



## Safety and Health in Agriculture: Guidelines for an integrated and shared approach in the South Adriatic Area

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## CIA PUGLIA – PROGETTO SAGRI- SA 010017 financed by INTERREG IPA South Adriatic

### **Chapter 1 – Territory Analyses Chapter 1**

Territory Analyses provides the foundation for the entire study. This section outlines the structural framework of the agricultural sector in the partner territories, analyzing production characteristics, the workforce, the main occupational risks, and regulatory and organizational issues. The objective is to identify territorial specificities and existing gaps compared to European standards for occupational health and safety, providing an objective basis for planning subsequent actions.

Attachment A - Territory Analyses from Puglia

Attachment B - Territory Analyses from Albania

Attachment C - Territory Analyses from Molise

Attachment D - Territory Analyses from Montenegro

### **Chapter 2 Guidelines Content Chapter**

Guidelines Content is a chapter that represents the technical and operational core of the document. Based on the evidence emerging from the territorial analysis, strategic guidelines, preventive measures, and organizational models proposed to strengthen safety management on farms are defined. This section integrates national and European regulatory references, methodological tools, preventive measures, and recommendations for the adaptation of agricultural SMEs, with particular attention to sustainability, training, and institutional strengthening.

Attachment A - Guidelines Content from Puglia

Attachment B - Guidelines Content from Albania

Attachment C - Guidelines Content from Molise

Attachment D - Guidelines Content from Montenegro

### Chapter 3 – Testing

Testing documents the experimental application of the guidelines in real-life business contexts. Through the involvement of selected agricultural businesses, the proposed model was validated in the field, analyzing its effectiveness, adaptability, and any operational criticalities. This phase allows us to transform a theoretical framework into a practical tool, verifying the consistency between regulatory requirements and the feasibility of its application in local contexts.

Attachment A - Testing from Puglia

Attachment B - Testing from Albania

Attachment C - Testing from Molise

Attachment D - Testing from Montenegro

### Chapter 4 – Commitment of local stakeholders

This chapter is related to the formalization of the involvement of local, institutional, and business stakeholders in the process of adopting and disseminating the guidelines. This section takes on strategic importance, as it consolidates the transition from an experimental project to a shared and sustainable commitment over time. Through agreements, letters of intent, and recommendations for follow-up, the continuity of the actions and the replicability of the model in partner territories are ensured.

Attachment A – local Commitment

Attachment B – local Commitment from Albania

Attachment C – local Commitment from Molise

Attachment D – local Commitment from Montenegro

### Policy and institutional recommendations

#### Common lines of action

The analyses conducted in the three partner countries (Italy, Albania and Montenegro) as part of the SAGRI project have highlighted the need to promote a series of coherent, concrete and coordinated political and institutional actions, capable of overcoming the current structural limitations in the management of health and safety in agriculture.

The Joint Guidelines propose a framework for shared actions that can serve as a basis for the development of sectoral policies, regional programmes, and inter-institutional agreements.

#### Priority lines of action must have the following objectives:

1. develop a common model for agricultural prevention, adaptable at local level, based on shared minimum tools: simplified risk assessments, checklists, standardized protocols.
2. encourage the adoption of good practices through incentives in agricultural support programs (e.g., RDP, innovation incentives, digitalization calls);

3. strengthen continuing education systems by introducing minimum training requirements for agricultural employers, with attention to migrant and seasonal workers.
4. integrate safety measures into environmental and quality policies, promoting safety as an integral part of sustainability.
5. Promote the active participation of stakeholders (agricultural associations, health authorities, inspectorates, bilateral bodies, cooperatives) through periodic consultations at the local level.

To make the common lines of action effective, the Joint Guidelines recommend that public decision-makers and system actors:

- formalize multi-level territorial agreements between local authorities, trade associations and prevention services.
- integrate agricultural safety into rural, environmental and social development plans.
- allocate technical and financial resources to support micro-enterprises and cooperatives.
- establish local or regional observatories on accidents, recurring critical issues and prevention needs.
- to promote regulatory and operational convergence between the three countries, with a view to future Adriatic harmonization.

#### **Recommendations for policy makers and competent authorities**

- Based on the evidence collected in the three partner countries and the results of the accompanying actions carried out, the Joint Guidelines formulate a series of recommendations addressed to public decision-makers, inspection bodies, and institutional coordination authorities at local, regional, and national levels.
- The goal is to strengthen the regulatory framework, improve the implementation of prevention measures, and systematize the culture of health and safety in agriculture.

#### **Recommendations for the national level could be:**

- Update and adapt existing legislation for micro-agricultural businesses by introducing simplified, legally binding tools (e.g., simplified DVR, standard forms);
- establish tax and contribution incentives for companies that adopt good safety practices (e.g., training, health surveillance, certified PPE);
- provide dedicated funds in national agricultural and health plans, intended to support organizationally vulnerable agricultural businesses.
- recognize the role of intermediary organizations (agricultural associations, bilateral bodies, cooperatives) as operational channels of prevention.
- Strengthen surveillance systems with inspectors trained in the specificities of the agricultural sector and continuously present in rural areas.

#### **At local level, it is recommended:**

- the establishment of **permanent territorial networks** between rural municipalities, health services, inspectorates, and agricultural associations to promote coordinated prevention actions.

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- the inclusion of agricultural safety in **local strategic plans and municipal regulations**, also in relation to markets, fairs, and short supply chains.
- the promotion of **integrated experimental projects** (training, ICT tools, shared audits), with the support of LAGs and rural development bodies.

**At cross-border level**, it is recommended:

- the recognition of agricultural safety as a **common theme in the Adriatic area**, to be included in IPA, Interreg and post-2027 CAP programs.
- the **periodic sharing of data, tools and best practices** between the administrations of Italy, Albania and Montenegro.
- the promotion of a **minimum joint model**, supported by a permanent inter-institutional technical group, on a voluntary basis.

## Conclusions

The SAGRI project has enabled, for the first time in the Adriatic region, the development of a joint approach to health and safety in the agricultural sector, based on shared experiences, context analysis, testing of practical tools, and direct involvement of companies, operators, and institutions.

Through the development of these Joint Guidelines, the partners from Italy, Albania and Montenegro have

- mapped common risks (mechanical, chemical, biological, physical, ergonomic, psychosocial) and identified recurring critical issues in the agricultural sector.
- built a shared technical language, based on principles of integrated prevention, continuous training, stakeholder involvement and valorization of micro-enterprises.
- replicable and proportionate tools, such as simplified risk assessments, control sheets, checklists, multilingual tools and operational protocols.
- Networking public and private entities, fostering local and cross-border alliances based on continuous improvement in risk management.

These Guidelines are not intended to be a final document, but rather a shared basis for the coordinated development of prevention policies and practices in the Adriatic countries.

Building on the synergies established, it is recommended:

- the institutionalization of a joint technical group between Italy, Albania, and Montenegro, with the function of updating and monitoring the proposed models.
- the integration of the Guidelines into agricultural, rural and health development programs, at local, national and cross-border levels.
- the promotion of further pilot actions, including cross-sectoral ones (environment, inclusion, training), to broaden the impact on the territories and supply chains;
- the adoption by local institutions of Memoranda of Understanding based on these guidelines, to formalize the ethical and operational commitment of the signatories.

- the consolidation of a cross-border agricultural prevention network could serve as a reference model for other areas of the Adriatic basin and for new cooperation projects.

# CHAPTER 1 -TERRITORIAL ANALYSES







## Chapter 1

### Apulian Territory analyzes

#### General overview of the agricultural sector in Puglia

Puglia is one of Italy's regions with the highest agricultural potential, both in terms of agricultural land area and the economic value generated by the primary sector. According to the latest available ISTAT data, the utilized agricultural area (UAA) in Puglia amounts to approximately 1.2 million hectares, equal to over 10% of the national UAA, distributed primarily among arable land, olive groves, and fruit orchards. The region stands out for its cultivation of olives, grapes, and durum wheat, making it a national leader in the production of extra virgin olive oil and one of the main cereal-producing hubs of Southern Italy.

Puglia's agricultural sector is characterized by high land fragmentation and a significant presence of micro and small family-run businesses. Indeed, according to the General Census of Agriculture, Puglia has approximately 196,000 farms, placing it second in the country after Sicily. The average farm size is 6.1 hectares, lower than the Italian average, reflecting a production structure historically based on small-scale farms.

From an economic perspective, the primary sector plays a significant role in regional value added, although gradually declining compared to the past, in favor of diversification and vertical integration (processing, direct sales, agritourism). According to ISTAT data on value added by economic activity, in 2022, agriculture accounted for approximately 4% of regional value added, higher than the national average.

In recent years, there has been a progressive modernization process, driven by public interventions (especially under the RDP – Rural Development Program) and a growing awareness of environmental sustainability and production quality. Structural challenges persist, including obsolete machinery, limited digitalization, and limited access to prevention and safety systems for micro-enterprises.

Puglia's productive vocation is expressed through a marked crop specialization that reflects the region's soil and climate. Among the principal crops are olives, which occupy approximately 35% of the region's agricultural area, vines and table grapes, cereals (especially durum wheat), vegetables, and fruit trees. The province of Foggia stands out for its extensive cereal production, while the provinces of Bari and Brindisi are centers of excellence for olive growing and viticulture.

Among certified products, the region boasts numerous DOP and IGP designations, including "Terra di Bari" and "Collina di Brindisi" olive oils and "Primitivo di Manduria" wine. These designations contribute to the economic growth and international recognition of Puglia's agrifood sector. According to ISMEA, the total value of DOP and IGP products in Puglia exceeded €690 million in 2021, confirming the centrality of quality as a driver of rural development. A significant aspect of the recent transformation is the growth of organic farming. In Puglia, organic acreage exceeded 260,000 hectares in 2022, representing 21.3% of the regional UAA, well above the national average. This trend reflects a greater focus on sustainable practices among producers and consumers, but also imposes new training and safety requirements, especially regarding the use of alternatives to pesticides, biological risk management, and the adoption of innovative machinery.

To complement the above, the following official ISTAT table is provided with the percentage distribution of the main Apulian crops.

**Table 1- Agricultural area by main crops in Puglia (in % of regional UAA, 2022)**

| Culture                      | % regional UAA |
|------------------------------|----------------|
| Olive tree                   | 35.2%          |
| Cereals (mainly durum wheat) | 28.7%          |
| Screw                        | 9.4%           |
| Vegetables and fruit trees   | 11.6%          |
| Meadows and pastures         | 6.8%           |

|             |      |
|-------------|------|
| Other crops | 8.3% |
|-------------|------|

Source: ISTAT – Agricultural Statistical Yearbook (2023 )

Alongside the factors that enhance the territory, Puglia's agricultural sector is currently faced with significant environmental and technical challenges. One of the most serious critical issues is desertification and soil degradation, phenomena that particularly affect the region's inland and southern areas. According to the National Research Council (CNR), over 57% of the region's surface area is at medium to high risk of desertification due to erosion, salinization, and the progressive loss of organic matter.

Another growing threat is climate change, which in Puglia is manifesting itself with an increased frequency and intensity of extreme events (prolonged droughts, heat waves, sudden hailstorms), compromising productivity and the stability of crop cycles. The agricultural sector is particularly affected by water scarcity and the progressive reduction of available resources, exacerbated by structural inefficiencies in the management of irrigation networks and the still limited use of water-saving technologies.

Due to climate change, agricultural workers working in the fields are exposed to a high risk of heat stress and heat stroke during the summer months, due to the combination of prolonged sun exposure, high ambient temperatures, and humidity. This condition can cause dehydration, heat exhaustion, and, in the most severe cases, potentially fatal sunstroke, especially among workers without adequate protection, regular breaks, and hydration. To address this risk, the Puglia Region issued Ordinance No. 274 of June 18, 2024, which prohibits work in the fields from 12:30 PM to 4:00 PM, until August 31, on days when the INAIL - CNR maps ( Work climate website ) indicate a "high" risk level for sun exposure and intense physical activity. This ordinance, valid only in the affected areas and on the days concerned, represents an immediate operational tool to be integrated into the company's DVR, providing for precautionary breaks during critical time slots to protect the health of agricultural workers.

On a technical level, many Apulian farms operate with obsolete and unsafe machinery. According to INAIL, over 45% of agricultural tractors in Puglia are more than 30 years old and do not comply with

the latest regulations regarding protective equipment. This obsolescence directly impacts the incidence of accidents, especially in less structured and family-run businesses.

Finally, the sector's limited digitalization represents a further obstacle to sustainable development and the dissemination of prevention measures. Only 18% of Apulian farms use smart technologies (sensors, DSS, digital traceability), making it difficult to introduce advanced systems for risk monitoring and safety data management.

## 1.2 Characteristics of the agricultural workforce in Puglia

The agricultural workforce in Puglia is characterized by high seasonality, a significantly aging workforce, and a significant presence of foreign workers, often employed in precarious conditions. According to ISTAT data for 2022, the primary sector in Puglia employs approximately 84,000 standard labor units (AWUs), equivalent to 9.1% of the national total.

This figure, although slightly lower than in previous years, confirms the importance of agriculture in the regional employment structure.

A distinctive feature of the sector is the workforce's demographic structure. The share of agricultural workers over 55 has exceeded 38%, signaling an aging process that raises questions about the generational sustainability of the production system. Conversely, the presence of young farmers under 35 remains limited, at less than 7%, despite public incentives for generational turnover.

The gender gap remains marked: women represent approximately 29% of total agricultural workers, a higher share than the average for Southern Italy, but their presence is concentrated in micro-businesses and non-managerial roles

Adding to these dynamics is the growing role of foreign labor, particularly from Eastern Europe, sub-Saharan Africa, and South Asia. The migrant component, estimated at over

25,000 regularly employed in Puglia in 2022, plays a vital role in seasonal harvesting and livestock farming. However, numerous reports have highlighted the vulnerability of these workers to exploitative conditions, poor safety standards, and illicit labor brokering.

Despite the measures introduced by Law 199/2016, the phenomenon of gangmastering remains a structural problem in agricultural work in Puglia, particularly in some rural areas of the provinces of Foggia and Taranto. In 2022, the National Labor Inspectorate reported a 38% rate of irregularities in inspections carried out on farms in Puglia, with numerous cases of violations regarding working hours, safety, and housing.

The diffusion of a safety culture among agricultural workers in Puglia remains a significant challenge, influenced by several structural factors. One of the main obstacles is the limited participation of workers in mandatory training courses required by Legislative Decree 81/2008. According to data collected by the Workplace Prevention and Safety Service (SPSAL) of the Bari Local Health Authority, in 2022, less than 50% of agricultural workers had a workplace health and safety training certificate. The percentage drops further among foreign and seasonal workers, who are often not reached by information campaigns or targeted training.

In many cases, training is perceived as a mere bureaucratic requirement, disconnected from the daily operational reality of agricultural businesses. This reductive approach contributes to a poor internalization of good prevention practices and the underestimation of occupational risks, particularly the less visible ones such as ergonomic or psychosocial risks.

A further limitation is the difficulty in accessing prevention services, especially for microenterprises and self-employed workers. According to a survey conducted by INAIL in collaboration with the University of Foggia, over 60% of agricultural businesses in Puglia with fewer than five employees do not regularly consult a qualified physician or external health and safety representative. This situation leads to a lack of health surveillance and fragmented or absent management of the Risk Assessment Document (DVR). Finally, it's worth noting the delay in digitalizing safety management processes, which limits the effectiveness of monitoring and documenting interventions. Only a marginal portion of companies use digital platforms to track training activities, verify PPE use, or manage periodic equipment inspections.<sup>1</sup> These structural criticalities highlight the need for systematic and coordinated action, aimed not only at regulatory compliance but also at disseminating a cultural approach to safety, shared by all stakeholders in the agricultural supply chain.

### 1.3 Mapping of the main health and safety risks

The agricultural sector is notoriously among the productive sectors with the highest risk to worker health and safety. This is due to the simultaneous presence of numerous risk factors— mechanical, chemical, biological, physical, ergonomic, and psychosocial—often amplified by the artisanal nature of the businesses, the lack of training, and the intermittent nature of employment. In Puglia, these conditions are particularly acute, given the prevalence of microbusinesses and the widespread seasonality of work. *a. Mechanical risks*

Among the most significant risks in agriculture are mechanical ones, related to the use of agricultural machinery such as tractors, rotary cultivators, balers, shredders, and irrigation systems. The use of obsolete or non-compliant equipment is a leading cause of serious, sometimes fatal, injuries, often resulting from rollovers, impacts, crushing, or accidental contact with moving parts. According to INAIL, 42% of fatal agricultural injuries in Puglia in the three-year period 2020–2022 were attributable to accidents involving agricultural machinery.

Current legislation imposes specific requirements regarding CE marking, collective protection, and training for the correct use of machinery. However, effective implementation of these measures is often lacking in small companies, where the level of technical supervision and equipment updates are limited. *b. Chemical risks*

Another critical area is chemical risks associated with the use of pesticides, fertilizers, and herbicides. Agricultural workers are exposed to potentially harmful substances through inhalation, skin contact, or ingestion, many of which are classified as irritants, toxic, or carcinogenic. Exposure can occur both during the preparation of the mixtures and during field application, especially in the absence of adequate personal protective equipment. In Puglia, the use of chemical treatments remains widespread, particularly in the intensively farmed olive and viticulture sectors, despite the growing focus on organic farming. The National Action Plan for the Sustainable Use of Plant Protection Products (NAP) provides specific training requirements and preventive measures, but the level of implementation among smaller farms remains uneven.

#### *c. Biological risks*

Biological risks in agriculture arise primarily from exposure to pathogens of animal, plant, or environmental origin. In livestock or agro-livestock settings, workers may meet viruses, bacteria, and fungi that potentially cause zoonoses such as brucellosis, leptospirosis, bovine tuberculosis, or echinococcosis. In Puglia, these risks are more frequent on mixed farms, where the presence of inadequately managed stables, shelters, or manure favors the proliferation of pathogens.

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<sup>1</sup> CREA. (2023). AgriDigit Report – State of the Digitalization of Italian Agriculture. Rome: CREA Policies and Bioeconomy.

Even forage processing or confined, poorly ventilated environments can lead to chronic exposure to *bioaerosols*, molds, and mycotoxins, with significant respiratory and allergic effects. Although the risk is well documented, the perception of biological hazards among agricultural workers is generally low, and the protective measures adopted are often inadequate.

#### *Physical risks*

Agricultural activity also exposes workers to numerous physical risks, including exposure to noise, mechanical vibrations, extreme microclimates, and solar radiation. Chronic exposure to heat and intense sunlight is a critical factor during the summer months, with potential acute effects such as dehydration, heat stroke, and, in the long term, skin conditions and cancer. Measurements conducted by ISPRA in the Tavoliere and Salento areas over the three-year period 2020–2022 showed UV radiation levels exceeding the recommended threshold for more than 60 days per year.

Other physical risk factors include prolonged exposure to vibrations from tractors and no suspension rotary cultivators, which can cause osteoarticular disorders, and the use of noisy equipment, often without ear defenders. Poor maintenance of protective equipment and the lack of regular health surveillance exacerbate exposure.

#### *Ergonomic and psychosocial risks*

Agriculture is also characterized by ergonomic risks, due to manual handling of loads, awkward postures, and repetitive strain. These factors, often underestimated, cause widespread musculoskeletal disorders, such as lumbago, tendonitis, and carpal tunnel syndrome. The problem is particularly acute among seasonal workers, who work long hours in demanding physical conditions and often without adequate training.

Finally, psychosocial risks—such as work-related stress, isolation, and contractual instability—are an emerging concern in Apulian agricultural settings, particularly among young entrepreneurs and migrant workers. Difficulty accessing psychological support services and the lack of corporate welfare policies contribute to low awareness of these issues.

### **1.4 Analysis of accidents and occupational diseases in agriculture in Puglia**

The agricultural sector in Puglia, as in the rest of Italy, continues to have one of the highest rates of workplace accidents, especially in relation to the number of hours worked. According to INAIL data, 2,948 workplace accidents were reported in Puglia's agricultural sector in 2022, 37 of which resulted in deaths, representing approximately 14% of the national total of fatal accidents in the primary sector.

Cause analysis shows a clear prevalence of accidents related to the use of agricultural machinery (particularly tractors and towed equipment), falls from heights (from trees, ladders, or trailers), and collisions with animals. Furthermore, a significant proportion of injuries involve manual handling of loads and injuries from unprotected sharp tools. The following table, extracted from the INAIL open data database, shows the distribution of reported accidents in agriculture by event type.

**Table 2- Accidents in agriculture in Puglia by type (year 2022)**

| Event type                    | No. of accidents reported |
|-------------------------------|---------------------------|
| Contact with moving machinery | 738                       |

|                                              |       |
|----------------------------------------------|-------|
| Fall from a height                           | 614   |
| Collisions or crushing by animals or objects | 482   |
| Manual handling of loads                     | 391   |
| Sharps injuries                              | 335   |
| Exposure to chemicals or dust                | 207   |
| Others                                       | 181   |
| Total                                        | 2,948 |

Source: INAIL – Open Data Database (2023)

The accident incidence rate among the total number of workers employed in the agricultural sector in Puglia stands at approximately 3.4 per 100 workers, a value higher than the national average (2.9‰), confirming the greater vulnerability of the sector in the regional context. From a geographical perspective, the data highlights a higher concentration of accidents in the provinces of Foggia and Bari, areas with a high agricultural density and a significant presence of seasonal labor. The province of Foggia, in particular, accounts for over 30% of regional accidents, a figure that also reflects the prevalence of gangmastering and irregular work.

In addition to accidents, agricultural work is associated with a high incidence of occupational diseases, often underdiagnosed or reported late. In Puglia, 415 occupational diseases were recognized in the agricultural sector in 2022, according to data published by INAIL. The most common category is musculoskeletal disorders, which alone account for over 60% of cases, followed by respiratory, skin, and hearing diseases.

According to the INAIL "Observatory of Occupational Diseases - Agriculture Sector Report", published in 2022, the most frequent pathologies are:

- chronic lumbago and back pain, linked to the manual handling of loads and inappropriate postures;
- tendinitis and carpal tunnel syndrome, due to repetitive movements, use of manual tools and mechanical vibrations;
- chronic bronchopneumopathies and occupational asthma, associated with exposure to organic dust, molds and volatile chemical agents;
- contact dermatitis and photodermatitis, due to exposure to chemicals, irritating plants and UV rays;
- loss, caused by prolonged use of noisy machinery without adequate hearing protection.

The following table shows official INAIL data relating to the distribution of occupational diseases recognized in Puglia in 2022 in the agricultural sector only:

**Table 3- Occupational diseases recognized in agriculture in Puglia (year 2022)**

| Type of pathology               | No. of recognized cases |
|---------------------------------|-------------------------|
| Musculoskeletal disorders       | 258                     |
| Respiratory diseases            | 74                      |
| Skin diseases                   | 42                      |
| Noise-induced hearing loss      | 29                      |
| Other (systemic diseases, etc.) | 12                      |
| Total                           | 415                     |

Source: INAIL – Regional data 2023

Despite its epidemiological significance, health surveillance in agriculture remains fragmented, especially among smaller farms. Only a minority of companies regularly screen their workers, and the lack of a widespread network of qualified doctors dedicated to the sector further exacerbates diagnostic delays and active prevention.

Occupational diseases, often overlooked by agricultural SMEs, represent a crucial issue in terms of social and production costs, with direct implications for business continuity and worker well-being.

### 1.5 Regulatory aspects and prevention measures

The primary regulatory framework for workplace health and safety in Italy is Legislative Decree No. 81 of April 9, 2008, known as the "Consolidated Law on Workplace Safety." The decree harmonized and systematized previous legislation, introducing an integrated approach to prevention based on risk assessment, mandatory training, and the adoption of technical, organizational, and procedural measures.

In the agricultural sector, Legislative Decree 81/2008 provides specific provisions for agricultural and livestock farms, particularly in Titles III and V, relating to the use of work equipment and personal protective equipment, and in Chapters II and III, dedicated to the specificities of family businesses and self-employed workers.

According to what was reported by the Puglia Region in 2022, within the "*Guidelines for the application of Legislative Decree 81/08 in agricultural companies*" the main obligations of the employer in agriculture include:

- risk assessment and drafting of the Risk Assessment Document (RAD);
- the appointment of the Head of the Prevention and Protection Service (RSPP), who may be internal or external to the company;
- the appointment of the competent doctor for health surveillance, in the cases provided for;

- information, training and education of workers, with minimum modules differentiated based on the type of risk.
- the supply and control of Personal Protective Equipment (PPE) appropriate for the activities carried out.

In Puglia, implementing these provisions is particularly complex in small agricultural businesses and family-run businesses, where both employer and employee are often the same person, and where access to specialist advice (RSPP and/or occupational health and safety physician) is limited by financial and organizational constraints. Furthermore, in some types of businesses, the legislation allows for self-certification of risks in place of the DVR for companies with fewer than 10 employees. This measure, while simplifying the requirements, risks weakening effective worker protection

Mandatory training is a key lever for prevention, but in agriculture it still suffers from a significant misalignment between norms and practice: course participation is often limited, outdated, and poorly aligned with the actual needs of rural businesses, as confirmed by several technical reports from Puglia's local health authorities

Pursuant to the provisions of Legislative Decree 81/2008, agricultural companies are required to implement a series of technical and organizational measures aimed at reducing occupational risks. Specifically, effective prevention requires the systematic adoption of tools and procedures that improve operational safety in the fields, warehouses, greenhouses, and processing facilities.

In the "Operational Manual for Safety in Agricultural Businesses" drawn up by the Department of Agriculture of the Puglia Region in 2022, the most relevant technical measures include:

- the compliance of the machinery fleet by replacing or adapting tractors and equipment that do not comply with the Machinery Directive (2006/42/EC);
- the installation of fixed and mobile protections on moving mechanical parts;
- the introduction of safety signs, compliant with the provisions of Title V of Legislative Decree 81/08, visible and resistant to atmospheric agents;
- the adoption of certified PPE, in particular gloves, goggles, overalls, and filter masks for the use of chemical products;
- the establishment of storage areas for pesticides equipped with ventilation, signage, and compliant containers.

In the "Guidelines for the Prevention of Heat Risk in Agricultural Workplaces" drafted by ISPRA in 2023, from an organizational point of view, the Apulian experience highlighted the usefulness of some key actions:

- the scheduling of periodic maintenance, including through external contracts with specialized workshops;
- the development of standardized operating procedures (e.g. for handling loads, cleaning work areas, washing vehicles);
- managing work shifts and breaks, especially during periods of intense heat, according to ISPRA protocols on microclimatic risk;
- the preparation of emergency and first aid plans, with the designation of trained internal personnel and a minimum supply of medical devices.

Practical training courses, promoted in Puglia by bilateral organizations and trade associations (CIA, Coldiretti, Confagricoltura), play a significant role. These courses aim to complement mandatory theoretical training and are often conducted in collaboration with SPSAL.

(Specialized Health Services) of the local health authorities.

In some pilot areas, particularly in the province of Lecce and Alta Murgia, experimental projects have been launched to adopt digital decision support systems (DSS), capable of monitoring environmental and operational risks in real time. Although their deployment is still limited, these tools represent an important opportunity for proactive prevention in agriculture.

### 1.6 Gaps identified and training needs

Despite the broad regulatory framework and the commitment of local authorities, structural and cultural issues persist in Puglia that limit the effectiveness of prevention policies in agricultural workplaces. One of the main gaps is the limited penetration of a safety culture among agricultural workers, often perceived as a formal obligation rather than a necessary condition for business sustainability and individual well-being.

Linguistic and cultural barriers, particularly among foreign workers, further complicate the challenges of disseminating best practices. According to a recent survey conducted by the Puglia Region and INAIL, only 24% of non-Italian agricultural workers reported receiving training in their own language, and less than 15% believed the content was fully comprehensible. This poses a significant risk of exclusion and increased exposure to daily hazards.

Another critical factor is the lack of continuity in training programs, which are often limited to a single event, without *follow-up* or refresher courses. Furthermore, the training offerings are poorly tailored to the specific needs of each company: family-run microbusinesses, which represent over 90% of businesses in Puglia, require short, practical, and contextualized modules.

Organizationally, the weakness of safety management systems (SGSL) is evident: less than 10% of Apulian farms have formally implemented internal procedures for monitoring, maintenance, and verification of PPE, or traceability of training. Even where formal documents such as DVRs or maintenance records exist, their effective use is often limited to inspection purposes and not to a genuine management rationale.

Finally, there is a growing need for qualified trainers capable of working closely with companies, adapting language, content, and tools to real-world operational contexts. In this sense, the involvement of trade associations and agricultural technicians can represent a strategic resource, to be integrated with the public system.

## CHAPTER 1 GUIDELINES CONTRIBUTION FOR ALBANIAN TERRITORY ANALYSES



### 1.1 Introduction

Albania's agricultural sector plays a critical role in its economy, engaging approximately 36% of the total labor force, according to recent data from INSTAT and Eurostat. The sector accounts for around 19% of Albania's GDP, underscoring its importance to national development and economic stability.

The agricultural workforce in Albania is predominantly rural, with a significant portion of workers operating in small-scale or family-owned farms. Data from Eurostat indicates that smallholder farmers and their families represent over 80% of the total workforce in agriculture, with most farms being less than 2 hectares in size. Such operations are often characterized by a reliance on manual labor and traditional farming methods, which increases the occupational health and safety risks for workers.

### 1.2 Demographics of the Agricultural Workforce

According to INSTAT, approximately 45% of the agricultural workforce is female, with women often engaged in both unpaid family labor and primary agricultural activities. The sector also includes a significant proportion of older workers, with over 30% of agricultural laborers being above the age of 50. This demographic profile is associated with a higher incidence of occupational injuries and health risks, as older workers are more susceptible to the physical demands of manual labor.

Youth involvement in agriculture remains low, with younger generations migrating to urban areas in search of better employment opportunities. This trend contributes to labor shortages and an aging workforce, further impacting productivity and sustainability in the sector.

### 1.3 Employment Trends and Socio-Economic Factors

The agricultural sector in Albania is largely informal, with a high percentage of unregistered workers and limited access to social protection and health insurance. INSTAT data shows that only about 20% of agricultural workers are formally employed, leaving the majority without access to essential benefits. This informality poses challenges for regulatory oversight and the implementation of occupational health and safety (OHS) measures.

Additionally, income levels in agriculture are relatively low compared to other sectors. The average monthly income for agricultural workers is approximately 60% of the national average, creating economic constraints that impact farmers' ability to invest in personal protective equipment (PPE) and other safety measures. This financial barrier is a significant factor in the low adoption of OHS protocols across the sector.

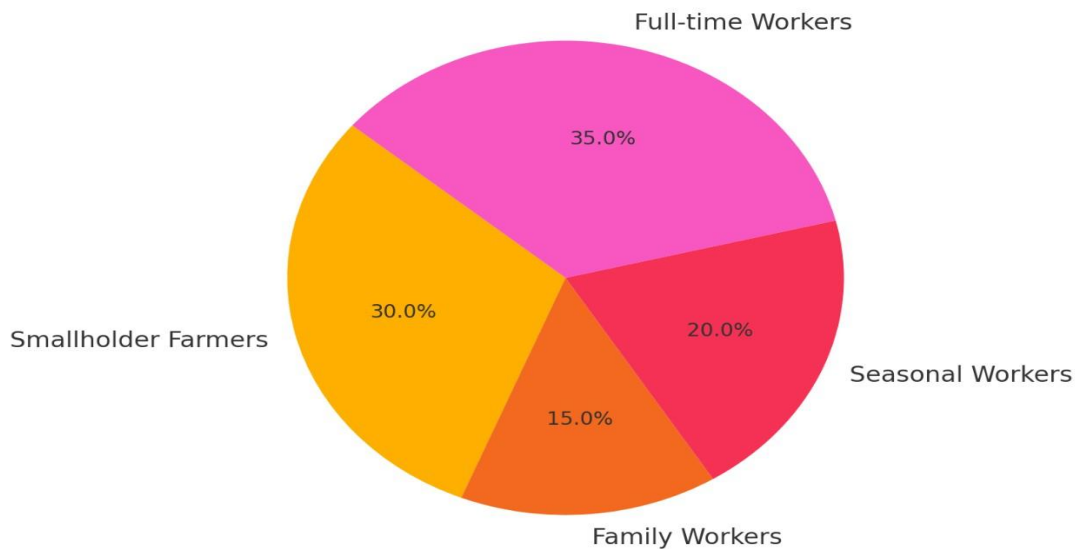
### 1.4 Occupational Health and Safety Risks

Agricultural work in Albania is associated with various occupational risks, including exposure to pesticides, physical strain from manual labor, and machinery-related injuries. According to reports

from the Albanian State Labour Inspectorate, there has been a steady increase in reported workplace injuries in the agricultural sector over the past decade, with common issues including musculoskeletal disorders and respiratory problems.

The lack of access to adequate PPE and training exacerbates these risks, as workers are often unaware of the proper handling procedures for chemicals and machinery. This situation is further complicated by the seasonal nature of agricultural work, which leads to fluctuations in labor demand and an influx of temporary or migrant workers who may lack familiarity with safety protocols.

### PPE Access Rates among Agricultural Workforce Groups in Albania



"The pie chart displays access rates to personal protective equipment (PPE) among different agricultural workforce groups in Albania. Limited access, particularly among smallholder farmers and family workers, underscores economic and structural challenges in achieving widespread PPE compliance."

### 1.5 Regulatory and Institutional Challenges

The State Labour and Social Services Inspectorate (ISHPSHS) is the main institution responsible for enforcing labor standards in Albania, including occupational health and safety regulations. However, resource constraints limit the effectiveness of inspections and enforcement, particularly in rural areas where most agricultural activities take place. In 2022, ISHPSHS reported that less than 20% of agricultural enterprises had undergone an OHS inspection, highlighting the need for increased institutional support and resources to enhance compliance.

Furthermore, Albania's alignment with EU OHS standards remains partial. While there are national regulations in place, their application is inconsistent, with significant gaps in areas such as chemical safety, machinery maintenance, and worker training. These gaps pose substantial challenges for Albania's efforts to improve working conditions in agriculture and align with EU directives.

### 2. Territorial Analysis and Planned Initiatives for Albania

The Policy Document on Occupational Health and Safety for 2024-2030 outlines Albania's strategic approach to advancing health and safety in the workplace, aligning with international and EU standards. This policy document integrates the principles of Albania's National Strategy for European

Integration 2022-2030 and focuses on essential pillars for institutional, regulatory, and social development in the field of occupational health and safety (OHS).

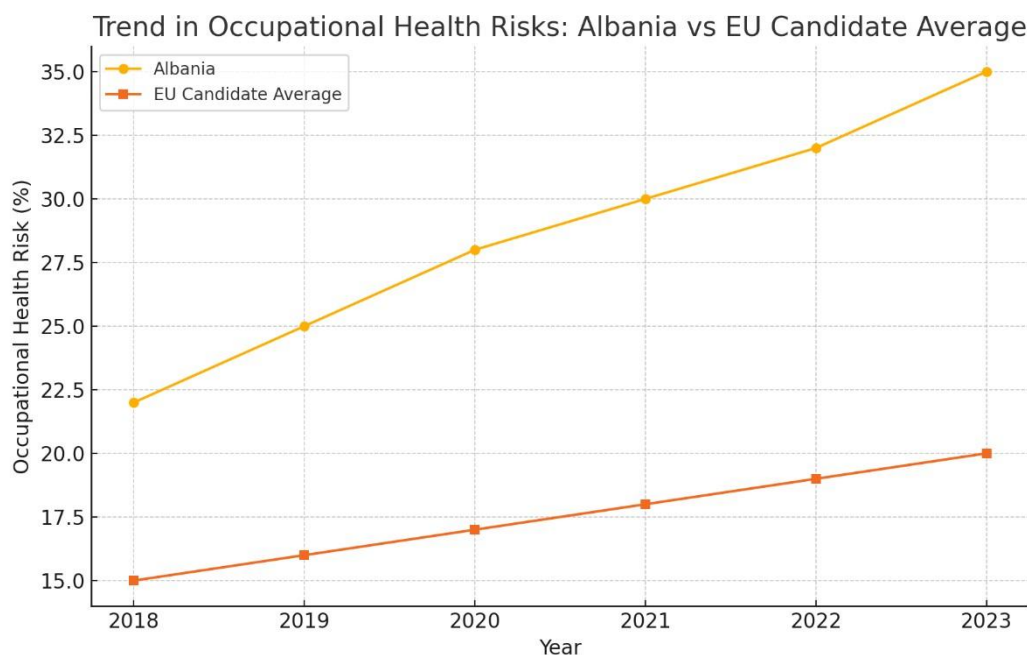
The strategic framework is organized into three main pillars:

- Pillar A: Adapting OHS institutions and policies to current and future challenges. This involves updating Albania's regulatory framework to reflect EU standards and establishing the Interinstitutional Council on OHS. The council will oversee cross-sector collaboration and drive efficient policy implementation across institutions.
- Pillar B: Strengthening governance and management capabilities within OHS institutions. Efforts will focus on improving the capacity of the Ministry of Health and Social Protection and the State Labour Inspectorate. Key initiatives include enhanced inspection protocols, systematic risk assessments, and improved compliance with EU regulations.
- Pillar C: Making OHS a national priority through widespread awareness and engagement campaigns. This includes promoting a preventive safety culture via educational campaigns targeting schools, universities, and workplaces, increasing awareness among workers and employers alike.

Additionally, Albania's policy framework for 2024-2030 outlines the creation of a National Registry of Occupational Accidents and Diseases (NROAD), developed in line with European standards (ESAW and EODS). The registry will improve data collection on workplace incidents, serving as a foundation for targeted prevention initiatives. Plans are also underway to introduce a national system for training, certifying, and licensing OHS experts, establishing high professional standards and equipping workplaces to address safety challenges effectively.

## 2.1 Summary

The agricultural workforce in Albania faces numerous challenges, including economic constraints, a high prevalence of informal employment, and limited access to OHS resources. The demographic profile, with a significant representation of older workers and low youth engagement, adds to the complexity of ensuring safe working conditions. Addressing these issues requires a multifaceted approach that combines regulatory reform, financial incentives, and targeted training programs to improve awareness and compliance with safety standards. Strengthening the capacity of ISHPSHS to conduct regular inspections and enforcing existing regulations will be critical in advancing Albania's alignment with EU OHS standards.



"This line chart tracks the trend of occupational health risks in Albania compared to the EU candidate average from 2018 to 2023. The higher and increasing risk rates in Albania emphasize the need for improved safety protocols and health risk mitigation strategies in the agricultural workforce."

### 3. Comparison with EU Health and Safety Regulation

The European Union has established a comprehensive regulatory framework for occupational health and safety (OHS) in agriculture. Key directives include:

- Directive 89/655/EEC** (on the use of work equipment): This directive requires employers to ensure that equipment is safe and regularly maintained. It also mandates training for workers to operate equipment correctly. In EU member states, compliance typically includes frequent equipment checks, proper maintenance logs, and thorough training sessions for new employees. For example, Germany enforces strict regulations requiring annual machinery inspections and certifications. All agricultural machinery must be inspected by certified safety inspectors, and farmers are mandated to keep maintenance logs to verify equipment safety. Moreover, Germany provides subsidies for PPE, making it more affordable for farmers and increasing compliance rates. In France, training sessions for machinery operators are required semi-annually, with a focus on safe handling and emergency procedures. French regulations also mandate that each farm have safety signage on or near hazardous equipment, providing immediate hazard warnings.
- Directive 2009/128/EC** (on the sustainable use of pesticides): This directive is significant in the context of agriculture, as it emphasizes safe handling, application, and storage of pesticides. It requires that only trained and certified individuals handle pesticides, and it mandates protective equipment to prevent exposure to harmful chemicals. Compliance in EU countries like Italy includes rigorous certification processes, with renewal every three years, and specific storage regulations to prevent environmental contamination. Italy has implemented a rigorous certification system for pesticide handlers, who must complete a government-approved course before they are certified to use pesticides. Certification requires renewal every three years, and storage facilities for pesticides are regularly inspected to ensure compliance with safety

standards. The Netherlands mandates that farms use only certified, environmentally safe pesticides, with detailed records kept for each pesticide application. Pesticide storage areas must have spill containment measures, and all farm workers involved in handling pesticides undergo mandatory training on safe handling and application. Denmark enforces strict regulations on pesticide usage, including mandatory training and certification for all chemical handlers.

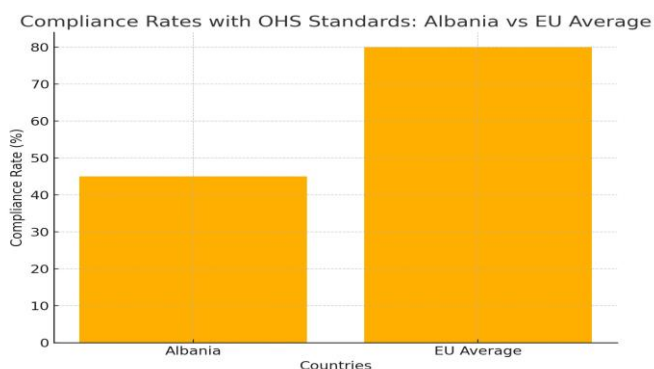
- **Directive 2006/42/EC** (on machinery safety): This directive sets forth requirements for machinery used in agriculture, mandating safety features such as protective guards on hazardous equipment. Spain requires all high-risk agricultural machinery to have safety shields or guards to prevent accidental contact with moving parts. Compliance is ensured through annual inspections conducted by certified agencies. If machinery fails inspection, it must either be upgraded to meet safety standards or removed from operation. Poland's compliance with this directive includes mandatory pre-use safety checks and seasonal safety assessments by farmers themselves, which are then verified by state inspectors. All equipment found lacking essential protective features must be upgraded, and regular training is provided to operators on safe usage. France mandates regular machinery inspections under the EU Machinery Directive (2006/42/EC), reducing accident rates and enhancing operational safety

In Albania, alignment with these EU standards is partial. National regulations address general safety concerns but lack specificity for agricultural contexts. Equipment maintenance is limited in many rural areas due to high repair costs and lack of access to spare parts. Training is provided sporadically, and few pesticide handlers receive official certification due to limited training resources. Additionally, machinery safety standards are inconsistently applied, with many older models still in use that lack adequate protective features.

