and Forestry from 2010 to 2019 ("Fatal Accidents", n.d.) and shows similar trends to the 2015 the Eurostat research. The main causes of the 214 deaths over this 9 year frame are tractor vehicles (31%), machinery (19%) and livestock (19%), which add up to a total of 69% (compared to the 40.3% in the Eurostat research) and falling heights and falling objects, amounting to 17%, compared to the 19.5% in the European wide research.

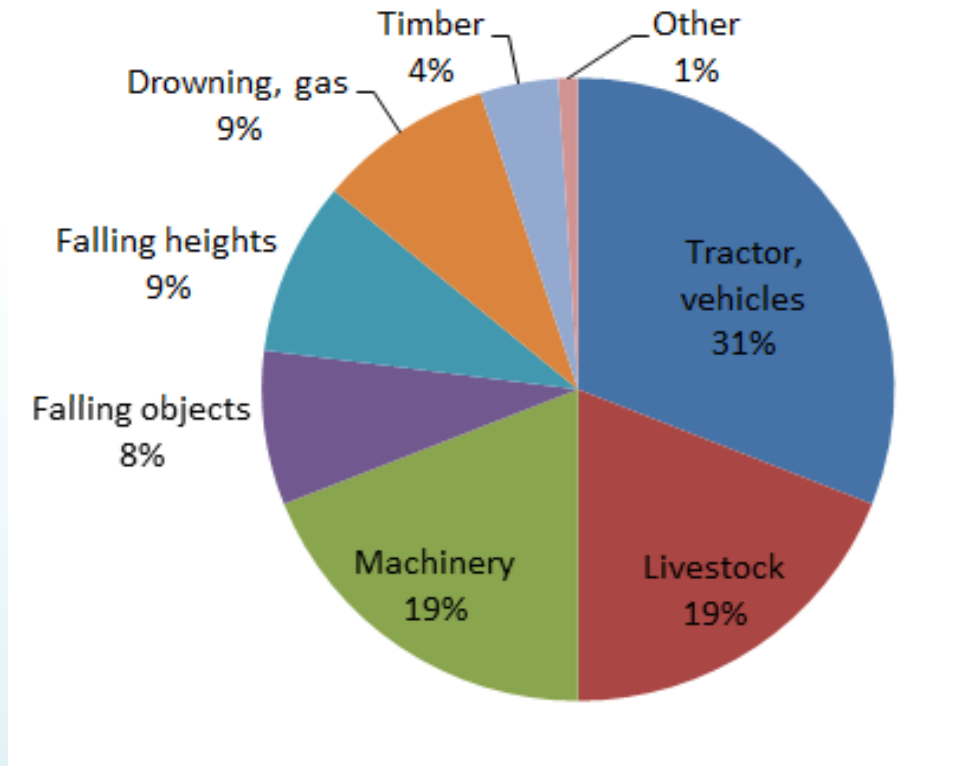


Figure 10: fatal accidents in Agriculture and Forestry in Ireland in the period 2010-2019, data from the Irish Health and Safety Authority



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Additionally, the International Labour Organisation (ILO) singles out agriculture for being one of the most dangerous jobs next to mining and construction, and points out several risk factors responsible for the high hazards in this sector:

- the countless complex technologies used in widely disparate environments, from highly mechanized commercial agriculture to intensive, small-scale subsistence agriculture. This involves differences in working methods that are much more important than in other sectors;
- the fact that the workforce is scattered in remote rural areas where public services, health services, and communication systems are often inadequate or of lower quality than those in urban areas;
- the wide variety of tasks, especially in small-scale agriculture, done by agricultural workers most of the time using inadequate equipment and without having received the necessary information and training;
- the determining influence of environmental factors, such as severe weather conditions makes it very difficult to control safety at work (for example, when gusts of wind occur while pesticides are applied, or when storms erupt at harvest time);
- The inadequate application of safety techniques in agriculture, compared to the mayor rigor of the measures in the industry.

All of these specific hazards that make agriculture a particularly dangerous occupation added to the fact that most businesses are family run and that it is an aged occupation (having less resources), result in a great number of accidents, both fatal and non-fatal.



International
Labour
Organization

Figure 11: ILO Logo, International Labour Organization



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