A comparative analysis indicates that Albania would benefit from adopting more specific regulations for agriculture, supported by financial subsidies and training programs. Visual aids, such as a compliance chart, could further clarify Albania's current alignment with EU standards, helping identify priority areas for regulatory adjustments.

#### 4. Gap Identification

Albania's agricultural sector faces several gaps in aligning with EU OHS standards. Identifying and addressing these areas is essential for improving worker safety, productivity, and economic sustainability. CJMU?



"This chart compares the occupational health and safety (OHS) compliance rates between Albania and the EU average. The significant gap highlights Albania's need for targeted regulatory improvements to meet EU standards and enhance worker safety in the agricultural sector."

#### 4.1 Key Gaps:

**Regulatory Framework:** Albania's existing OHS regulations are broad and lack agricultural-specific provisions found in EU directives. For instance, while general PPE guidelines exist, they are not tailored to the unique risks in agriculture, such as pesticide exposure and machinery-related injuries. EU countries have agricultural-specific OHS regulations, while Albania's policies remain generalized, leading to inconsistent safety standards across the sector.

**Training and Certification:** There is a significant lack of structured training for farmers on equipment safety and chemical handling. EU countries implement regular training programs certified by government bodies; however, in Albania, most farmers learn through informal channels or family experience, with limited access to formal training. This gap contributes to high accident rates and improper handling of hazardous materials.

**Economic Constraints on PPE:** Economic barriers prevent smallholder farmers from accessing PPE. In the EU, subsidies or tax incentives are often available to help farmers afford PPE, but Albania lacks such support mechanisms. As a result, PPE usage is low, especially among small-scale farmers who comprise the majority of Albania's agricultural workforce.

**Limited Enforcement Capacity:** The State Labour Inspectorate (ISHPSHS) lacks resources, limiting its ability to conduct regular inspections and enforce existing regulations. In contrast, EU countries have dedicated agricultural inspectors and substantial budgets allocated for

compliance checks. In Albania, inspections are infrequent, with only about 20% of farms inspected annually, leading to low compliance rates.

#### Impacts of These Gaps:

These gaps increase occupational hazards, reduce productivity, and limit Albania's ability to align with EU standards. They also contribute to a lack of workforce retention, with young people migrating to urban areas or abroad for safer employment opportunities. Addressing these gaps requires a targeted approach that considers both Albania's economic constraints and the practical challenges of implementing regulatory reforms in rural areas.

#### Comparative Analysis with EU Candidate Countries

Many candidate countries have successfully implemented similar EU OHS standards by adopting phased approaches and leveraging partnerships with EU institutions. For instance, North Macedonia and Serbia, both in the EU accession process, have prioritized high-risk areas first, such as pesticide handling and equipment safety, before expanding regulations to cover broader occupational health and safety aspects. Both countries implement flexible PPE loan programs, making it accessible for smallholder farmers while providing a low-cost approach to compliance.

Case studies from these countries reveal that a gradual approach, along with capacity building in local institutions, can significantly improve compliance rates and workplace safety. Such examples demonstrate achievable benchmarks for Albania and provide a roadmap for structured regulatory development.

## Recommended Measures for Improvement

To address these identified gaps and help Albania meet EU OHS standards, the following measures are recommended:

**Developing Agricultural-Specific Safety Regulations:** Albania should create regulations tailored to agriculture, covering equipment safety, chemical handling, and PPE requirements. This could involve establishing minimum standards for protective guards on machinery, PPE usage, and pesticide storage. The Ministry of Agriculture and ISHPSHS could partner with EU regulatory agencies to draft these standards, ensuring alignment with EU directives.

**Establish specific international partnerships,** such as with EU agricultural safety organizations, to support the development of an OHS training curriculum tailored to the needs of Albanian agriculture. The proposed curriculum could cover pesticide handling, machinery safety, and other high-risk areas. Additionally, adopting a phased regulatory development plan for compliance with EU standards, beginning with pesticide safety and progressing to other areas over a three-year period, would allow for steady improvement in compliance and safety.

**Structured Training Programs:** Partner with agricultural schools and international organizations to establish regular training programs in pesticide handling, equipment safety, and PPE usage. These programs could be certified and require renewal every three years, like practices in EU countries. Involving local universities and vocational schools would help provide accessible training, particularly in rural areas.

**PPE Subsidy Programs:** To ensure affordability, Albania should introduce subsidies or tax incentives to help farmers purchase PPE. This could be managed through a government subsidy scheme or by partnering with PPE suppliers to provide equipment at reduced prices. Subsidies could focus on smallholder farmers, who are less able to invest in safety gear independently.

To **facilitate PPE access**, Albania can explore EU Instrument for **Preaccession Assistance (IPA) funds** to subsidize safety equipment for smallholder farmers. This subsidy program could prioritize high-risk regions and smaller farms, providing them with essential equipment at reduced costs. Additionally, partnering with EU safety equipment providers could enable lowercost procurement of PPE.

**Strengthening ISHPSHS:** Allocate funds to expand ISHPSHS's resources, enabling it to increase inspection frequency and enforce OHS regulations more effectively. This could involve hiring additional inspectors, providing advanced training, and ensuring adequate transportation for rural inspections. Collaboration with EU agencies could provide the technical support necessary to enhance inspection standards.

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## Annexes: Official Data and Supporting Documentation

### Annex 1: INSTAT Demographic and Workforce Data

INSTAT, 2023. Statistical Yearbook of Albania 2023. Tirana: Institute of Statistics (INSTAT). This section includes demographic data of the agricultural workforce in Albania, with tables on age distribution, gender representation, and rural employment statistics. The data highlights a significant portion of workers aged above 50, reflecting an aging workforce in agriculture.

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*Table 1: Age Distribution of Agricultural Workforce in Albania (2023)*

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### Age Group Percentage of Workforce

|          |     |
|----------|-----|
| Below 30 | 12% |
| 30-50    | 45% |
| Above 50 | 43% |

### INSTAT Agricultural Workforce Data

- Table: Distribution of Agricultural Workforce by Region and Employment Type
- Source: [INSTAT Agriculture Statistics](#)

### Annex 2: Eurostat Occupational Health Risks Comparison

Eurostat, 2023. Agricultural workforce demographics and occupational health risks in Albania and the EU. Luxembourg: Eurostat Publications. This annex provides comparative data on occupational health risks between Albania and EU member states, highlighting disparities in PPE access, health issues, and accident rates.

*Table 2: Comparative Occupational Health Risks in Agriculture (Albania vs EU, 2023)*

| Risk Factor               | Albania | EU Average |
|---------------------------|---------|------------|
| Musculoskeletal Disorders | 15%     | 10%        |
| Respiratory Issues        | 20%     | 8%         |
| Lack of PPE Access        | 65%     | 25%        |

### Eurostat Occupational Health and Safety Statistics

- Table: Comparative Analysis of OHS Compliance Rates between Albania and EU Member States
- Source: [Eurostat Health and Safety at Work Statistics](#)

### Annex 3: Occupational Safety Regulations - EU Directives

European Commission, 1989. Council Directive 89/655/EEC on the minimum safety and health requirements for the use of work equipment by workers. Official Journal of the European Communities, L 393, 30.12.1989, pp. 13–17.

This section includes key safety and health directives applicable to agricultural equipment safety, including mandatory protective measures for high-risk machinery, and annual equipment maintenance standards applicable in EU contexts.

#### **Annex 4: Case Studies on OHS Implementation in EU Candidate Countries**

- Case Study 1: Serbia's Approach to Aligning Agricultural OHS Standards with the EU
- Case Study 2: North Macedonia's Phased Implementation of OHS Regulations in Agriculture

Source: [European Agency for Safety and Health at Work Publications](#)



## CHAPTER 1- Legal framework and current context in OSH in agriculture Montenegro

The purpose of this document, titled “D.1.2.9–1.2.13 Guideline to Prevent Safe and Health Risk in the Agricultural Sector in Montenegro”, is to provide clear, evidence-based, and applicable guidelines for enhancing occupational safety and health (OSH) in agriculture. It seeks to identify key risks faced by agricultural workers, propose preventive and protective measures, and recommend improvements to Montenegro’s legal and institutional frameworks, in line with EU directives and ILO standards.

Special emphasis is placed on harmonization with EU directives (89/391/EEC, 2009/104/EC, 2009/128/EC) and ILO Convention No. 184, which sets global benchmarks for OSH in agriculture. The document also aims to support policy makers in developing more robust inspection, monitoring, and support mechanisms for the sector.

Agriculture plays a strategic role in Montenegro’s economic and rural development. According to 2022 data, the agriculture, forestry and fisheries sector accounted for 6% of GDP, while an estimated 25% of the population was engaged in family farming, mostly informally. This points to an urgent need for inclusive safety policies that address risks in informal and seasonal labor.

Given the high-risk nature of agricultural work—due to machinery, chemicals, animals, environmental conditions, and physical strain, this guideline provides a solid foundation for building a safer and healthier working environment across the sector.

### Legal framework for Occupational Safety and Health in agriculture

The current OSH legal framework in Montenegro consists of several national laws, sectoral acts, and international conventions. However, its application in agriculture is limited and fragmented.

Relevant international and EU instruments include:

- **Directive 2009/104/EC** on minimum safety requirements for the use of work equipment, including agricultural machinery.

This Directive replaced the earlier Directive 89/655/EEC, providing an updated framework to improve worker protection when using equipment in high-risk sectors such as agriculture. Directive 2009/104/EC also introduces clearer definitions of employer responsibilities, stricter standards for technical maintenance, mandatory use of personal protective equipment (PPE), and requirements for ergonomic improvements. These provisions are particularly important in agriculture, where workers are frequently exposed to mechanical risks, repetitive strain, and outdated machinery.

- **Directive 2009/128/EC** on sustainable use of pesticides and protection of workers and the environment.

While Montenegro has partially transposed Directive 2009/128/EC through the Law on Plant Protection Products, key components such as pesticide waste disposal, safety measures in sensitive ecological areas, and quality control protocols through inspection and laboratory testing still lack full operationalization.

- **ILO Convention No. 184** on Safety and Health in Agriculture – which defines obligations for safe chemical use, training, equipment, and protection of seasonal workers.

At the national level, the following laws are most relevant:

- **Law on Safety and Health at Work** (Official Gazette of Montenegro, Nos. 034/14, 044/18, 084/24) - provides general OSH principles but lacks agriculture-specific provisions;
- **Labour Law** (Official Gazette of Montenegro, Nos. 74/2019, 8/2021, 59/2021, 68/2021 i 145/2021.– does not regulate seasonal and temporary workers who dominate agricultural labor;
- **Law on Plant Protection Products** (Official Gazette of Montenegro, Nos. 51/2008, 40/2011, 18/2014) – only partially aligns with EU rules for pesticide safety.
- **Rulebook on Safety in Agriculture (1968)** – outdated and misaligned with current agricultural practices and technologies.

These limitations highlight the need for sector-specific legal reforms and harmonization. A detailed analysis will be presented in Chapter 3.

### Challenges in the implementation of regulations

Despite having a formal legal framework, practical implementation of OSH in agriculture is weak due to several structural challenges: **Outdated regulations**

- The main regulatory document, the Rulebook from 1968—is obsolete and incompatible with modern OSH standards. **Lack of inspection capacity**
- Montenegro currently has no inspectors specialized in agriculture. The small number of general OSH inspectors cannot ensure adequate coverage or enforcement in rural areas.

### Limited awareness and training

- Most agricultural workers do not receive any formal OSH training and often misuse or neglect protective equipment.
- Risk awareness is particularly low regarding chronic hazards such as pesticide exposure or ergonomic strain.

## Prevalence of informal employment

- A large share of seasonal and family-based labor is unregistered, operating outside of the legal OSH system, without insurance or protective entitlements. **Access to equipment**
- Small-scale farms often lack financial and technical resources to procure or maintain adequate protective equipment.

These barriers demand urgent attention and coordinate reform efforts. The following chapters will elaborate proposed solutions, including legislative upgrades, improved training systems, digital monitoring, and stakeholder engagement.

## GAP Analysis of ILO Convention 184

### Introduction to ILO Convention 184 and its importance for the protection of agricultural workers

Adopted in 2001 by the International Labour Organization (ILO), ILO Convention 184 on Safety and Health in Agriculture is one of the most significant international instruments aimed at improving the protection of agricultural workers. Its primary goal is to reduce occupational risks in the agricultural sector, enhance working conditions, and safeguard the health of workers, particularly seasonal and temporary workers, who are often among the most vulnerable.

The convention emphasizes several key areas of occupational safety and health, including:

- The legal and institutional framework, along with the responsibilities of employers and the state;
- The protection of seasonal and temporary workers;
- The safe handling and use of pesticides and chemical substances;
- The technical safety and maintenance of agricultural machinery;
- Inspection and enforcement of occupational safety regulations.

Montenegro **has not yet ratified ILO Convention 184**, which means the national legal framework lacks unified guidelines for regulating occupational safety and health in agriculture. This GAP analysis aims to identify key discrepancies between domestic legislation and the requirements of Convention 184 and to highlight the areas in need of reform and alignment in order to ensure improved protection for workers in the agricultural sector.

### Comparative analysis of the requirements of ILO Convention 184 and Montenegro's National Legislation

The following section presents a comparative analysis of the requirements outlined in ILO Convention 184 and the corresponding provisions in Montenegro's national legislation, with a particular focus on identifying key shortcomings and areas in need of harmonization.

*Table 1: Comparative Analysis – ILO Convention 184 vs. National Legislation of Montenegro*

| Area | Requirements of ILO Convention 184 | Status in Montenegro |
|------|------------------------------------|----------------------|
|------|------------------------------------|----------------------|

|                                                        |                                                                                                                                                                                                |                                                                                                                                                                                                            |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legal and institutional framework                      | States must establish clear occupational safety and health (OSH) policies in agriculture, including mandatory regulation across all segments of agricultural production.                       | The Law on Occupational Safety and Health does not recognize agriculture as a particularly high-risk sector and does not introduce specific protection measures for workers in this field.                 |
| Protection of seasonal and temporary workers           | Seasonal and temporary workers must have the same rights to protection as permanent employees, including access to healthcare, protective equipment, and insurance against workplace injuries. | Seasonal workers are not recognized as a distinct category in the legislation, which means they work without health insurance, personal protective equipment, or adequate training.                        |
| Use of pesticides and protection from chemical hazards | Strict control and mandatory training for workers handling pesticides, including protective measures against poisoning and environmental contamination.                                        | Directive 2009/128/EC has been partially implemented through the Law on Plant Protection Products, but mandatory certification for handling pesticides is still not required for all agricultural workers. |
| Mechanical risks and machinery safety                  | Regular technical inspections of agricultural machinery, mandatory protective equipment on tractors, and a prohibition on the use of unsafe machines.                                          | Directive 2009/104/EC has not been fully implemented; many agricultural machines operate without adequate safety mechanisms.                                                                               |
| OSH Inspection and Law Enforcement                     | Stricter inspection oversight and regular controls on agricultural holdings to ensure the implementation of occupational safety measures.                                                      | OSH inspection in agriculture is underdeveloped, with a limited number of inspectors and infrequent inspections, resulting in weak enforcement of regulations.                                             |

### Key legislative gaps in relation to ILO Convention 184

Based on the conducted analysis, it is evident that the national legal framework **is not fully aligned with the requirements of ILO Convention 184**, leading to significant legal and institutional gaps in occupational safety and health in agriculture.

The first and most critical issue is the **inadequate protection of seasonal and temporary workers**, who make up a large portion of the agricultural workforce. This group of workers often operates in unsafe conditions, without insurance in the event of work-related injuries, without access to basic healthcare, and without mandatory training on occupational safety measures.

The current legal framework fails to recognize seasonal workers as a particularly vulnerable group, which further increases the risk of exploitation and violations of their labor rights.

Additionally, the regulation of pesticide and chemical use is insufficiently developed. Although Montenegro has partially implemented Directive 2009/128/EC on the sustainable use of pesticides, in practice there are **no systematic mechanisms for mandatory education and certification of all agricultural workers handling agrochemicals**. The absence of such measures increases the risk of poisoning, improper storage of chemicals, and contamination of soil and water, thus endangering both worker health and the environment.

Another major shortcoming lies in the oversight of agricultural machinery, where current regulations do **not provide for mandatory periodic technical inspections of machines** used on farms. The lack of regular maintenance checks contributes to a higher incidence of accidents, particularly on small and medium-sized farms, where outdated and unsafe equipment is often used without adequate protective features.

The final critical issue concerns **weak OSH inspection and enforcement of laws**. Although the national legal framework provides for certain inspection measures in agriculture, inspections are rarely carried out in practice, and penalties are poorly enforced. The lack of inspectors specialized in the agricultural sector further hinders the implementation of regulations and allows unsafe working conditions to persist on many farms.

### Next steps toward legislative harmonization

To improve the protection of agricultural workers and create the necessary conditions for **ratifying ILO Convention 184**, Montenegro must undertake a **comprehensive legislative reform**, which should include the following key steps:

- **Improvement of the legal framework**

The Law on Occupational Health and Safety should be amended to recognize agriculture as a high-risk sector and introduce specific protection measures for agricultural workers. This process should include the definition of mandatory safety standards for all agricultural workers, including seasonal and temporary workers, and the adoption of specific by-laws prescribing minimum safety requirements in the sector.

- **Introduction of mandatory certification for pesticide handling**

National regulations need to be aligned with Directive 2009/128/EC by introducing mandatory training and certification for all workers who handle pesticides and other chemical substances. At present, Montenegro lacks a systematic approach to this issue, resulting in workers often being unaware of the health risks involved. Certification and training would reduce cases of poisoning and misuse of pesticides.

- **Regulation of Technical Inspections for Agricultural Equipment**

Mandatory periodic technical inspections should be introduced for tractors, harvesters, and other agricultural machinery to reduce accident rates caused by outdated or malfunctioning equipment. Implementing Directive 2009/104/EC, which defines minimum health and safety requirements for the use of work equipment, is key to this process.

- **Strengthening of OSH Inspection Mechanisms**

The current inspection system is underdeveloped and unable to effectively monitor compliance in the agriculture sector. It is necessary to increase the number of inspectors specialized in agriculture and

to introduce stricter inspections of farms to ensure implementation of safety measures. Additionally, penalties for non-compliance must be made stricter and more effectively enforced to incentivize employers to invest in safety standards.

- **Preparation for ratification of ILO Convention 184**

As a final step toward improving the system of occupational safety and health in agriculture, Montenegro should initiate the ratification process for ILO Convention 184. This requires a gradual harmonization of legislation with international standards, development of an implementation strategy, and execution of pilot worker protection programs in agriculture to ensure effective application of standards post-ratification.

Inadequate protection of seasonal workers, insufficient control over pesticide use, outdated agricultural machinery, and weak inspection oversight represent the **main challenges** in occupational health and safety in Montenegro's agriculture sector. Comprehensive legislative reform and the implementation of alignment measures with ILO Convention 184 are **crucial steps** toward improving working conditions in this sector and ensuring the health and safety of agricultural workers.

The following chapters will present **detailed recommendations** for further implementation of occupational safety and health measures in line with international standards.

## **Territorial analysis and agricultural structure of Montenegro**

Agriculture in Montenegro has a long-standing tradition and represents a vital part of the country's social and economic fabric, particularly in rural areas. However, its territorial distribution is highly uneven, shaped by complex geographical, climatic, and infrastructural factors. According to preliminary results of the 2024 Agricultural Census, approximately **38% of Montenegro's total territory is used as agricultural land**.

The structure of this land clearly indicates limited potential for intensive crop production. **Meadows and pastures account for 85% of the total utilized land**, while **arable land represents only 6.7%**, and **perennial plantations 0.8%**. A mere **0.01% of the land is used for greenhouse or protected cultivation**. This distribution highlights a dominant orientation toward **extensive livestock farming**, while the scope for intensive arable farming, vegetable growing, and fruit cultivation is limited not only by physical space but also by terrain configuration, soil quality, and climatic constraints.

### **Key Data (2024 Census):**

- Number of agricultural holdings: 26,711
- Average size of utilized land (excluding mountain pastures and commons): 4.7 ha
- Including mountain pastures and commons: 9.3 ha
- More than 72% of holdings use less than 2 ha of land
- Most grown crops: cereals, vegetables, and grapevines
- Most farms rely on traditional production methods, with limited mechanization and low levels of digitalization

Table 2: Number of Agricultural Holdings by Land Use and Livestock Type (2024)

| Category           | Number of Agricultural Holdings |
|--------------------|---------------------------------|
| Number of Holdings | 26.711                          |
| Cattle             | 68.600                          |
| Sheep              | 167.344                         |
| Goats              | 28.184                          |
| Pigs               | 52.272                          |
| Poultry            | 1.361.403                       |

### 1.5.1 Distribution of agricultural land and its impact on food production and livestock farming

The structure of utilized agricultural land in Montenegro plays a key role in determining the development direction of the sector and the possibilities for more intensive food production. According to preliminary results from the 2024 Agricultural Census, the total area of utilized land amounts to **111,931 hectares**, of which:

- **Meadows and pastures:** 95,208 ha (85%)
- **Arable land:** 7,537 ha (6.7%)
- **Permanent crops:** 936 ha (0.8%)
- **Greenhouses and glasshouses:** 13 ha (0.01%)
- **Other (unclassified) land:** 8,237 ha

The dominance of meadows and pastures clearly indicates a strong orientation toward **livestock production**, while spatial and technical conditions for intensive crop farming are limited. This is especially evident in the mountainous and hilly-mountainous areas of the north and central regions, where terrain configuration and climatic conditions further hinder land cultivation and the application of modern mechanization.

**Arable land**, which includes croplands and to a lesser extent greenhouse areas, is often fragmented and divided into small plots. This significantly complicates the use of modern technologies and increases production costs. These areas are used for cultivating cereals (corn, wheat, barley), vegetables (potatoes, onions, tomatoes, beans), and grapevines, with vineyards being most prominent in the southern and central regions.

**Permanent crops**, comprising orchards and olive groves, account for only 0.8% of the total utilized area and are mostly concentrated in the coastal region, Zeta, and Nikšić.

Although covering a symbolic area (13 ha), **greenhouse and glasshouse production** holds development potential—particularly in extending the growing season and increasing yields— but it remains in the early stages of development.

Overall, **crop production**, despite being spatially limited, remains an important part of Montenegrin agriculture. It is characterized by small landholdings, low mechanization levels, and low adoption of modern technologies, especially irrigation. These factors further limit growth potential, particularly in the southern and central regions, which also face seasonal labor shortages.

Agricultural production is **typically fragmented**, taking place on small plots, without irrigation or modern technological inputs. A limited number of holdings engage in greenhouse production—as reflected in the fact that only 13 hectares, or 0.01% of total utilized land, are used for greenhouses and glasshouses.

**Regionally**, crop production is characterized by:

- **Viticulture** in Zeta, Podgorica, Ulcinj, and Nikšić; ○ **Olive cultivation** in Bar, Ulcinj, and the Bay of Kotor; ○ **Vegetable** growing in coastal and lowland areas (Zeta, Tivat, Danilovgrad); ○ **Cereals and potatoes** in the north (Bijelo Polje, Pljevlja, Berane).

Despite certain potential, crop production faces numerous structural constraints, including:

- lack of irrigation and exposure to climatic risks (droughts, storms); ○
- fragmented plots that hinder mechanization.
- low levels of market organization and procurement systems.
- and labor shortages during peak seasons, particularly in the south and central parts of the country.

### **Regional differences in the distribution of agricultural land in Montenegro**

Agricultural production in Montenegro varies significantly across the three main regions – the coastal, central, and northern – due to differences in geography, climate, and infrastructure. The number and structure of agricultural holdings, types of production, and levels of mechanization differ by region, directly influencing agricultural development potential as well as occupational safety and health (OSH) challenges.

To better understand the territorial distribution of agricultural production, Montenegro is divided in this analysis into the following three regions: coastal, central, and northern. Each has specific characteristics in terms of land structure, dominant agricultural activities, size and type of holdings, and working conditions. This division provides clearer insight into regional disparities that directly affect the application of OSH measures and opportunities for further sector development.

#### **Coastal region** (Ulcinj, Bar, Herceg Novi, Kotor, Budva, Tivat)

This region is characterized by a smaller number of holdings but a notable presence of permanent crops – vineyards, olive groves, and orchards. Olive and grape cultivation are the dominant activities.

- Holdings are generally small, family-run, and rely on traditional methods.
- The terrain is suitable for planting, but urbanization pressures are significant.
- This region holds strong potential for intensive and greenhouse-based production, although it remains underutilized.

#### **Central region** (Podgorica, Danilovgrad, Nikšić, Tuzi, Zeta, Cetinje)

Characterized by mixed holdings—combining livestock and crop production.

- The largest share of utilized agricultural land is found in Nikšić and Podgorica.

- The region includes a greater number of medium-sized holdings with better infrastructural access.
- It has potential to become a hub for modern agriculture and broader implementation of OSH measures.

**Northern region** (Bijelo Polje, Berane, Pljevlja, Rožaje, Mojkovac, Plav, Gusinje, etc.) This region contains the largest number of agricultural holdings in the country.

- Extensive livestock farming prevails sheep and cattle breeding, and dairy production.
- Climatic conditions are more challenging, and the terrain is often inaccessible.
- There is a shortage of access to modern mechanization and protective measures for workers.
- Working conditions are further hindered by physically demanding tasks on difficult terrain and under extreme weather conditions.

*Table 3: Number of agricultural holdings by municipality (2024)*

| Municipality | Number of agricultural holdings |
|--------------|---------------------------------|
| Bijelo Polje | 3.933                           |
| Nikšić       | 3.187                           |
| Pljevlja     | 2.769                           |
| Podgorica    | 2.186                           |
| Berane       | 2.060                           |
| Ulcinj       | 1.351                           |
| Danilovgrad  | 1.138                           |
| Bar          | 1.135                           |
| Rožaje       | 1.216                           |
| Mojkovac     | 999                             |
| Zeta         | 909                             |
| Plav         | 795                             |
| Tuzi         | 739                             |
| Petnjica     | 664                             |
| Andrijevisa  | 595                             |
| Kolašin      | 569                             |
| Žabljak      | 426                             |
| Plužine      | 396                             |
| Cetinje      | 306                             |
| Šavnik       | 305                             |

|             |     |
|-------------|-----|
| Herceg Novi | 286 |
| Kotor       | 248 |
| Gusinje     | 239 |
| Budva       | 156 |
| Tivat       | 104 |

*Table 4: Key Regional Differences in Agriculture*

| Region   | Dominant Activities                           | Number of Holdings | Main Challenges                                   |
|----------|-----------------------------------------------|--------------------|---------------------------------------------------|
| Coastal  | Olive growing, viticulture, vegetable farming | 3.280              | Land shortage, urbanization                       |
| Central  | Cereals, grapevine, mixed farming             | 9.460              | Parcel fragmentation, insufficient digitalization |
| Northern | Livestock farming, milk production            | ~14.000            | Harsh working conditions, poor mechanization      |

Clear Regional differences in the distribution of agricultural land and the structure of holdings significantly affect production organization, access to resources, and working conditions. While the coastal region offers potential for specialized and high-value crop production, the central region has the capacity to develop integrated holdings, and the north remains the backbone of livestock farming. These territorial specificities must be considered when defining strategies to improve occupational safety and health, as different agroecological and infrastructural conditions bring different risks. The following section of the analysis will focus on the socio-demographic profile of agricultural holding holders, which further contributes to understanding the real needs and challenges within the sector.

### Socio-demographic characteristics of agricultural holdings

In addition to the territorial distribution and land structure, the socio-demographic profile of agricultural holding holders plays a key role in understanding work-related challenges and designing appropriate occupational safety and health (OSH) measures. Age structure, gender representation, and education level significantly determine the sector's capacity to adapt to modern demands for safety and work efficiency.

#### Age structure and gender representation according to the 2024 Agricultural Census:

- **The total number of holding holders** is 26,711.
- **The average age** of holding holders is 59 years, both for men and women.

- **Women account** for 37% of holding holders, indicating a still significant gender imbalance in farm management.

*Table 5: Average age of agricultural holding holders in Montenegro (2024)*

| Agricultural Holdings | Average Age of Holder |
|-----------------------|-----------------------|
| Men                   | 59                    |
| Women                 | 59                    |

These data point to a serious challenge in generational renewal within the sector. The aging of the agricultural population and the low interest among young people in engaging in agriculture directly impact the adoption of new technologies, implementation of safety measures, and the ability to adapt to modern working conditions. Additionally, the high average age of holding holders increases their exposure to physical strain and the risk of chronic health problems.

### Educational Structure

In addition to age and gender distribution, the education level of holders and managers of agricultural holdings has a direct impact on the sector's ability to adapt to modern work requirements, comply with regulations, and implement occupational safety and health (OSH) measures. A lower level of formal education is often associated with limited access to information, weaker compliance with legal regulations, and a lower degree of technological adaptation.

*Table 6: Highest level of education attained by agricultural holding managers (2024)*

| Education level           | Number of managers |
|---------------------------|--------------------|
| Primary school            | 5.210              |
| Secondary school          | 16.823             |
| College (two-year degree) | 1.597              |
| University degree         | 2.530              |
| Master's degree           | 160                |

### Gender structure in agriculture and OSH Implications

According to data from the 2024 Agricultural Census, men account for **87.1%** of agricultural holding holders and managers, while women make up only **12.9%**, both as formal holders and managers. This gender imbalance indicates the need to introduce gender-sensitive approaches in the design of occupational safety policies and measures in agriculture. Although women participate in numerous on-farm activities—especially in vegetable production, livestock farming, and food processing—their formal roles often remain invisible. As a result, they lack access to training, protective equipment, subsidies, and decision-makers, which increases their vulnerability in the workplace.

### It is necessary to:

- Promote greater inclusion of women as formal agricultural holding holders.
- Ensure that OSH programs are gender-inclusive.
- Involve women in the development and implementation of OSH policies, particularly in rural areas.

## Chapter 1

### Molise Region -Territorial analysis

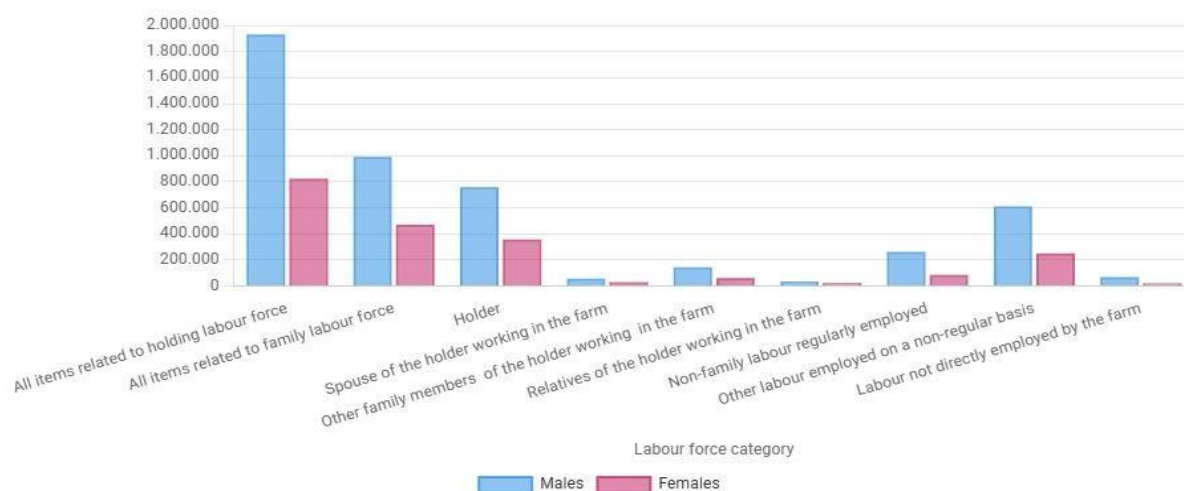


#### INTRODUCTION

According to the results of the 7th General Agricultural Census, in 2020 there were 1,133,006 farms operating in Italy, covering a total utilized agricultural area (UAA) of 12.4 million hectares. In 2023, as regards the main crops, national production of olives for oil increased compared to the previous year. National production of oranges will increase by 3.0% compared to the previous year, while production of wine grapes and tomatoes will decrease (by 21.5% and 2.0% respectively). In 2023, compared to the previous year, the distribution of fertilizer products in Italy will show an increase, affecting all geographical areas (+29.9%). The most significant increase was in the South (+86.7%), followed by the Centre (+47.7%). Despite this, the North-East remains the area where the largest quantity of fertilizers is distributed, accounting for 30.1% of the national total. In Italy, 92.8 million kilograms of plant protection products were distributed in 2023 (-9.8 per cent compared to 2022), of which 53.9 per cent in the North, 13.8 per cent in the Centre and 32.4 per cent in the South. With regard to livestock, the number of animals on farms engaged in livestock farming is estimated at approximately: 5.6 million head of cattle, 416,000 head of buffalo, 6.5 million head of sheep and 980,000 head of goats. The North has the largest number of cattle (71 per cent), particularly in Lombardy (27.4 per cent of the national total). The largest number of buffaloes is found in southern Italy (78.2 per cent), particularly in Campania (72.8 per cent of the national total). The largest number of sheep and goats is concentrated in the South (73.2 per cent and 62.7 per cent respectively), particularly in Sardinia, which has the largest number of sheep and goats (47.9 per cent and 28.8 per cent of the national total respectively). The production of extra virgin olive oil is particularly well established in Tuscany, a region that covers 38.4 per cent of the total national olive growing area and is home to 41.5 per cent of producers in the sector. followed by Puglia (with 27.5 per cent of the area and 16.3 per cent of producers) and Sicily (14.2 per cent of the area and 16.4 per cent of producers). In 2023, the number of agritourism businesses will increase to 26,129 (+1.1 per cent compared to 2022), with an average density across the whole of Italy of 8.6 establishments per 100 square kilometers. There are 8,834 agritourism businesses run by women, a very modest increase compared to 2022 (+0.2 per cent). At national level, the female participation rate is 33.8 per cent, slightly lower than in 2022 (34.1 per cent).

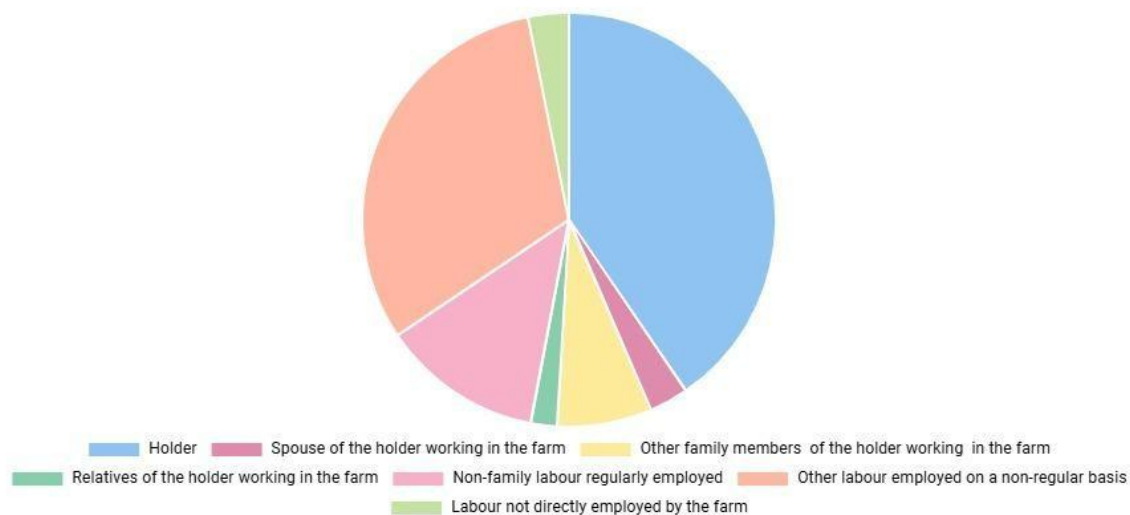
## Farms and labour days by labor category and sex - Chart

Frequency: Annual, Territory: Italy, Indicator: Number of people in the company's workforce, Time: 2020



## Farms and labour days by labor category - Chart

Frequency: Annual, Territory: Italy, Indicator: Number of people in the company's workforce, Sex: Total, Time: 2020



## AGRICULTURE IN MOLISE

Agriculture in Molise remains a fundamental component of the region, but data from the 2020 General Agricultural Census, processed by Istat through the “Story Map” platform, highlight both positive and negative aspects for the sector. According to the report, the total agricultural area (TAA) covers 52.4% of the region, while the utilised agricultural area (UAA) stands at 41.9%. However, compared to 2010, both have undergone a significant decline: -7.2% for the TAA and -5.3% for the UAA, decreases that are higher than the national average.

The document provides a detailed analysis of Molise's crops. 58% of the UAA is devoted to arable land, 14.4% to permanent grassland and pastures, and 7.3% to woody crops, with olive trees as the predominant crop. In terms of livestock farming, Molise stands out for its percentage contribution of poultry (3.7%) and beehives (1%) compared to the national totals.

There are 18,707 farms based in Molise, accounting for 1.7% of the Italian total. One striking figure is the high number of women at the helm of farms: 39.7% of farm managers in Molise are women, the highest percentage among Italian regions. At the provincial level, Campobasso stands out with 40.3%, ranking fourth in Italy after Avellino, Benevento and Frosinone.

Labour in agriculture is strongly rooted in families, which account for 73.1% of the workforce (compared to 53% of the Italian average). On the contrary, the presence of foreign labour is limited, accounting for only 8%, about half the national average. In terms of organic farming, Molise is well below average: only 2.7% of farms use this method, compared to 6.7% nationally.

Although it does not account for the largest share of added value or regional GDP, the agricultural sector in Molise remains a fundamental pillar of the region's economy and social fabric. In 2020, agriculture contributed 5.2% to total added value, while in 2021 its contribution to regional GDP was estimated at between 3.32% and 6%. These variations in percentages, attributable to different economic metrics (value added vs. GDP) and reference years, do not diminish the essential role of the sector, which, despite being a minority contributor compared to other sectors such as services or industry, has a profound impact on the economic stability and external competitiveness of the region, as evidenced by Molise's positive trade balance in 2020.

A distinctive feature of agriculture in Molise is its remarkable social vitality and capacity for generational renewal. The region holds the national record for the percentage of farms run by women, reaching 39.7% of the total. At the same time, there is a high level of youth entrepreneurship, with over 38% of new farm registrations by under-35s in the first nine months of 2016, significantly higher than the national average of 31%. This strong presence of women and young people at the helm of agricultural businesses represents a crucial competitive advantage for Molise, indicating a dynamic human capital oriented towards innovation, diversification and sustainability. This demographic profile suggests a greater propensity to adopt new technologies and a deeper connection with local communities, elements that can drive the sector's resilience in the face of structural challenges.

Key products include cereals, olive oil, wine and, in particular, truffles, for which Molise accounts for a significant share of the national harvest. Despite a decrease in the amount of land used for agriculture, the sector is moving towards more sustainable practices and digital innovation, with the support of targeted regional policies.

Challenges remain, including the contraction of agricultural land, the impact of climate change and wildlife management, but opportunities related to quality products, sustainability and technological innovation are opening new prospects for the future of agriculture in Molise.

Agriculture in Molise is part of a socio-economic context characterised by complex dynamics, where the primary sector plays a role that is more than proportional to its direct contribution to GDP. Although Molise is one of the smallest regions in Italy, agriculture is an intrinsic part of its identity and economy.<sup>2</sup>

### THE DEMOGRAPHIC FRAMEWORK IN MOLISE

Molise faces significant demographic challenges. The region recorded a population decline of -0.40% in 2021.<sup>1</sup> The old-age index is particularly high, at 233.0, indicating a significantly higher number of people over 65 than young people up to 14 years of age. The structural dependency ratio is 57.9, reflecting the weight of the non-working population on the working-age population.<sup>1</sup> In 2020, the birth rate was 6.4 per 1,000 inhabitants, while the death rate was 12.1 per 1,000 inhabitants.

Despite the demographic picture of population decline and ageing, Molise's positive trade balance suggests that the agricultural sector, although representing a smaller portion of the overall economy, acts as a stabilizing force and external economic driver. The ability to export valuable agricultural products, such as PDO products and IGT wines, contributes substantially to this positive balance. This means that Molise's agriculture, by generating income from outside the region, helps to mitigate the economic pressures arising from internal demographic dynamics. Therefore, policies aimed at promoting exports and quality in the agricultural sector not only foster growth in the sector but also strengthen the economic resilience of the entire region, positioning agriculture as a strategic asset for the overall development of Molise.

The structure of Molise's farms and land use dynamics reveal an evolving sector characterised by structural challenges and unique strengths, particularly in terms of human capital.

In 2020, there were 18,707 farms based in Molise, accounting for 1.7% of the national total. It is interesting to note that the 7th General Agricultural Census involved approximately 28,000 agricultural and livestock farms in Molise, suggesting that the figure of 18,707 refers to active production units in a stricter sense, perhaps excluding those with secondary activities or very small in size. Although no specific average size is provided for farms in Molise, the national context indicates an average UAA per farm of 10.5 hectares, with the southern regions having a lower average of around 9 hectares compared to 14 hectares in the north. This suggests that farms in Molise tend to be smaller than the national average.

The region ranks first in Italy for the proportion of farms run by women, who account for 39.7% of the total.<sup>4</sup> In particular, the province of Campobasso ranks fourth among Italian provinces, with 40.3% of farm managers being women.

About certified organic farming, Molise is below the national average:

only 2.7% of farms adopt this method, compared to 6.7% nationally. However, this figure does not tell the whole story of sustainability in the sector. In 2023, over 60% of Molise farmers adopted sustainable agricultural practices to protect the land.<sup>9</sup> These practices include the use of monitoring technologies (such as Farmonaut satellites), reducing the use of pesticides and chemical fertilizers, and promoting organic farming and biodiversity.

The discrepancy between the low percentage of farms with organic certification (2.7%) and the high adoption of broader sustainable agricultural practices (over 60%) reveals an interesting dynamic. This suggests that, while there is a strong intrinsic commitment to environmental responsibility among Molise farmers, barriers to formal organic certification (which may include costs, bureaucratic complexity, or a perception of little market advantage) may limit their uptake. This indicates that the Molise agricultural sector has a solid foundation of environmental management that is not fully recognised by the “certified organic” metric alone. The opportunity lies in understanding and addressing these barriers, perhaps through targeted incentives or

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<sup>2</sup> Ibidem

campaigns to promote sustainable practices already in place, in order to fully capitalise on the market potential of “sustainability made in Molise”.

Molise boasts a diverse agricultural and livestock production landscape, ranging from extensive cultivation to high-value niche products, often linked to specific traditions and territories.

The utilized agricultural area (UAA) in Molise is dominated by arable land, which accounts for 58% of the total. Permanent grassland and pastures cover 14.4% of the UAA, while woody crops, notably olive trees, occupy 7.3%.<sup>4</sup> This distribution highlights the region's suitability for both extensive and specialised agriculture.

**Cereals:** The cultivation of durum wheat in Molise is of considerable economic importance, covering approximately 70,000-75,000 hectares. The average regional yield is around 3 tonnes per hectare.<sup>10</sup> For the farms sampled, the average yield was higher, at 4.21 t/ha.

**Olive oil:** Molise is a producer of olive oil. Recent data indicate a harvest of 19,178 tonnes of olives and a production of 2,515 tonnes of oil. Another source reports 15,339 tonnes of olives and 2,036 tonnes of oil. Molise extra virgin olive oil (PDO) is one of the products recognised under quality schemes.

**Wine:** Molise's vineyard area covers between 5,500 and 5,540 hectares, with 55% located in mountainous areas and 45% in hilly areas. Total wine production is 319,000 hectolitres.<sup>14</sup> Red and rosé wines predominate, accounting for 74% of production, while white wines account for 26%. The region boasts 4 DOC and 2 IGT

**Appellations.** Among the grape varieties, Montepulciano and Aglianico are the most important black grapes, while Falanghina and Trebbiano are prevalent among the whites.

The “Tintilia del Molise DOC” designation was established in 2011.<sup>14</sup> Exports of Molise PDO products increased by 18.8% and those of IGT wines by 31% between 2013 and 2015, signalling a growing international presence.

In the livestock sector, Molise poultry and beehives contribute significantly to the respective national totals, with 3.7% and 1% respectively. An important initiative for the management of the sector was the creation of a single digitised database for farmers in Molise and Abruzzo, scheduled for completion by 2023, with 154 Molise farms already registered.

Livestock farming, particularly in the hilly and mountainous areas of Molise, plays a role that goes beyond mere economic production. It is often the only economic activity possible that contributes crucially to protecting the environment and safeguarding the territory, preventing the degradation of marginal areas.<sup>6</sup>

## EXCELLENCE AND TRADITIONAL LOCAL PRODUCTS

Molise is internationally renowned for certain products of excellence. The region is a leading player in truffle production, accounting for 40% of the national harvest, with an impressive 80% of production destined for export. 18 Annual production includes around 50 quintals of white truffles and other varieties, between 30 and 70 quintals of white truffles, and 300 quintals of black summer truffles.<sup>19</sup> The areas best known for white truffles are the humid valleys in the inland areas of the provinces of Isernia (Carovilli, San Pietro Avellana, Capracotta) and Campobasso (Bojano).

The region also boasts a wide range of Traditional Agri-Food Products (PAT), ranging from cheeses (such as Caciocavallo, Pecorino del Matese, Scamorza molisana) to cured meats (Ventricina di Montenero di Bisaccia, Soppressata molisana), vegetables, legumes, fruit, honey and traditional liqueurs.<sup>20</sup> Saffron cultivation is another growing niche, with a yield of about 60g of pistils per 100 square metres, with the largest harvest in the second year. The cultivation of coriander seeds is also significant, with 23,348 hectares dedicated to it in 2016, mainly for export to Asian markets.

While a significant portion of Molise's UAA is devoted to extensive crops such as durum wheat, the region's true competitive strength and highest export potential lie in high value-added niche products such as truffles,

quality wines, saffron and coriander seeds. This observation suggests that a development strategy for Molise agriculture should prioritise investment and specialisation in these products, which capitalise on the uniqueness of the territory and its traditions. Focusing on research, brand enhancement, quality certification and targeted international marketing for these products would allow Molise to maximise economic returns even from a shrinking land base, taking full advantage of its terroir and local knowledge. The extensive list of PATs further highlights this opportunity to build a strong “Molise brand” in the agri-food sector.

The multifunctional role of livestock farming is another crucial aspect. The explicit mention that livestock farming is often the only viable economic activity in the hilly and mountainous areas of Molise and that it contributes to environmental protection and land conservation highlights an ecological and social function that goes beyond the mere production of meat or milk. This indicates that livestock farming is not only an economic activity, but a vital component of landscape management and ecological resilience. Regional policies and support programmes should explicitly recognise and incentivise these ecosystem services provided by livestock farmers, particularly in marginal areas, for example through measures for sustainable grazing practices (such as “arboricultural grazing” cited as a climate adaptation practice ) and the development of quality livestock products that reflect the unique characteristics of Molise's pastures. This integrated approach ensures that livestock farming contributes both to economic output and to the long-term health of the Molise landscape.

## AGRICULTURAL EMPLOYMENT IN MOLISE

Employment dynamics in Molise's agricultural sector present a complex picture, with seemingly contradictory trends that, upon closer analysis, reveal a process of modernisation and retraining.

Although agriculture contributed 5.2% to Molise's total added value in 2020, it employs a slightly higher proportion of the regional workforce, accounting for 7.5% of Molise's workers in 2021. The overall employment rate in Molise was 53.5% in 2020, with an average unemployment rate of 9.5%.

Despite signs of an overall recovery in regional employment, with growth of 7.1% compared to 2023 and a decrease in the overall unemployment rate to 5.3%, the agricultural sector recorded a significant decline of 21.7% in employment compared to 2019.

Contrary to the overall decline in agricultural employment, the sector is proving highly attractive to young people. Youth employment in agriculture has grown by 11.3% in Italy and 12.9% in the south of the country. Molise, in particular, stands out for its greater contribution to youth entrepreneurship in the agricultural sector, with new registrations by under-35s exceeding 38% of the total in the first nine months of 2016, well above the national average of 31%.

The presence of foreign labour in the Molise agricultural sector is relatively limited, accounting for only 8% of the workforce, about half the national average.<sup>5</sup> This suggests a greater dependence on local labour.

The coexistence of a significant decrease in overall agricultural employment (21.7% since 2019) and a robust attractiveness of the sector for young entrepreneurs (over 38% of new registrations by under-35s) reveals a profound structural transformation in the Molise agricultural labour market. The reduction in jobs could indicate increased efficiency, greater mechanisation or a process of consolidation of smaller and less productive farms. At the same time, the high influx of young people, who are often more qualified and innovation-oriented, suggests a professionalisation of the sector, with a focus on higher value-added activities and the adoption of advanced technologies, such as those of Agriculture 4.0.<sup>25</sup> This is not simply a decline in employment, but rather a sign of modernisation, with the sector repositioning itself to operate more efficiently and sustainably with a more specialized and entrepreneurial workforce

## SAFETY REGULATIONS IN ITALY

In Italy, the main legislation governing health and safety in the workplace is **Legislative Decree No. 81 of 9 April 2008**, commonly known as the **Consolidated Law on Occupational Safety** (Testo unico sulla sicurezza del Lavoro).

This decree represented a reorganization and harmonization of previous provisions on the subject, incorporating various European directives and establishing a comprehensive regulatory framework for the prevention of and protection against occupational risks.

### Key points of Legislative Decree 81/2008:

- **Principi Generali:** The Consolidated Law is based on the principle of health protection as a fundamental right of the individual and in the interest of the community, as enshrined in the Italian Constitution.
- **Scope of application:** Applies to all sectors of activity, public and private, and to all types of risk. It concerns all workers (employees, self-employed and equivalent).
- **Roles and responsibilities:** Clearly define the roles, obligations and responsibilities of all those involved in the company's prevention system, including:
  - **Employer:** The employer is primarily responsible for safety and must take all necessary measures to protect the physical integrity and moral character of workers. The employer is required to assess all risks present in the company and to prepare a Risk Assessment Document (DVR).
  - **Managers and supervisors:** Contribute to the implementation of safety measures in accordance with their duties and responsibilities.
  - **Employees:** They have a duty to take care of their own health and safety and that of other people in the workplace, complying with the instructions and means provided by the employer.
  - **Head of the Prevention and Protection Service (RSPP):** A person appointed by the employer with specific expertise in prevention and protection.
  - **Competent Doctor:** Carries out health surveillance of workers in relation to specific risks.
  - **Workers' Safety Representative (RLS):** Represents workers on aspects of health and safety at work.

**General protective measures:** The decree lists the general protective measures that employers must adopt, including:

- Assessment of all health and safety risks.
- Removal or reduction of risks at source.
- Prevention planning.
- Information and training for workers.
- Provision of Personal Protective Equipment (PPE).
- Health surveillance.

- Emergency management (first aid, firefighting, evacuation).
- **Technical and managerial adjustments:** This involves the adoption of specific measures to address risks or areas of activity (e.g. temporary or mobile construction sites, use of work equipment, physical, chemical and biological agents, manual handling of loads, video terminals, etc.).
- **Penalties:** Establishes a system of penalties (administrative and criminal) in the event of non-compliance with the obligations set out in the legislation. Penalties are reviewed periodically.
- **Updates and amendments:** Legislative Decree 81/2008 has undergone several additions and amendments over the years to incorporate new European directives or to adapt to new requirements (e.g. Legislative Decree 106/2009, Decree Law 146/2021).

In summary, Legislative Decree 81/2008 is the cornerstone of Italian workplace safety legislation, which aims to promote a culture of prevention and ensure safe and healthy working environments for all workers.

## THE MAIN RISKS PRESENT IN THE TERRITORY

Agriculture is a sector that poses high risks to workers' health and safety, and Molise is no exception. Although recent data (May 2025) show a decline in reports of accidents in agriculture at the national level, the Molise region recorded an overall increase in accident reports in 2025 (+2.3%). In general, agriculture, together with construction, remains one of the sectors with the highest number of accidents, including fatalities.

Here are the main risks in agriculture in Molise, often highlighted by supervisory bodies (INAIL) and trade associations:

### Accidents involving machines and agricultural vehicles:

- **Tractor rollovers:** This is the leading cause of death in agriculture. Many accidents are related to outdated machinery, poor maintenance, improper use (e.g., on sloping terrain or by inadequately trained individuals), and the advanced age of many farmers, which can lead to inattention or slower reaction times.
- **Crushing or entrapment:** During the use or maintenance of agricultural machinery, such as combine harvesters, balers, or earth-moving equipment.
- **Being run over:** By moving vehicles.
- **Falling from vehicles:** During ascent or descent, or during transport. **B. Falls from height:**
- From trees, ladders, roofs of sheds, or silos. **C. Chemical risk:**
- **Exposure to pesticides and plant protection products:** Improper use or failure to wear appropriate PPE can cause acute or chronic poisoning, skin and respiratory irritation, and increase the risk of more serious long-term conditions (e.g., neurological, oncological).
- **Exposure to fertilizers and other substances:** These products can also pose health risks if not handled correctly.

### Biological risk:

- **Contact with animals and sewage:** Can lead to zoonotic diseases (transmissible from animals to humans) such as brucellosis, leptospirosis, and tetanus.
- **Exposure to organic dust:** Such as dust from grains, hay, mold, pollen, and mites, which can cause asthma, allergic rhinitis, and other respiratory diseases.
- **Stings and bites:** Insects (mosquitoes, ticks), snakes, spiders.

### Physical risk:

- **Exposure to noise and vibrations:** Long-term use of agricultural machinery can cause hearing damage (hearing loss) and musculoskeletal disorders (e.g., back pain, shoulder disorders, carpal tunnel syndrome).
- **Exposure to solar radiation:** Working outdoors exposes workers to the risk of skin cancer (melanoma, epithelioma) and solar keratosis. In Molise, as in the rest of southern Italy, high temperatures require particular attention to prevent heatstroke and dehydration, so much so that the Molise Region has issued specific ordinances for work activities involving prolonged exposure to the sun.
- **Extreme temperatures:** Excessive heat in summer and intense cold in winter.

### Manual handling of loads:

- Lifting, carrying, or supporting heavy loads can cause musculoskeletal disorders, particularly affecting the spine (low back pain, sciatica), knees, and hips.

### Risks in confined spaces/silos:

- Hazards related to lack of oxygen, presence of toxic gases (e.g., methane in biogas, CO<sub>2</sub>) or explosive atmospheres (e.g., grain dust) inside silos, sewage storage tanks, or enclosed spaces.

### Factors related to age and education:

A significant factor in Molise, as in other regions of southern Italy, is the high average age of farmers, who are often less inclined to keep up to date with new technologies or adopt strict safety procedures.

- The lack of adequate training and certification in the use of agricultural machinery is a recurring problem, as highlighted by Coldiretti Molise.
- **Prevention and management measures:** To mitigate these risks, it is essential to apply Legislative Decree 81/2008, with particular attention to:
  - **Risk assessment (DVR):** Specific to the farm and up to date.
  - **Training and information:** Adequate and ongoing training for all workers on the safe use of equipment, chemical and biological risk management, and emergency procedures. In particular, certification for the use of tractors is mandatory.
  - **Machine maintenance:** Regular and thorough, with attention to compliance with safety regulations (e.g., roll bars on tractors).
  - **Use of PPE:** Mandatory and monitored (gloves, goggles, respiratory masks, safety footwear, protective clothing).

- **Health surveillance:** Carried out by the Medical Officer in relation to specific risks.
- **Improvement of environmental conditions:** Shading, availability of water, management of extreme temperatures.
- **Promotion of innovation:** Incentives for the purchase of modern and safe machinery.

Awareness of risks and a proactive approach to safety are essential to protect the lives and health of those who work in the Molise countryside.

Although Italian legislation on safety at work is among the most comprehensive and rigorous (Legislative Decree 81/2008), its practical application in the field, especially in regions such as Molise, can be lacking in several areas. These shortcomings do not only affect agriculture, but often extend to all productive sectors, particularly small and micro-enterprises.

The following are the main gaps identified in the Molise region in workplace safety:

**Lack of a culture of prevention:**

- **Poor risk perception:** Many workers and employers, especially in small businesses or traditional sectors such as agriculture, tend to underestimate risks or consider them an integral part of the job. This leads to unsafe behavior and failure to use PPE.
- **Resistance to change:** Difficulty abandoning established but unsafe practices, often for economic reasons or out of habit.
- **High average age:** In Molise, the aging workforce, especially in agriculture, can lead to less familiarity with new technologies and safety procedures, as well as reduced physical abilities and reaction times.<sup>3</sup>

**Difficulties in applying for Legislative Decree 81/2008 in SMEs:**

- **Regulatory complexity:** The Consolidated Law is a complex document, and for small businesses in Molise, which often lack dedicated staff or in-house expertise, interpreting and applying it correctly can be costly and difficult.
- **Safety costs:** Implementing safety measures (training, purchasing PPE, adapting machinery, consulting) involves costs that SMEs, with limited financial resources, may struggle to bear.
- **Lack of “effective” RLS:** In small companies, it is common for the Workers' Safety Representative (RLS) to be appointed by the employer rather than elected by the workers, thus losing its function of protection and representation.
- **Lack of safety management systems:** The limited adoption of health and safety management systems (such as the models referred to in Article 30 of Legislative Decree 81/2008) makes prevention less structured and more reactive than proactive.

### Obsolescence of machinery and equipment:

In many sectors, particularly agriculture, outdated machinery and equipment that does not meet current safety standards is still in use. The lack of investment in renewing machinery is a widespread problem.

### Lack of controls and supervision:

- **Limited resources of supervisory bodies:** The supervisory bodies (ASREM, Territorial Labor Inspectorate) may have limited human and instrumental resources compared to the vastness of the territory and the number of companies to be supervised.
- **Difficulty of access:** Especially in rural and isolated areas of Molise, controls can be more sporadic and complex to implement.
- **Effectiveness of sanctions:** Although sanctions are in place, their deterrent effect may be limited if the perception of the risk of being caught and sanctioned is low.

### Inadequate or insufficient training:

Despite the obligation, training for workers (and employers) may be insufficient, superficial, or not adequately updated about the specific risks of the sector and regulatory changes. This is particularly evident in the case of certification for the use of agricultural machinery.

### Emergencies and specific critical issues in the area:

- **Managing excessive heat:** As highlighted by recent regional ordinances, working outdoors during the hottest hours of the day, especially in the agricultural and construction sectors, poses a significant risk and requires specific measures. The timeliness and effectiveness of these measures and related controls is essential.
- **Isolation of inland areas:** The lack of road infrastructure and essential facilities (such as hospitals and emergency services in remote areas) can exacerbate the consequences of an accident by delaying rescue and emergency response.<sup>7</sup> Problemi strutturali e socioeconomici:

**Economic crisis and depopulation:** The general economic situation and the phenomenon of depopulation, especially in inland areas, can discourage investment in security and encourage the use of unskilled or “undeclared” labor, which is by its nature less protected.

**Presence of irregular work:** Undeclared work is a huge risk factor, as irregular workers have no health and safety protections whatsoever.

To overcome these gaps, a joint effort is needed from all stakeholders: institutions, regulatory bodies, employer and trade union associations, and, of course, employers and workers themselves. It is essential to promote a culture of safety that starts with training and awareness-raising and is supported by effective controls and incentives for the adoption of best practices.

## CHAPTER 2

### GUIDELINES CONTENT





## Chapter 2 Guidelines content -Apulia Region

### General principles of the strategic model

The proposed strategic model for health and safety management in the agricultural sector is based on a preventative, participatory, and systemic approach, consistent with the principles established by Legislative Decree 81/2008 and European directives on worker protection. Specifically, the key reference is Article 15 of the Consolidated Law, which lists general protection measures, including risk assessment, prevention planning, risk reduction at source, and worker information and training.

The model's primary objective is not only regulatory compliance, but also the introduction of integrated and proactive safety management, understood as a structural component of business management. This means considering safety not as a cost, but as an enabling factor for productivity, economic sustainability, and the well-being of human capital. This vision is consistent with the approach proposed by the European Health and Safety Strategy 2021– 2027, which emphasizes systematic prevention and the *empowerment* of small-scale agricultural businesses

In the INAIL "Guidelines for Safety Management in Agricultural Micro-Enterprises" published in 2022, the guiding principles of the model include:

- the principle of proportionality, according to which preventive measures must be appropriate to the size, type of production, and level of risk of the company.
- the principle of active participation, which requires the involvement of all company stakeholders in safety management (from the employer to workers, to external consultants);
- the principle of operational simplification, aimed at encouraging the adoption of the model even in micro-enterprises through clear tools, accessible language, and digital support.

Finally, the model emphasizes the territory as a strategic component: the specific characteristics of the Apulian context—in terms of crops, work organization, and climate— require the adoption of flexible and scalable solutions that can be adapted to different types of businesses while maintaining high standards of safety and legality.

Traditionally, safety management on farms has been treated as a formal requirement, often delegated to external consultants and disconnected from internal decision-making processes. In this reactive model, safety concerns emerge primarily during inspections, incidents, or documentation requirements, without being truly integrated into the company's management cycle. This approach, although widespread especially among microenterprises, has obvious limitations: it fails to ensure systematic risk reduction, fails to promote active worker involvement, and fails to contribute to a healthy and productive work environment. In contrast, the proposed strategic model is based on an integrated vision of safety, which envisions the systematic inclusion of prevention and protection activities in corporate planning, organization, and control. Safety thus becomes a management lever, not an external variable to be tolerated. In this context, the employer is not only legally responsible, but also a cultural promoter of prevention.

In INAIL's 2021 "Support tools for safety management in agricultural enterprises" it is reported that adopting a strategic approach involves:

- the identification of risks as an integral part of production planning (e.g. crop choices, rotations, schedules);
- the definition of safety improvement objectives over time, monitorable through indicators (e.g. hours without accidents, participation in courses, positive inspections);
- the use of flexible operational tools consistent with the agricultural context, such as simplified checklists, digital apps, machine data sheets and maintenance plans. This approach is particularly useful for companies in Puglia, where the combination of high risks, limited resources, and strong seasonality requires agile, customizable models geared toward concrete problem-solving.

### Model structure: actors, roles, tools

The strategic model for managing health and safety in agriculture is structured around a clear and functional framework, centered on three fundamental pillars: corporate entities, tasks and responsibilities, and operational tools. This framework is designed to adapt to business contexts of varying sizes, with particular attention to the agricultural sector in Puglia, characterized by small, family-run or semi-family-run businesses.

The model provides for the coordinated participation of the following actors:

- Employer: The central figure and ultimate responsibility for safety management. They must ensure risk assessment, worker training, health surveillance, and the availability of PPE. They may assume the role of RSPP in companies with up to 30 employees, subject to specific training.<sup>57</sup>
- Prevention and Protection Service Manager (RSPP): Technical figure responsible for preparing the DVR, providing internal consulting, and implementing prevention measures. In small companies, this role is often filled by the employer.
- Company physician: intervenes in companies where health surveillance is mandatory (e.g., pesticide use, exposure to noise or vibrations). He or she is also responsible for health protocols and employee fitness for work.
- Territorial Workers' Representative for Safety (RLST): a position established by Article 48 of Legislative Decree 81/08, this role operates in agricultural companies that have not elected an internal RLS, providing support to workers in verifying safety conditions. The RLST has access to the workplace, receives specific training, promotes compliance with accident prevention regulations, and acts as an intermediary between workers and employers, particularly in small businesses or those with seasonal labor.
- Workers' Safety Representative (RLS): mandatory in companies with more than 15 employees, but highly recommended even in smaller settings, often replaced by a Workers' Safety Representative (RLST). This role facilitates dialogue between workers and employers on safety issues.
- Workers: recipients and co-protagonists of safety. They must follow procedures, use PPE correctly, and report any risks or anomalies.

The effective implementation of a strategic safety management model in agriculture requires the coordinated use of a series of operational tools, designed to ensure traceability, regulatory compliance, and continuous improvement. In agricultural SMEs, the effectiveness of these tools depends on their accessibility, ease of use, and appropriateness to the actual work context.

The basic documentation that a company must adopt and update:

**Risk Assessment Document (RAD)** - The RAD is the cornerstone of the entire safety management system. It must include hazard identification, risk assessment, prevention and protection measures adopted, and a plan for improvement. The RAD must be updated regularly or whenever significant changes occur to production activities. Self-certification of risk is permitted for farms with up to 10 workers, but only under certain conditions.

**Training register** - a fundamental tool for ensuring the traceability of mandatory training activities, both for employees and family caregivers. It must include the dates of the courses, the content covered, the instructors, and the certificates issued. Its correct completion is often subject to inspection by regulatory bodies.

**Emergency and first aid plan** - mandatory for all businesses, including agricultural ones. It must contain the procedures to be implemented in the event of a fire, serious injury, or other emergency, and must designate the workers responsible for managing the emergency.

**Equipment and machinery data sheets** - Every machine or piece of equipment in the company should be accompanied by a technical data sheet listing its main characteristics, checks performed, maintenance status, and safe use instructions. These data sheets, supplemented by *checklists*, are useful tools for preventing mechanical accidents.

**PPE (Personal Protective Equipment) Management** - essential to ensure the proper supply, maintenance, and replacement of PPE (gloves, masks, overalls, ear muffs, etc.). A PPE delivery form, signed by workers, and a periodic inspection log must be maintained.

### **Management process and cyclicity**

Effective occupational health and safety management requires a cyclical and dynamic approach based on the principle of continuous improvement. This approach is consistent with the management models proposed by the International Labour Organization (ILO) and the INAIL guidelines on Occupational Safety Management Systems (OSMS), which are based on the Deming cycle: *Plan – Do – Check – Act* (PDCA).

This approach is particularly useful in agriculture, where activities vary depending on seasonality, weather conditions, and crop type. A static, linear model would be inadequate to capture the complexity and variability of the operational context. The proposed model instead adopts a risk management cycle divided into five phases, each involving concrete, verifiable, and documentable activities.

The stages of the process are:

**Risk assessment:** the initial and foundational phase. It involves identifying the hazards present in the company, estimating the associated risks (in terms of probability and severity), and prioritizing interventions. It must be conducted methodically and with a participatory approach, involving workers and, if necessary, external consultants.

**Measure planning:** defining the correct and preventive measures to be implemented, both short and long-term. This phase involves drafting or updating the DVR, scheduling maintenance, identifying training needs, and assigning operational responsibilities.

**Implementation:** Implementation of the planned measures, including the provision of PPE, training, equipment maintenance, and safe shift organization. Implementation

also requires constant communication with workers to ensure their active involvement.

**Monitoring and verification:** This phase consists of collecting data and evaluating the effectiveness of the implemented measures. Monitoring may include:

- verification of the frequency and severity of accidents or *near misses* ;
- the analysis of training reports and maintenance records;
- the comparison between set objectives and results obtained.

More structured farms can adopt safety *performance indicators* (e.g., *working days lost due to injuries, number of internal audits, percentage of trained workers*), while for micro-enterprises, the use of *simplified self-assessment forms prepared by regional SPSAL* is recommended.

**Review and Improvement:** The final phase involves updating assessments, documents, and procedures considering the evidence gathered. This can occur annually or when organizational changes occur (introduction of new machinery, new crops, changes in workforce). Continuous improvement is the core of the model, as it allows the company to gradually adapt to new regulatory, technological, and production needs.

**Figure 1- Diagram – Strategic safety management cycle in agricultural companies (adapted PDCA model)**



Source: Re-elaboration based on INAIL and Puglia Region (2023)

### Enabling factors and support tools

The effective implementation of a strategic safety management model in agriculture depends not only on the system's technical structure, but also on the presence of enabling factors that facilitate its integration into business processes. These factors are even more crucial in contexts like Puglia,

characterized by a prevalence of family-run microbusinesses, limited economic resources, and a low level of digitalization.

Continuous and contextualized training. Training is the first and most important enabling factor. To be effective, it must be:

- practical, that is, based on real cases and operational demonstrations;
- contextualized, that is, tailored to the company's real risks and not generic;
- accessible, also in linguistic and logistical terms, to involve migrant and seasonal workers.

Experiments conducted in Puglia by INAIL and local health authorities have demonstrated that field workshops, simulation courses, and multilingual video guides are more effective than traditional classroom courses.

Simplify documentation and procedures. A second key factor is simplification. Farms often perceive safety as a complex set of bureaucratic requirements. To overcome this barrier, it's essential to offer:

- pre-filled templates (e.g. simplified DVR);
- *checklists* ;
- graphic and multilingual guides prepared by SPSAL and INAIL

These tools also allow less experienced or poorly educated employers to orient themselves and correctly apply the legislation.

Digitalization and enabling technologies. The introduction of digital tools represents a significant acceleration in safety management. Although the average level of digitalization among Apulian agricultural businesses is still low, the most advanced experiences demonstrate that adopting technological solutions can simplify:

- monitoring of equipment and PPE (e.g. QR codes on machines, digital checklists, etc. );
- the management of training or health deadlines (e.g. automated calendars);
- the traceability of maintenance interventions or internal inspections. *open source tools* and platforms accessible via *smartphone* have been tested , such as digital decision support systems (DSS) for security, developed in collaboration with universities and local consortia.

Local support and technical assistance. Another enabling factor is the local technical support network offered by public and private entities. In Puglia, a key role is played by:

- SPSAL of the Local Health Authorities, which offer free consultancy, training and collaborative checks;
- professional agricultural organizations (CIA, Coldiretti, Confagricoltura), which act as cultural and operational intermediaries;
- agricultural assistance centers (CAA), often involved in the management of company documents.

These actors can act as multipliers of the model, promoting its diffusion and adaptation to different regional territories.

Collaborative networks and peer learning. Creating networks of agricultural businesses that share experiences, tools, and best practices represents a strategic opportunity. The Puglia RDP Operational Groups (OGs) and rural innovation networks can serve as privileged channels for exchanging practical safety solutions, promoting participatory and sustainable models.

### Adaptability of the model to Apulian agricultural SMEs

The success of a strategic health and safety management model depends on its adaptability to the operational context, particularly for micro and small businesses (SMEs), which account for over 95% of Apulia's agricultural sector. These businesses present specific characteristics that significantly impact the ability to implement formal prevention tools: limited financial resources, non-standardized workloads, frequent use of seasonal labor, and limited access to specialized technical advice.

Precisely to respond to these critical issues, the proposed model has been structured to guarantee:

- modularity, that is, the possibility of applying it in a simplified or complete form based on the company size and production complexity;
- scalability, that is, the ability to gradually grow with the company, introducing increasingly more complex tools;
- operational flexibility, which allows measures to be adapted to crops, seasonal cycles and available resources.

A concrete example of adaptation can be seen in the case of cereal farms in the Alta Murgia region, where labor is limited but mechanical risks are high. In these contexts, the model focuses on the adoption of machine data sheets, maintenance plans, and periodic training for the safe use of tractors. In contrast, in fruit and vegetable farms in the Foggia area with high seasonal labor intensity, the focus shifts to multilingual training, PPE management, and environmental monitoring.

The model's ability to adapt to local business needs is a key factor in its success and long-term sustainability. Its practical application will be examined in Chapter 3.

To make the model accessible and applicable to Apulian agricultural SMEs, it is necessary to use facilitating operational tools that overcome technical and cultural barriers to adoption. These include:

- concise and illustrated sheets for the simplified DVR, prepared in multiple languages and with practical examples related to the different types of processing;  
*apps* for safety management, already successfully tested in olive oil companies in the Brindisi area, which integrate *checklists*, reminders and access to basic video training
- Security desks spread throughout the country, promoted by local authorities, CAA (agency assistance centers) or trade unions, capable of providing ongoing support in document management and fulfilling training obligations.

In addition to the technical tools, it is essential to strengthen some enabling conditions that determine the success of the model:

- trust between institutions and agricultural businesses, often compromised by exclusively punitive approaches;
- stable training alliances between local health authorities, bilateral bodies and agricultural professional schools;
- recognition of the economic value of safety, including through rewards in public tenders, PSRs, or quality certification systems.

Only under these conditions can the strategic model translate into a shared, structured, and lasting prevention practice capable of improving working conditions in the agricultural sector and contributing to the competitiveness and sustainability of local businesses.

## Chapter 2 GUIDELINES CONTENT AND STRATEGIC MANAGEMENT MODEL -ALBANIA



### CURRENT STATUS

#### Introduction

Agriculture is a critical sector in Albania, employing a significant portion of the workforce. However, it presents numerous health and safety risks, including exposure to hazardous chemicals, machinery accidents, ergonomic strain, and biological hazards. This document outlines a **strategic management model** designed to enhance the **processes, procedures, and applications** necessary to manage occupational safety and health (OSH) risks in agriculture effectively.

This model aligns with the *Policy Document for Occupational Health and Safety 20242030*, EU directives, and best international practices, ensuring a structured approach that integrates policy objectives with practical implementation mechanisms. The aim is to establish a **systematic framework** that supports **continuous improvement, compliance monitoring, and stakeholder collaboration** in managing agricultural OSH issues.

#### Legal and Strategic Framework

The model is built upon the following regulatory and strategic foundations:

- **Albanian Law No. 10237 (2010):** Establishes national occupational safety and health (OSH) requirements.
- **EU Directives:**
  - Directive 89/391/EEC: Establishes a general framework for improving worker safety and health (for more information, see Annex 2)
  - Directive 2009/128/EC: Defines sustainable pesticide use requirements.  
(for more information, see Annex 3)
  - Directive 98/24/EC: Ensures protection from chemical agents (for more information, see Annex 4)
  - Directive 2002/44/EC: Mitigates risks from vibration and noise (for more information, see Annex 5)
  - Directive 2000/54/EC: Addresses biological hazard exposure in the workplace (for more information, see Annex 6)
- **ILO Conventions:**
  - Convention 155: Occupational Safety and Health (for more information, see Annex 7)
  - Convention 184: Safety and Health in Agriculture (for more information, see Annex 8)
  - Convention 187: Promotional Framework for OSH (for more information, see Annex 9)

- **Strategic Vision:**

- Integration of OSH principles into agricultural policies and rural development initiatives.
- Promotion of a **preventive culture** by embedding risk assessment and safety management in daily farming operations.
- **Inter-agency cooperation** to ensure enforcement, compliance, and support for agricultural enterprises.

## Process-Based Risk Management in Agriculture

### Risk Identification and Assessment Model

#### Establishment of a standardized risk assessment protocol following EU methodologies

The establishment of a standardized risk assessment protocol following EU methodologies is crucial for ensuring consistent, transparent, and effective risk management across different sectors within the European Union. Such a protocol helps to streamline decision-making and enhance public safety, while also ensuring that risk assessments are aligned with European standards and regulations. At the heart of the EU's risk assessment framework is the precautionary principle and the emphasis on scientific evidence. This framework involves several key steps, including hazard identification, exposure assessment, dose-response analysis, and risk characterization. The aim is to evaluate risks in a systematically structured way to inform regulatory and policy decisions. This framework is applied across a range of sectors, from environmental risks to public health and safety.

To establish a standardized protocol, it is essential to first understand the various components that make up the EU's risk assessment methodology. These components include identifying and analyzing potential risks, assessing the exposure of affected populations or environments, and determining the risk level through quantitative and qualitative means. Tools such as risk matrices and event tree analyses are often used to assess the likelihood and severity of risks.

Developing a standardized risk assessment protocol involves adapting these EU methodologies to different sectors while ensuring flexibility to accommodate the unique challenges of each. It is also important to engage stakeholders in the process, including policymakers, experts, and the public, to ensure transparency and effective communication. Clear risk communication helps decision-makers and the public understand the nature of the risks and the actions required to mitigate them.

Legal compliance is another key aspect of the protocol's development. Ensuring that the risk assessment aligns with EU regulations such as REACH or the Water Framework Directive ensures that it remains legally sound and enforceable. At the same time, a detailed implementation plan ensures that the protocol can be practically applied at both the national and EU levels.

Monitoring and periodic review are critical for ensuring the effectiveness of the protocol. Regular monitoring of risk levels, as well as periodic updates based on new data, scientific advancements, or changes in regulations, ensures that the risk assessment remains relevant and accurate over time. This iterative process helps to manage emerging risks and adapt to new challenges as they arise.

However, there are challenges to implementing such a protocol. Data availability, cultural and regional differences in risk perceptions, and the uncertainty inherent in risk projections all pose challenges that must be addressed. Ensuring the availability of reliable data, considering local contexts, and using conservative approaches in cases of uncertainty are key to overcoming these challenges.

In conclusion, a standardized risk assessment protocol based on EU methodologies offers numerous benefits, including enhanced consistency and transparency across member states. By following this framework, EU countries can improve their ability to manage risks effectively, protect public safety, and contribute to global risk management standards. As risks evolve, so too will the protocols, ensuring that risk management remains proactive and adaptable to future challenges (*for a structure of a protocol, see Annex 10*).

### Adoption of the 5x5 risk matrix model (likelihood vs. severity) to prioritize risks.

The **5x5 risk matrix** is a tool commonly used in risk assessment to help prioritize and evaluate risks based on two key factors: **likelihood** (the probability that a risk will occur) and **severity** (the impact or consequences if the risk does occur). It provides a structured approach for determining which risks are most critical and require immediate attention versus those that can be managed with less urgency. (*for the key components of a risk matrix, see Annex 11*).

### Implementation of sector-specific hazard identification tools

To ensure a comprehensive risk assessment, it is essential to use hazard identification tools tailored to the unique risks found in different sectors. In the agricultural sector, various hazards pose significant threats to workers, the environment, and public health. Identifying and managing these risks effectively requires specialized approaches for each type of hazard. Below are some key areas where sector-specific hazard identification tools can be implemented,

#### Farm Machinery (Tractor Roll-Over Risks, Mechanical Entanglements, Vibration-Related Injuries)

Farm machinery, particularly tractors, is one of the most significant sources of risk in agricultural operations. Tractors are large, heavy machines that are used in various tasks, such as plowing, planting, and harvesting, but their use also exposes workers to considerable risks. **Tractor roll-overs** are a leading cause of fatalities in agriculture, often occurring due to uneven terrain or improper use. Hazard identification tools like **roll-overprotective structures (ROPS)** and **seat belts** are critical for minimizing these risks by ensuring safety in the event of a roll-over.

**Mechanical entanglements** are another major hazard in farm machinery. Workers are at risk of becoming caught in moving parts, such as rotating shafts, belts, or augers, which can lead to serious injuries or fatalities. To address this, machinery should be equipped with safety features like **guards** and **emergency stop systems**, and workers should be trained on the importance of these safety measures.

Lastly, **vibration-related injuries** occur due to prolonged exposure to machine vibrations, which can lead to conditions like **hand-arm vibration syndrome (HAVS)** and **whole-body vibration**. Implementing tools like **vibration monitoring** and using **ergonomically designed machinery** that minimizes excessive vibration can help reduce the risk of these long-term injuries.

#### Chemical Safety (Pesticide Exposure, Fertilizer Handling, Airborne Contaminants)

Chemical safety in agriculture is an area of major concern, particularly when it comes to **pesticide exposure**, **fertilizer handling**, and **airborne contaminants**. Pesticides are widely used to control pests and diseases, but their use also introduces risks of **acute poisoning**, **skin absorption**, and **inhalation exposure**. Tools like **pesticide application safety protocols**, **personal protective equipment (PPE)** (e.g., gloves, respirators, protective suits), and **pesticide drift monitoring** can help minimize these hazards.

**Fertilizer handling** also presents chemical risks, particularly with substances like **ammonium nitrate** and **potassium**. Improper handling or storage can result in **chemical burns**, **explosions**, or **long-term**

**health effects.** Specialized hazard identification tools such as **safe storage guidelines**, **handling procedures**, and **spill containment plans** should be employed to prevent accidents.

Furthermore, **airborne contaminants** like dust and volatile organic compounds (VOCs) from chemicals can pose respiratory risks to workers. Implementing **dust suppression systems**, **ventilation controls**, and regular **health monitoring** for respiratory conditions can greatly reduce exposure to these harmful agents.

### **Biological Risks (Zoonotic Diseases, Allergens, Fungal Infections in Stored Crops)**

In agriculture, biological risks are often associated with **zoonotic diseases**, which are diseases that can be transmitted from animals to humans. Workers on farms and in livestock facilities may be exposed to pathogens such as **Salmonella**, **E. coli**, **Avian Influenza**, and **Bovine Tuberculosis**. Hazard identification tools such as **biosecurity measures**, **animal health monitoring**, and **personal protective equipment** can help mitigate the risks associated with zoonotic diseases by reducing exposure and enhancing early detection.

In addition to zoonotic diseases, workers may be exposed to **allergens** related to crops and livestock. For example, handling **pollen** from certain crops or working with **livestock feed** can trigger allergic reactions, including respiratory issues or skin irritations. **Allergen management protocols** and **health surveillance** programs are crucial for identifying and managing these risks.

**Fungal infections** are also a significant concern, especially in **stored crops** like grain. Conditions such as **aflatoxin contamination** or **ergot poisoning** are caused by the growth of fungi in improperly stored crops. Hazard identification tools such as **fungal growth detection systems**, **temperature and humidity control measures**, and **regular crop inspections** can help identify and address these risks before they lead to widespread contamination.

### **Environmental Risks (Heat Stress, Extreme Weather Impact, Flood and Drought Response Measures)**

The agricultural sector is highly sensitive to environmental changes, and as such, effective hazard identification tools are necessary for managing environmental risks. **Heat stress** is a significant concern, particularly during hot weather conditions when workers are exposed to high temperatures for prolonged periods. **Heat stress monitoring systems**, along with **hydration protocols** and **work-rest cycles**, can help mitigate the risk of heat-related illnesses, such as heatstroke or exhaustion.

**Extreme weather events**, including **storms**, **hail**, **flooding**, and **drought**, also pose substantial risks to agricultural operations. These events can damage crops, machinery, and infrastructure, as well as disrupt the supply chain. Tools such as **weather forecasting models**, **early warning systems**, and **disaster preparedness plans** can assist in identifying the potential for extreme weather events, enabling farmers to take proactive measures to protect their operations.

**Flood and drought response measures** are critical in regions prone to these extreme events. Flooding can lead to soil erosion, crop damage, and water contamination, while droughts can cause water shortages and crop failure. Effective hazard identification tools such as **water management systems**, **drought-resistant crop varieties**, and **flood barriers** can help mitigate the impacts of these environmental hazards.

## **Control and Mitigation Measures**

### **Application of the Hierarchy of Controls**

The Hierarchy of Controls is a systematic approach used in occupational safety and health (OSH) to minimize or eliminate exposure to hazards. It provides a structured framework for addressing workplace risks, starting from the most effective control measures (elimination) to the least effective (personal protective equipment, or PPE).

Below are specific applications of each level of the hierarchy in the agricultural sector, where risks from chemicals, machinery, and environmental factors are prevalent.

**Elimination: Phasing Out High-Risk Chemicals and Obsolete Machinery** Elimination is the most effective control method as it completely removes the hazard from the workplace. In agriculture, this can involve the phasing out of high-risk chemicals such as certain pesticides, herbicides, or fertilizer that pose significant health or environmental risks. By eliminating the use of these chemicals, the potential for exposure to toxic substances is removed entirely, safeguarding both workers and the surrounding environment.

In addition, the elimination of obsolete machinery—such as outdated tractors or manual handling tools—can significantly reduce risks like mechanical failures, operator injuries, or exposure to harmful emissions. Replacing older equipment with newer, safer machinery that meets modern safety standards helps mitigate the risk of accidents, such as roll-overs, mechanical entanglements, and vibration-related injuries. This step can be particularly impactful in environments with high levels of manual labor or where safety systems may not have been updated.

### **Substitution: Using Low-Toxicity Alternatives in Pest Management**

The substitution control measure focuses on replacing a hazardous substance or process with something less dangerous. In agriculture, this often involves replacing harmful chemicals with low-toxicity alternatives for pest and disease management. For example, switching from highly toxic chemical pesticides to biological pest control agents, such as natural predators or microbial insecticides, reduces the potential harm to workers, beneficial insects, and the environment.

Another substitution strategy involves using non-chemical weed management methods, such as mechanical cultivation or mulching, instead of herbicides. By adopting less harmful substances or methods, agricultural workers are exposed to fewer risks, which not only improves health outcomes but can also align with sustainability goals by reducing environmental pollution.

### **Engineering Controls: Installation of Automated Pesticide Dispensers, Ergonomic Tools, and Mechanized Handling Equipment**

Engineering controls involve modifying the workplace environment or equipment to reduce the exposure to hazards. In agriculture, this could include the installation of automated pesticide dispensers that can control the precise application of pesticides, reducing the need for manual handling and minimizing the risk of pesticide exposure to workers. Automated dispensers can ensure accurate dosing and reduce the likelihood of spills, overexposure, or drift that can harm the worker or contaminate the environment.

Another important engineering control is the use of ergonomic tools designed to reduce strain and injury. For example, specially designed machinery with ergonomic handles, footrests, and adjustable seats can help minimize musculoskeletal injuries, which are common in farming tasks such as planting, harvesting, and lifting.

Finally, mechanized handling equipment, such as conveyor belts or robotic harvesters, can be implemented to automate the lifting, sorting, and handling of heavy crops or materials. This reduces the physical load on workers, preventing injuries related to lifting, repetitive motion, or exertion.

## **Administrative Controls: Implementation of Rotational Shifts, OSH Training, and Digital Safety Reporting Systems**

Administrative controls focus on changing the way work is performed to reduce exposure to hazards. In the agricultural sector, this can include implementing rotational shifts to prevent overexposure to certain tasks, such as pesticide application or heavy machinery operation. Rotating workers between different jobs ensures that no single worker is exposed to high-risk tasks for extended periods, reducing the likelihood of fatigue, heat stress, or long-term injury.

Another key administrative control is the implementation of OSH (Occupational Safety and Health) training. Regular training programs that cover safety protocols, the correct use of machinery, pesticide handling, and emergency procedures equip workers with the knowledge needed to minimize their exposure to hazards. This can also include first-aid training to ensure workers know how to respond to emergencies effectively.

In addition, digital safety reporting systems can be used to track safety incidents and near misses in real time. These systems allow workers to report unsafe conditions, which can be analyzed to identify trends and take corrective actions promptly. Digital systems also enable better record-keeping and can help managers ensure that safety protocols are being followed, facilitating compliance with regulations and improving overall workplace safety.

## **PPE Implementation: Mandating the Use of Certified Protective Gear for Chemical and Machinery-Related Tasks**

The last line of defense in the Hierarchy of Controls is PPE (Personal Protective Equipment). While PPE is essential for protecting workers from residual risks that cannot be eliminated through engineering or administrative controls, it is considered less effective than other control measures because it does not eliminate the hazard but only provides a barrier to exposure.

For tasks involving chemical safety, workers should be required to wear certified protective gear, such as respirators, chemical-resistant gloves, protective suits, and goggles to prevent direct contact with hazardous substances like pesticides, herbicides, or fertilizers. These protective measures are crucial for minimizing exposure when working with chemicals that pose serious health risks through inhalation or skin absorption.

When working with machinery, workers should also wear PPE, including high-visibility clothing, hearing protection for exposure to loud noises from farm machinery, and safety boots with steel toes to prevent injuries from heavy objects or machinery parts. Proper training in the use and maintenance of PPE is essential to ensure its effectiveness.

**Elimination: Phasing Out High-Risk Chemicals and Obsolete Machinery** Elimination is the most effective control method as it completely removes the hazard from the workplace. In agriculture, this can involve the **phasing out of high-risk chemicals** such as certain pesticides, herbicides, or fertilizers that pose significant health or environmental risks. By eliminating the use of these chemicals, the potential for exposure to toxic substances is removed entirely, safeguarding both workers and the surrounding environment.

In addition, the **elimination of obsolete machinery**—such as outdated tractors or manual handling tools—can significantly reduce risks like mechanical failures, operator injuries, or exposure to harmful emissions. Replacing older equipment with newer, safer machinery that meets modern safety standards helps mitigate the risk of accidents, such as roll-overs, mechanical entanglements, and vibration-related injuries. This step can be particularly impactful in environments with high levels of manual labor or where safety systems may not have been updated.

### Substitution: Using Low-Toxicity Alternatives in Pest Management

The **substitution** control measure focuses on replacing a hazardous substance or process with something less dangerous. In agriculture, this often involves replacing harmful chemicals with **low-toxicity alternatives** for pest and disease management. For example, switching from highly toxic chemical pesticides to **biological pest control agents**, such as natural predators or microbial insecticides, reduces the potential harm to workers, beneficial insects, and the environment.

Another substitution strategy involves using **non-chemical weed management** methods, such as mechanical cultivation or mulching, instead of herbicides. By adopting less harmful substances or methods, agricultural workers are exposed to fewer risks, which not only improves health outcomes but can also align with sustainability goals by reducing environmental pollution.

### Engineering Controls: Installation of Automated Pesticide Dispensers, Ergonomic Tools, and Mechanized Handling Equipment

**Engineering controls** involve modifying the workplace environment or equipment to reduce the exposure to hazards. In agriculture, this could include the **installation of automated pesticide dispensers** that can control the precise application of pesticides, reducing the need for manual handling and minimizing the risk of **pesticide exposure** to workers. Automated dispensers can ensure accurate dosing and reduce the likelihood of spills, overexposure, or drift that can harm the worker or contaminate the environment.

Another important engineering control is the use of **ergonomic tools** designed to reduce strain and injury. For example, specially designed machinery with ergonomic handles, footrests, and adjustable seats can help minimize musculoskeletal injuries, which are common in farming tasks such as planting, harvesting, and lifting.

Finally, **mechanized handling equipment**, such as conveyor belts or robotic harvesters, can be implemented to automate the lifting, sorting, and handling of heavy crops or materials. This reduces the physical load on workers, preventing injuries related to lifting, repetitive motion, or exertion.

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## **Procedure for Training and Capacity Building**

### **Structured Training System:**

*Certification programs in farm safety (aligned with **EU Directive 2003/88/EC** on working time and safety measures)*

To ensure compliance with EU Directive 2003/88/EC on working time and safety, a structured **farm safety certification program** should be established. The program should include the following components: A. **Curriculum Development:**

- Design a modular training program covering key farm safety areas:
- Safe machinery operation (tractors, balers, harvesters, and automated equipment)
- Pesticide safety and proper chemical handling.
- Livestock management and zoonotic disease prevention.
- Ergonomic best practices to prevent musculoskeletal disorders.
- Fire safety and emergency response protocols.
- First aid and medical emergency handling.
- Ensure compliance with EU OSH standards and national agricultural safety policies.

### **Training and Certification Levels:**

- **Basic Certification (Level 1):** Covers general farm safety practices for all workers.
  - **Advanced Certification (Level 2):** Specialized training for equipment operators, pesticide applicators, and livestock handlers.
  - **Farm Safety Instructor Certification (Level 3):** For professionals who will train others in agricultural OSH practices.
- C. **Assessment and Evaluation:**
- Conduct written and practical assessments to evaluate workers' knowledge and application of safety measures.

- Implement farm-based safety audits as part of the certification process.
- Require periodic recertification every **three to five years** to ensure ongoing compliance with updated regulations. D. **Accreditation and Oversight:**
- Establish a national **Farm Safety Certification Body** under the Ministry of Agriculture and Ministry of Labor.
  - Partner with EU institutions to recognize Albanian farm safety certifications within EU labor mobility frameworks.
  - Maintain a national registry of certified farm workers to facilitate tracking and compliance.

#### Incentives for Certification:

- Provide **financial incentives and subsidies** for farmers and agricultural enterprises that implement certified training.
- Offer **insurance discounts** for farms that employ certified workers.
  - Require farm safety certification as a prerequisite for government grants and EU funding applications.

By implementing this certification program, Albania can enhance farm safety, reduce workplace accidents, and align its agricultural sector with EU labor and safety standards.

#### *Digital learning platforms for **remote access to safety modules**.*

To ensure that safety training is accessible and practical for all agricultural workers, on-site training and knowledge-sharing sessions should be conducted through **Agricultural Extension Services (AES)**. These sessions should focus on:

- **Hands-on demonstrations** of safe agricultural practices, including correct handling of machinery, pesticide application techniques, and ergonomic lifting methods.
- **Localized training programs** tailored to different agricultural sectors (e.g., livestock farming, greenhouse agriculture, viticulture, and grain production).
- **Seasonal safety training** to address specific hazards such as extreme weather conditions, planting and harvesting risks, and disease outbreaks among crops and livestock.
- **Peer-to-peer learning initiatives**, where experienced farmers and trained safety officers mentor newer workers on best practices.
- **Use of mobile training units** to reach remote and rural farms, ensuring inclusivity and broad participation.
- **Collaboration with universities and research institutions** to integrate the latest agricultural safety innovations and sustainable farming methods.

AES should work closely with **the Ministry of Agriculture, farmer associations, and international OSH organizations** to update training curricula and ensure continuous improvement. Regular evaluation of these training programs should be conducted to assess their effectiveness and identify areas for enhancement.

By implementing a robust on-site training system through Agricultural Extension Services, Albania can enhance farm safety awareness, reduce accidents, and promote sustainable agricultural practices aligned with EU standards.

### *On-site training and knowledge-sharing sessions via **Agricultural Extension Services**.*

To enhance the safety and well-being of agricultural workers, **on-site training and knowledge-sharing sessions** should be integrated into the activities of **Agricultural Extension Services (AES)**. These sessions will ensure that workers have direct access to practical safety education tailored to their specific farming environments.

#### **Key Components of On-Site Training:**

- **Hands-on Demonstrations:** Conduct real-time, interactive training on safe handling of farm machinery, pesticide application, livestock management, and ergonomic work techniques.
- **Specialized Training Modules:** Develop sector-specific training programs for different types of farming, such as arable farming, greenhouse operations, livestock farming, and viticulture.
- **Seasonal Safety Awareness:** Implement targeted training during planting and harvesting seasons to address specific risks related to weather conditions, equipment usage, and worker fatigue.
- **Field Simulations and Emergency Drills:** Conduct simulated emergency response exercises for fire safety, first aid, and chemical spill containment.
- **Knowledge Exchange Networks:** Encourage experienced farmers to share best practices with newer workers, promoting peer-to-peer learning and mentorship.
- **Mobile Training Units:** Deploy mobile teams to reach remote agricultural communities, ensuring that even small-scale farmers and workers in isolated areas receive proper training.
- **Collaboration with Academic and Research Institutions:** Partner with universities and agricultural research centers to introduce innovative safety measures and sustainable farming techniques.
- **Evaluation and Feedback:** Implement regular assessments to measure the effectiveness of training and incorporate feedback from workers to improve future sessions.

By utilizing **Agricultural Extension Services as a primary vehicle for farm safety training**, Albania can enhance knowledge dissemination, reduce workplace accidents, and ensure compliance with EU occupational safety standards across the agricultural sector.

#### **Practical Application:**

##### *Risk simulation exercises in machinery handling and emergency response.*

To enhance agricultural safety, structured **risk simulation exercises** should be implemented as part of ongoing training programs. These simulations provide hands-on experience in **handling agricultural machinery safely and responding to emergencies**, reducing workplace accidents and improving crisis management skills.

#### **Key Components of Risk Simulation Exercises:**

- **Machinery Handling Simulations:**
  - Safe operation of tractors, balers, and harvesting equipment under controlled conditions.
  - Identification and prevention of mechanical failures using diagnostic tools.
  - Emergency braking, steering maneuvers, and obstacle avoidance in different terrains.

- **Emergency Response Training:**
  - Fire safety drills covering evacuation procedures, fire suppression techniques, and use of fire extinguishers.
  - First aid response training, including CPR, injury stabilization, and emergency communication protocols.
  - Chemical spill containment drills following EU safety regulations for pesticide and hazardous substance handling.
- **Scenario-Based Training:**
  - Simulated power failures and extreme weather response, ensuring preparedness for electrical hazards and natural disasters.
  - Handling livestock-related emergencies, such as containment of aggressive animals and zoonotic disease outbreak control.
  - Safe procedures for confined space rescue in silos, wells, and grain storage areas.

#### Integration with Agricultural Training Programs:

- Collaboration with **Agricultural Extension Services** to conduct regular **field training sessions**.
- Utilization of **virtual reality (VR) and augmented reality (AR) technologies** to simulate high-risk situations in a controlled environment.
- Partnering with **fire brigades, emergency medical services, and occupational health experts** to provide realistic response training.
- Establishing a **certification process for machinery handling proficiency**, ensuring workers meet safety competency standards.

By incorporating risk simulation exercises into training programs, Albania's agricultural sector can significantly improve workplace safety, enhance worker confidence in handling emergencies, and align with EU occupational health and safety standards.

#### *Implementation of on-farm audits and real-time monitoring using mobile technology*

To enhance workplace safety and ensure compliance with health and safety regulations, **on-farm audits and real-time monitoring** using mobile technology should be integrated into agricultural operations. This approach leverages digital tools to proactively identify hazards, track compliance, and support emergency response efforts.

#### Key Components of On-Farm Audits:

- **Regular Safety Inspections:**
  - Conduct scheduled and surprise inspections using mobile auditing applications.
  - Develop checklists based on EU agricultural safety standards to assess machinery maintenance, chemical storage, and worker protective measures.
  - Assign safety officers to document violations, recommend corrective actions, and track implementation.
- **Real-Time Monitoring via Mobile Technology:**
  - Utilize **wearable safety devices** and **GPS tracking** to monitor workers in hazardous environments (e.g., confined spaces, high-risk machinery operations).
  - Implement **sensor-based alerts** for real-time detection of hazardous conditions, such as extreme heat, gas leaks, or exposure to toxic chemicals.
  - Introduce **drone surveillance** for large agricultural sites to monitor compliance with safety protocols.

- **Data Collection and Reporting:**
  - Store audit reports in a **centralized digital database** accessible to farm managers and regulatory authorities.
  - Generate automated safety performance reports to identify trends and areas for improvement.
  - Enable **anonymous hazard reporting systems** to encourage workers to report safety concerns without fear of retaliation.
- **B. Integration with Agricultural Safety Programs:**
- Provide **training on digital tools** for farm managers and safety officers to enhance efficiency in conducting audits.
- Develop **mobile applications** with multilingual support to assist migrant workers in understanding safety guidelines.
- Establish partnerships with **universities and tech firms** to create innovative mobile safety solutions for the agricultural sector.
- Offer **financial incentives and regulatory benefits** to farms that implement real-time monitoring systems and demonstrate compliance with safety audits.

By integrating on-farm audits and mobile technology, Albania's agricultural sector can improve workplace safety, ensure regulatory compliance, and create a culture of continuous risk assessment and hazard mitigation in line with EU occupational safety standards.

## Application of Digital Safety Management Tools

### Development of an Agricultural OSH Digital Platform to:

To enhance safety compliance and promote proactive risk management in agriculture, a **dedicated digital platform** should be developed with the following key functionalities:

#### *Track incidents and near-miss reports*

- Provide an easy-to-use mobile and web interface where farmers and workers can **report accidents, injuries, and near-miss incidents** in real time.
- Implement **geo-tagging and time-stamping** to accurately record the location and timing of incidents, facilitating faster response and mitigation.
- Utilize **data analytics and AI-driven trend analysis** to identify high-risk areas and recurring incidents, helping authorities and farm managers implement targeted preventive measures.

#### *Generate automated safety compliance reports for farms.*

- Develop a **compliance dashboard** that provides real-time updates on farm safety standards, machinery inspections, and regulatory requirements.
- Automate the generation of **monthly and annual safety performance reports**, flagging non-compliance issues and providing corrective action recommendations.
- Enable integration with **government OSH agencies**, allowing regulatory bodies to monitor compliance remotely and provide guidance where necessary.

#### *Offer a farmer self-assessment module to encourage proactive risk management.*

- Create an interactive **self-assessment tool** that guides farmers through a structured checklist covering machinery maintenance, chemical storage, PPE availability, and worker training.
-

- Provide **instant feedback and risk ratings** based on the assessment, helping farmers identify gaps in their safety procedures and take corrective measures.
- Include **educational resources and training modules** linked to each assessment area, ensuring continuous learning and safety improvements.

### Integration with National OSH Databases:

#### *Alignment with **National Register for Work Accidents and Occupational Diseases (NROAD)***

To ensure comprehensive monitoring and data collection on workplace incidents in the agricultural sector, Albania's farm safety initiatives must be **aligned with the National Register for Work Accidents and Occupational Diseases (NROAD)**. This alignment will enhance accident reporting, risk identification, and regulatory compliance. The following key measures should be implemented:

- **Integration of Agricultural Incident Data:**
  - Develop a **standardized reporting system** where farm owners and workers can log workplace accidents, injuries, and near-miss events directly into the NROAD system.
  - Ensure **real-time synchronization** of accident reports with national OSH databases to enable timely analysis and intervention.
  - Promote **sector-specific data categorization**, distinguishing between machinery-related accidents, pesticide exposure cases, livestock-related injuries, and ergonomic issues.
- **Enhanced Surveillance and Data Analysis:**
  - Utilize **predictive analytics** and trend mapping to identify high-risk agricultural activities and implement targeted safety measures.
  - Conduct **annual agricultural safety reports** based on collected NROAD data, guiding policy recommendations and regulatory improvements.
  - Establish a **feedback mechanism** where farms receive risk assessment summaries and customized safety recommendations based on their accident history.
- **Farm Compliance Monitoring:**
  - Require **mandatory reporting** of all workplace injuries and occupational diseases to NROAD for regulatory oversight.
  - Introduce **compliance audits** using NROAD data to ensure farms adhere to national safety standards and take corrective actions when necessary.
  - Develop **penalty and incentive structures**, rewarding farms with exemplary safety records while enforcing sanctions for repeated noncompliance.
- **Worker Awareness and Engagement:**
  - Educate farm workers about their **right and obligation to report workplace accidents** through training programs and informational materials.
  - Establish **anonymous reporting channels** for workers to submit OSH concerns without fear of retaliation.
  - Promote **collaboration between labor unions, health professionals, and farm owners** to improve the overall efficiency of workplace safety reporting.

By ensuring that agricultural workplaces are fully integrated into the **National Register for Work Accidents and Occupational Diseases (NROAD)**, Albania can significantly improve **accident prevention, occupational health research, and regulatory enforcement** in the agricultural sector.

**Coordination with meteorological and environmental monitoring systems for weather-based risk alerts.**

To mitigate weather-related risks in agriculture, Albania should integrate **meteorological and environmental monitoring systems** into its occupational safety framework. Real-time data from these systems can help farmers and agricultural workers anticipate and respond to hazardous weather conditions effectively.

**Key Components of Coordination:**

- **Real-Time Weather Alerts:**
  - Establish an **automated early warning system** that provides alerts on extreme temperatures, heavy rainfall, storms, and high winds.
  - Develop a **mobile alert application** that sends localized weather-based risk notifications to farmers, enabling timely safety precautions.
  - Utilize **geospatial weather forecasting** to help agricultural businesses plan work schedules around hazardous conditions.
- **Environmental Hazard Monitoring:**
  - Integrate data from **air quality sensors** to monitor pesticide drift and exposure risks.
  - Develop **soil moisture tracking systems** to assess drought risks and prevent unsafe working conditions in high-heat environments.
  - Implement **flood risk assessments** for farms located in vulnerable areas, helping farmers relocate equipment and workers before severe weather events.
- **Farm-Specific Safety Guidelines:**
  - Establish **weather-responsive safety protocols**, such as work stoppage recommendations during extreme conditions.
  - Train workers on **heat stress management**, including hydration strategies, rest breaks, and protective clothing requirements.
  - Develop **storm shelter access plans** for outdoor farm workers, ensuring emergency protection during extreme weather events.
- **Collaboration with Meteorological Agencies and Research Institutions:**
  - Partner with **Albanian and EU meteorological agencies** to improve predictive models for agricultural safety.
  - Work with **environmental research institutions** to refine data collection methods and enhance forecasting capabilities.
  - Encourage participation in **EU-funded climate resilience programs** that support sustainable farming practices and risk reduction strategies.

By integrating **weather-based risk monitoring** into Albania's agricultural OSH framework, farmers can significantly reduce the risks associated with extreme weather, protect workers from environmental hazards, and improve overall farm productivity and resilience.

## Monitoring, Evaluation, and Continuous Improvement

### Performance Metrics for OSH in Agriculture:

*Reduction in **fatal and non-fatal incidents** through data-driven interventions.*

To measure the effectiveness of occupational health and safety (OSH) interventions, a **data-driven approach** should be implemented to systematically reduce workplace accidents in agriculture.

### Key Performance Indicators (KPIs) and Implementation Measures:

- **Incident Tracking and Analysis:**
  - Establish a **centralized OSH database** to record and analyze workrelated accidents, injuries, and near-misses.
  - Implement **automated trend analysis tools** to identify high-risk activities and recurring hazards in agricultural operations.
  - Integrate **machine learning algorithms** to predict potential safety risks and suggest preventive measures.
- **Intervention Effectiveness Evaluation:**
  - Develop a **risk-reduction index** to quantify the effectiveness of implemented safety measures.
  - Conduct **pre- and post-intervention assessments** to evaluate the impact of new safety regulations, training programs, and technology adoption.
  - Use **benchmarking against EU agricultural OSH data** to compare Albania's performance with best practices in the sector.
- **Worker Safety Training and Compliance Monitoring:**
  - Track **training participation rates** and evaluate knowledge retention through periodic assessments.
  - Monitor **Personal Protective Equipment (PPE) usage rates** and ensure adherence to safety protocols.
  - Implement **worker feedback mechanisms** to assess safety culture improvements and areas requiring further intervention.
- **Technology-Enabled Safety Enhancements:**
  - Deploy **real-time safety monitoring tools**, such as wearable sensors for exposure tracking and fatigue detection.
  - Utilize **drone surveillance** for large farm areas to monitor compliance with safety regulations.
  - Introduce **automated alerts and AI-driven decision support systems** to assist farm managers in preventing incidents before they occur.
- **Regulatory Compliance and Enforcement:**
  -

- Conduct **regular farm inspections and audits** using mobile applications to streamline reporting and corrective actions.
- Implement **penalty and reward systems** to encourage compliance with OSH regulations.
- Foster **collaboration with government agencies and labor unions** to continuously improve agricultural OSH policies.

By leveraging **data-driven safety interventions**, Albania's agricultural sector can achieve measurable reductions in workplace accidents, ensure regulatory compliance, and enhance overall farm productivity and worker well-being.

#### **Increase in OSH training participation rates among farmers.**

To improve occupational safety and health (OSH) outcomes in agriculture, increasing participation in **safety training programs** is crucial. A well-trained workforce is better equipped to prevent accidents, properly handle hazardous materials, and operate machinery safely.

#### **Key Strategies to Enhance Training Participation:**

- **Accessibility and Incentives:**
  - Provide **free or subsidized training programs** for farmers and agricultural workers, particularly in rural areas.
  - Offer **certification incentives**, such as tax breaks, subsidies, or government grants, for farms that ensure full worker participation in safety training.
  - Introduce **flexible training schedules** to accommodate seasonal farming activities.
- **Digital and On-Site Training Integration:**
  - Develop **mobile applications and e-learning platforms** to facilitate remote access to OSH training.
  - Utilize **virtual reality (VR) and augmented reality (AR)** simulations to provide interactive and immersive safety training experiences.
  - Implement **on-site training sessions through Agricultural Extension Services** to ensure practical, hands-on learning.
- **Mandatory OSH Training Regulations:**
  - Enforce **mandatory OSH training** as part of farm employment contracts and licensing requirements.
  - Require annual **refresher courses and certifications** for farmers and agricultural machinery operators.
  - Establish a **national training registry** to monitor participation rates and track progress.
- **Community Engagement and Knowledge Sharing:**
  - Organize **regional farmer safety forums** where experienced workers share best practices and lessons learned.
  - Promote **peer-to-peer training programs** where certified workers train new employees.
  - Strengthen partnerships with **universities, vocational training centers, and agricultural cooperatives** to expand training outreach.
- **Performance Monitoring and Continuous Improvement:**
  -

- Track **annual participation rates** and compare them against OSH incident reductions to measure effectiveness.
- Conduct **post-training assessments** to ensure knowledge retention and practical application of safety measures.
- Regularly update training materials to incorporate **new EU regulations, technological advancements, and emerging agricultural risks**.

By implementing these measures, Albania can ensure a **higher OSH training participation rate**, leading to a safer agricultural sector with **fewer workplace accidents, improved compliance, and enhanced worker well-being**.

### Adoption of risk-reducing technologies and methodologies.

To enhance workplace safety in agriculture, Albania should actively promote the **adoption of innovative risk-reducing technologies and methodologies** that align with EU standards. These advancements can significantly minimize occupational hazards, improve worker safety, and increase farm efficiency.

#### Key Strategies for Adoption:

- **Mechanization and Automation:**
  - Introduce **GPS-guided tractors and automated harvesting equipment** to reduce manual labor and mitigate risks associated with repetitive strain injuries.
  - Implement **sensor-based irrigation systems** to minimize direct exposure to hazardous water-borne chemicals.
  - Promote the use of **robotic weeders and automated pesticide sprayers** to decrease human contact with hazardous substances.
- **Wearable Safety Devices and Monitoring Systems:**
  - Equip workers with **wearable health monitoring devices** to track exposure to extreme temperatures, detect fatigue levels, and alert supervisors in case of emergencies.
  - Deploy **smart helmets and exoskeletons** to support workers in physically demanding tasks and reduce ergonomic injuries.
  - Utilize **real-time air quality sensors** in confined farming environments, such as greenhouses and pesticide storage areas, to prevent exposure to toxic fumes.
- **Advanced Personal Protective Equipment (PPE):**
  - Develop and distribute **enhanced PPE**, such as **chemical-resistant gloves, self-ventilated masks, and fire-retardant clothing**, tailored for specific agricultural tasks.
  - Promote **lightweight, ergonomically designed protective gear** to increase comfort and compliance among workers.
  - Establish **subsidy programs** to assist smallholder farmers in acquiring high-quality PPE.
- **Data-Driven Risk Assessment and AI Integration:**
  - Implement **AI-driven predictive analytics** to assess farm hazards and suggest proactive safety measures.
  - Use **drone technology** for real-time field monitoring, ensuring compliance with safety guidelines and detecting potential risks before accidents occur.

- Develop **cloud-based risk management platforms** where farmers can access personalized safety recommendations based on historical data and environmental conditions.
- **Sustainable and Eco-Friendly Alternatives:**
  - Encourage the use of **bio-pesticides and organic fertilizers** to reduce chemical exposure risks.
  - Promote **no-till and precision agriculture** techniques to minimize soil erosion and reduce worker strain during planting and harvesting.
  - Implement **renewable energy sources**, such as **solar-powered machinery and electric vehicles**, to enhance sustainability while improving safety conditions.

#### Performance Monitoring and Continuous Improvement:

- Establish a **national repository** to track the adoption rates of risk-reducing technologies and their impact on workplace safety.
- Conduct **annual safety audits** to assess the effectiveness of new technologies in reducing accident rates.
- Facilitate **farmer-led innovation forums** to share success stories and encourage peer-to-peer learning on best safety practices.

By integrating **modern risk-reducing technologies and methodologies**, Albania can ensure a **safer, more productive agricultural sector that aligns with EU occupational safety standards and sustainability goals**.

#### Annual Review and Stakeholder Engagement:

##### Establishment of an Inter-Institutional Council for Agricultural OSH (IICAOSH).

The **Inter-Institutional Council for Agricultural Occupational Safety and Health (IICA-OSH)** is envisioned as a central coordinating body dedicated to enhancing occupational safety and health (OSH) in the agricultural sector. Given the complex and hazardous nature of agricultural work—including exposure to machinery accidents, chemical risks, biological hazards, and environmental stressors—there is a pressing need for a **structured, multi-stakeholder approach** to improving workplace safety.

##### *Objectives of IICA-OSH*

The primary goal of the IICA-OSH is to create a **harmonized, evidence-based framework** for risk prevention and OSH management in agriculture. The council will facilitate collaboration between government bodies, industry stakeholders, academic institutions, and labor representatives to ensure that safety regulations, research, and training programs are effectively implemented. Its key objectives include:

#### Policy Coordination and Development

- Assist in the formulation of **national and regional policies** for agricultural OSH.

- Ensure **alignment with EU and international safety standards**, adapting best practices to the local context.
- Promote **legal reforms** where necessary to enhance worker protections and OSH enforcement mechanisms.

**Inter-Agency Collaboration** o Establish partnerships between **ministries of agriculture, labor, health, and environment** to address cross-sectoral risks.

- o Engage with **universities and research institutions** to integrate scientific findings into OSH strategies.
- o Work with **farmers' unions, cooperatives, and industry groups** to ensure practical, field-based solutions.

#### **Hazard Identification and Risk Prevention**

- o Conduct **sector-wide assessments** to identify high-risk areas in farming activities.
- o Develop **standardized safety protocols** for handling machinery, chemicals, biological agents, and environmental stressors.
- o Facilitate the **implementation of the Hierarchy of Controls**, ensuring that risks are minimized at their source.

#### **Training and Capacity Building**

- o Design **mandatory OSH training programs** for farmworkers, supervisors, and agricultural businesses.
- o Promote **knowledge-sharing** through workshops, online training modules, and field demonstrations.
- o Certify **OSH trainers and inspectors** to ensure a consistent and professional approach to workplace safety.

#### **OSH Data Collection and Monitoring**

- o Establish a **national agricultural OSH database** to track incidents, injuries, and near-misses.
- o Encourage **digital safety reporting systems** to improve real-time monitoring of workplace hazards.
- o Publish **annual reports and recommendations** to inform policymakers and industry stakeholders.

#### **Funding and Incentive Programs**

- o Advocate for **financial incentives** (e.g., subsidies, tax benefits) for farms that implement best safety practices.
- o Secure **EU and international funding** for OSH projects, research, and training initiatives.
- o Develop **insurance and compensation frameworks** for farmworkers affected by occupational injuries or illnesses.

#### **Structure of IICA-OSH**

The council will be structured as a **multi-stakeholder platform** with the following components:

- **Executive Committee:** Comprised of representatives from key government ministries, responsible for policy decisions and regulatory alignment.

- **Technical Working Groups:** Focused on specific risk areas such as **farm machinery safety, chemical exposure, biological risks, and environmental hazards.**
- **Advisory Board:** Including experts from academia, industry, and international organizations to provide guidance and technical expertise.
- **Regional Committees:** Ensuring that OSH strategies are implemented effectively at the local level, with adaptations based on regional agricultural conditions.

### *Expected Impact of IICA-OSH*

The establishment of IICA-OSH is expected to **significantly reduce occupational injuries and fatalities** in agriculture by fostering a culture of prevention, compliance, and continuous improvement. By unifying efforts across institutions, the council will ensure that **farm workers, agribusinesses, and policymakers** are equipped with the knowledge and resources needed to create a safer and more sustainable agricultural sector.

### **Engagement of farmers' associations, labor unions, and research institutions to ensure continuous improvement.**

A **collaborative and inclusive approach** is essential for the successful implementation and continuous improvement of Occupational Safety and Health (OSH) standards in agriculture. The active participation of **farmers' associations, labor unions, and research institutions** ensures that OSH policies and practices are both practical and based on the latest scientific advancements. Their engagement helps create a **feedback loop** where field experiences, worker concerns, and research-driven solutions inform and refine safety strategies over time.

### *Role of Farmers' Associations in Agricultural OSH*

Farmers' associations play a **pivotal role** in ensuring that occupational safety standards are adopted and implemented at the farm level. They act as a bridge between regulatory bodies and individual farmers, helping translate **OSH policies into practical guidelines** that suit different farming contexts. Their engagement can drive improvements in safety through the following actions:

- **Disseminating OSH Best Practices**
  - Conducting **awareness campaigns** to educate farmers on risks related to machinery, chemicals, and environmental hazards.
  - Distributing **safety manuals** and guides tailored to specific agricultural activities.
  - Organizing **peer-to-peer knowledge-sharing events**, where experienced farmers can mentor others on safe practices.
- **Advocating for Farmers' Needs**
  - Representing the concerns of small-scale and family-run farms in policy discussions to ensure that safety regulations are **both effective and feasible** for different farm sizes.
  - Negotiating for **financial incentives** such as subsidies for purchasing safer machinery or adopting environmentally friendly pest management alternatives.
  - Ensuring that **OSH training and certification programs** are accessible to all farmers, including those in remote areas.
- **Facilitating Access to Safety Equipment and Training**
  - Partnering with equipment manufacturers to provide **discounts or financing options** for safer machinery and protective gear.
  - Organizing **on-farm demonstrations** of modern safety technologies, such as roll-over protective structures (ROPS) for tractors and automated pesticide dispensers.

- Promoting the use of **cooperative-based safety programs**, where groups of farmers can collectively invest in shared safety resources.

#### *Contribution of Labor Unions to Worker Safety and Rights*

Labor unions serve as **advocates for farmworkers**, ensuring that their rights to a safe and healthy work environment are upheld. Their participation in OSH improvement efforts ensures that policies are not only designed **for workers but also with workers' input**. Key contributions of labor unions include:

- **Strengthening OSH Regulations and Enforcement**
  - Advocating for **stronger legal protections** for farmworkers, including strict enforcement of safety standards for machinery operation, pesticide handling, and working conditions.
  - Pushing for **mandatory health monitoring programs** for workers exposed to hazardous chemicals, heat stress, or biological risks.
  - Collaborating with **labor inspectors** to ensure compliance with OSH laws and to hold non-compliant employers accountable.
- **Empowering Workers Through Education and Representation**
  - Conducting **training workshops** on workers' rights, hazard recognition, and emergency response procedures.
  - Establishing **whistleblower protection policies** to encourage workers to report unsafe conditions without fear of retaliation.
  - Negotiating for **fair working conditions**, such as adequate rest breaks, protective equipment, and access to healthcare services.
- **Improving Workplace Safety Through Collective Bargaining**
  - Lobbying for **better wages and benefits** for farmworkers to ensure that economic pressures do not force workers to take unsafe risks.
  - Encouraging employers to invest in **ergonomic tools and mechanized handling equipment** to reduce the physical strain on workers.
  - Promoting the **adoption of rotational shifts** to prevent overexposure to extreme heat, repetitive tasks, or hazardous chemicals.

#### **Research Institutions as Drivers of Innovation in OSH**

Universities and research institutions play a **critical role** in providing the **scientific foundation** for OSH policies, developing new safety technologies, and evaluating the effectiveness of existing measures. Their involvement in agricultural OSH includes:

- **Conducting Risk Assessments and Epidemiological Studies**
  - Identifying **emerging risks** in agriculture, such as the impact of climate change on worker health or new chemical exposures from evolving pest management practices.
  - Studying **injury patterns and occupational diseases** among farmworkers to develop targeted prevention strategies.
  - Analyzing **the effectiveness of OSH interventions**, such as PPE use, training programs, or engineering controls.

- **Developing Innovative Safety Solutions**
  - Designing **new protective equipment** that is both effective and comfortable for farmworkers.
  - Improving **precision agriculture technologies**, such as drone-assisted pesticide application, to reduce worker exposure to hazardous chemicals.
  - Testing **bio-based pest control alternatives** to replace high-toxicity pesticides.
- **Providing Scientific Support for Policy Development**
  - Offering **evidence-based recommendations** to policymakers on improving safety regulations.
  - Developing **OSH training curricula** in collaboration with government agencies and industry groups.
  - Partnering with industry to **pilot new safety technologies** before largescale adoption.

#### *Creating a Continuous Feedback Loop for OSH Improvement*

To ensure that OSH strategies remain relevant and effective over time, it is crucial to establish a **structured feedback loop** that enables constant evaluation and refinement. This can be achieved through:

- **Regular Stakeholder Consultations**
  - Organizing **multi-stakeholder forums** where farmers' associations, labor unions, researchers, and policymakers can share insights and coordinate efforts.
  - Creating **sector-specific working groups** that focus on risks, such as pesticide safety, heat stress management, or machinery hazards.
- **Data-Driven Decision-Making**
  - Establishing a **national agricultural OSH database** to collect and analyze real-time data on workplace injuries, illness trends, and safety interventions.
  - Encouraging **digital safety reporting systems**, where farmworkers can report hazards using mobile apps or online platforms.
- **Adaptive Policy and Training Updates**
  - Reviewing OSH policies and training programs annually to incorporate **new scientific findings** and **emerging best practices**.
  - Ensuring that **feedback from farmworkers** is integrated into the refinement of safety protocols and hazard mitigation strategies.

#### **Implementation of policy feedback loops to refine agricultural safety regulations.**

Agricultural occupational safety and health (OSH) regulations must be dynamic and adaptable to evolving risks, technological advancements, and socio-economic changes in the sector. **Policy feedback loops** are essential mechanisms that enable continuous refinement and improvement of safety regulations by incorporating data, stakeholder input, and real-world experiences into the decision-making process. These loops ensure that policies remain relevant, effective, and responsive to emerging challenges.

## Key Components of an Agricultural OSH Policy Feedback Loop

The **policy feedback loop** is a structured cycle that involves **data collection, stakeholder engagement, policy evaluation, and regulatory updates**. This cycle ensures that safety regulations are continually assessed and refined based on actual conditions in the agricultural sector. The key components of an effective feedback loop include:

### A. Data Collection and Incident Monitoring

A **robust data collection system** is fundamental to identifying gaps and weaknesses in existing agricultural safety regulations. This includes:

- **Workplace injury and illness reporting:** Mandatory reporting systems for accidents, near-misses, and occupational diseases to track trends and pinpoint high-risk areas.
- **Digital safety reporting platforms:** Mobile apps and online portals where farmers, workers, and safety inspectors can log hazards and compliance issues in real time.
- **Sector-wide OSH audits and inspections:** Regular field assessments by regulatory agencies to measure adherence to safety protocols and identify areas for improvement.
- **Environmental and climate monitoring:** Tracking how extreme weather events (e.g., heat waves, floods, and droughts) impact worker safety and adjusting regulations accordingly.

### Stakeholder Engagement and Feedback Integration

To ensure that policies are both practical and effective, active engagement with stakeholders—including farmers, labor unions, industry experts, and researchers—is necessary. Feedback mechanisms include:

- **Farmer and worker consultation forums:** Regular meetings with agricultural workers, farm owners, and labor unions to discuss challenges in implementing safety regulations.
- **Industry and academic partnerships:** Collaborating with universities, research institutions, and agribusinesses to integrate the latest scientific findings and technological innovations into OSH policies.
- **Public-private collaborations:** Engaging farm equipment manufacturers, chemical producers, and agricultural cooperatives to develop safer tools, machinery, and handling methods.
- **Legislative review panels:** Establishing advisory committees that review policy effectiveness and recommend updates based on stakeholder input.

### Policy Evaluation and Regulatory Impact Assessment

Once data and stakeholder feedback are collected, regulatory bodies must assess whether existing safety measures are effective or need revision. This process involves:

- **Comparative analysis of injury and fatality trends:** Evaluating whether current regulations have led to measurable improvements in workplace safety.
- **Pilot programs and field testing:** Implementing trial safety interventions (e.g., new pesticide handling protocols or machine safety features) before full-scale regulatory adoption.
- **Cost-benefit analysis:** Assessing the economic impact of safety regulations on small-scale farmers versus the benefits of reduced workplace injuries and associated costs.

- **Review of best international practices:** Benchmarking against EU and global OSH standards to ensure alignment with modern safety approaches.

### Regulatory Updates and Policy Refinement

Based on evaluation findings, necessary adjustments to agricultural safety policies are made through:

- **Amendments to existing laws and regulations:** Updating outdated provisions to reflect current risks, technologies, and best practices.
- **New compliance guidelines:** Issuing revised safety manuals and standard operating procedures (SOPs) to ensure proper implementation at the farm level.
- **Legislative action and incentives:** Introducing new policy measures, such as financial support for farmers adopting safer practices or stricter penalties for non-compliance.
- **Integration of digital compliance tracking:** Automating safety audits and regulatory checks using smart monitoring systems.

### Continuous Monitoring and Iteration

The policy feedback loop is a **continuous process**, ensuring that agricultural OSH regulations remain dynamic and adaptable. This requires:

- **Regular legislative review cycles:** Mandating periodic policy evaluations (e.g., every 3–5 years) to assess effectiveness.
- **Adaptive regulatory frameworks:** Implementing flexible rules that allow quick adjustments in response to emerging risks (e.g., new agricultural technologies, climate-induced hazards).
- **Transparency and public reporting:** Publishing annual safety reports to inform stakeholders about progress and areas for improvement.

### Expected Benefits of Policy Feedback Loops in Agricultural OSH

The implementation of a structured feedback loop yields several benefits for agricultural safety, including:

- **Enhanced Worker Protection:** Continuous refinement of OSH regulations ensures that farmworkers operate in safer conditions, reducing the risk of injuries and occupational diseases.
- **Greater Compliance and Practicality:** Policies developed with direct input from farmers and workers are more **realistic, practical, and easier to implement**, leading to higher compliance rates.
- **Data-Driven Decision-Making:** The use of **real-time safety data and impact assessments** ensures that policies are based on evidence rather than assumptions.
- **Increased Productivity and Efficiency:** Safer working environments lead to **fewer disruptions**, improved worker morale, and higher efficiency in agricultural operations.
- **Alignment with EU and International Standards:** The continuous updating of regulations helps ensure **compliance with European Union safety directives**, facilitating trade and funding opportunities for the agricultural sector.

## Institutional Framework for Policy Feedback Loops

To effectively implement policy feedback loops, a dedicated **institutional framework** must be established. This could involve:

- **National Agricultural OSH Task Force:** A specialized government agency responsible for collecting data, engaging stakeholders, and revising regulations.
- **Inter-Institutional Council for Agricultural OSH (IICA-OSH):** A multistakeholder body that oversees policy development and implementation.
- **Regional and Local OSH Committees:** Decentralized units responsible for adapting national safety policies to regional agricultural conditions.
- **Farm Safety Advisory Services:** Providing technical support and compliance assistance to farmers, especially small-scale producers.

## Conclusion

The implementation of **policy feedback loops** is essential for maintaining an effective, adaptable, and evidence-based regulatory framework for agricultural occupational safety. By continuously **collecting data, engaging stakeholders, evaluating policies, updating regulations, and monitoring their impact**, policymakers can ensure that safety measures remain relevant and effective in protecting farmworkers, improving compliance, and fostering a safer agricultural sector.

## Implementation of Roadmap and Strategic Vision for Future Development

### Short-Term (1-2 Years):

- Establishment of **baseline OSH performance indicators** in agriculture.
- Launch of a **national awareness campaign** on farm safety.
- Pilot testing of **OSH compliance audits** in agricultural enterprises.

### Medium-Term (3-5 Years):

- Full-scale **deployment of digital risk monitoring tools**.
- Expansion of **farmer training programs** and safety certification schemes.
- Integration of OSH policies into **national rural development funding mechanisms**.

### Long-Term (6+ Years):

- Institutionalization of **OSH principles in Albania's agricultural sector**.
- Sustainable financing mechanisms via **EU agricultural and innovation funds**.
- Strengthening **cross-border cooperation with EU OSH agencies**.

## Conclusion

The adoption of this **strategic management model** ensures that OSH in Albanian agriculture is governed by a structured, process-driven approach aimed at **long-term sustainability and continuous improvement**. By embedding **scientific risk assessment methodologies, digital tracking, and multi-stakeholder governance**, Albania will enhance **farmer safety, compliance with EU standards, and agricultural productivity**. This model serves as a framework for ongoing innovation, fostering a **culture of prevention and responsibility in agricultural work environments**.

## Annex 1. Albanian Law No. 10237 (2010): National Occupational Safety and Health (OSH) Requirements

Albanian Law No. 10237, enacted in 2010, establishes the **legal framework for occupational safety and health (OSH)** in Albania. It defines the rights and responsibilities of employers, employees, and government institutions in ensuring safe and healthy working conditions across all economic sectors, including agriculture. The law aligns with **EU directives and International Labour Organization (ILO) conventions**, supporting Albania's commitment to improving workplace safety standards in line with European best practices.

### Key Provisions and Objectives

#### 1. Employer Responsibilities:

- Employers must **identify and assess workplace risks** and implement preventive measures.
- They are required to provide **protective equipment, safety training, and medical surveillance** for workers.
- Workplaces must have **emergency plans, first aid resources, and appropriate risk communication** systems.

#### 2. Worker Rights and Participation:

- Employees have the right to a **safe working environment and protection from occupational hazards**.
- They must be **informed about workplace risks** and trained in safety procedures.
- Workers have the right to **refuse dangerous work** without facing penalties.

#### 3. Government Oversight and Enforcement:

- The **State Labor Inspectorate** is responsible for monitoring compliance through inspections and enforcement actions.
- Employers who violate OSH regulations may face **penalties, fines, or worksite closures**.

#### 4. Sector-Specific Implementation:

- Special provisions apply to **high-risk industries**, including agriculture, construction, and mining.
- Agricultural OSH measures cover **pesticide safety, machinery use, ergonomic risks, and exposure to biological hazards**.

### Relevance to Agriculture

In the agricultural sector, Law No. 10237 mandates **protective measures for farmers and rural workers** exposed to risks such as **chemical handling, extreme weather, and heavy machinery operation**. Compliance with the law supports **workplace injury reduction, improved working conditions, and alignment with EU agricultural safety regulations**. The law plays a crucial role in Albania's efforts to **strengthen OSH governance** and foster a culture of workplace safety.

## Annex 2. Directive 89/391/EEC: General Framework for Worker Safety and Health

Directive 89/391/EEC, also known as the **Framework Directive on Occupational Safety and Health (OSH)**, was adopted by the European Council in 1989. It establishes a **comprehensive legal framework** aimed at improving the safety and health of workers across all sectors, including agriculture. The directive sets out fundamental principles for **risk prevention, worker participation, and employer responsibilities** to create safer workplaces within the European Union (EU).

### Key Provisions and Objectives

#### 1. Employer Obligations:

- Employers must **assess workplace risks** and take appropriate preventive measures.
- They must provide **safe working conditions, training, and necessary protective equipment**.
- Emergency response and first aid provisions must be in place.

#### 2. Worker Rights and Participation:

- Workers have the right to **receive training and information** on occupational hazards.
- They must be consulted on safety measures and **participate in decision-making** regarding workplace health and safety.
- No worker should be penalized for raising safety concerns.

#### 3. Risk Prevention Approach:

- The directive prioritizes **risk elimination or reduction at the source** rather than relying solely on protective measures.
- It follows the **hierarchy of controls**, emphasizing preventive action, collective protection, and adaptation of work to individuals.

#### 4. Enforcement and Compliance:

- Member states are required to **establish national regulatory frameworks** and ensure compliance through inspections and enforcement mechanisms.

### Relevance to Agriculture

In the agricultural sector, Directive 89/391/EEC supports **structured risk management** for hazards like machinery operation, pesticide use, and manual handling. It emphasizes **preventive measures**, such as ergonomic improvements, protective equipment, and training programs, to **reduce accidents and occupational diseases among farmers and agricultural workers**.

As a foundational OSH directive, it serves as the basis for **sector-specific EU directives**, ensuring that worker safety is a fundamental part of workplace policies across industries.

### Annex 3. Directive 2009/128/EC: Sustainable Use of Pesticides

Directive 2009/128/EC, also known as the **Sustainable Use of Pesticides Directive (SUD)**, establishes a framework for **reducing risks and impacts** of pesticide use on human health and the environment within the European Union (EU). It promotes **integrated pest management (IPM)**, **safer pesticide application**, and **alternative pest control methods** to minimize reliance on chemical pesticides while ensuring sustainable agricultural production.

#### Key Provisions and Objectives

##### 1. Reduction of Pesticide Risks and Dependency:

- EU member states must implement **National Action Plans (NAPs)** to reduce pesticide risks and promote safer alternatives.
- Measures must focus on **protecting water, soil, air, and biodiversity** from pesticide contamination.

##### 2. Training and Certification for Pesticide Users:

- Farmers and pesticide handlers must undergo **mandatory training and certification** to ensure safe and responsible use.
- Pesticide use in public spaces (e.g., parks, schools) must be restricted to protect human health.

##### 3. Promotion of Integrated Pest Management (IPM):

- IPM practices prioritize **biological control**, **crop rotation**, **resistant crop varieties**, and **mechanical weeding** over chemical solutions.
- Farmers are encouraged to adopt **precision agriculture technologies** to optimize pesticide application.

##### 4. Spraying Equipment Standards and Restrictions:

- Regular **inspection and calibration** of pesticide application equipment is required to ensure efficiency and safety.
- Aerial spraying is **strictly regulated and permitted only under exceptional circumstances**.

##### 5. Water and Environmental Protection Measures:

- **Buffer zones** must be established near water bodies to prevent pesticide runoff.
- Member states must **monitor pesticide residues** in food, water, and ecosystems.

#### Relevance to Agriculture

For Albanian agriculture, aligning with Directive 2009/128/EC ensures **safer pesticide use**, **reduced environmental pollution**, and **improved farmworker health**. The directive encourages **alternative pest control methods**, **better pesticide training**, and **enhanced monitoring**, fostering more sustainable and EU-compliant agricultural practices.

#### Annex 4. Directive 98/24/EC: Protection of Workers from Chemical Risks

Directive 98/24/EC, also known as the **Chemical Agents Directive (CAD)**, establishes minimum requirements to **protect workers from risks associated with chemical agents** in the workplace. It aims to **prevent occupational diseases and health hazards** caused by exposure to hazardous substances, including those used in agriculture, such as pesticides, fertilizers, and disinfectants.

##### Key Provisions and Objectives

###### 1. Risk Assessment and Prevention:

- Employers must **identify and assess chemical hazards** in the workplace.
- Substances classified as **toxic, carcinogenic, or mutagenic** require **strict control measures**.

###### 2. Hierarchy of Control Measures:

- **Elimination/Substitution:** Replace hazardous chemicals with safer alternatives where possible.
- **Engineering Controls:** Implement ventilation systems and enclosed handling processes to reduce exposure.
- **Administrative Controls:** Establish safety protocols, restrict exposure times, and provide training.
- **Personal Protective Equipment (PPE):** Ensure workers use appropriate protective gear, such as gloves, masks, and eyewear.

###### 3. Worker Information and Training:

- Employers must provide **clear safety instructions, training, and hazard communication** regarding chemical risks.
- **Safety Data Sheets (SDS)** must accompany all chemical substances to inform users about proper handling, storage, and disposal.

###### 4. Monitoring and Health Surveillance:

- Regular **exposure monitoring and worker health assessments** must be conducted.
- Medical checks are required for workers handling **high-risk substances**, such as pesticides or solvents.

Directive 98/24/EC is crucial for **reducing chemical exposure risks in farming**, where workers frequently handle pesticides, herbicides, and fertilizers. Compliance ensures **safer workplaces, better health protection, and alignment with EU safety standards**, promoting **sustainable and responsible chemical management in agriculture**.

## Annex 5. Directive 2002/44/EC: Protection of Workers from Risks Due to Vibration and Noise

Directive 2002/44/EC establishes **minimum health and safety requirements to protect workers from risks caused by mechanical vibrations**. The directive focuses on reducing the **long-term health effects** associated with exposure to vibrations from machinery, tools, and vehicles, particularly in high-risk sectors such as agriculture, construction, and manufacturing. Prolonged exposure to vibrations can lead to serious health issues, including **musculoskeletal disorders, vascular damage, and neurological conditions**.

### Key Provisions and Objectives

#### 1. Exposure Limit and Action Values:

- Defines **daily exposure limits** for both **hand-arm vibration (HAV)** (e.g., chainsaws, handheld tools) and **whole-body vibration (WBV)** (e.g., tractors, heavy machinery).
- Employers must ensure that **HAV does not exceed 5 m/s<sup>2</sup>** and **WBV does not exceed 1.15 m/s<sup>2</sup>** over an 8-hour work period.
- Action values are set at **2.5 m/s<sup>2</sup> for HAV and 0.5 m/s<sup>2</sup> for WBV**, triggering the need for preventive measures.

#### 2. Risk Assessment and Preventive Measures:

- Employers must conduct **risk assessments** to identify sources of vibration exposure.
- Preventive actions include **choosing low-vibration machinery, improving ergonomic design, and limiting exposure time**.
- Implementation of **maintenance programs** to ensure tools and machinery remain in good working condition.

#### 3. Worker Training and Health Surveillance:

- Employers must **train workers on vibration risks, safe equipment handling, and protective measures**.
- Regular **health monitoring** is required for workers exposed to significant vibration levels.

Workers should be informed about **early symptoms of vibration related disorders** and encouraged to report them.

In agriculture, **tractors, harvesters, chainsaws, and other powered tools** expose workers to **whole-body and hand-arm vibration risks**. Implementing **low-vibration equipment, proper seating, suspension systems, and periodic breaks** can **reduce long-term health impacts**. Compliance with Directive 2002/44/EC ensures **better working conditions, prevents chronic occupational illnesses, and aligns Albanian agriculture with EU safety standards**.

## Annex 6. Directive 2000/54/EC: Protection of Workers from Biological Hazards in the Workplace

Directive 2000/54/EC establishes **minimum health and safety requirements** for protecting workers from **risks associated with exposure to biological agents** in the workplace. It applies to industries where workers may come into contact with **bacteria, viruses, fungi, and parasites**, such as agriculture, healthcare, waste management, and biotechnology. The directive aims to **prevent occupational diseases, ensure risk assessment, and implement control measures** to minimize exposure.

### Key Provisions and Objectives

#### 1. Classification of Biological Agents:

- Categorizes biological agents into **four risk groups (1-4)** based on their potential to cause disease in humans.
- Group 1: Low risk (e.g., non-pathogenic microorganisms).
- Group 2: Can cause disease but unlikely to spread (e.g., some strains of E. coli).
- Group 3: Can cause severe disease with a risk of spreading (e.g., tuberculosis bacteria).
- Group 4: High risk, no effective treatment available (e.g., Ebola virus).

#### 2. Risk Assessment and Prevention Measures:

- Employers must **identify and assess risks** related to biological hazards.
- Preventive measures include **safe handling procedures, ventilation systems, and controlled work environments**.
- Where elimination is not possible, exposure must be minimized using **engineering controls, administrative measures, and personal protective equipment (PPE)**.

#### 3. Worker Training and Health Surveillance:

- Employees must receive **training on biological hazards, proper hygiene, and emergency procedures**.
- Employers must provide **vaccinations** for workers exposed to infectious agents, such as **hepatitis B and rabies**.

Regular **medical monitoring** is required for high-risk workers to detect early signs of infection.

In agriculture, workers may be exposed to **zoonotic diseases (e.g., brucellosis, avian flu), organic dust, and contaminated water or soil**. Compliance with Directive 2000/54/EC ensures **proper biosecurity measures, protective equipment use, and vaccination programs**, reducing infection risks and improving occupational health standards in the sector.

## Annex 7. ILO Convention 155: Occupational Safety and Health

**ILO Convention No. 155 on Occupational Safety and Health (OSH)**, adopted in 1981, establishes a comprehensive framework for **ensuring safe and healthy working conditions** in all sectors, including agriculture. The convention emphasizes **preventive measures, employer and worker responsibilities, and national policy development** to promote workplace safety and reduce occupational risks. It serves as a **global benchmark** for countries developing and strengthening their OSH regulations.

### Key Provisions and Objectives

#### 1. National OSH Policy Framework:

- Requires ratifying countries to **formulate, implement, and periodically review a national OSH policy**.
- Encourages **integration of safety principles into economic and social policies**.
- Promotes **consultation between governments, employers, and workers** in shaping OSH regulations.

#### 2. Employer and Worker Responsibilities:

- **Employers** must ensure that **workplaces, equipment, and processes** do not pose health risks.
- **Workers** must comply with safety procedures and participate in OSH programs.
- The convention highlights the **importance of training, protective equipment, and hazard communication**.

#### 3. Hazard Identification and Risk Prevention:

- Countries must establish **systems for workplace risk assessment and accident prevention**.
- Employers should **eliminate or control workplace hazards**, ensuring workers are protected from exposure to dangerous substances, machinery risks, and environmental hazards.

#### 4. Enforcement and Monitoring:

Governments must provide **effective inspection and enforcement mechanisms**.

OSH policies should include **penalties for non-compliance and incentives for best practices**.

### Relevance to Agriculture

For agriculture, **ILO Convention 155** provides a foundation for regulating risks related to **pesticides, machinery, extreme weather, and zoonotic diseases**. Aligning with its principles helps **improve farmworker protection, reduce workplace injuries, and promote sustainable agricultural practices** in Albania and globally.

## Annex 8. ILO Convention 184: Safety and Health in Agriculture

**ILO Convention No. 184 on Safety and Health in Agriculture, adopted in 2001**, establishes **international standards for protecting agricultural workers from occupational hazards**. Given the high-risk nature of farming, the convention emphasizes **risk prevention, safe work practices, and access to healthcare** to improve working conditions in agriculture. It serves as a **key framework for national policies** aimed at reducing accidents, injuries, and diseases among agricultural workers.

### Key Provisions and Objectives

#### National Policy and Regulatory Framework:

- Requires governments to **develop and implement policies** for occupational safety and health (OSH) in agriculture.
- Promotes **enforcement mechanisms**, including labor inspections and compliance monitoring.
- Encourages **consultation with employers and workers** to improve farm safety.

#### Hazard Prevention and Risk Management:

- Employers must **identify and control risks** related to **pesticide exposure, machinery operation, extreme weather, and zoonotic diseases**.
- Calls for **safe handling and storage** of hazardous substances such as fertilizers and agrochemicals.
- Requires **protection against noise, vibration, and ergonomic risks** from prolonged manual labor.

#### Worker Training and Protection:

- Ensures **mandatory safety training** for agricultural workers handling machinery, chemicals, and livestock.
- Mandates the provision of **personal protective equipment (PPE)** to reduce injury risks.
- Calls for special **protection measures for vulnerable workers**, including **women, children, and seasonal farmworkers**.

#### Health and Welfare Measures:

- Employers must **provide access to clean drinking water, sanitation, and adequate housing** for agricultural workers.
- Requires **medical surveillance and first aid provisions** for workers exposed to occupational risks.

## Relevance to Agriculture

ILO Convention 184 provides a **structured approach to improving farmworker safety**, ensuring that **agricultural practices align with international OSH standards**. By implementing its principles, countries can **reduce accidents, improve workplace conditions, and enhance productivity** in the agricultural sector.

### Annex 9. ILO Convention 187: Promotional Framework for Occupational Safety and Health (OSH)

**ILO Convention No. 187, adopted in 2006**, establishes a **framework for promoting a culture of occupational safety and health (OSH) at the national level**. It aims to create a **continuous improvement process** for workplace safety by integrating OSH policies into national development strategies. The convention emphasizes **prevention, social dialogue, and systematic risk management** across all sectors, including agriculture.

#### Key Provisions and Objectives

##### National OSH Policy and Strategy:

- Requires ratifying countries to **develop, implement, and periodically review a coherent national OSH policy**.
- Encourages **integration of OSH policies into national economic, labor, and social development plans**.

##### OSH Management System and Programs:

- Governments must establish a **structured OSH management system** that includes **laws, regulations, and enforcement mechanisms**.
- Employers and workers should collaborate on **workplace safety initiatives and hazard identification programs**.

##### Promotion of a Preventive Safety Culture:

- Encourages **awareness campaigns, education programs, and worker training** to build a strong safety culture.
- Strengthens **social dialogue between governments, employers, and workers** to ensure effective OSH implementation.

##### Monitoring and Evaluation:

- Requires **data collection, reporting mechanisms, and research** to improve workplace safety.
- Calls for **continuous assessment and adaptation** of OSH policies based on emerging risks and best practices.

## Relevance to Agriculture

In agriculture, **Convention 187 helps promote preventive measures for farmworkers** by encouraging **risk assessments, training programs, and the adoption of safer agricultural practices**. By implementing its principles, Albania and other countries can **enhance worker protection, reduce occupational accidents, and align their OSH frameworks with international standards**.

## Annex 10. Establishment of a Standardized Risk Assessment Protocol Following EU Methodologies

### Introduction

- **Purpose of the Document:** To provide a comprehensive guide for establishing a standardized risk assessment protocol aligned with European Union methodologies.
- **Importance of Standardization:** Ensures consistency, comparability, and efficiency in risk management across different sectors and EU member states.
- **Scope:** The document applies to environmental, health, safety, economic, and technological risks, covering methodologies used in EU risk assessment processes.

### Overview of EU Risk Assessment Framework

- **EU Risk Management Structure:**
  - **Regulatory Bodies:** Overview of key institutions like the European Commission, the European Food Safety Authority (EFSA), and the European Chemicals Agency (ECHA).
  - **EU Directives and Regulations:** Key frameworks guiding risk assessment, such as REACH, the European Green Deal, and the EU Risk Management Strategy.
- **EU Methodologies:**
  - The **Precautionary Principle** and **Scientific Evidence:** The foundation of EU risk assessments.
  - Key steps: **Hazard Identification**, **Dose-Response Assessment**, **Exposure Assessment**, and **Risk Characterization**.

### Core Components of a Standardized Risk Assessment Protocol

- **Identification of Risk Context:**
  - **Sectoral Focus:** Differentiating risks in various sectors (e.g., agriculture, industry, public health, environment).
  - **Risk Types:** Environmental, health, technological, and economic risks.
- **Risk Identification Process:**
  - Methods for identifying potential hazards using historical data, scientific research, and expert consultations.
- **Risk Analysis:**
  - Assessing the likelihood and severity of identified risks.
  - Tools like fault tree analysis, event tree analysis, and Monte Carlo simulations.
- **Exposure Assessment:**
  - Determining the populations or environments at risk.
  - Exposure pathways and factors affecting exposure levels.
- **Risk Characterization:**
  - Estimating risk using quantitative and qualitative methods.
  - Use of risk matrices and decision trees to determine the level of acceptable risk.

## Development of the Standardized Protocol

- **Adapting EU Methodologies:**
  - Developing a flexible protocol that can be adapted to different sectors, including agriculture, manufacturing, and healthcare.
  - Integrating EU best practices and guidelines into national and organizational frameworks.
- **Stakeholder Engagement:**
  - Involving stakeholders (e.g., policy makers, experts, and the public) in the risk assessment process.
  - Transparent communication and sharing of risk information.
- **Risk Communication:**
  - Ensuring that risk communication is clear, concise, and actionable for decision-makers and the public.
  - Use of visual aids like risk maps, graphs, and dashboards.

## Compliance and Implementation

- **Legal Compliance:**
  - Ensuring adherence to EU legislation related to risk management.
  - Specific EU regulations that enforce risk assessment protocols (e.g., REACH, Water Framework Directive, Occupational Safety).
- **Implementation Strategy:**
  - Establishing a step-by-step implementation plan for the standardized protocol.
  - Integrating the protocol with national and EU-level reporting systems.

## Monitoring and Review

- **Continuous Monitoring:**
  - Ongoing tracking of risk levels and effectiveness of risk mitigation strategies.
  - Developing Key Performance Indicators (KPIs) for risk management activities.
- **Periodic Review and Updates:**
  - Regular updates to the risk assessment protocol based on new scientific findings, technological advancements, or changes in regulations.
  - Flexibility to adapt to emerging risks and new EU directives.

## Challenges and Considerations

- **Data Availability:**
  - Access to reliable and comprehensive data for risk assessment.
  - The role of big data, AI, and remote sensing technologies in modern risk assessments.
- **Cultural and Regional Differences:**
  - How different EU member states might approach risk management differently.
  - Harmonizing practices without compromising local context.

- **Uncertainty in Risk Analysis:**
  - Addressing gaps in knowledge and uncertainties in risk projections.
  - Use of conservative approaches in cases of high uncertainty.

## Conclusion

- **Key Benefits:**
  - Enhanced consistency, transparency, and comparability in risk management across EU countries.
  - Improved decision-making and public safety.
- **Future Outlook:**
  - The role of the EU in fostering global risk management standards. ○ The potential for this protocol to evolve as new challenges and risks emerge globally.

## References

- A comprehensive list of EU regulations, scientific papers, and standards referenced in the development of the standardized protocol.

## Annex 11. Key Components of the 5x5 Risk Matrix

1. **Likelihood:** This axis evaluates the probability of a risk happening. It usually consists of five levels, ranging from very low likelihood to very high likelihood.

For example:

- **1 (Rare):** The risk is unlikely to happen (e.g., once in a lifetime).
  - **2 (Unlikely):** The risk has a low probability but could occur under certain conditions.
  - **3 (Possible):** The risk is moderately likely to occur.
  - **4 (Likely):** The risk has a high probability of occurring.
  - **5 (Almost Certain):** The risk is very likely to occur, or it is a frequent occurrence.
2. **Severity:** This axis assesses the potential consequences or impact of the risk if it were to happen. Like likelihood, it also has five levels, ranging from minimal impact to catastrophic outcomes:
    - **1 (Negligible):** The impact is minor and manageable with little to no resources.
    - **2 (Minor):** The consequences are noticeable but manageable with some effort.
    - **3 (Moderate):** The impact is moderate, requiring significant resources to manage.
    - **4 (Major):** The consequences are severe, requiring substantial resources and causing major disruptions.
    - **5 (Catastrophic):** The consequences are extreme, causing widespread harm or irreparable damage.

### Using the 5x5 Risk Matrix:

The 5x5 matrix creates a grid with **likelihood** on one axis (typically the vertical axis) and **severity** on the other (typically the horizontal axis). When a risk is identified, its likelihood and severity are scored, and the intersection of these two factors determines its **risk level**. This results in a **total risk score** ranging from 1 (lowest risk) to 25 (highest risk).

### Risk Priority Categories:

- **Low Risk (1–4):** Risks that fall into this category are typically considered manageable and may not need immediate action.
- **Moderate Risk (5–12):** Risks in this range require attention but can be managed with standard risk mitigation strategies.
- **High Risk (13–20):** These are more significant risks that need to be carefully monitored and may require more resources to mitigate.
- **Critical Risk (21–25):** These risks represent the most severe combination of likelihood and impact. They should be addressed immediately with the highest level of resources and planning.

### Example:

- **Risk A:** A risk with **likelihood 3 (Possible)** and **severity 4 (Major)** would have a risk score of 12, placing it in the moderate risk category.
- **Risk B:** A risk with **likelihood 5 (Almost Certain)** and **severity 2 (Minor)** would have a risk score of 10, placing it in the moderate risk category as well, but still requiring attention.

- **Risk C:** A risk with **likelihood 2 (Unlikely)** and **severity 5 (Catastrophic)** would have a score of 10, signaling the importance of planning for such a rare but highly severe risk.

#### Benefits of Using the 5x5 Risk Matrix:

**Simplifies Decision Making:** By categorizing risks in a visual grid, it becomes easier to see which risks need immediate attention and which ones can be monitored over time.

**Prioritization:** It helps focus resources and efforts on the highest-priority risks, ensuring that organizations respond to the most critical issues first.

**Clear Communication:** The 5x5 risk matrix provides a simple, visual way to communicate complex risk information to stakeholders, decision-makers, and teams.

In summary, adopting the **5x5 risk matrix model** is an effective way to evaluate, compare, and prioritize risks based on their likelihood and severity, helping organizations allocate resources effectively and ensure that the most critical risks are managed promptly.

## CHAPTER 2 – Proposed Model or Guidelines to Prevent OSH Risks Montenegro



This chapter presents the strategic model and proposed guidelines developed within the framework of the "D.1.2.9–1.2.13 GUIDELINE TO PREVENT SAFE AND HEALTH RISK IN THE AGRICULTURAL SECTOR IN MONTENEGRO." The model is the result of a comprehensive normative analysis, comparative assessment with EU directives and international standards, and extensive field research conducted in ten agricultural SMEs across Montenegro.

It includes a detailed risk typology specific to the agricultural sector, covering mechanical, chemical, biological, physical, psychosocial, and ergonomic risks. Based on identified gaps and challenges, concrete recommendations and measures are proposed across key areas: legal and institutional frameworks, education and training, inspection oversight, equipment and workplace safety, digitalization, and intersectoral coordination.

The aim of this chapter is to provide a structured and operational model that supports Montenegro's alignment with European and international OSH standards, while responding to the real conditions and needs of the country's agricultural sector. The content reflects both regulatory analysis and direct input gathered through stakeholder consultations and pilot testing in local SMEs, ensuring its practical applicability.

### Methodology and Normative Analysis

#### Normative and Comparative Approach

The development of the proposed model for occupational safety and health (OSH) risk prevention in Montenegro's agricultural sector was grounded in a thorough normative and comparative analysis of relevant national and international frameworks.

The following legal instruments were reviewed and assessed:

- **Directive 89/391/EEC** on the introduction of measures to encourage improvements in the safety and health of workers at work;
- **Directive 2009/104/EC** on minimum safety and health requirements for the use of work equipment by workers at work;
- **Directive 2009/128/EC** on sustainable use of pesticides;
- **ILO Convention No. 184** on Safety and Health in Agriculture;
- Existing national OSH legislation, including the **Law on Occupational Safety and Health** and the **Law on Plant Protection Products**;
- The outdated **Rulebook on Occupational Safety in Agriculture** from 1968.

**Directive 2009/104/EC** replaced Directive 89/655/EEC and introduces clearer definitions of employer responsibilities, stricter standards for technical maintenance, mandatory use of personal protective equipment (PPE), and requirements for ergonomic improvements. These provisions are particularly important in agriculture, where workers are frequently exposed to mechanical risks, repetitive strain, and outdated machinery.

While **Montenegro has partially transposed Directive 2009/128/EC** through the Law on Plant Protection Products, key components such as pesticide waste disposal, safety measures in sensitive ecological areas, and quality control protocols through inspection and laboratory testing still lack full operationalization.

The **ILO Convention 184** is the only international instrument dedicated exclusively to OSH in agriculture. It outlines the obligations of member states in ensuring worker protection in relation to chemical exposure, training, use of personal protective equipment, and safeguarding seasonal and informal workers. Montenegro has not yet ratified this convention, which represents a significant gap in the national OSH framework.

The **1968 Rulebook** on OSH in agriculture remains in use and is significantly outdated. It does not reflect technological advancements, modern risk typologies, or sector-specific needs such as chemical handling and ergonomic work design.

To address these gaps, the following legal and policy recommendations were proposed:

- Adoption of a new Rulebook on OSH in agriculture aligned with modern practices;
- Ratification and implementation of EU directives 89/391/EEC, 2009/104/EC, and 2009/128/EC;
- Ratification of ILO Convention 184;
- Development of tailored by-laws and sector-specific guidelines focusing on different areas of agricultural production (e.g., fruit growing, dairy farming, pesticide application);
- Institutionalization of inter-ministerial cooperation mechanisms.

These recommendations aim to bring Montenegro's national OSH framework into alignment with EU and international standards, providing the necessary legal basis for the development and implementation of the proposed model.

### Consultation Process

In parallel with the legal review, the process of developing the proposed OSH model included extensive stakeholder consultation and field-based research. These consultations were designed to ensure that the proposed guidelines are not only normatively sound but also practically applicable and contextually relevant.

The following activities were undertaken:

- Field research was conducted in **ten agricultural companies** of varying sizes and production types;
- **Semi-structured interviews** were held with workers, managers, occupational safety professionals, and OSH inspectors;
- **Questionnaire-based assessments** were conducted to identify levels of OSH awareness, perceptions of risk, and current safety practices;

**Direct observations** were carried out during farm visits to assess the implementation of protective measures and use of equipment;

- Feedback from stakeholders was systematically collected and integrated into the development of recommendations and practical guidelines.

This consultation process ensured that the proposed model is rooted in the lived experiences of agricultural workers and employers, reflecting the real challenges and possibilities for improvement in OSH practices across Montenegro's agro-sector.

### Risk typology in agriculture

According to the International Labour Organization (ILO) ([Safety and Health in Agriculture https://www.ilo.org/safework/](https://www.ilo.org/safework/)), agriculture is one of the three most hazardous work sectors in the world, alongside construction and mining. This sector involves physically demanding tasks, frequent use of heavy and often outdated machinery, daily handling of chemicals, and work in adverse and unpredictable weather conditions. Working conditions are often further aggravated by the isolation of farms, limited access to healthcare services, and lack of information about safety standards.

Despite the high level of risk exposure, Montenegro lacks a systematic approach to identifying, recording, and managing agricultural risks, and prevention and control mechanisms in this sector remain largely underdeveloped.

### Mechanical risks

Mechanical risks represent one of the greatest challenges in the agricultural sector, as improper use of agricultural machinery and tools can lead to serious injuries, and in some cases, fatal accidents. Available data show that most agricultural accidents are related to the use of tractors, combine harvesters, motor cultivators, and other self-propelled machines.

#### Key issues and risks related to machinery use:

- **Outdated and defective agricultural machinery** – A large number of farms in Montenegro use worn-out tractors and implements without adequate safety equipment. The lack of regular technical inspections increases the risk of mechanical failures during operation, which can result in tractor rollovers, brake failures, and loss of control.
- **Unprotected moving parts** – The absence of guards on rotating components, pulleys, and chains often leads to severe injuries to workers' hands and limbs.
- **Tractor rollover risk** – Particularly hazardous are farms located on steep and inaccessible terrain, where working on slopes significantly increases the risk of rollovers. The lack of safety cabins and rollover protection structures (ROPS) leads to serious injuries and fatalities.
- **Improper use of attached implements** – Incorrect connection of attachments (plows, seeders, sprayers) often causes sudden jerks or detachment during operation, jeopardizing worker safety.
- **Working in adverse weather conditions** – Operating machinery during rain, fog, snow, and on slippery terrain significantly increases the risk of accident

**Lack of training and low awareness of safety procedures** – Many farmers, especially seasonal workers, lack formal training for operating agricultural machinery. This often results in improper use, increasing the likelihood of accidents.

#### **Most common causes of machinery-related injuries**

- **Contact with unprotected moving parts** – Blunt force trauma, amputations, and bone fractures.
- **Tractor and vehicle rollovers** – Severe physical injuries and fatalities.
- **Falls from height while working on machines** – Spinal and head injuries.
- **Improper use of implements and tools** – Injuries during attachment or detachment of machinery components.

#### **Measures to reduce mechanical risks:**

- **Mandatory use of safety cabins and rollover protection structures (ROPS)** on tractors, especially on farms operating on steep terrain.
- **Regular technical inspections and maintenance of agricultural machinery** to prevent malfunctions and accidents.
- **Restricting untrained workers from operating machinery** and requiring mandatory training for all machinery operators.
- **Installation of protective guards on rotating parts** of tractors, combines, and other machines.
- **Use of seat belts** and proper equipment attachment systems on tractors.
- **Organizing regular training sessions and increasing awareness** about safe machinery operation in agriculture.

#### **Chemical risks**

The use of chemicals in agriculture represents one of the most serious health risks for workers. Direct or prolonged exposure to these substances can cause both acute and chronic illnesses, while improper application and storage further endanger the safety of humans, animals, and the environment.

##### **Terminology note:**

*In this document, the term “chemicals” is used as an umbrella term that includes pesticides, herbicides, fungicides, mineral and organic fertilizers, soil treatment agents, and other agrochemicals used in crop production. For consistency and clarity, the single term “chemicals” is used instead of individual product names.*

#### **Key issues related to chemical risks in agriculture**

- **Inadequate worker protection** – A large number of farmers and seasonal workers do not use protective equipment (masks, gloves, safety goggles, protective clothing), or use it incorrectly, which increases the risk of direct chemical exposure.

- **Insufficient regulation and oversight** – Although a legal framework and regulations for chemical use are in place, their implementation and enforcement are limited, and illegal or inappropriate substances are still being used in the field.

**Lack of training for proper handling** – Many workers have never received certified training in chemical use, which leads to incorrect dosing, poor application methods, and increased personal and environmental exposure.

- **Improper storage and handling** – Chemicals are often stored in inadequate locations, near livestock feed or in unlabeled containers, increasing the risk of contamination and poisoning.
- **Multiple exposure pathways** – Workers may be exposed to chemicals through skin contact, inhalation, or ingestion—especially during spraying, mixing, or handling of packaging.
- **Increased vulnerability of certain groups** – Seasonal workers, as well as women of reproductive age (including pregnant and breastfeeding women), often work without basic protective equipment, making them particularly vulnerable.

## Health effects of chemical exposure

### 1. Acute effects

- Poisoning: nausea, dizziness, vomiting, eye and respiratory tract irritation
- Burns and skin reactions
- Breathing difficulties and respiratory tract irritation

### 2. Chronic effects

- Increased risk of cancerous diseases (leukemia, lymphomas)
- Neurological disorders, including risk of Parkinson's disease
- Hormonal imbalance and reproductive problems
- Liver and kidney damage due to toxin accumulation

## Recommended measures to reduce chemical risks

- **Mandatory use of protective equipment** – including masks, gloves, safety goggles, protective suits and footwear, along with mandatory decontamination procedures after work.
- **Education and certification** – regularly organized hands-on training and licensing programs for farmers and workers.
- **Proper storage of chemicals** – in protected, clearly marked areas, out of reach of children and animals.
- **Limiting chemical use and promoting alternative methods** – such as biological pest control, organic farming, and integrated pest management (IPM).
- **Application of modern technologies** – including drones, GPS systems, and automatic sprayers to reduce direct contact with chemicals.
- **Access to water and decontamination supplies** – ensuring facilities for hygiene and emergency removal of chemicals from skin and clothing.
- **Enhanced inspection and monitoring** – in the areas of chemical distribution, application, and residue control in products, soil, and water.

## Biological risks

Agricultural workers are frequently exposed to biological risks, including contact with allergens, bacteria, viruses, fungi, parasites, and toxins. These factors can lead to acute and chronic infectious diseases, allergic reactions, respiratory issues, and damage to the immune system.

Seasonal workers are especially vulnerable, as they often work in poor hygienic conditions, without proper protective equipment or training. Work in enclosed facilities (e.g., barns, silos, food storage) increases exposure to organic dust and microorganisms, while open-field farm work carries additional risks of contact with wild and domestic animals, insects, and contaminated water.

### Key biological risks in agriculture

- **Exposure to mold and fungi** – Working in high-humidity environments (e.g., grain storage, greenhouses) increases the risk of fungal lung infections and respiratory allergies. Prolonged inhalation of mold spores can lead to aspergillosis and other respiratory diseases.
- **Zoonotic diseases** – Agricultural workers are often in contact with domestic animals (cattle, pigs, sheep, poultry), as well as rodents and insects, which can transmit infectious diseases:
  - **Brucellosis** – Transmitted from infected animals; causes fever, joint pain, and fatigue.
  - **Leptospirosis** – Usually contracted through contaminated water or soil; affects kidneys, liver, and respiratory system.
  - **Salmonellosis and Campylobacteriosis** – Caused by contaminated food or handling; leads to severe gastrointestinal distress.
- **Insect and tick bites** – Farmers are commonly exposed to ticks, mosquitoes, and flies, which can lead to:
  - **Lyme disease** – Caused by tick-borne bacteria; leads to fatigue, joint pain, and neurological issues.
- **West Nile fever** – Spread by infected mosquitoes; can cause high fever, encephalitis, and neurological complications.
- **Allergic reactions** – Inhalation of pollen, dust, mold, and animal dander can trigger severe allergic responses, asthma, and bronchial irritation, particularly among workers in confined spaces with high concentrations of these allergens.
- **Mycotoxin poisoning** – Long-term handling of contaminated animal feed or moldy grain can result in ingestion of mycotoxins (e.g., aflatoxins, ochratoxins), which may cause liver, kidney, and immune system damage.

### Most common health effects of biological risk exposure:

- **Acute infections and poisoning** – Fever, diarrhea, vomiting, weakness
- **Respiratory problems** – Allergic reactions, asthma, chronic bronchitis
- **Neurological issues** – Effects of neurotropic viruses and tick-borne infections
- **Long-term organ damage** – Liver, kidneys, immune system

### Recommended measures to reduce biological risks:

- **Mandatory use of protective equipment** – Gloves, protective masks, goggles, and work clothing should be standard gear when working near animals, in dusty environments, or grain storage facilities

**Regular disinfection and sanitation measures** – Storage areas, barns, and workspaces must be regularly cleaned, ventilated, and disinfected to reduce concentrations of microorganisms and allergens.

- **Vaccination of workers** – Agricultural workers should be vaccinated against zoonotic diseases, such as leptospirosis, brucellosis, and tetanus, to reduce the risk of infection.
- **Reducing contact with wild and infected animals** – Workers must apply biosecurity procedures to avoid unnecessary contact with potentially infected animals.
- **Use of chemical and biological pest control agents** – Insect and rodent control (disinsection and deratization) should be routine practices on farms to reduce populations of disease-carrying pests.
- **Worker education on biological risks** – Training sessions should be organized to help workers recognize symptoms of zoonotic diseases, allergic reactions, and respiratory issues so they can respond quickly and seek medical help.
- **Proper storage and handling of animal feed** – Reducing humidity in storage areas helps prevent mycotoxin contamination.
- **Inspection and monitoring** – Implement regular checks of air and water quality on farms, as well as evaluations of the work environment, to identify and eliminate biological risks.

#### Physical and environmental risks

Agricultural workers are often exposed to extreme weather conditions, prolonged sun exposure, high humidity, cold, and wind, which significantly increase health risks and reduce work productivity. Most agricultural activities take place outdoors, where there are typically no adequate shelters or rest areas, making physical exertion even more difficult for workers.

#### Key Physical and Environmental Risks:

- **Heat stress and dehydration** – Agricultural workers, especially during summer months, are frequently exposed to high temperatures and direct sunlight. This can lead to heatstroke, sun exhaustion, dehydration, and a general decline in physical endurance. Seasonal workers are particularly at risk due to long shifts, often without sufficient water or shaded breaks.
- **UV radiation exposure** – Prolonged exposure to sunlight without adequate protection (hats, sunglasses, sunscreen) increases the risk of skin damage, premature aging, and even skin cancer.
- **Hypothermia and frostbite** – Workers in cold climates or high altitudes face low temperatures, cold winds, and moisture, which may result in hypothermia, muscle stiffness, and reduced motor skills, increasing the risk of accidents.
- **High humidity and respiratory issues** – Farmers working in greenhouses, tunnels, or near water bodies are often exposed to high humidity levels, which may cause breathing difficulties, worsen asthma, and increase the risk of allergic reactions.
- **Working in extreme weather conditions** – Frequent exposure to strong winds, rain, hail, and storms raises the risk of injuries, falls, and being struck by wind-blown objects. This is especially dangerous on steep terrain, where slipping and falling can cause serious injuries.
- **Climate change and its effects** – The growing impact of climate change has led to longer droughts, heavy rainfall, and unpredictable weather patterns, further complicating working conditions in agriculture. Changes in temperature and humidity also contribute to the spread

of pests and plant diseases, which in turn require increased chemical use, heightening health risks for workers.

### Recommended Measures to Reduce Physical and Environmental Risks:

- Provide **shaded shelters and rest areas** in open agricultural fields.
- Ensure **regular hydration breaks**, especially during the summer.
- **Mandatory use of protective equipment**, including hats, sunglasses, protective clothing, and sunscreen.
- **Adjust working hours** according to seasonal conditions (e.g., avoid working during the hottest part of the day).
- **Educate workers** on how to recognize symptoms of heat stress, dehydration, and hypothermia.
- Develop **emergency response plans** for extreme weather events or temperature extremes.

### Psychosocial risks

In addition to physical, chemical, and biological hazards, agricultural work also involves significant psychosocial risks, which are often overlooked in occupational safety and health policies. The unique features of this sector—such as the seasonal nature of work, dependence on weather conditions, financial instability, and geographic isolation—directly impact workers’ mental health and overall quality of life.

Many farmers, particularly those on small family farms and seasonal workers, face high levels of stress, job insecurity, exhaustion, and social isolation, which can lead to depression, anxiety, and even suicide.

### Main psychosocial risks

- **Unpredictable weather and financial insecurity** - Agriculture is highly vulnerable to climate change—droughts, floods, hail, and frost can destroy crops overnight, leaving workers without income. This constant uncertainty creates psychological tension and a sense of helplessness.
- **Seasonal work and job insecurity** - Many agricultural jobs are temporary, lacking formal contracts or social protection. This further destabilizes livelihoods, especially for migrant workers and women, who are often engaged in short-term, low-paid roles.
- **Isolation and social exclusion** - Rural areas are often physically and infrastructurally remote from urban centers and services. Farmers have limited access to healthcare, education, and social services, leading to loneliness and reduced psychological resilience.
- **Physical exhaustion and its psychological impact** - Long working hours, exposure to harsh weather, and lack of rest lead to chronic physical fatigue, increasing the risk of emotional burnout.
- **Market pressure and competition** - Low purchase prices, unfair competition, high production costs, and reliance on intermediaries contribute to economic pressure and a sense of lost control over production.
- **Lack of access to healthcare and psychological services** - Montenegro currently lacks specialized mental health programs for rural communities, as well as counseling services for farmers, further increasing their vulnerability.

### Possible consequences of psychosocial risks:

- Chronic stress, exhaustion, and emotional burnout

- Depression, anxiety, insomnia, and mood disorders
- Alcohol and substance abuse
- Increased suicide risk, especially among independent farmers
- Decreased motivation, productivity, and quality of life

#### Recommended measures to reduce psychosocial risks:

- Introducing **financial and social protection systems**, including crop loss insurance and subsidized healthcare services;
- Organize **mental health workshops** and training in rural areas;
- Develop **supportive communities**—through associations, cooperatives, and peer-to-peer networks to strengthen solidarity;
- Establish **mobile healthcare and psychological teams** to serve remote areas;
- Promote **work–life balance** through education, reduced working hours, and vacation planning;
- Invest in **mechanization and facilitate physical labor**, thereby indirectly reducing mental strain;
- Develop **national mental health programs** tailored to the specific needs of the agricultural population.

#### Ergonomic risks

Agricultural workers are exposed to high levels of physical strain, including prolonged standing, squatting, bending, lifting heavy loads, and repetitive motions. These factors increase the risk of musculoskeletal disorders, back, shoulder, and joint pain, and chronic fatigue. The lack of ergonomically adapted tools, modern equipment, and work procedures further worsens working conditions and increases the likelihood of injuries and occupational illnesses among farmers.

#### Key issues related to ergonomic risks in agriculture:

**Workers** often manually lift and carry loads (e.g., grain sacks, hay bales, crates of fruits and vegetables), leading to spinal injuries, herniated discs, and muscle/joint damage. o The absence of mechanical aids (hoists, carts, conveyor belts) significantly increases physical strain.

**Improper working postures** o Many agricultural tasks require frequent bending, squatting, or prolonged standing, especially during harvesting, weeding, planting, and soil preparation. o Poor posture during work contributes to chronic pain in the back, neck, and shoulders.

#### Repetitive motions over extended periods

Repetitive tasks performed for hours (e.g., seeding, manual harvesting, milking, pruning) lead to muscle overuse, tendon inflammation, and repetitive strain injuries (e.g., tennis elbow, carpal tunnel syndrome). o Women in agriculture are especially affected, often performing manual food processing and product sorting, which can cause joint stiffness and muscle fatigue.

**Lack of ergonomically designed tools and machines** o Many farms use outdated tools and equipment

- o not suited to the human body. o Tasks like manual spraying, plowing, pruning, and digging are done with excessive physical effort and inadequate tools.
- o Machines without adjustable handles or seats increase fatigue and improper body loading.

**High risk of chronic musculoskeletal disorders among older workers** o A significant percentage of farmers are over the age of 50, making them more prone to spinal, joint, and muscle conditions.

- o Intense physical labor at an older age can result in cartilage damage, osteoporosis, and degenerative spine diseases.
- o The lack of adapted work procedures for older workers increases the risk of injury.

#### **Most common health consequences of ergonomic risks:**

- Lower back pain and spinal disorders – lumbago, sciatica, herniated discs
- Repetitive strain injuries (RSIs) – tendonitis, carpal tunnel syndrome
- Knee and joint injuries – osteoarthritis, cartilage inflammation due to excessive squatting and standing
- Stiffness and reduced mobility – especially in older workers, leading to decreased work capacity

#### **Recommended measures to reduce ergonomic risks:**

- **Use of load-carrying aids** – Introduce carts, hoists, ergonomic harnesses, and conveyor belts to reduce spinal and joint strain;
- **Ergonomic design of tools and machines** – Use tools with adjustable handles, vibration-dampened machines, and adjustable tractor seats to reduce fatigue and pressure on the body;
- **Change working postures and allow regular breaks** – Minimize prolonged bending and squatting by alternating tasks, taking more frequent breaks, and using seats or benches in greenhouses and on farms;
- **Train workers on proper lifting techniques** – Instruction on bending the knees, using leg strength instead of the back, and avoiding sudden lifting of heavy objects;
- **Organize physical exercise and stretching routines** – Introduce musclestrengthening programs, especially for the back and legs, to prepare workers for physical tasks;
- **Adapt work conditions for older workers** – Reduce strain on the spine through shorter shifts, lighter tools, and assigning less physically demanding tasks;
- **Use modern technological solutions** – Introduce exoskeletons to offload the spine and smart sensors that monitor posture and remind workers to change position to prevent overuse.

#### **Proposed Guidelines and Measures**

##### **Legal and Institutional Recommendations**

To address the fragmented and outdated regulatory framework currently governing Occupational Safety and Health (OSH) in agriculture in Montenegro, the following legal and institutional measures are proposed:

- **Adopt a new Rulebook on OSH in agriculture**, replacing the existing regulation from 1968, which no longer reflects modern practices, technologies, or risk profiles of agricultural work.
- **Ratify and fully implement EU directives** relevant to the agricultural sector—namely 89/391/EEC (framework directive), 2009/104/EC (use of work equipment), and 2009/128/EC (sustainable use of pesticides)—as well as the **ILO Convention 184**, which offers a global standard for OSH in agriculture.

- **Develop sector-specific by-laws and operational guidelines**, with targeted focus on various branches of agriculture, including crop farming, livestock breeding, dairy production, and pesticide use.
- **Introduce a legal obligation for medium and large agricultural enterprises to engage internal OSH specialists**, ensuring on-site risk assessments, training, and supervision.
- **Establish an inter-ministerial cooperation mechanism** between the Ministry of Labour, Employment and Social Dialogue and the Ministry of Agriculture, Forestry, and Water Management to enable joint planning, data sharing, and coordinated OSH policy-making.

### Education and Training Measures

Strengthening awareness and capacity among agricultural workers and employers is crucial. The following educational and training recommendations are proposed:

- **Introduce mandatory OSH training programs** for all categories of agricultural workers, particularly seasonal and low-skilled workers.
- **Develop educational materials, visual guides, and multimedia manuals** adapted to the literacy level and practical needs of agricultural workers, using simple language and pictograms.
- **Create e-learning platforms and digital modules**, accessible in rural areas, to ensure OSH knowledge reaches remote farms and small-scale producers.
- **Integrate OSH into vocational and formal education**, through partnerships with agricultural schools and training centers, to institutionalize safety practices from an early stage.

### Inspection Oversight Improvements

Enhancing the institutional capacity of inspection bodies is essential to ensure compliance and provide guidance. The proposed measures include:

- **Increase the number of OSH inspectors** specialized in agriculture and provide them with continuous training on emerging risks in agricultural work environments.
- **Introduce a preventive and advisory inspection model**, shifting the focus from punishment to guidance, support, and employer education.
- **Equip inspectors with digital tools** such as mobile apps, e-checklists, and access to centralized databases, enabling more efficient and real-time field supervision.

### Equipment and Workplace Safety

Given the high level of physical risk in agricultural work, the following measures aim to improve safety conditions and equipment usage:

- **Ensure availability and proper use of personal protective equipment (PPE)** tailored to specific workplace risks—especially for pesticide handling, machinery operation, and animal care.
- **Establish monitoring systems for equipment maintenance and usage**, incorporating **digital labels (QR codes, RFID)** and tracking systems for compliance.
- **Promote ergonomic tools and technologies** to reduce physical strain, particularly in manual tasks and repetitive activities, and include ergonomic assessments in workplace evaluations.

## Digitalization and Data Management

To improve transparency, traceability, and responsiveness in OSH processes, digital tools should be integrated:

- **Implement centralized digital systems** for tracking workplace injuries, training completion, risk assessments, and preventive actions.
- **Introduce QR codes, sensors, and mobile apps** for real-time field monitoring and worker alerts, enhancing risk detection and immediate response.
- **Create a national digital injury database**, accessible to OSH inspection and relevant authorities, that ensures accurate data collection and trend analysis.
- **Mandate anonymous reporting channels** for all injuries, including minor and unreported cases, and establish protection mechanisms for whistleblowers.

## Intersectoral Coordination

A unified approach to OSH in agriculture requires cooperation between different institutions and sectors:

- **Establish a national coordination body** that includes ministries, inspectorates, farmer associations, and OSH professionals, with a dedicated mandate and resources.
- **Ensure that rural development programs and subsidies (e.g., IPARD)** are aligned with OSH priorities—particularly in investments related to equipment, digitalization, and training.
- **Launch a national awareness campaign** on OSH in agriculture, engaging local governments, media, and civil society to foster a safety-first culture in rural areas.

## SWOT analysis of OSH in agriculture in Montenegro

The SWOT analysis of occupational safety and health (OSH) measures in agriculture in Montenegro provides a comprehensive overview of the key strengths, weaknesses, opportunities, and threats shaping the current state of OSH in this sector. Including this analysis in the document enables a structured insight into existing capacities, institutional and legislative gaps, as well as external factors that may influence the effective implementation of safety measures. The SWOT approach supports the identification of specific intervention points and the development of recommendations tailored to the real challenges observed in the field, thereby contributing to strategic planning and the sustainable improvement of working conditions in agriculture.

Table 6: SWOT analysis

| Strengths | Weaknesses |
|-----------|------------|
|-----------|------------|

| <ul style="list-style-type: none"> <li>• A regulatory framework governing occupational safety and health (OSH) exists.</li> <li>• There is interest among certain employers in improving working conditions.</li> </ul> <p>International initiatives and projects related to OSH in agriculture are present.</p> <p>There are existing experiences and examples of good practices on some agricultural holdings.</p>                                                       | <ul style="list-style-type: none"> <li>• Lack of specific legal provisions and by-laws regulating OSH in agriculture.</li> <li>• Low awareness among workers and employers about the importance of risk prevention.</li> <li>• Absence of mandatory OSH education for agricultural work.</li> </ul> <p>Limited capacity of inspection services to adequately oversee the sector.</p> <p>Lack of statistical data on workrelated injuries in agriculture.</p>                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Integration of OSH into national agricultural development strategies.</li> <li>• Utilization of EU funds and international aid to improve safety in the sector.</li> <li>• Development of targeted training programs for farmers and seasonal workers.</li> </ul> <p>Digitalization and new technologies offer opportunities for enhanced risk prevention.</p> <p>Collaboration with educational institutions to promote OSH.</p> | <ul style="list-style-type: none"> <li>• Growing number of seasonal and informally employed workers without any protection.</li> <li>• Climate change increasing risks (e.g., heatwaves, floods).</li> <li>• Resistance within the sector to change and invest in prevention measures.</li> </ul> <p>Insufficient political will to address OSH issues in agriculture systematically.</p> <p>Risk of OSH being neglected in the context of agricultural policy reforms.</p> |

## Chapter 2 –guidelines contribution for Molise region



### STRATEGIC MANAGEMENT MODEL

#### RISK ASSESSMENT CRITERIA

The risk assessment referred to in Article 17, paragraph 1, letter a) of Legislative Decree 81/08, including in the choice of work equipment and chemical agents used, as well as in the layout of workplaces, covered all risks to the safety and health of workers, including those relating to groups of workers exposed to particular risks, including those related to work-related stress, in accordance with the European Agreement of

October 8, 2004, and those concerning pregnant workers, in accordance with Legislative Decree No. 151 of March 26, 2001, as well as those related to gender differences, age, and origin from other countries.

The assessment of the risks to which workers are exposed required a careful analysis of the specific situations in which employees in various workplaces find themselves while performing their duties.

Risk assessment is:

- related to choices regarding equipment, substances, and workplace layout;
- aimed at identifying and implementing appropriate measures and precautions. Therefore, risk assessment is linked both to the type of work carried out in the production unit and to situations determined by factors such as the working environment, the structures and systems used, and the materials and products involved in the processes.

The guidelines considered are based on the following aspects:

- observation of the working environment (requirements of the workplace, access routes, equipment safety, microclimate, lighting, noise, physical and harmful agents); • identification of tasks performed in the workplace (to identify the hazards arising from individual tasks);
- observation of how the work is carried out (in order to check compliance with procedures and whether these involve additional hazards);
- examination of the environment to identify external factors that may have adverse effects on the workplace (microclimate, ventilation);
- examination of work organization;
- review of psychological, social, and physical factors that may contribute to stress at work and study of how they interact with each other and with other factors in the organization and work environment.

The observations made are compared with established criteria to ensure safety and health, based primarily on:

- national and international legal standards.
- technical standards;
- publisher standards and guide Lines.

## METHODOLOGY AND CRITERIA USED FOR RISK ASSESSMENT

The risk assessment was carried out using the methods and criteria deemed most appropriate for the company's working conditions, considering the general principles of protection set out in Article 15 of Legislative Decree 81/08. Where legislation provides specific guidance on assessment methods, risk descriptors were identified based on technical standards and/or reference guidelines, also using information contained in institutional, national, and international databases (e.g., noise, vibrations, manual handling of loads, etc.).

In the absence of specific legislative guidelines on assessment methods, criteria based on experience and knowledge of the actual working conditions of the company have been adopted and, where available, on support tools, data from the accident register, risk profiles, accident indices, accident dynamics, checklists, technical standards, instructions for use and maintenance, etc. In this case, the extent of the risks is determined by assigning an appropriate value to the probability of occurrence (P) and the severity of the damage (D). The combination of these variables yields the risk matrix, whose magnitude is given by the relationship:

$$R = P \times D$$

The probability of event P occurring is associated with a numerical index shown in the following table:

| PROBABILITY OF THE EVENT |                   |                                                                                                                                                                                                                |
|--------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                        | Improbable        | There are no reports of accidents occurring in similar working conditions, so the occurrence of such an event would be met with astonishment and disbelief.                                                    |
| 2                        | Not very probable | The deficiency found could cause harm to workers only in conjunction with other unfavorable situations; there are reports that, on very rare occasions, accidents have occurred in similar working conditions. |

|          |                        |                                                                                                                                                                                                                                                                       |
|----------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3</b> | <b>Probable</b>        | The deficiency found could cause harm to employees, although not automatically. Statistics show that, in some cases, accidents have occurred under similar working conditions.                                                                                        |
| <b>4</b> | <b>Highly probable</b> | There is a direct correlation between the anomaly detected and the possibility of injury to employees; accidents have occurred in the same company under similar working conditions, so the occurrence of an accident would come as no surprise to senior management. |

The severity of the damage is estimated by analyzing the type of damage, the parts of the body that may be involved, and the number of people exposed. The severity of the damage (D) is associated with a numerical index shown in the following table:

| <b>SEVERITY OF DAMAGE</b> |                    |                                                                                                           |
|---------------------------|--------------------|-----------------------------------------------------------------------------------------------------------|
| <b>1</b>                  | <b>Mild</b>        | The event could result in partial disability, which is quickly reversible, for no more than one employee. |
| <b>2</b>                  | <b>Moderate</b>    | The event could result in temporary incapacity for one or more employees.                                 |
| <b>3</b>                  | <b>Severe</b>      | The event could result in disability, with permanent aftereffects for one or more employees.              |
| <b>4</b>                  | <b>Very severe</b> | The event could result in death or permanent disability for one or more employees.                        |

## RISK MATRIX

The matrix resulting from the combination of probability and damage is shown in the following figure:

|             |   | DANNO |   |    |    |
|-------------|---|-------|---|----|----|
|             |   | 1     | 2 | 3  | 4  |
| PROBABILITÀ | 4 | 4     | 8 | 12 | 16 |
|             | 3 | 3     | 6 | 9  | 12 |
|             | 2 | 2     | 4 | 6  | 8  |
|             | 1 | 1     | 2 | 3  | 4  |

| Risk entity     | Referenc e values     | Priority of intervention                               | Implementation time in days |
|-----------------|-----------------------|--------------------------------------------------------|-----------------------------|
| <b>Very low</b> | $(1 \leq R \leq 1)$   | Improvements to be evaluated during the planning phase | 180                         |
| <b>Low</b>      | $(2 \leq R \leq 4)$   | improvements to be implemented in the medium term      | 60                          |
| <b>Medium</b>   | $(6 \leq R \leq 9)$   | Improvements to be implemented urgently                | 30                          |
| <b>High</b>     | $(12 \leq R \leq 16)$ | Improvements to be implemented immediately             | 0                           |

The guidelines considered were based on the following aspects:

- observation of the working environment (requirements of the workplace, access routes, equipment safety, microclimate, lighting);
- noise, physical and harmful agents;
- identification of the tasks performed in the workplace (to assess the risks arising from individual tasks);
- observation of how the work is performed (in order to check compliance with procedures and whether these involve other risks);
- examination of the environment to detect external factors that may have negative effects on the workplace (microclimate, ventilation);
- examination of work organization;
- review of psychological, social, and physical factors that may contribute to stress at work and study of how they interact with each other and with other factors in the organization and workplace environment.

**The observations made are compared with criteria established to ensure safety and health based on:**

- national and international legal standards;
- good technical standards;
- published standards and guidelines;

**Hierarchical principles of risk prevention:**

- elimination of risks;
- replacing what is dangerous with what is not dangerous or less dangerous;
- combating risks at source;
- applying collective rather than individual protective measures;
- adapting to technical progress and changes in the field of information;
- seeking to ensure an improvement in the level of protection.

#### **LIST OF RISKS IDENTIFIED AND ANALYSED**

The following risks have been identified, analyzed, and assessed as reported in the following chapters:

- Electrocution.
- Falls from height;
- Falling objects;
- Impacts and compression;
- Cuts;
- Slips;
- Trips, falls on level ground;

- Being hit by a vehicle;
- Drowning;
- Inhalation of dust;
- Shearing
- Liquid splashes;
- Projectile splinters;
- Inhalation of gases and vapors;
- Punctures;
- Burns;
- Heat stress;
- Cold stress;
- Entanglement;
- Noise;
- Hand-arm vibrations;
- Summer microclimate;
- Ergonomics;
- MMC - High-frequency handling of low loads;
- ATEX gas;
- Fire;
- MMC - Lifting and transport;
- MMC - Pushing and pulling;
- Flames and explosions;
- Overturning;
- Vehicle accidents;
- Electromagnetic fields;
- Ventilation;
- Whole-body vibrations;
- Infection;
- Unhealthy or non-ergonomic environments;
- Contact with moving vehicles;
- Escape routes not easily accessible;

- Exits not easily accessible;
- Difficulties in evacuation;
- First aid and emergency management issues;
- Explosion of pressurized equipment;
- Exposure to flames or heat;
- Falls;
- Contact with hazardous fluids;
- Awkward postures;
- Excessive exertion;
- Sudden movements;
- Unstable positions;
- High frequency of movements with insufficient recovery time;
- Physical and verbal aggression;

#### **TECHNOLOGICAL INNOVATION FOR PREVENTION AND PROTECTION IN THE USE OF TRACTORS**

To reduce or eliminate risks, it is also necessary to use technology, innovation, and Artificial Intelligence. To this end, a protocol has been signed by the Molise Regional Directorate of INAIL, the INAIL Department of Technological Innovations and Safety of Plants, Products, and Human Settlements, and the Department of Industrial Engineering of the University of Rome Tor Vergata. This protocol provides for prevention and protection measures for the appropriate use of tractors, even in production phases where the use of protective arches is difficult. Therefore, the research activity is aimed at prototyping additional standard ROPS for tractor models based on a statistical study of the tractor fleet, compact non-collapsible ROPS (CROPS), and the study, design, and construction of prototypes of rollover protection structures that can be easily or automatically collapsed/raised.

In uncommon situations, lowered ROPS are not positioned safely because the maneuver is 'awkward and requires considerable force; this results in a significant number of fatal or serious accidents involving tractors equipped with ROPS that have been lowered. The main objective of the study, design, and construction of prototypes of rollover protection structures that can be easily or automatically lowered/raised was to reduce the force required to move the protection structure, especially during the repositioning phase in the safety configuration.

These studies, which are continuously updated, are necessary to manage the risk of tractor rollovers, the leading cause of serious and fatal accidents in agriculture.

With a view to drawing up the PMP (Targeted Prevention Plan), the Molise Region has identified tractor rollovers as the main risk and has provided information, training, and monitoring plan for all key players in the agricultural sector.

Therefore, we recommend that farms in Molise apply the PMP so that the three fundamental elements of the plan, namely information, training, and monitoring, are implemented by the farms in Molise involved in the project.



## CHAPTER 3 TESTING



## Chapter 3 Testing Apulia Region



**CIA Puglia model: principles, systemic approach, and continuous improvement** Promoting workplace health and safety in agriculture requires a structured approach that combines regulatory, operational, and training tools with a systemic and dynamic vision of work organization. The model developed by CIA Puglia as part of the SAGRI project addresses this need by integrating established practices and operational tools tailored to the specific needs of the Apulian agricultural sector.

The core of the model is the adoption of cyclical logic, inspired by the principle of *continuous improvement*, according to which every company process—including those related to safety— must be periodically planned, implemented, verified, and reformulated based on the critical issues and opportunities that emerge. This approach corresponds to the international PDCA model—Plan, Do, Check, Act—widely recognized in the quality management field and effectively transferable to safety management systems.

In the Puglia agricultural context, often characterized by small, family-run businesses with limited administrative resources, the model proposed by CIA Puglia focuses on procedural simplification without compromising effectiveness. Each requirement (e.g., DVR, risk assessment, training) is integrated into a logical and operational sequence that supports the entrepreneur in building a coherent and accessible system.

The model is based on five pillars:

1. participatory risk assessment, conducted with the active involvement of the owner and workers.
2. use of thematic checklists as practical tools for monitoring the application of safety measures.
3. integration with production processes, preventing safety from being perceived as a separate or bureaucratic element.
4. continuous and personalized training, with modules differentiated based on roles and tasks.
5. cycle, which provides for systematic review of the applied measures and safety documents.

Each phase of the continuous improvement cycle includes concrete activities and application tools that guide the company on a path of progressive improvement.

The PDCA cycle in agriculture can be structured as follows:

- Plan: identify hazards, assess risks, draft or update the DVR, define improvement objectives and training plans.
- Do: Implement preventive and protective measures, provide training, distribute PPE, and secure equipment.
- Check: monitoring activities, checking the effectiveness of measures taken, compiling checklists and recording incidents and near misses.
- Take Action (Act): Review the system, update documents and procedures based on audit results, implement corrective and preventive actions.

This structure allows farmers to manage workplace safety in a non-static, but adaptive, manner, promoting a culture of prevention rooted in daily production processes.

Below is an example of a mini checklist for an initial company self-assessment of the level of implementation of the PDCA cycle. This tool is a useful guide for identifying critical points and activating an improvement process.

**Table 4- Mini Checklist: Starting the continuous improvement cycle**

| CONTROL VOICE                                                   | YES                      | NO                       | NOTE |
|-----------------------------------------------------------------|--------------------------|--------------------------|------|
| Has your company DVR been updated in the last 12 months?        | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Have concrete safety improvement targets been defined?          | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Have workers received training in the last 12 months?           | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are internal audit reports and controls available?              | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there a plan for periodically reviewing preventive measures? | <input type="checkbox"/> | <input type="checkbox"/> |      |

*Source: CIA Puglia processing based on Legislative Decree 81/08, art. 28–29, and ILO methodologies.*

### DVR and risk assessment in agriculture

Risk assessment is the cornerstone of any occupational health and safety management system. In agriculture, this regulatory requirement translates into the preparation of a Risk Assessment Document (RAD), required by Article 17 of Legislative Decree 81/08, even for small and family-run agricultural businesses.

In Puglia's agricultural context, dominated by micro-businesses with a limited number of workers and a high seasonality, the DVR serves not only a prescriptive, but also an organizational and preventive role. The CIA Puglia model aims to simplify and standardize the risk assessment process, facilitating its development through guideline templates, risk sheets, and operational support tools.

One of the key elements introduced is the use of pre-populated and adaptable DVR templates, which help companies identify the main risks related to their activities: from the use of agricultural machinery to exposure to chemicals and biological agents, from microclimatic risks (heat stroke, UV radiation) to injuries related to the manual handling of loads.

As part of the SAGRI project, during the accompanying action of November 27–29, 2024, numerous Apulian companies expressed the need to update their DVR, particularly in relation to the addition of new equipment, changes in workforce composition, and the introduction of more complex agronomic techniques. The need for support in understanding the risk sheets and completing the sections relating to PPE, signage, and emergency procedures also emerged.

In the CIA Puglia model, risk assessment is not limited to the completion of the document, but is connected to the PDCA cycle, becoming a dynamic tool to be periodically reviewed. This vision allows for the shift from a document-based approach to a functional and informed approach, based on the active participation of workers and their representatives.

In the agricultural context, proper management of the Risk Assessment Document (DVR) allows the entrepreneur not only to comply with legal obligations but also to effectively prevent accidents and occupational diseases. The CIA Puglia model proposes an operational and structured approach that includes periodic review of the DVR's contents, updating it as working conditions change, and the use of standardized tools.

During the accompanying actions foreseen by the SAGRI project, the technicians and trainers have highlighted how the most recurring difficulties in managing the DVR are:

- the lack of updates following the introduction of new machines or substances;
- the lack of an integrated health surveillance plan;
- the lack of specific training related to the risks identified in the document.

To facilitate the self-assessment of agricultural companies, a mini checklist has been prepared to monitor the main risk assessment requirements, to be used as an internal continuous monitoring tool.

**Table 5- Mini Checklist: DVR and basic requirements**

| CONTROL VOICE                                                                               | YES                      | NO                       | NOTE |
|---------------------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Has the DVR been updated following structural changes or the introduction of new equipment? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Has the competent doctor been appointed and are health surveillance protocols activated?    | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Have all workers received specific training on the identified risks?                        | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Has a DVR improvement or review plan been established at least annually?                    | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are risk sheets attached and referred to each agricultural task?                            | <input type="checkbox"/> | <input type="checkbox"/> |      |

*Source: CIA Puglia processing from INAIL schemes and observations collected during the SAGRI accompanying action (November 2024).*

## **Risk analysis: methodical approach and prevention tools**

### *a. Mechanical and organizational risks*

Mechanical hazards are a major cause of accidents in the agricultural sector, particularly in situations where machinery and equipment are used without adequate training and maintenance. Added to

these are organizational risks, linked to improper operating methods, irregular shift patterns, or the lack of written procedures. In the Apulian agricultural sector, these two factors often combine critically, especially in companies employing seasonal or occasional workers.

The CIA Puglia model focused on these two types of risk, proposing a methodical and standardized approach that combines technical and documentary assessment with direct field observation. The activities carried out during the accompanying actions envisaged by the SAGRI project allowed the most frequent mechanical risk situations to be identified:

- tractors not equipped with a roll bar or seat belts;
- uncovered cardans;
- lifting systems without certifications or periodic checks;
- mixed use of equipment without a use and maintenance manual.

From an organizational standpoint, the main critical issues that emerged included the lack of written shift schedules, the inaccurate communication of tasks, the lack of controls over daily operations, and the lack of on-site signage. These are all factors that, if left unmanaged, increase the risk of human error and resulting injuries.

In response to these issues, the CIA model has developed a system that includes technical sheets for verifying the condition of the equipment, checklists for daily operations, simplified protocols for assigning tasks, and the introduction of safety signs specific to the rural environment.

Effective management of mechanical and organizational risks in agriculture requires not only the availability of tools and equipment, but also a deeply rooted safety culture among employers and workers. During the accompanying activities conducted in Puglia, it emerged that many companies had a theoretical awareness of the hazards but lacked simple and immediate tools to regularly monitor the safety of equipment and operating procedures.

**Table 6- Technical inspection sheet – Condition of agricultural equipment**

Objective: To ensure the efficiency and safety of equipment used in daily agricultural operations.

| CONTROL VOICE                                                                 | YES                      | NO                       | NOTE |
|-------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Has the equipment been routinely serviced as scheduled?                       | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are there any obvious signs of wear, corrosion, or structural damage?         | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are the safety devices (guards, casings, switches, brakes, etc.) functioning? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are the user manuals available and accessible?                                | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Was the equipment used only by trained personnel?                             | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Were any anomalies noted in the maintenance log?                              | <input type="checkbox"/> | <input type="checkbox"/> |      |

|                                             |                          |                          |  |
|---------------------------------------------|--------------------------|--------------------------|--|
| Is the updated maintenance booklet present? | <input type="checkbox"/> | <input type="checkbox"/> |  |
|---------------------------------------------|--------------------------|--------------------------|--|

Recommended frequency of testing:

- Before daily use (quick visual check)
- Monthly (in-depth functional and documentary verification)
- Annual (check with a specialized technician) Responsible for compiling:

Name \_\_\_\_\_ and surname: \_\_\_\_\_

Date: Signature: \_\_\_\_\_

**Source: CIA Puglia – SAGRI Project, 2024**

### Table 7- Daily checklist – Daily operations on the farm

**Objective:** Organize and control the main activities of the day in a structured way, ensuring safety, efficiency, and traceability.

| OPERATION                                                                | COMPLETED                | NOTE |
|--------------------------------------------------------------------------|--------------------------|------|
| Check weather conditions and plan compatible activities                  | <input type="checkbox"/> |      |
| Check the condition of equipment and vehicles before use                 | <input type="checkbox"/> |      |
| Assigning tasks and checking the availability of PPE                     | <input type="checkbox"/> |      |
| Start of day briefing (information on risks, schedules, critical issues) | <input type="checkbox"/> |      |
| Check the presence of personnel trained in the use of machinery          | <input type="checkbox"/> |      |
| Check the condition of internal routes (traffic, obstacles, signs)       | <input type="checkbox"/> |      |
| Monitoring breaks and shifts to avoid overload                           | <input type="checkbox"/> |      |
| Collection of reports of critical issues or incidents                    | <input type="checkbox"/> |      |
| Cleaning and tidying up work areas at the end of each activity           | <input type="checkbox"/> |      |
| Updating the activity and observation log                                | <input type="checkbox"/> |      |

Attendance:

To be completed every morning before the start of activities and updated at the end of the day.

Responsible for compiling:

Name and surname: \_\_\_\_\_

Date:

Signature: \_\_\_\_\_

Source: CIA Puglia – SAGRI Project, 2024

**Table 8- Simplified protocol – Assignment of tasks**

Objective: Ensure clear assignment of daily tasks, respecting worker skills and workplace safety.

| N.  | OPERATOR<br>NAME | ASSIGNED<br>JOB | MACHINERY /<br>EQUIPMENT<br>USED | SPECIFIC<br>TRAINING<br>POSSESSED | PPE<br>DELIVERED | OPERATIONAL<br>NOTES |
|-----|------------------|-----------------|----------------------------------|-----------------------------------|------------------|----------------------|
| 1   |                  |                 |                                  |                                   |                  |                      |
| 2   |                  |                 |                                  |                                   |                  |                      |
| 3   |                  |                 |                                  |                                   |                  |                      |
| 4   |                  |                 |                                  |                                   |                  |                      |
| ... |                  |                 |                                  |                                   |                  |                      |

Checks to be carried out before the person responsible signs:

- ☐ The tasks are consistent with the worker's skills
- ☐ The tools are suitable and safe
- ☐ The PPE was delivered and used correctly
- ☐ The worker has received the operating instructions **Responsible for compiling:**

Name and surname: \_\_\_\_\_

Date: / / \_\_\_\_\_

Signature: \_\_\_\_\_

Source: CIA Puglia – SAGRI Project, 2024

To support a continuous improvement process consistent with the PDCA (Plan–Do–Check– Act) cycle, a simplified self-assessment tool has been developed, suitable for use even by small farms. This tool, in the form of a mini checklist, allows monitoring operating conditions related to mechanical and organizational risks.

**Table 9- Mini Checklist: Control of mechanical and organizational risks**

| CONTROL VOICE                                                                       | YES                      | NO                       | NOTE |
|-------------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Are all tractors and operating machines equipped with compliant protection systems? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are moving parts (cardan shafts, blades, pulleys) adequately protected?             | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is equipment maintenance documented and recorded?                                   | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there a daily or weekly schedule for major operations?                           | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are workers aware of their assigned tasks and the related operating procedures?     | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are there signs indicating mechanical hazards and behavioral requirements?          | <input type="checkbox"/> | <input type="checkbox"/> |      |

Source: CIA Puglia, based on information gathered during the SAGRI support program and the best corporate practices highlighted during technical training sessions.

#### **Chemical risks: exposure, prevention and operational control**

Chemical risks in agriculture arise primarily from the use of plant protection products, fertilizers, herbicides, as well as substances used for sanitization and preservation. Exposure can occur during the preparation of mixtures, field application, equipment washing, or even during indoor storage.

Absorption can occur through the respiratory, cutaneous, or oral routes. Common conditions associated with prolonged exposure include contact dermatitis, chronic respiratory disorders, neurological damage, and in some cases, cancer. Those most exposed are usually those who directly handle the products and those who perform field treatments.

During the accompanying actions conducted by CIA Puglia, the need emerged to strengthen:

- training on the correct use of plant protection products.
- the importance of reading labels and safety data sheets.
- the systematic use of certified PPE (gloves, masks, suits, glasses)
- the correct storage of products in ventilated, closed and segregated rooms.

One of the tools introduced by the CIA model is the adoption of control sheets for chemical use, which guide farmers in recording: the product's commercial name, quantity used, application method, presence of unprotected operators, and post-treatment observations. These sheets, together with the phytosanitary intervention log, enable continuous improvement of the chemical risk management system.

**Table 10- Control sheet – Use of chemical products in agriculture** Objective: To systematically and traceably record the use of chemicals.

| Date of intervention | Product trade name | Active ingredient | Dosage and quantity used | How to apply | Unprotected operators present (y/n) | Post-surgery observations |
|----------------------|--------------------|-------------------|--------------------------|--------------|-------------------------------------|---------------------------|
|                      |                    |                   |                          |              |                                     |                           |

Instructions for filling out:

- Please complete immediately after surgery.
- Attach any updated safety data sheets for the product used.
- If unprotected operators are present, specify the corrective actions taken.

Final check (by the safety manager):

- ☐ Intervention recorded in the official register of phytosanitary treatments
- ☐ Suitable PPE used
- ☐ No accidental contamination detected
- ☐ Information reported in a legible and complete manner Responsible for compiling:

Name and surname: \_\_\_\_\_

Date: / / \_\_\_\_\_

Signature: \_\_\_\_\_

Source: CIA Puglia – SAGRI Project, 2024

Furthermore, good practices such as worker rotation, post-treatment personal hygiene, the installation of emergency showers in medium-sized companies, and periodic health checks through mandatory health surveillance have been promoted.

A critical issue that has emerged in the Puglia region is the difficulty, especially for small farms, in correctly locating and archiving updated safety data sheets (SDS) and labels for the products they use. It is essential to promote the use of simple digital tools, such as mobile apps or prepopulated spreadsheets, to facilitate the collection and storage of pesticide treatment data.

**Table 11– Example of a spreadsheet – Digital register of phytosanitary treatments**

| Date       | Treated crop | Plant protection product | Active ingredient  | Dose used (l/ha or g/ha) | N. Intervention | Operator name | SDS presence (y/n) | Attached label (y/n) | Observations          |
|------------|--------------|--------------------------|--------------------|--------------------------|-----------------|---------------|--------------------|----------------------|-----------------------|
| 01/07/2025 | Durum wheat  | Clean 360 glyph          | Glyphosate         | 3 l/ha                   | 1               | Mario Rossi   | S                  | S                    | Pre -sowing treatment |
| 10/07/2025 | Olive        | Oxycup 20 wg             | Copper oxychloride | 2 kg/ha                  | 2               | Anna Bianchi  | S                  | N                    | To be integrated SDS  |
| ...        | ...          | ...                      | ...                | ...                      | ...             | ...           | ...                |                      |                       |

Source: CIA Puglia – SAGRI Project, 2024

Furthermore, during the accompanying actions, a lack of maintenance of personal protective equipment was reported. For example, face masks were not replaced within the prescribed timeframe, damaged or inadequate gloves, and coveralls lacking EN certification. The quality of PPE, along with proper storage and sanitization, is crucial to ensuring effective protection against harmful exposures.

**Table 12- Checklist – Verification of personal protective equipment (PPE)**

Check date: / / \_\_\_\_\_

Control Officer: \_\_\_\_\_

| PPE TYPE                  | PRESENT<br>(Y/N) | IN GOOD<br>CONDITION<br>(Y/N) | LAST<br>REPLACEMENT<br>DATE | CE/EN<br>COMPLIANCE<br>(Y/N) | NOTE |
|---------------------------|------------------|-------------------------------|-----------------------------|------------------------------|------|
| Face mask<br>with filter  |                  |                               |                             |                              |      |
| Chemical gloves           |                  |                               |                             |                              |      |
| Protective suit           |                  |                               |                             |                              |      |
| Goggles                   |                  |                               |                             |                              |      |
| Safety footwear           |                  |                               |                             |                              |      |
| Headphones or<br>earplugs |                  |                               |                             |                              |      |

Checks to be carried out:

- ☐ Check for any visible damage (tears, wear, deformations);
- ☐ Check the expiration dates of filters and consumables;
- ☐ Ensure that all PPE is stored in dry, clean environments;
- ☐ Check that each PPE has visible or attached EN/CE certification;
- ☐ Record any scheduled maintenance or replacement.

**Signature of the operator in charge:** \_\_\_\_\_

**Signature of company manager:** \_\_\_\_\_

*Source: CIA Puglia – SAGRI Project, 2024*

Another effective prevention measure is periodic chemical risk assessment, which should be integrated into the Risk Assessment Document (RAD). This assessment must consider:

- the intrinsic dangerousness of the substances;
- how to use it;
- the frequency of exposure;
- the presence of sensitive groups (e.g. seasonal workers or young people).

**Table 13- Sheet – Chemical risk assessment (to be integrated into the DVR)**

Department / Area treated: \_\_\_\_\_

Evaluation date: // \_\_\_\_\_

Evaluator / RSPP: \_\_\_\_\_

| Element to be evaluated               | Brief description                                                             |
|---------------------------------------|-------------------------------------------------------------------------------|
| <b>Dangerousness of the substance</b> | Toxicity, flammability, irritation, CLP classification, presence of H phrases |
| <b>How to use</b>                     | Dilution, mixing, application method (spraying, nebulization, etc.)           |
| <b>Frequency of exposure</b>          | Number of monthly interventions, duration, number of operators involved       |

| Risk Level<br>(Low/Medium/High) | Notes /<br>Compensatory measures |
|---------------------------------|----------------------------------|
|                                 |                                  |
|                                 |                                  |
|                                 |                                  |

|                                           |                                                                 |  |  |
|-------------------------------------------|-----------------------------------------------------------------|--|--|
| <b>Presence of sensitive groups</b>       | Young people, pregnant women, foreign workers, seasonal workers |  |  |
| <b>PPE assigned and used</b>              | Type, frequency of use, documented maintenance                  |  |  |
| <b>Safety Data Sheets (SDS) available</b> | Latest revision present, accessibility, correct archiving       |  |  |

Operational tips:

- The assessment must be reviewed at least every 3 years or at any significant change in the substances.
- The presence of carcinogenic or mutagenic agents requires the adoption of additional measures.
- The collected data must be integrated into the DVR and used for targeted worker training.

Source: CIA Puglia – SAGRI Project, 2024, according to Legislative Decree 81/08, Title IX, Chapters I and II.

Finally, the dissemination of good management practices such as the principle of substitution (using less hazardous substances whenever possible) and the scheduling of interventions in the absence of wind or high temperatures are consistent with a systemic approach to continuous improvement, oriented towards prevention.

**Table 14- Mini Checklist: Management of chemical risks on farms**

| CONTROL VOICE                                                                 | YES                      | NO                       | NOTE |
|-------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Are safety data sheets (SDS) for chemical products available and up-to-date?  | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is specific PPE equipment always worn during treatments?                      | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are storage rooms ventilated, closed and equipped with signage?               | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there a treatment register with an indication of the products and dosages? | <input type="checkbox"/> | <input type="checkbox"/> |      |

|                                                            |                          |                          |  |
|------------------------------------------------------------|--------------------------|--------------------------|--|
| Have the operators received specific and updated training? | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Are masks and filters serviced periodically?               | <input type="checkbox"/> | <input type="checkbox"/> |  |

Source: CIA Puglia processing, adapted from the good practices identified during the SAGRI accompanying actions (November 2024).

### **Biological risks: exposure to pathogens and prevention strategies**

Biological risks in agriculture represent a major health concern for exposed workers, particularly those working outdoors with animals, manure, plant residues, waterways, or damp soil. Sources of exposure include viruses, bacteria, fungi, parasites, and other microorganisms capable of causing infections, allergies, or occupational diseases. The main pathogens present in agricultural contexts are:

- *Leptospira* spp. and *Salmonella* spp. (from contact with animals and zootechnical waste);
- *Aspergillus fumigatus* (in moldy hay dust and feed);
- *Clostridium tetani* (through wounds from contaminated instruments)
- fever virus and brucellosis (among workers in contact with infected animals or contaminated parts).

Agricultural activity involves multiple risk situations: harvesting vegetables in greenhouses, contact with soil contaminated by sewage, compost management, and the raising and processing of animal products. Transmission can be through inhalation, skin contact, or accidental ingestion.

During the SAGRI project's accompanying activities in Puglia, the difficulty emerged in recognizing biological risk as a separate entity, often confused with general workplace hygiene. The companies involved highlighted the lack of specific checklists and the poor training of workers, especially seasonal workers, on the use of PPE and proper behavior in the presence of potentially contaminated organic materials.

**Table 15- Checklist – Prevention of biological risk in agriculture**

**Date of inspection:** / / \_\_\_\_\_

**Audit Manager:** \_\_\_\_\_

| Item to check                                                                             | Verification (Y/N) | Notes Corrective actions / |
|-------------------------------------------------------------------------------------------|--------------------|----------------------------|
| Presence of pests or wild animals in the work area                                        |                    |                            |
| Periodic inspection and cleaning of equipment and storage rooms                           |                    |                            |
| Use of gloves, overalls and masks in the presence of manure, plant residues and carcasses |                    |                            |
| Availability and correct use of PPE by seasonal workers                                   |                    |                            |

|                                                                                                     |  |  |
|-----------------------------------------------------------------------------------------------------|--|--|
| Signage or signalling to identify areas at biological risk                                          |  |  |
| Presence of a company protocol for the management of contaminated materials (e.g. animal carcasses) |  |  |
| Personal hygiene guaranteed: availability of water, soap, disinfectants                             |  |  |
| Regular cleaning of agricultural vehicles in contact with organic materials                         |  |  |

#### Directions for use:

- Complete the checklist **at least once a month** , or **after each high biological risk operation** .
- In the case of **seasonal or young workers** , provide **targeted training** and increased supervision.
- Use the checklist as **an operational attachment to the DVR** or company control register.

Source: CIA Puglia – SAGRI Project, 2024 processing, based on the “Report on Biological Risk in Agriculture” ASL BA.

The need to develop company biological risk sheets also emerged, with practical examples related to the work cycle: cleaning of premises, collection and handling, use of wastewater, and treatment of organic waste. The proposed approach is based on a continuous improvement cycle that includes: identification, prevention, control, and updating.

#### Table 16- Company biological risk sheet

Activities: (e.g. Cleaning of processing rooms)

Area of intervention: (e.g. vegetable warehouse/storage)

Date of compilation: // \_\_\_\_\_

Responsible: \_\_\_\_\_

##### 1. Risk identification

| Risk factor                 | Description                                                         |
|-----------------------------|---------------------------------------------------------------------|
| Biological sources          | Presence of mold, bacteria on surfaces, contaminated plant residues |
| Critical phase of the cycle | Washing surfaces, contact with organic residues                     |
| Operators' exhibition       | Direct (hands, mucous membranes), indirect (air, steam)             |

### Preventive measures

| Preventive action                                  | Present (Y/N) | Notes / Improvement actions |
|----------------------------------------------------|---------------|-----------------------------|
| Mandatory use of PPE (gloves, masks, glasses)      |               |                             |
| Pathogen training and good hygiene practices       |               |                             |
| Adoption of effective detergents and disinfectants |               |                             |
| Documented periodic sanitization                   |               |                             |

### 3. Control measures

| Check                                               | Frequency | Documented (Y/N) | Notes |
|-----------------------------------------------------|-----------|------------------|-------|
| Visual inspection of surfaces                       | Weekly    |                  |       |
| Recording of sanitization cycles                    | Daily     |                  |       |
| Check the operation of extractor fans / ventilation | Monthly   |                  |       |

### 4. Continuous updating and improvement

|                         |                                                        |
|-------------------------|--------------------------------------------------------|
| Latest DVR revision     |                                                        |
| Notes for future review | <i>e.g. update SDS sheets for sanitizing products)</i> |

Source: CIA Puglia – SAGRI Project, 2024, integrated with Guidelines for the management of biological risk in agriculture ASL BA and Legislative Decree 81/08, Title X.

In Puglia region, biological risk management presents additional challenges due to the presence of seasonal workers, often lacking specific training, and the persistent lack of written infection control protocols on small-scale farms. Poor ventilation in enclosed spaces, such as warehouses and storage areas, combined with improper management of organic waste, promotes the growth of mold and bacteria, with implications for respiratory and skin health. A case in point emerged during the follow-up activities: several farms were found to be improperly storing manure, accumulating near processing areas without separation measures or personal protective equipment for workers.

This behavior increases exposure to fungal spores, endotoxins, and anaerobic bacteria, with medium- to long-term health consequences.

Good practices to promote include:

- the compilation of specific biological risk sheets for each activity.
- operator training with simulations and case studies.
- the systematic adoption of certified PPE, with particular attention to resistant gloves, FFP2/FFP3 masks and washable protective clothing.
- the reporting and separation of areas where organic materials and wastewater accumulate.

A key element for effective prevention is integrating biological risk into the company's continuous improvement system: updating the DVR, monitoring risk situations, and periodically verifying the effectiveness of the measures adopted.

### 17- Mini Checklist: Prevention of biological risk in agriculture

| CONTROL VOICE                                                           | YES                      | NO                       | NOTE |
|-------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Is there an updated biological risk assessment in the DVR?              | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Have workers received specific training on biological risks?            | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is a separation system used for manure, compost and wastewater?         | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are adequate and certified PPE provided (FFP2/3, gloves, suits)?        | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are the facilities ventilated and equipped with sanitization protocols? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there a requirement to report contaminated or at-risk areas?         | <input type="checkbox"/> | <input type="checkbox"/> |      |

Source: CIA Puglia processing, based on training content from the SAGRI event – November 29, 2024.

### Physical risks: exposure to noise, vibrations, microclimate and radiation

Physical risks in agriculture arise from exposure to mechanical, thermal, acoustic, and radiant agents, which can compromise workers' health in the short and long term. These risks are frequently underestimated, especially in small agricultural enterprises, where the perception of danger is often limited to the presence of machinery and tools. Among the main physical agents detected are:

- Noise: coming from tractors, chainsaws, sprayers and threshers, often exceeding the regulatory daily exposure limits (87 dB A);
- Vibrations transmitted to the whole body and to the hand-arm system, due to prolonged use of mechanical means and motorized equipment;
- Solar UV and IR radiation, especially during the summer, with increased risk of photoaging, burns and chronic skin diseases;
- Unfavorable microclimate, with sudden temperature changes, heat and high humidity in greenhouses, stables and unventilated warehouses

Table 18 Checklist 1 – Noise

| Verify                                                                            | Yes                      | No                       | Corrective actions |
|-----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------|
| Has noisy equipment been measured with a sound level meter in the last 12 months? | <input type="checkbox"/> | <input type="checkbox"/> |                    |

|                                                                 |                          |                          |  |
|-----------------------------------------------------------------|--------------------------|--------------------------|--|
| Do workers always use EN-certified earplugs/embeds?             | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Has a rotation plan been developed to limit exposure >85 dB(A)? | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Are noise risk warning signs posted in critical areas?          | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Is there a maintenance log for noisy machines?                  | <input type="checkbox"/> | <input type="checkbox"/> |  |

Source: CIA Puglia processing, based on training content from the SAGRI event – November 29, 2024.

**Table 19- Checklist 2 – Vibrations (WBV and HAV)**

| Verify                                                                    | Yes                      | No                       | Corrective actions |
|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------|
| Has HAV/WBV risk assessment been performed in the DVR?                    | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Do workers use anti-vibration devices (handles, gloves, cushioned seats)? | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Are work shifts organized to alternate exposed/non-exposed activities?    | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Are operators trained on the early signs of vibration-related illnesses?  | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Is the use of equipment subject to vibration monitored?                   | <input type="checkbox"/> | <input type="checkbox"/> |                    |

Source: CIA Puglia processing, based on training content from the SAGRI event – November 29, 2024.

**Table 20- Checklist 3 – Solar radiation**

| Verify                                                                                 | Yes                      | No                       | Corrective actions |
|----------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------|
| Is it forbidden to work during peak hours (e.g. 12:30–16:00) during the summer months? | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Do workers have access to adequate PPE (wide-brimmed hats, UV glasses)?                | <input type="checkbox"/> | <input type="checkbox"/> |                    |

|                                                            |                          |                          |  |
|------------------------------------------------------------|--------------------------|--------------------------|--|
| Are sunscreens with SPF $\geq 30$ regularly distributed?   | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Is there a shaded area available for breaks?               | <input type="checkbox"/> | <input type="checkbox"/> |  |
| Are there internal awareness campaigns on UV risk planned? | <input type="checkbox"/> | <input type="checkbox"/> |  |

Source: CIA Puglia processing, based on training content from the SAGRI event – November 29, 2024.

**Table 21- Checklist 4 – Unfavorable microclimate**

| Verify                                                                                      | Yes                      | No                       | Corrective actions |
|---------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------|
| Are enclosed spaces (greenhouses, stables) equipped with mechanical or natural ventilation? | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Are thermometers and hygrometers installed to monitor environmental conditions?             | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Are breaks scheduled based on heat and humidity?                                            | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Is worker hydration guaranteed (e.g., accessible, fresh water)?                             | <input type="checkbox"/> | <input type="checkbox"/> |                    |
| Are shifts adjusted on heatwave days (weather alerts)?                                      | <input type="checkbox"/> | <input type="checkbox"/> |                    |

#### Checklist 4 – Unfavorable microclimate

The accompanying action of the SAGRI project highlighted how many workers do not use hearing or vision protection, often due to lack of knowledge or established habits. Furthermore, the lack of soundproofed tractor cabs and the use of outdated equipment amplify exposure to vibrations and noise.

Another systematically underestimated risk is prolonged exposure to UV rays, which not only causes skin damage but can increase the risk of cataracts and skin cancer. On days of intense summer sunshine, numerous cases of heatstroke are also recorded, sometimes undiagnosed or unreported by healthcare professionals.

To effectively prevent physical risks, farms must adopt technical, organizational, and behavioral strategies, within a management system consistent with the principle of continuous improvement. Health surveillance, periodic equipment replacement, scheduled maintenance, and targeted information are essential tools for limiting prolonged exposure to noise, vibration, and adverse weather conditions.

Good practices include:

- installation of soundproof cabins or anti-vibration panels on agricultural vehicles;
- scheduling the heaviest activities during the cooler hours;
- mandatory supply and use of PPE (earplugs, headphones, UV-filtering glasses, hats and UV-protective clothing);
- Recording and updating noise and microclimate exposure in company documents. In the Puglia region, Puglia Region Resolution No. 743/2023 provided for the temporary suspension of field work during the hottest hours of days with extreme temperatures, introducing an exemplary practice at the national level for the protection of outdoor work. Finally, assessing mechanical vibrations and adopting ergonomic equipment (such as antivibration chainsaws and shock-absorbing seats) are specific prevention measures to be integrated into updated DVRs.

**Table 22- Mini Checklist: Prevention of physical risks in agriculture**

| CONTROL VOICE                                                                         | YES                      | NO                       | NOTE |
|---------------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Has an updated physical risk assessment been performed in the DVR?                    | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are hearing, vision, and sun protection devices in use?                               | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are activities planned to avoid exposure during the hottest hours?                    | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are the tractors and machinery equipped with anti-vibration or soundproofing systems? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there specific health surveillance for noise, heat and vibrations?                 | <input type="checkbox"/> | <input type="checkbox"/> |      |

Source: CIA Puglia processing, SAGRI event – November 28-29, 2024.

### ***Ergonomic and psychosocial risks***

Ergonomic and psychosocial risks are often overlooked in agricultural health and safety management, despite being among the main causes of injuries and long-term occupational diseases. Agricultural

workers are subjected to repetitive movements, awkward postures, intense physical exertion, and high mental demands, especially in seasonal or work-intensive environments.

Manual activities such as harvesting, pruning, planting, hoeing, or loading/unloading materials expose the musculoskeletal system to chronic biomechanical stress, increasing the risk of low back pain, tendonitis, and carpal tunnel syndrome. The lack of mechanical aids, poor ergonomic training, and inadequate support devices (such as seats, handles, and footrests) further exacerbate these exposures.

From a psychosocial point of view, the main risk factors in agriculture are:

- Social isolation and low interaction in rural settings;
- High seasonal workload, with intensive pace and short breaks;
- Job insecurity and economic insecurity, especially among irregular workers;
- Lack of awareness of one's own risk conditions and lack of psychological or health support.

During the accompanying action provided by the SAGRI project, the trainers emphasized how work-related stress disorders, concerns about weather conditions, and pressure from yields and delivery deadlines are common experiences among small-scale farmers and employees. The lack of community structures, support services, or a formal system for reporting workrelated distress contributes to the chronicity of this distress.

**Table 23- Preliminary assessment form for work-related stress risk (simplified model – agricultural sector)**

Company: \_\_\_\_\_

Date of compilation: // \_\_\_\_\_ Assessment manager: \_\_\_\_\_

### 1. Objective company indicators

| Factor                            | Observations | Presence of critical issues (Y/N) |
|-----------------------------------|--------------|-----------------------------------|
| Abnormal or recurrent absenteeism |              |                                   |
| High turnover                     |              |                                   |
| Frequent conflicts or complaints  |              |                                   |
| Repeated or abnormal injuries     |              |                                   |
| Complaints about workloads        |              |                                   |

### Content of the work

| Factor | Observations | Presence of critical issues (Y/N) |
|--------|--------------|-----------------------------------|
|        |              |                                   |

|                                        |  |  |
|----------------------------------------|--|--|
| Excessive work rates                   |  |  |
| Repetitive and monotonous work         |  |  |
| Exposure to adverse weather conditions |  |  |
| Physically strenuous activities        |  |  |

### 3. Organizational and relational context

| Factor                       | Observations | Presence of critical issues (Y/N) |
|------------------------------|--------------|-----------------------------------|
| Ambiguity in tasks and roles |              |                                   |

|                                           |  |  |
|-------------------------------------------|--|--|
| Lack of support from employer/managers    |  |  |
| Conflicts or isolation between colleagues |  |  |
| Lack of internal communication            |  |  |

### 4. Proposed corrective actions

| Proposed action                                  | Expiration | Responsible |
|--------------------------------------------------|------------|-------------|
| Stress Management Training                       |            |             |
| Fairer organization of shifts/workloads          |            |             |
| Introduction of moments of structured comparison |            |             |
| In-depth evaluation at a later stage             |            |             |

Source: INAIL (2017), *The methodology for the assessment and management of SLC risk*, Rome.

This form can be used as a preliminary tool to identify signs of work-related stress risk in the agricultural sector, with particular attention to small and medium-sized enterprises. It can be supplemented by subjective questionnaires, interviews, or focus groups, as required by the in-depth assessment phase described in the INAIL document.

The prevention of ergonomic risks in agriculture requires an integrated approach based on:

- Specific training on the correct use of the body and equipment;
- Adoption of tools and machinery designed according to ergonomic principles (e.g. nonslip handles, adjustable trolleys, assisted handling devices);
- Task rotation to avoid repetitive localized strain;
- Adaptation of workstations, even in the fields or in the mills.

**Table 24- Checklist – Ergonomic risk assessment in agricultural companies**

Verification date: // \_\_\_\_\_

Audit Manager: \_\_\_\_\_

| Element to be evaluated                                                                               | Verification<br>(Y/N) | Notes<br>Corrective<br>actions / |
|-------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------|
| Is periodic training provided on the correct use of the body in manual operations?                    |                       |                                  |
| Are workers informed about the risks associated with awkward postures or repetitive movements?        |                       |                                  |
| Are ergonomically designed equipment used (e.g., comfortable handles, trolleys, assisted levers)?     |                       |                                  |
| Is there a <b>job rotation plan</b> for repetitive manual tasks (e.g., harvesting, pruning)?          |                       |                                  |
| workstations (e.g., mills, stables, greenhouses) adaptable to the height and build of the operators ? |                       |                                  |
| Is there an <b>assisted handling system</b> for heavy loads (lift trucks, forklifts, pallet trucks)?  |                       |                                  |
| Are there signs or visual guides on correct postures in key work areas?                               |                       |                                  |
| <b>musculoskeletal disorders</b> reported by workers (e.g. back pain, neck pain) recorded ?           |                       |                                  |
| Are there <b>active breaks or micro-breaks</b> for static or repetitive tasks?                        |                       |                                  |
| Are handheld equipment maintained to ensure functionality and ease of use?                            |                       |                                  |

Using the checklist:

- Use every 3 months or when duties change.
- It can be integrated into the health surveillance plan or the internal ergonomics protocol.
- Can be combined with practical training courses funded by bilateral institutions or interprofessional funds.

*Source: Adapted from INAIL, Ergonomics and Prevention in Agriculture.*

The Puglia Region, in its Regional Prevention Plan, has promoted the dissemination of good ergonomic practices, especially in the fruit and vegetable and olive oil sectors, encouraging demonstration projects and on-the-job training.

Regarding psychosocial risk, priority actions include:

- Monitoring work-related stress, using tools such as the INAIL method;
- Organization of moments of discussion and listening between employers and workers;
- Raising awareness among small business owners about the relationship between mental well-being and productivity;
- Access to external consulting services, including through trade associations or local networks (e.g., CIPIA or INAIL offices).

On 28 and 29 November 2024, as part of the accompanying action of the SAGRI project, these topics were covered both in the classroom and in practical exercises, with the direct involvement of workers in ergonomic simulations and subjective self-assessments on stress .

**Table 25- Mini Checklist: Prevention of ergonomic and psychosocial risks**

| CONTROL VOICE                                                            | YES                      | NO                       | NOTE |
|--------------------------------------------------------------------------|--------------------------|--------------------------|------|
| Has an ergonomic risk assessment been carried out in the DVR?            | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are ergonomic tools used (e.g. spring scissors, trolleys, lifts)?        | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Have workers been trained on posture, physical exertion, and prevention? | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Is there periodic monitoring of work-related stress risk?                | <input type="checkbox"/> | <input type="checkbox"/> |      |
| Are there structured moments for listening or discussion?                | <input type="checkbox"/> | <input type="checkbox"/> |      |

*Source: CIA Puglia processing, SAGRI accompanying action – November 2024.*

## Participant profiles and representativeness of the agricultural sector

The SAGRI project involved a diverse group of stakeholders from three countries (Italy, Albania, and Montenegro), representing the main production entities in the cross-border agricultural sector. Participants were selected based not only on the type of business or organization involved, but also on their ability to serve as multipliers of best practices in occupational health and safety.

In Italy, participants were selected from companies operating in the olive oil and vegetable production sectors. The Apulian companies involved have diverse organizational structures, ranging from agricultural cooperatives bringing together thousands of producers to individual businesses or family-run companies with a long tradition in the local area. This allowed us to analyze the cross-cutting nature of workplace safety needs, observing how needs, limitations, and potential vary based on company size, workforce composition (permanent or seasonal), the mechanization of operations, and document management.

Italian companies have shown growing interest in integrating risk management tools, albeit with varying degrees of maturity. Larger companies have demonstrated a reasonable ability to implement preventative measures and greater regulatory awareness, while smaller businesses still require a guided and simplified approach, such as that promoted by the project's accompanying actions.

On the cross-border side, the participating entities have made a significant contribution to understanding the various critical issues and approaches to occupational health and safety. In Albania, the selected farms are predominantly small and medium-sized, family-run, often growing fruit, vegetables, and olives. Operating conditions are sometimes exacerbated by poor infrastructure, limited use of personal protective equipment, and insufficient mechanization. However, precisely for these reasons, participating in the SAGRI project has provided these entities with an opportunity for growth and awareness-raising, with the introduction of self-assessment tools, simplified documentation, and guidelines tailored to their local context.

In Montenegro, too, the participating companies provided a representative cross-section of local agriculture. Many are multifunctional enterprises, with activities ranging from fruit and vegetable production to livestock farming and primary processing. The issues identified are partly similar to those in Albania, but with a slightly higher level of attention to hygiene and sanitation, thanks in part to the presence of public bodies and professional associations collaborating to disseminate best practices. The Montenegrin partners played an active role in the accompanying activities, contributing practical examples and training materials useful for the widespread dissemination of the proposed model.

Overall, the composition of participants ensured significant coverage of the main agricultural sectors, as well as a good diversity in terms of size, work organization, and risk awareness. This diversity allowed us to test the effectiveness of the SAGRI model in different contexts, validating its scalability and adaptability, key elements for its potential future use at the interregional and cross-border levels.

## Application of the model in Apulian business contexts

### *Case study 1: Agriverde*

**Agriverde** company, located in Vieste (FG), is a medium-sized olive growing company, with over 20 hectares of cultivated land, a company-owned oil mill, and the constant use of seasonal labor both in the fields and in the processing plants.

One of the first elements adopted was the electronic application log, integrated with control sheets for the use of pesticides. This system allows for precise recording of treatment information: commercial name, doses, operators involved, times, weather conditions, and post-application observations. This has improved the monitoring of chemical risks and facilitated the traceability of compliance.

The company introduced periodic inspection sheets for equipment (chainsaws, tractors, sprayers), which record the condition of use, critical issues encountered, and the date and signature of the inspection. These documents also served as a useful tool for the updated DVR, helping to map mechanical and vibration risk situations.

Great attention has been paid to internal training, through short training sessions and the posting of simplified *checklists on the noticeboard* regarding the use of PPE, particularly during the olive oil harvest. The company has also developed an operational protocol for managing personal protective equipment, with periodic checks of their condition (e.g., integrity of mask filters, validity of certified overalls, presence of suitable gloves).

A distinctive aspect of the company has been the introduction of a digital technical file, built on data sheets shared between the safety manager and field managers, which allows for the real-time collection of anomalies, avoided incidents, revisions, and *feedback* from operators. This has reinforced the principle of continuous improvement, which is also the cornerstone of the CIA Puglia model.

Finally, the integration of a specific assessment of the mill's microclimate—using thermohydrometers—has allowed for the introduction of mitigation measures such as forced ventilation and regular breaks, reducing the risk of heat stress during the autumn months.

#### *Case study 2: Prince Thomas Company*

The **Prencipe Tommaso** farm, operating in the organic horticultural sector in the lower Tavoliere area, stands out for its strong commitment to innovation. The farm's areas, primarily cultivated with open-field vegetables, require careful risk management, especially about microclimatic factors, sun exposure, and the presence of vulnerable workers (young workers, foreign workers, and women).

Among the tools introduced, the periodic biological risk assessment stands out. This was carried out through the development of sheets for each growing phase, with specific reference to the handling of organic matter (natural fertilizers, compost, plant residues). These sheets have been integrated into the DVR and updated seasonally.

The company has implemented simplified task assignment protocols to formalize the delegation of daily activities (e.g., checking irrigation, harvesting), improving communication between employers and workers, and reducing the risk of organizational ambiguity, which is often the cause of work-related stress.

Furthermore, a job rotation system has been set up, supported by a *checklist* that focuses on aspects of work ergonomics filled out by workers at the end of the day, useful for monitoring the most frequent physical discomforts and proposing corrective interventions (e.g., height of workbenches, replacement of overly heavy crates).

In the area of chemical risk prevention, although organic farming limits the use of pesticides, a digital record has been developed to monitor the products used, tracking their origin, date of use, operator involved, and observations. This tool has been particularly appreciated for its simplification of data collection during audits by certification bodies.

Finally, particular attention was paid to internal communications, through the creation of a multilingual (Italian/English/Romanian) noticeboard for safety messages and the organization of short awareness-

raising sessions before the start of periods of high activity, focusing on practical issues (use of gloves, correct posture, hand hygiene).

#### *Evidence of the PDCA cycle in business practices*

The analysis of the experiences conducted at the Agriverde and Principe Tommaso companies clearly shows how the application of the CIA Puglia model allows for the operational implementation of the PDCA ( *Plan – Do – Check – Act* ) continuous improvement cycle, also provided for by Legislative Decree 81/08 as a recommended approach for the systemic management of workplace safety.

- **Plan:** Both companies initiated a needs analysis phase, identifying critical issues in various risk areas (chemical, biological, physical, ergonomic), accompanied by the development of support tools ( technical data sheets, protocols, *checklists* ). This phase proved crucial for defining realistic objectives consistent with the companies' specific production and organizational characteristics.
- **Do (Doing):** Implementing the measures included, on the one hand, the adoption of recording and control tools (chemical product registers, digital worksheets, information boards), and on the other, the introduction of shared safety procedures, such as job rotation sheets or PPE maintenance protocols. The simplicity and adaptability of the tools favored effective adoption among workers.
- **Check:** Periodic verification was ensured through the analysis of data reported in *checklists* by managers or operators themselves, and through monitoring reports. The use of these tools allowed us to measure the effectiveness of the actions and identify new risk areas or training needs.
- **Act:** Based on the observations and data collected, companies have modified or updated their practices: in the case of Prince Thomas, improving ergonomics at product processing points. This step highlights the desire to go beyond the mere adoption of static measures, but to initiate a dynamic and cyclical process of improvement.

The adoption of the PDCA cycle, combined with simple yet effective tools, has allowed companies to internalize a culture of prevention and strengthen the active involvement of workers, thus contributing to the consolidation of the safety management system.

#### **Accompanying actions needs analysis and operational response**

The accompanying activities conducted in Puglia between November 27 and 29, 2024, represented a key moment in validating and adapting the model proposed by CIA Puglia to the operational reality of the farms involved in the SAGRI project. The activities were structured over three consecutive days, each with specific objectives, addressed through training sessions, practical exercises, participatory evaluations, and the collection of qualitative feedback.

November 27th was dedicated to analyzing the initial conditions. A focus group was held to identify the main information and organizational needs regarding safety . The most recurring themes included: the lack of standardized operational tools, the fragmentation of safety documentation, the difficulty in training seasonal workers, and the lack of awareness of biological and chemical risks. The day continued with an information session led by Dr.

Nicoletta Malcangi of the SPSAL (Specialized Health and Safety Services) department of the ASL of Bari, regarding safety roles and obligations, mechanical risk analysis with a description of best practices, and chemical risk analysis.

On November 28th, activities focused on accident prevention in agriculture and biological risk, with the support of INAIL Regional representatives, Dr. Lorenzo Cipriani and Dr. Luigi

Caradonna. The joint exercise involved companies and technicians, involving guided analysis of real-life cases and the application of the *checklists* developed for biological risk. Participants were able to experience the practical use of the tools, evaluate their relevance, and suggest operational improvements, contributing to a bottom-up review of the project materials.

November 29th was dedicated to participatory testing of the effectiveness of the measures. This involved simulating real-world risk assessments on agricultural businesses, identifying priority actions to implement in the short term. This was done to gather information for developing personalized training programs, considering the specific crop, organizational, and territorial characteristics of the businesses.

This phase proved essential for strengthening the centrality of agricultural workers in the prevention system and for initiating a process of raising awareness among the organizations involved regarding the need to adopt a cyclical, dynamic, and participatory approach to health and safety management.

During the accompanying activities, feedback from participants highlighted structural and operational issues that hinder the widespread application of advanced risk management models. Specifically, the following emerge:

- a low level of digitalization in companies, with difficulties in using electronic tools to record safety-related activities;
- the lack of qualified human resources, especially regarding the role of the Prevention and Protection Service Manager (RSPP), who is often internal and not always up-to-date on current legislation;
- the lack of targeted training for seasonal workers, who make up a significant portion of the workforce during harvesting and processing periods;
- the confusion between formal requirements and truly useful prevention tools, with a tendency to focus more on document production than on actual risk reduction. Despite these challenges, participating companies have demonstrated a clear openness to adopting the CIA Puglia model, appreciating its modular design, the practicality of the tools ( *checklists* , simplified forms, protocols), and the continuous improvement approach, which allows the system to be adapted to the company's specific needs.

To facilitate the consolidation of the model over time, some operational proposals have been put forward, including:

- the creation of company micro-teams with reference functions in safety matters;
- the introduction of an annual participatory audit format, to be carried out with the support of CIA technicians;
- the creation of an online support platform, with updated materials and assistance in compiling tools, such as *cloud storage* and spreadsheets to be compiled with the collected data.

This approach allows us to transform the logic of regulatory compliance into a shared path of awareness and organizational innovation, in line with the principles of the PDCA ( *Plan–Do– Check–Act* ) cycle, which have already been widely tested.

The accompanying action included the use of tools such as self-assessment questionnaires, risk assessment grids, guided plenary discussions, and sector-specific focus groups. A comprehensive yet coherent picture of the company's needs emerged, which can be summarized as follows:

- need for simple and operational tools for managing documentation in the company (technical data sheets, simplified DVRs, operational protocols);
- Request support in reading and interpreting current legislation, with practical examples and accessible language;
- difficulties in the continuous training of workers, especially seasonal or low-educated workers;
- poor awareness of biological risk and work-related stress risk;
- interest in the use of digital media for the traceability of interventions and the archiving of documentation (e.g. SDS, certificates, safety plans).

During the workshops, thanks to the active participation of the companies, it was possible to collect concrete data through questionnaires and document their level of involvement and interest, which was reflected in requests for voluntary participation in further training or consulting programs. The companies involved expressed strong support for the model proposed by CIA Puglia, confirming that an integrated and dynamic approach—inspired by the PDCA cycle—effectively addresses the real needs of the sector.

## Chapter 3 -Testing the proposed model for health and safety in agriculture in Albania



### Initial Assessment and Baseline Establishment

Before implementing the strategic management model, agribusinesses must conduct a thorough assessment of their current occupational safety and health (OSH) practices. This begins with a comprehensive risk assessment using tools such as the 5x5 Risk Matrix (as outlined in Annex 11 of Chapter 2). The risk assessment should identify and prioritize hazards related to machinery operation, chemical handling, biological risks, environmental factors, and ergonomic strain. By evaluating the likelihood and severity of each risk, agribusinesses can focus their efforts on the most critical areas.

In addition to risk assessment, agribusinesses should evaluate their existing OSH practices. This includes reviewing safety policies, training programs, incident reporting systems, and compliance with Albanian Law No. 10237 (2010) and relevant EU directives (e.g., Directive 89/391/EEC, Directive 2009/128/EC). Engaging stakeholders such as farm managers, workers, and safety officers is crucial during this phase. Their input can provide valuable insights into current challenges and areas for improvement.

Finally, agribusinesses should establish baseline metrics to measure their starting point. These metrics might include the number of workplace accidents, worker participation in OSH training, and compliance with safety protocols such as PPE usage and machinery maintenance.

### Develop an OSH Implementation Plan

Based on the findings from the initial assessment, agribusinesses should develop a detailed OSH implementation plan. This plan should begin with setting clear and measurable objectives for improving workplace safety. For example, an agribusiness might aim to reduce workplace accidents by 20% within one year or achieve full compliance with EU OSH standards within three years. These objectives should align with the three pillars of the strategic management model: adaptation of institutions and policies, strengthening governance and management, and promoting a preventive culture.

Once objectives are defined, agribusinesses should prioritize actions based on the risks identified in the assessment. The Hierarchy of Controls (elimination, substitution, engineering controls, administrative controls, PPE) should guide these actions, with a focus on addressing high-priority risks first. Responsibilities for implementing the plan should be clearly assigned, with an OSH coordinator or team taking the lead. This team will oversee the implementation process, ensuring that tasks are completed on time and within budget. A phased timeline should also be developed, outlining short-term (1-2 years), medium-term (3-5 years), and long-term (6+ years) goals. This timeline should include milestones for key activities such as training programs, technology adoption, and policy updates.

## Implement Control and Mitigation Measures

With the implementation plan in place, agribusinesses can begin applying the Hierarchy of Controls to reduce risks and improve safety. The first step is elimination and substitution, which involves phasing out high-risk chemicals and obsolete machinery. For example, agribusinesses can replace hazardous pesticides with low-toxicity alternatives or adopt biological pest control methods. Next, engineering controls should be implemented to modify the workplace environment or equipment. This might include installing automated pesticide dispensers, ergonomic tools, and mechanized handling equipment to reduce manual labor and minimize exposure to hazards.

Administrative controls are also essential for improving safety. These controls involve changing the way work is performed to reduce exposure to risks. For example, agribusinesses can introduce rotational shifts to limit workers' exposure to hazardous tasks or implement digital safety reporting systems for real-time incident tracking. Developing and enforcing safety protocols for machinery operation, chemical handling, and emergency response is another critical aspect of administrative controls. Finally, personal protective equipment (PPE) should be provided to workers as a last line of defense. This includes certified protective gear such as gloves, masks, goggles, and safety boots. Workers must be trained on the proper use and maintenance of PPE to ensure its effectiveness.

## Training and Capacity Building

To ensure the successful implementation of the strategic management model, agribusinesses must invest in training and capacity building for their workforce. This begins with the development of structured training programs aligned with EU Directive 2003/88/EC and Albanian OSH regulations. These programs should cover essential topics such as safe machinery operation, pesticide safety, zoonotic disease prevention, and emergency response. Training should be tailored to the specific needs of the workforce, with separate modules for managers, supervisors, and workers.

In addition to formal training programs, agribusinesses should conduct on-site training sessions to provide hands-on experience. These sessions can include demonstrations of safe machinery handling, simulations of emergency response scenarios, and peer-to-peer learning opportunities. Agricultural Extension Services (AES) can play a key role in delivering localized training programs that address the unique challenges of different agricultural sectors. To enhance accessibility, agribusinesses can also leverage digital learning platforms that offer remote access to safety modules. Advanced technologies such as virtual reality (VR) and augmented reality (AR) can be used to create immersive training experiences that simulate high-risk situations in a controlled environment.

## Monitoring, Evaluation, and Continuous Improvement

To ensure the long-term success of the strategic management model, agribusinesses must establish a robust system for monitoring, evaluation, and continuous improvement. This begins with defining key performance indicators (KPIs) that measure the effectiveness of OSH interventions. Examples of KPIs include the reduction in workplace accidents, the increase in OSH training participation rates, and the adoption of risk-reducing technologies. Data on these KPIs should be collected regularly through digital platforms, surveys, and on-site audits.

Annual reviews should be conducted to assess progress toward OSH objectives and identify areas for improvement. These reviews should involve input from all stakeholders, including workers, managers, and safety officers. Based on the findings, agribusinesses can update their implementation plans and refine their safety protocols. A continuous feedback loop should also be established to gather ongoing input from workers and managers. This feedback can be used to address emerging risks, improve training programs, and enhance the overall safety culture.

External audits by government inspectors or independent experts can provide an additional layer of accountability. These audits can help agribusinesses identify compliance gaps and implement corrective actions. By fostering a culture of continuous improvement, agribusinesses can ensure that their OSH practices remain effective and aligned with evolving standards.

### **Stakeholder Engagement and Collaboration**

Successful implementation of the strategic management model requires collaboration with external stakeholders. Farmers' associations can play a key role in disseminating best practices and advocating for financial incentives to support OSH improvements. Labor unions can ensure that worker rights are protected and that safety concerns are addressed. By working with research institutions, agribusinesses can access the latest scientific findings and pilot innovative safety solutions. Finally, engagement with government agencies such as the Ministry of Agriculture and Ministry of Labor can provide regulatory guidance and access to funding programs.

### **Conclusion**

By following this methodology, Albanian agribusinesses can effectively apply and use the Strategic Management Model for Health and Safety in Agriculture. The model provides a structured approach to improving OSH outcomes, reducing workplace accidents, and aligning EU standards. Through risk assessment, control measures, training, digital tools, and continuous improvement, agribusinesses can create a safer and more productive working environment for their employees. This approach not only enhances worker well-being but also contributes to the long-term sustainability and competitiveness of Albania's agricultural sector.

Following are some real case scenarios!

### **Scenario 1: Reducing Pesticide Exposure in a Greenhouse Background:**

A commercial greenhouse facility in southern Albania employs 50 workers to grow vegetables year-round. Workers are regularly exposed to pesticides and other agrochemicals during spraying, mixing, and maintenance operations. The facility has reported several cases of pesticide-related health issues, such as skin irritation, headaches, and breathing difficulties.

Application of the Strategic Management Model

#### **Risk Assessment**

Apply a 5x5 Risk Matrix to assess risks associated with agrochemical use in enclosed environments where limited air circulation increases exposure severity.

Identify high-risk activities, including Manual pesticide spraying in poorly ventilated tunnels. o Improper chemical storage within the production zone. o Lack of PPE usage during mixing and application.

#### **Control Measures**

Inventory & Labeling o Establish and maintain an up-to-date inventory of all pesticides, herbicides, and fertilizers. o Ensure all containers are properly labeled in Albanian with GHS compliant hazard symbols.

Storage o Store chemicals in locked, well-ventilated rooms outside production areas.

Ensure spill containment systems are in place and separate storage from flammables, food, and feed.

#### **PPE**

Provide mandatory use of gloves, masks, goggles, and protective suits for all chemical handlers.

Train workers on proper usage, cleaning, and replacement of PPE.

#### **Application or Elimination/Substitution:**

Replace high-toxicity pesticides with lowtoxicity alternatives or biological pest control methods.

Engineering Controls: Install automated pesticide dispensers to reduce manual handling and minimize exposure.

Administrative Controls: Implement rotational shifts to limit workers' exposure time and provide training on safe pesticide handling.

Strictly follow manufacturer guidelines: correct dosage, intervals, and safety pre-harvest periods.

Avoid spraying during high temperatures or when ventilation is off.

Prioritize targeted application methods (e.g., drip irrigation compatible pesticides or foggers with shields).

#### **Disposal or rinse empty pesticide containers three times, puncture them, and store separately.**

Arrange disposal through authorized waste collection services—no dumping into drains or soil.

#### **Training and Capacity Building**

Conduct annual training sessions on:

Safe chemical handling and PPE use. o Safe spraying techniques and emergency response procedures.

Emergency measures like using eye-wash stations and first aid protocols.

Post safety instructions and SDS sheets near chemical mixing and application areas.

## **Monitoring and Evaluation**

Use a monitoring checklist to evaluate:

Compliance of chemical storage facilities.

Availability and condition of PPE. o Accuracy of logbooks.

Correct container disposal.

Define and track Key Performance Indicators (KPIs):

Reduction in pesticide-related health complaints. o % of trained personnel. o % compliance with safety protocols.

Track KPIs such as the reduction in pesticide-related illnesses and worker compliance with safety protocols.

Conduct annual internal reviews to update the chemical safety management plan.

## **Scenario 2: Preventing Biological Hazards in a Dairy Farm Background:**

A dairy farm in central Albania with 50 cattle has recently reported health incidents among workers, including respiratory issues, skin irritation, and suspected zoonotic infections. These incidents were linked to poor manure handling practices, mold in storage rooms, and a lack of hygiene protocols in animal zones.

Application of the Strategic Management Model

### **Risk Assessment**

Conduct a 5x5 Risk Matrix to evaluate biological risks related to:

Exposure to manure, animal waste, and bedding.

Contact with animals potentially carrying zoonotic diseases (e.g., leptospirosis, Q fever).

Mold or rodent infestations in poorly ventilated feed storage areas.

Identify gaps in personal hygiene, vaccination, and rodent control systems.

### **Control Measures**

Risk Identification or Assign the farm manager to identify all work tasks with possible exposure to biological agents.

Conduct routine checks for mold, rodents, and bio-contaminated waste in barns and storage areas.

Hygiene Practices

Install handwashing stations with soap and clean water in multiple zones (e.g., near milking stations, manure pits).

Enforce no eating, drinking, or smoking in active work areas.

Protective Measures

Provide and enforce the use of boots, gloves, and coveralls for tasks involving animal contact or waste handling.

Equip workers with respirators when handling dry feed, compost, or working in dusty barns.

Pest and Rodent Control

Implement routine disinfection schedules for animal stalls, walkways, and waste areas.

Install rodent traps or contract licensed pest control services to manage infestation risks.

Vaccination & Health Surveillance o Ensure all workers are vaccinated against tetanus and other relevant diseases.

Encourage symptom reporting and provide medical check-ups for workers showing respiratory or skin conditions. o Keep records of exposure incidents and medical follow-ups.

## **Training and Capacity Building**

Conduct regular training sessions in collaboration with the Council of Albanian Agribusiness, covering:

Common biological risks in dairy farming. o Proper use of PPE.

Signs and symptoms of zoonoses or mold exposure.

Document all training courses and maintain attendance and certification records.

## **Monitoring and Evaluation**

Use a standardized Monitoring & Inspection Checklist (based on the guide):

Hygiene facilities functional (yes/no) o PPE usage compliance (yes/no) o Signs of infestation addressed (yes/no) o Training records up to date (yes/no)

Define and track KPIs, including:

Number of biological hazard incidents reported. o % of staff trained on biological risk protocols.

% compliance with vaccination and hygiene routines.

Conduct quarterly audits to assess improvements and update control strategies

## **Scenario 3: Managing Noise and Vibration Risks in a Vineyard/Orchard Background:**

A vineyard in south Albania employs 30 seasonal workers who regularly operate or work near noisy and vibrating machinery such as tractors, pruning tools, and sprayers. Several workers have reported symptoms of hearing fatigue, numbness in hands, and discomfort after prolonged use of vibrating handheld equipment.

Application of the Strategic Management Model

### **Risk Assessment**

Apply a 5x5 Risk Matrix to assess the likelihood and severity of: o Noise exposure exceeding 85 dB(A).

Hand-arm vibration from chainsaws and pruning shears.

Identify high-risk machinery and tasks by:

Conducting annual measurements or consulting manufacturer data. Mapping areas or machines with the highest exposure levels.

### **Control Measures**

Engineering Controls of Equip tractors and mobile machinery with vibration-dampening seats.

Provide anti-vibration gloves for handheld tools (e.g., trimmers, chainsaws).

Ensure routine maintenance of machinery to reduce excessive noise and vibration.

Work Organization (Administrative Controls) o Limit exposure time per worker per day to noisy/vibrating equipment.

Implement task rotation to avoid prolonged continuous exposure for any individual.

Personal Protective Equipment (PPE) to Provide earplugs or earmuffs to all workers exposed to noise >80 dB(A).

Ensure consistent use of anti-vibration gloves during operation of handheld equipment.

## Training and Capacity Building

Develop a training module (with involvement of the Council of Albanian Agribusiness) covering: o Health effects of noise and vibration exposure (e.g., hearing loss, white finger syndrome).

Correct use and maintenance of PPE.

Post visual warnings and safety posters in high-risk zones and near machinery sheds.

## Monitoring and Evaluation

Use the Monitoring & Inspection Checklist: o Equipment noise levels measured (yes/no) o PPE available and used correctly (yes/no) o Task rotation applied (yes/no) o Maintenance records up to date (yes/no)

Track KPIs such as:

Reduction in reported symptoms (hearing fatigue, hand numbness). o % of workers trained annually.

% compliance with PPE and task rotation guidelines.

Conduct annual internal audits to assess policy effectiveness and update mitigation strategies.

## Action Plan and Budget

A structured action plan for each recommendation, outlining specific activities, timelines, estimated costs, and responsible parties.

| Activity                                | Objective                                    | Timeline  | Estimated Cost (USD) |
|-----------------------------------------|----------------------------------------------|-----------|----------------------|
| Develop Agricultural Safety Regulations | Align national regulations with EU standards | 12 months | \$100,000            |
| Training and Certification Programs     | Educate farmers on OHS practices             | 18 months | \$200,000            |
| PPE Subsidy Program                     | Provide financial support for PPE            | 12 months | \$150,000            |
| Strengthen ISHPSHS Capacity             | Enhance inspection and enforcement           | Ongoing   | \$250,000 annually   |

## Implementation Details

### Developing Practical Guides and Tools

KASH, in collaboration with academia, will develop user-friendly guides, checklists, and risk assessment tools for pesticide safety, biological hazards, and noise/vibration risks tailored to farm-level applications.

### Training Programs

Partner with academia, vocational schools, training centers, and NGOs to design and deliver modular training programs (including demo sessions) on: Safe pesticide handling and PPE use (greenhouses)

Hygiene, zoonosis prevention, and rodent control (dairy farms)

Machinery safety and vibration/noise exposure prevention (vineyards/orchards)

Awareness and Communication Materials

Produce and disseminate visual materials (posters, infographics, safety signage) and promote peer learning via model farms and social media outreach coordinated by KASH.

### Company Piloting (Test Implementation)

Test the implementation of each scenario in 3 selected companies (1 greenhouse, 1 dairy farms, 1 vineyard or orchard), including:

- Baseline risk assessment
- Introduction of protective measures (e.g., PPE, hygiene stations, safety gear)
- Staff training and internal monitoring setup
- Tracking and reporting changes through simple checklists and KPIs

### Monitoring and Self-Assessment Tools

Introduce practical self-evaluation checklists and logs for pesticide use, hygiene routines, and machinery exposure. These tools will be distributed through KASH's member network.

## **Timeline**

### **Q1: Development of Practical Tools**

Launch the co-design of guides, checklists, and risk assessment tools for pesticide use, biological hazards, and machinery risks. KASH coordinates input from businesses, NGOs, and university partners.

### **Q2: Training Program Launch**

Roll out training workshops and field demonstrations on chemical safety, biological risk management, and machinery-related health risks, focusing on practical application and use of PPE.

### **Q3: Pilot Implementation in Companies**

Begin field testing in 3 selected farms/companies, introducing safety tools, monitoring systems, and visual materials. Collect initial feedback and track behavioural change.

### **Q4: Peer Learning and Awareness Campaigns**

Organize peer exchange events and disseminate communication materials (e.g., case studies, posters, social media content) to amplify lessons from pilot farms.

### **Monitoring and Evaluation**

A comprehensive monitoring and evaluation framework will track progress, ensuring accountability and transparency.

Key Performance Indicators (KPIs):

KPIs include the number of regulations enacted and trained workers,

- Compliance rates with specific OHS measures, such as PPE usage in pesticide application.

- Percentage of workforce trained in OHS annually.
- Reduction rates in reported occupational injuries and illnesses over time. Implementing regular assessments and publishing the results would enhance transparency and accountability, aligning with EU monitoring practices.
- Evaluation Schedule: Regular quarterly and annual evaluations by ISHPSHS and the Ministry of Agriculture.
- Feedback Mechanisms: Surveys and feedback from farmers and stakeholders to measure awareness and compliance.
- Collaboration with External Agencies: Partner with EU institutions for thirdparty evaluations, ensuring objectivity in assessing compliance.

## Conclusion

Aligning with EU OHS standards is essential for Albania's agricultural sector. A coordinated effort involving policy reform, financial support, and increased enforcement will safeguard worker health, increase productivity, and enhance Albania's EU accession prospects. Collaboration between government bodies, farmers, and international organizations will be critical to achieving these objectives.

## Recommendations

### Prioritize Development of Safety Tools and Practices

Rather, focus on co-developing practical safety guidelines, standard operating procedures (SOPs), and checklists for managing chemical exposure, biological hazards, and machinery-related risks.

- Practical Steps: Establish working groups of KASH, agribusinesses, NGOs, and academia to draft and pilot materials.
- Challenges: Ensuring relevance across diverse farm types.
- Risk Mitigation: Pilot-test tools in multiple sites and adapt based on feedback.
- Strengthening On-Farm Capacity through Training and Peer Learning Build long-term capacity by investing in training programs, demonstration farms, and peer-to-peer knowledge sharing among agricultural businesses and workers.
- Practical Steps: Deliver workshop on PPE, hygiene, and noise/machinery safety through NGOs and university partners.
- Challenges: Engaging smallholders and farmers.

- Risk Mitigation: Use visual materials, mobile tools, and local farmer networks to extend reach.
- Promote Low-Cost, Farm-Led Investments in Health and Safety Encourage farms to adopt affordable safety solutions such as hygiene stations, proper PPE storage, anti-vibration gear, and internal monitoring tools.
- Practical Steps: Support farms to develop internal safety protocols using project-developed checklists and templates.
- Challenges: Limited financial capacity of smaller farms.
- Risk Mitigation: Focus on scalable, low-cost practices and emphasize benefits for worker health and productivity.
- Expand Public Awareness and Recognition of Good Practices
- Raise awareness of agricultural OHS by showcasing good practices through communication campaigns, pilot farm stories, and digital outreach.
- Practical Steps: Use videos, posters, social media, and farmer field days to communicate success stories and risk prevention tips.
- Challenges: Competing information and limited digital literacy.
- Risk Mitigation: Use simple, visual materials and partner with trusted local actors (e.g., KASH coordinators, farmer cooperatives).

### Chapter 3 - testing of the proposed model in local SMEs in Montenegro



To validate the practical applicability and relevance of the proposed Occupational Safety and Health (OSH) guidelines for the agricultural sector in Montenegro, a structured testing phase was conducted in selected local small and medium-sized enterprises (SMEs). This phase represented a crucial step in the development of the Joint Guideline under Activity 1.2 – D.1.2.13, as required by the Interreg IPA CBC South Adriatic Programme.

The testing process was designed to ensure that the guidelines are not only normatively aligned with EU directives and international standards but also adaptable to real-life working conditions in Montenegrin agricultural enterprises. Through a combination of theoretical sessions and practical demonstrations, involving company management, employees, and OSH practitioners, the guidelines were assessed for clarity, feasibility, and effectiveness.

The following sections provide an overview of the testing process, detailed profiles of the participating SMEs, and key findings and feedback gathered during this phase.

#### Overview of the Testing Process

As part of Activity 1.2 – D.1.2.13 within the SAGRI project, funded under the Interreg IPA CBC South Adriatic Program, field testing of the proposed Occupational Safety and Health (OSH) guidelines was carried out in ten agricultural SMEs across Montenegro. The purpose of this phase was to verify the applicability, clarity, and relevance of the guidelines in real workplace conditions, ensuring their alignment with the specific needs and working environments of local agricultural enterprises.

The testing activities were implemented by OSH experts from the Safety at Work Association of Montenegro (SWAM), under the coordination of a senior expert involved in the preparation of this document.

#### Key Characteristics of the Testing Process

##### ☐ Duration and Format

Each testing session lasted approximately half a working day (around 4 hours) per SME. The format combined theoretical presentations, interactive discussions, and practical demonstrations of key OSH procedures. Practical OSH checklists developed within the project were also presented and tested with participants to validate their clarity and usability.

##### ☐ Participants

Depending on the size of the company, between 3 and 15 participants were involved in each session. This included regular employees, managerial staff, and, where applicable, designated OSH officers. The sessions were designed to engage both operational and administrative personnel, promoting a comprehensive understanding of OSH principles.

## ☐ **Geographic Balance**

The selection of SMEs ensured representation from all major regions of Montenegro: coastal, central, and northern areas. This allowed for testing in diverse agricultural environments, reflecting the variety of risks and working conditions present in Montenegro's agro-sector.

## **Structure of the Sessions**

The testing was conducted in two parts:

### **Theoretical Training**

- Presentation of the developed OSH guidelines, including legal and institutional aspects, risk types, and prevention measures. Special focus was given to the following topics:
- Safe use of agricultural machinery and equipment
- Handling of chemicals and pesticides
- Ergonomic risks and prevention of musculoskeletal disorders ▪ Psychosocial risks and emergency procedures

### **Practical Demonstrations**

Demonstration of correct use of personal protective equipment (PPE), safe operating procedures with selected machinery, ergonomic postures during manual tasks, and proper storage and handling of hazardous substances.

## **Documentation**

Signed attendance sheets and evaluation forms from all ten SMEs are archived and available upon request as formal evidence for the Interreg IPA CBC South Adriatic Programme. These documents serve both monitoring and evaluation purposes and confirm the SMEs' active involvement in the testing process.

## **List of Participating SMEs**

The following ten SMEs were included in the testing phase:

1. "13. jul – Plantaže" (Podgorica)
2. Dairy "Lazine" Ltd. (Danilovgrad)
3. "Moric" Ltd. – Luštica, Herceg Novi
4. "Monte Bianco" Ltd. – Danilovgrad
5. "Naša Farma" Ltd. – Spuž (Danilovgrad)
6. "Franca" Ltd. – Bijelo Polje
7. "Niksen Čavor" Ltd. – Kotor
8. "Monteproduct" Ltd. – Tivat
9. Raketić Farm – Kosanica, Pljevlja
10. "Naše Voće" Ltd. – Župa, Nikšić

## Stakeholder Commitment

As part of the process, all ten SMEs were invited to sign a Letter of Commitment confirming their support for the adoption of the proposed OSH guidelines. Signed letters from most of SMEs have been collected and will be presented in Chapter 4. Some SMEs are in the process of formalizing their commitments due to internal administrative procedures.

## Description of Pilot SMEs and Methodology (10 Mini Portraits)

This section provides a detailed description of the ten pilot agricultural SMEs in Montenegro where the testing of the proposed Occupational Safety and Health (OSH) guidelines was conducted. The selection of these SMEs was made to reflect the diversity of the Montenegrin agricultural sector in terms of size, geographic distribution, production types, and organizational structures.

The presented profiles (mini portraits) include essential information about each SME, such as location, core activities, number of employees, existing OSH capacities, key risks identified during the testing phase, and specific observations made through practical training and demonstrations.

The methodology applied during this phase involved on-site visits, theoretical and practical training sessions, semi-structured interviews, and direct consultations with management and workers. These activities were aimed at both validating the proposed OSH guidelines and tailoring them to the specific operational realities of different agricultural enterprises in Montenegro.

By summarizing the main OSH-related characteristics and challenges of each SME, this chapter contributes to a comprehensive understanding of the current situation in the sector and supports the formulation of recommendations for broader implementation of OSH measures.

### Company 1: "13. jul – Plantaže" (Podgorica)

**Location:** Podgorica, Montenegro

**Type of Production:** Viticulture, winemaking, olive and peach cultivation, oil production

**Number of Employees:** Between 600 and 900 (including seasonal workers)

**Existing OSH Capacities:** The company has a formal OSH service. However, certain areas, such as the bottling plant, showed gaps in risk-specific protective equipment provision.

### Key OSH Risks Identified

- Mechanical risks related to machinery used in vineyards and bottling plants;
- Chemical risks, especially exposure to aggressive cleaning agents in the bottling sector; ▪ Ergonomic risks due to repetitive manual work and handling of heavy loads; ▪ Psychosocial risks linked to seasonal employment and work organization.

### Testing Activities Conducted:

- Half-day training session (4 hours) combining theoretical instruction and practical demonstrations;
- Presentation of OSH guidelines focusing on safe use of machinery, chemical handling, ergonomics, and risk prevention;
- Practical demonstration of PPE use, including introduction and demonstration of chemical-resistant footwear as a direct result of field testing;

Consultation session with company management regarding digitalization and OSH system integration.

**Number of Participants:** 12 participants, including regular workers, line managers, and OSH officers.

**Specific Feedback from Company:**

- Positive feedback on the practical demonstrations, especially regarding protective footwear.
- Expressed need for more structured OSH training programs focused on vineyard and bottling operations.
- Recommendations for integrating digital monitoring tools into OSH management processes.

**Company 2: Dairy "Lazine" Ltd. (Danilovgrad)**

**Location:** Danilovgrad, Central Montenegro

**Type of Production:** Milk collection and dairy production (milk, yogurt, cream)

**Number of Employees:** Approx. 130 employees + over 1,000 supplier cooperators **Existing OSH Capacities:** External OSH service engaged; Risk Assessment Act exists, but incomplete workplace risk classification; PPE usage with gaps.

**Key OSH Risks Identified**

- Chemical risks (cleaning agents, bottling process substances)
- Ergonomic risks (repetitive manual tasks, handling milk containers)
- Biological risks (exposure to milk and dairy products, hygiene management)

**Testing Activities Conducted**

- Half-day training session (4 hours) combining theoretical instruction and practical demonstrations;
- Presentation of OSH guidelines focusing on safe chemical handling, ergonomics, hygiene;
- Practical demonstration of PPE use, including safe handling of cleaning agents;
- Consultation with management regarding OSH procedures and internal record-keeping.

**Number of Participants:** 8 employees, including production workers, management representatives, and external OSH service providers.

**Specific Feedback from Company:**

- Positive feedback on chemical-resistant footwear introduction;
- Expressed need for clearer internal OSH procedures;
- Interest in full digitalization of hygiene and quality control systems.

### Company 3: "Moric" Ltd. – Luštica, Herceg Novi

**Location:** Luštica Peninsula, Herceg Novi, Montenegro

**Type of Production:** Organic olive oil production and agritourism ("olive experience")

**Number of Employees:** 3 full-time employees + up to 10 seasonal workers **Existing OSH Capacities:** No designated OSH officer; no formal Risk Assessment Act; basic internal safety instructions; PPE used to depend on activity but without systematic monitoring.

#### Key OSH Risks Identified

- Mechanical risks (olive milling machinery, manual olive collection)
- Physical and environmental risks (open-field work, heat stress, fire hazards)
- Ergonomic risks (manual handling of loads, repetitive postures) **Testing Activities Conducted**
- Half-day training session (4 hours) combining theoretical instruction and practical demonstrations.
- Presentation of OSH guidelines focusing on safe machinery operation, ergonomic practices, and PPE usage;
- Practical demonstration of correct PPE application and ergonomic posture training;
- Consultation with company representatives regarding digitalization potentials in OSH monitoring and agritourism safety management.

**Number of Participants:** 3 participants, including permanent staff and seasonal workers.

#### Specific Feedback from Company:

- Expressed interest in structured OSH training programs tailored to olive oil production; ✓ Positive feedback on ergonomic posture demonstrations;
- Interest in introducing smart technologies such as heat stress sensors, fire alarms, and visitor safety apps;
- Highlighted the need for external OSH consultancy services and formalization of OSH documentation processes.

### Company 4: "Monte Bianco" Ltd. – Danilovgrad

**Location:** Danilovgrad, Montenegro

**Type of Production:** Dairy production – mozzarella and semi-hard cheeses ("Planinski sir") **Number of Employees:** 18 employees + 3–4 seasonal workers

**Existing OSH Capacities:** External OSH service engaged; no internal OSH officer. Risk Assessment Act, emergency plan, and basic first aid/fire safety measures in place. PPE used mainly for chemical risks, slip hazards, and machinery handling.

#### Key OSH Risks Identified

- Chemical risks (disinfectants, cleaning agents)

- Physical risks (slippery floors, machine operation)
- Ergonomic risks (manual lifting, repetitive movements)

#### Testing Activities Conducted

- Half-day training session (4 hours), combining theoretical presentations and practical demonstrations.
- Presentation of OSH guidelines focusing on chemical risk management, safe handling of machinery, and ergonomic practices specific to cheese production;
- Practical demonstration of PPE use, with emphasis on handling slippery surfaces and heavy loads;
- Consultation with management regarding digitalization options for OSH monitoring and production process control.

**Number of Participants:** 3 participants, including production workers, seasonal employees, and management representatives.

Specific Feedback from Company:

- Positive feedback regarding ergonomic and PPE demonstrations;
- Recognition of the need for more structured, regular OSH training, especially for seasonal staff;
- Expressed interest in introducing a digital system for monitoring production and OSH parameters;
- Management acknowledged the importance of building a proactive internal OSH culture beyond formal compliance.

#### Company 5: „Naša Farma“ Ltd. – Spuž (Danilovgrad)

**Location:** Spuž, Danilovgrad, Montenegro

**Type of Production:** Pig farming (livestock production – pork meat)

**Number of Employees:** Between 10 and 30, depending on production dynamics

**Existing OSH Capacities:** No internal OSH officer; external OSH service provider engaged. Formal Risk Assessment Act exists, but there is no structured internal OSH management system.

#### Key OSH Risks Identified

- Biological risks related to livestock and exposure to animal waste;
- Chemical risks from cleaning agents and disinfectants;
- Ergonomic risks due to handling heavy loads and repetitive manual labor;
- Physical risks related to work in closed and humid spaces;
- Psychosocial risks associated with new organizational structure and staff rotation.

#### Testing Activities Conducted

- Half-day training session (4 hours) combining theoretical instruction and practical demonstrations;
- Presentation of OSH guidelines focusing on livestock-specific risks, safe handling of chemicals, ergonomic posture, and emergency procedures;

- Practical demonstration of PPE use relevant for pig farming, including protective boots, gloves, and masks;
- Consultation session with company management regarding the introduction of internal OSH officers and systematic monitoring of risks.

**Number of Participants:** 4 participants, including regular workers, supervisors, and management representatives.

**Specific Feedback from Company:**

- Positive feedback on the need to establish an internal OSH officer position;
- Emphasis on the importance of continuous education, especially for seasonal workers;
- Interest expressed in digital tools for monitoring environmental conditions within pig farming facilities (temperature, humidity);
- Willingness to integrate OSH procedures into future expansion plans, including environmental protection measures such as green belts and manure lagoon systems.

**Company 6: „Franca“ Ltd. – Bijelo Polje**

**Location:** Bijelo Polje, Montenegro

**Type of Production:** Meat procurement, slaughter, processing, and distribution; cattle and poultry fattening; canned meat production

**Number of Employees:** Over 750 (including affiliated companies and partner farms) **Existing OSH Capacities:** No permanent in-house OSH specialist. External services are engaged, but internal OSH control and prevention systems are underdeveloped. Risk Assessment Act exists, but reporting of workplace injuries is incomplete.

**Key OSH Risks Identified**

- Mechanical risks related to slaughtering machinery, meat processing equipment, and handling of heavy loads;
- Chemical risks due to exposure to disinfectants, cleaning agents, and meat preservation substances;
- Biological risks linked to handling of livestock and raw meat products;
- Ergonomic risks from repetitive manual work, lifting, and posture-related strain;
- Psychosocial risks associated with intensive production schedules and work organization.

**Testing Activities Conducted**

- Half-day training session (4 hours) combining theoretical presentations and practical demonstrations;
- Presentation of OSH guidelines focusing on mechanical and biological risk management, chemical handling procedures, ergonomics, and psychosocial risk prevention;
- Practical demonstration of correct PPE usage, particularly in high-risk zones such as slaughtering and processing areas;
-

- Consultation session with company management regarding internal OSH system development and integration of digital monitoring tools.

**Number of Participants:** 9 participants, including production workers, shift managers, and administrative staff.

**Specific Feedback from Company:**

- Positive feedback on the structure and clarity of training materials, especially regarding mechanical and biological safety procedures;
- Acknowledged the need to appoint a permanent in-house OSH officer to ensure regular monitoring and incident reporting;
- Expressed interest in developing digital safety record systems and automating incident reporting processes;
- Recommendation to establish a more proactive internal OSH culture, with regular refresher training and structured risk assessments tailored to all production units.

**Company 7: „Niksen Čavor“ Ltd. – Kotor**

**Location:** Dobrota, Kotor, Montenegro

**Type of Production:** Traditional Montenegrin products – Njeguši prosciutto, cheese, dairy and meat processing

**Number of Employees:** Approximately 50 workers

**Existing OSH Capacities:** No internal OSH officer; external service providers engaged on an ad hoc basis. Workforce turnover affects consistency in OSH procedures and training. Basic risk assessment exists but lacks detailed workplace-specific implementation.

**Key OSH Risks Identified**

- Mechanical risks related to meat processing equipment, cutting tools, and handling of heavy loads;
- Chemical risks from exposure to cleaning agents and preservatives used in meat processing;
- Biological risks due to contact with raw meat, dairy products, and exposure to bacteria;
- Ergonomic risks linked to repetitive manual tasks and physically demanding positions;
- Psychosocial risks associated with employee turnover and informal work organization structures.

**Testing Activities Conducted**

- Half-day training session (4 hours) including theoretical instruction and practical demonstrations;
- Presentation of OSH guidelines focused on safe operation of meat processing and dairy production equipment, chemical handling, ergonomics, and prevention of biological risks;
- Practical demonstration of PPE use adapted to specific activities, including gloves, aprons, masks, and slip-resistant footwear;
- Consultation with management regarding implementation of systematic OSH processes, record-keeping, and staff awareness programs.

**Number of Participants:** 9 participants, including production workers, line supervisors, and administrative staff.

**Specific Feedback from Company:**

- Strong interest expressed in establishing more structured and continuous OSH training programs, especially for new employees;
- Recognition of the need to appoint a designated OSH coordinator to ensure compliance with legal obligations;
- Positive feedback on practical demonstrations, particularly regarding biological risk prevention measures;
- Management expressed willingness to introduce digital tools for tracking workplace incidents and safety compliance records, alongside physical infrastructure improvements such as non-slip flooring and improved ventilation in production areas.

**Company 8: „Monteproduct“ Ltd. – Tivat**

**Location:** Tivat, Montenegro

**Type of Production:** Milk production, dairy processing, livestock farming, import of livestock  
**Number of Employees:** Approximately 25 permanent employees

**Existing OSH Capacities:** No internal OSH officer; no formal Risk Assessment Act developed. Basic protective equipment used informally, but without a structured OSH management system.

**Key OSH Risks Identified**

- Mechanical risks related to the use of agricultural machinery and equipment for feed production and animal care;
- Biological risks associated with direct contact with livestock (injuries, zoonotic diseases);
- Ergonomic risks from heavy lifting, manual feed handling, and repetitive tasks in livestock care;
- Chemical risks related to cleaning agents and veterinary substances;
- Psychosocial risks due to the physically demanding nature of work and absence of formal OSH procedures.

**Testing Activities Conducted**

- Half-day training session (4 hours) combining theoretical instruction and practical demonstrations;
- Presentation of OSH guidelines focused on livestock handling safety, machinery operation, ergonomics, and chemical handling procedures;
- Practical demonstration of PPE use, including protective gloves, boots, masks, and animal handling equipment;
- Consultation with company management regarding urgent needs for establishing formal OSH structures, including appointment of an OSH officer and preparation of legal documentation.

**Number of Participants:** 6 participants, including farm workers, administrative staff, and technical supervisors.

**Specific Feedback from Company:**

- Acknowledgment of the necessity to formalize OSH processes through internal capacity building and external support;
- Expressed interest in developing tailored OSH training modules focused on livestock-specific risks;
- Positive feedback on the relevance of practical demonstrations, especially regarding animal handling techniques and PPE usage;
- Management committed to initiating procedures for the preparation of a Risk Assessment Act and hiring or contracting OSH professionals to ensure compliance with national regulations and alignment with EU standards.

**Company 9: Raketić Farm – Pljevlja**

**Location:** Pljevlja, Northern Montenegro

**Type of Production:** Organic cereal cultivation (buckwheat, spelt, rye, barley, oats, wheat), stone-milled flour production, beekeeping

**Number of Employees:** 2 permanent family members (owners/operators) + occasional seasonal helpers

**Existing OSH Capacities:** No formal OSH officer or external service; no Risk Assessment Act; no structured OSH procedures; no documented use of PPE

**Key OSH Risks Identified**

- Mechanical risks (operation of small agricultural machinery, use of stone mill equipment);
- Biological risks (beekeeping – exposure to bee stings, allergens);
- Ergonomic risks (manual handling of heavy loads, repetitive manual tasks in milling and beekeeping);
- Physical and environmental risks (outdoor work in variable weather conditions, altitude-specific challenges);
- Chemical risks minimal, primarily related to occasional use of natural substances in farming.

**Testing Activities Conducted**

- Half-day training session (4 hours) adapted to the small-scale family context, combining theoretical explanation and on-site demonstration;
- Presentation of OSH guidelines specifically adapted to small organic farms, focusing on:
  - o Safe handling of agricultural tools and small machinery;
  - o Ergonomics in manual tasks such as milling and beekeeping activities;
  - o Prevention of risks related to outdoor work (UV exposure, weather extremes);
  - o First aid basics relevant to bee stings and minor injuries.
- Practical demonstration of basic PPE use (protective gloves, beekeeping suits, ergonomic postures);

- Consultation with farm owners regarding simplified OSH measures suitable for microscale agricultural businesses.

**Number of Participants:** 2 participants (family members actively involved in farm work).

**Specific Feedback from Farm:**

- Expressed appreciation for tailored guidance adapted to their specific scale and activity type;
- Noted a lack of prior awareness about legal OSH obligations and practical safety measures;
- Identified the need for simplified OSH training models for micro-farms in Montenegro;
- Willingness to gradually introduce basic OSH procedures and equipment (e.g., securing protective gloves, basic PPE for beekeeping, keeping a first aid kit).

**Company 10: „Naše Voće“ Ltd. – Župa, Nikšić**

**Location:** Župa, Nikšić, Central Montenegro

**Type of Production:** Apple orchard cultivation, fruit processing, juice production

**Number of Employees:** 8 full-time employees + 20–30 seasonal workers during harvest season

**Existing OSH Capacities:** No internal OSH specialist; external certified OSH provider engaged; partial application of food safety standards (GLOBAL GAP, HACCP); no structured internal OSH monitoring system

**Key OSH Risks Identified**

- Mechanical risks (use of machinery for orchard maintenance, fruit processing equipment);
- Ergonomic risks (manual harvesting, repetitive tasks in processing and packing);
- Physical and environmental risks (outdoor work during variable weather conditions, heat exposure, working at height during fruit picking);
- Chemical risks (use of plant protection products and cleaning agents in processing facility);
- Psychosocial risks (seasonal employment dynamics, high workload peaks during harvest).

**Testing Activities Conducted**

- Half-day training session (4 hours) combining theoretical and practical modules adapted to both permanent and seasonal workers;
- Presentation of OSH guidelines tailored to orchard farming and fruit processing, with a focus on:
  - o Safe use of machinery and orchard maintenance tools;
  - o Ergonomic techniques for manual fruit picking and processing line work;
  - o PPE usage adapted to different production stages (orchard, processing facility);

Basics of risk prevention related to chemical substances used in agriculture and processing;

Emergency procedures and first aid in case of injury.

- Practical demonstration of protective equipment use and ergonomic work postures;
- Consultation with management regarding integration of OSH procedures into broader digitalization and quality management initiatives.

**Number of Participants:** 7 participants, including full-time employees and a selected group of seasonal workers present during the training period.

#### **Specific Feedback from Company:**

- Recognition of the need for a more formalized internal OSH system, aligned with international certification standards;
- Positive response to practical demonstrations, particularly regarding ergonomic harvesting methods and PPE use;
- Expressed interest in integrating OSH monitoring modules into the company's ERP system;
- Commitment to introducing structured OSH training programs for seasonal workers before each harvest season.

#### **Feedback and Findings from Field Testing**

As part of the testing phase, comprehensive feedback was collected from all ten participating agricultural SMEs in Montenegro. The process included feedback forms, semi-structured interviews, and direct observations during training and demonstration sessions. The following key findings summarize the main insights regarding Occupational Safety and Health (OSH) conditions, practices, and needs identified in the field: **General Observations**

All SMEs acknowledged the importance of adopting structured OSH systems, particularly in relation to mechanical, chemical, ergonomic, and biological risks specific to agriculture and food production.

Larger SMEs expressed interest in developing internal OSH capacities, while smaller and family-owned businesses emphasized the need for simplified, accessible models adapted to their limited human and financial resources.

Practical demonstrations were rated as highly useful by participants, especially in relation to PPE use, machinery operation, and ergonomic posture adjustments. **Main OSH Gaps Identified**

Lack of systematic and regular OSH training cycles, particularly for seasonal and newly engaged workers.

Inconsistent application of personal protective equipment (PPE) adjusted to workplacespecific risks.

Absence of formal Risk Assessment Acts in micro-enterprises and family-run farms.

Low awareness of reporting obligations for workplace injuries, especially minor and moderate incidents.

#### **Inspection Oversight Challenges**

Montenegro employs only 10 OSH inspectors for all sectors, with none specialized in agriculture.

During consultations, several SMEs reported they had never been visited by inspection services regarding OSH in agriculture.

Inspections, where conducted, tend to focus solely on severe or fatal injuries, rather than preventive monitoring.

There is a notable lack of communication between SMEs and inspection bodies regarding injury reporting protocols and preventive consultation services. **Specific Feedback from SMEs**

Larger enterprises such as "13. jul – Plantaže," "Franca," and "Dairy Lazine" requested support in developing internal OSH coordination systems and integrating digital tools for monitoring.

Smaller companies, including “Moric” Ltd. and “Raketić” Farm, expressed the need for basic advisory support and simplified training modules adapted to their scale of operation.

Some companies suggested developing sector-specific e-learning platforms, which would allow workers in remote or rural areas to access OSH content regularly.

### **Recommendations Arising from Field Testing**

Establishment of simplified OSH compliance models for small and family-run agricultural businesses, including template documents and advisory services.

Introduction of regular, sector-adapted training cycles for permanent and seasonal workers, using both live and digital formats.

Encouraging SMEs to appoint internal OSH focal points or officers in line with company size and complexity.

Development of centralized digital databases for injury reporting and OSH monitoring, accessible both to enterprises and inspection services.

Strengthening coordination mechanisms between SMEs and public inspection bodies through formalized communication channels, advisory visits, and preventive consultation services.

### **Documentation and Monitoring**

Signed attendance sheets and evaluation forms from all ten SMEs are archived and available upon request as formal evidence for the Interreg IPA CBC South Adriatic Programme.

These documents serve both monitoring and evaluation purposes and confirm the formal participation of SMEs in the testing phase.

Overall, the testing phase confirmed both the validity and the adaptability of the proposed OSH guidelines, while highlighting the need for further institutional support, simplified procedures for smaller enterprises, and stronger digitalization and inspection mechanisms within Montenegro’s agricultural sector.

### Chapter 3 testing the proposed model in agricultural SMEs in Molise.



In Molise region, serious and fatal accidents caused by the overturning of agricultural vehicles are still too common; the determining factor in such events is often the “human factor,” understood as procedural error or incorrect practice (e.g., improper use of agricultural equipment without preliminary assessment of the risks posed by the environment). Furthermore, elderly people are often involved, as they prioritize established bad practices over respectful conduct dictated by the rules and technical requirements of the manufacturers of the machines used.

The agricultural sector has characteristics that make control more difficult and less effective: the fragmentation of businesses, most of which are small or very small, the large number of self-employed workers, high labor turnover, the seasonal nature of the work, the widespread use of foreign labor, and the advanced age of the working population.

These factors can undermine the effectiveness of case-by-case supervision, particularly in relation to constantly changing risk situations, making it necessary to seek strategies capable of achieving effectiveness across the entire sector.

Through the PMP, companies can be involved in a process of improvement, applying targeted measures that combine assistance—understood as the real involvement of companies—and supervision in the prevention of accidents and occupational diseases, with the ultimate goal of gradually raising the level of prevention and safety in the sector.

It is essential to support employers and farmers in the process of self-assessing the level of safety in risk management and the organization of workplace safety.

The Targeted Prevention Plan in agriculture aims to address the risk of vehicle rollovers, involving farms in the Molise region in a process of self-assessment and improvement, with the ultimate goal of reducing accidents, especially serious and fatal ones.

In summary, the TPP is developed through the following operational phases:

- participation and sharing of documents with stakeholders (trade associations) interested in the project and collection of comments/suggestions/reflections.
- presentation of the PMP and the tools produced to the Regional Coordination Committee for Health and Safety in the Workplace pursuant to Article 7 of Legislative Decree 81/2008;
- Annual report on the project
- Preparation of an information letter on the PMP with the above documents attached and sending it to selected farms in the area in collaboration with trade associations.

- Holding information seminars for farms;
- Verification by Asrem of the data reported in the self-assessment forms and data processing;
- Annual report on the project

When using agricultural vehicles, the risk of overturning is always very high; two critical factors characterize the risk of overturning:

- failure to use correct working procedures that consider the factors most closely related to this risk, linked to both the condition of the vehicle and its use;
- the failure to use the necessary protective devices (driver protection structures and seat belts).
- Furthermore, the grip of the tires on different surfaces is another critical factor in assessing the risk of agricultural vehicles overturning.
- Always travel in the direction of maximum slope as far as possible and do not cross the slope; try to avoid potholes, depressions, and ditches as much as possible.
- Avoid driving over logs or rocks that could cause the machine to lose its balance.
- If using cantilevered equipment, it should always be kept upstream of the machine.
- Avoid dangerous maneuvers such as sudden steering or braking.
- When driving downhill, use the engine brake by selecting the gear you would use when driving uphill before reaching the slope to prevent the tractor from gaining speed and becoming uncontrollable with the mechanical brake alone.

When towing heavy loads, it is always advisable to apply front ballast weights to counterbalance the weight. Loads must only be towed using the tow bar approved by the manufacturer and properly secured to the tow hook.

When driving on a slope, always keep the load uphill. Never use the tractor with the clutch disengaged or in neutral gear.

When adapting an agricultural tractor by installing devices, declarations of conformity must be issued by both the manufacturer and the installer. These declarations must be kept on file.

According to INAIL guidelines, declarations of correct installation can be signed by authorized workshops listed in the specific register or by the agricultural company itself, which in this case will appear and be responsible as the installer.

Only workshops authorized under Law No. 122 of February 5, 1992, which

regulates self-repair activities, may install ROPS protective devices: there is a register of companies that carry out self-repair activities, and only those listed in this register may carry out such activities.

Departing from Law No. 122 of February 5, 1992, Legislative Decree No. 9 of March

29, 2004, provides in Article 14, paragraph 12, that farms equipped with workshop facilities may equip their tractors with the safety devices in question, strictly following INAIL guidelines.

## Training

To drive a tractor, as well as other agricultural equipment listed in the State-Regions Agreement of February 22, 2012, operators must obtain a specific license by attending an 8-hour theoretical and practical course for wheeled or tracked tractors. If you wish to obtain certifications for all types of tractors, the course lasts 13 hours.

The above certificate must be renewed within 5 years of the date of issue of the certificate.

### Tips for reducing the risk of tipping over

Only drive the tractor if you are trained and instructed to do so, both on and off road. Only use tractors equipped with a cab with a rollover protection device and seat belts.

Before each start, check that the protection system (roll bar) is in the raised position and fasten your seat belts. Remember that a protective structure is not sufficient unless combined with fastened seat belts.

Assess the geomorphological characteristics of the terrain in advance, in particular: slope of the terrain; pay attention to steering and the stability of embankments and drainage ditches; variability of the terrain in relation to weather conditions; presence of particular risk conditions such as ditches, obstacles, holes, depressions, watercourses; use a tractor with mechanical characteristics suitable for the type of work to be carried out; ensure that the operating speed is such as to maintain the necessary safety in relation to the conformation of the terrain on which you are working, such as slope and instability of the terrain;

When driving the tractor, you must always know where all your family members and co-workers are.

Use the tractor's "safe stop" procedure and pay particular attention if the tractor is stopped on a slope.

Keep all screens and guards installed and apply signs and reflectors to towed accessories.

Ensure regular maintenance by using spare parts with the appropriate characteristics and using authorized workshops for extraordinary maintenance.

Keep a first aid kit and a dry powder fire extinguisher in the tractor.

Do not operate tractors that do not meet safety requirements.

Do not use the tractor without fastening your seat belts.

Do not drive on slopes close to the tipping limit.

Never load the platform beyond the manufacturer's specified capacity.

Do not tow excessive loads using unbraked devices and never transport people together with livestock, crops, or other materials.

Do not attach chains, cables, etc. to the safety frame for towing, as this may cause the tractor to overturn. Always use the tow bar.

Do not leave the power take-off attached when not in use.

Do not leave the key in the ignition.

Do not start or operate the tractor without being in the driver's seat.

Do not leave the tractor engine running when performing tasks on the ground or on the tractor.

Never allow anyone to ride on the tractor as a passenger unless the tractor is approved for that purpose (in general, tractors that can carry one or two passengers are also equipped with the appropriate seats with restraint systems).

Never re-flue with the engine running.

Do not replace the wheels (rims and/or tires) with others of a different size not specified in the vehicle registration document.

The farms participating in the project undertake to apply the model described in chapter 3, given that they all have agricultural tractors and employees.

## CHAPTER 4 - LETTER OF COMMITMENT BY LOCAL STAKEHOLDERS



## Chapter 4 Commitment of Apulian Stakeholders

### Purpose and value of the local agreement

Within the SAGRI project, the local agreement represents an operational and strategic tool aimed at ensuring the adoption, implementation, and dissemination of guidelines for the prevention of health and safety risks in the agricultural sector. This document stems from the need to strengthen relationships between project partners and local economic and social stakeholders, promoting a shared commitment to systematizing the approach to prevention in local agricultural contexts.

The primary purpose of the agreement is to leverage the results of the support initiative undertaken in November 2024 and translate them into concrete and ongoing practices, adopted by participating companies and supported by the relevant associations. In this regard, the document serves a dual purpose:

- tool for consolidating the knowledge acquired during the support action;
- basis for building a model of permanent cooperation between businesses, organizations and public institutions.

The agreement, drafted in a concise and easily understandable format, aims to promote the voluntary adoption of good safety practices covered during the training days (correct use of PPE, biological risk management, prevention of musculoskeletal disorders, manual handling, etc.), fostering a widespread and participatory culture of prevention.

Furthermore, the agreement aims to strengthen agricultural businesses' ability to integrate safety into the day-to-day management of their business operations, also paying attention to emerging issues related to the agricultural work environment (for example, exposure to biological agents, use of obsolete machinery, infrastructure deficiencies, work-related stress).

The goal is to make prevention not a bureaucratic obligation, but a structural component of corporate competitiveness and sustainability. From this perspective, the local agreement also serves as a tool to support continuous improvement, encouraging companies to monitor their progress and identify specific training needs.

Within the SAGRI project, participating companies signed the agreement informally and voluntarily, through direct involvement during the support program held in November 2024. The companies demonstrated their commitment by actively participating in training activities, completing evaluation forms, and sharing their business experiences with experts and other participants.

This approach allowed us to gather substantial support, despite the lack of an official signature, demonstrating a concrete interest from businesses in adopting the proposed measures. Specifically, companies recognize the value of the initiative as:

- operational reference to be integrated into the daily management of corporate risks;
- useful tool for updating your DVRs and strengthening internal training;
- basis for future stable collaboration with project partners and trade associations.

- The local agreement therefore takes on a significance that goes beyond mere formality: it constitutes a collective commitment aimed at widespread accountability, capable of valorizing local resources and strengthening the network of relationships between businesses and intermediaries.

Looking ahead, it is proposed that the agreement model be replicated, updated, and formalized in future territorial prevention programs, also through the support of public institutions responsible for workplace safety in agriculture, such as the local health authorities (ASL), the SPESAL (Italian National Institute for Agricultural Accidents and Illegal Work), the INAIL (National Institute for Insurance against Accidents and Illegal Work) and regional agricultural consultancy services.

## 4.2 Stakeholders involved

Stakeholder engagement was a key element in building and legitimizing the support process initiated by the SAGRI project. The strategy adopted involved the direct involvement of diverse stakeholders, from both agricultural production and representation, training, and prevention. This approach fostered an integrated and multidisciplinary vision of health and safety in agriculture, overcoming the traditional fragmentation of interventions.

Specifically, the project involved agricultural companies operating in diverse production contexts, both in size and level of specialization. The companies actively participated in information activities and exchanges of experiences, sharing with the trainers the main critical issues encountered in risk management in the field. In particular, the need to strengthen skills in manual handling, safe use of agricultural machinery, biological risk management, and updating company risk assessment records (DARs) emerged across the board.

In addition to the companies, representatives of professional agricultural organizations and prevention experts were involved, helping to coordinate activities, disseminate the project's content, and strengthen dialogue between companies and institutions. In this context, a particularly important role was played by professionals from the regional healthcare system, particularly SPESAL operators, and INAIL experts, who provided data, tools, and interpretative guidelines for an updated understanding of the accident phenomenon and emerging risk profiles.

This setup allowed for the creation of a collaborative and mutually learning environment, in which each stakeholder was able to contribute to the validation of the guidelines and the strengthening of the culture of prevention in the agricultural sector.

A particularly significant contribution was made by INAIL, which during the accompanying project presented a detailed analysis of the trend in accidents in agriculture, with specific reference to the Apulian context. The intervention highlighted the persistence of several structural critical issues, including the high incidence of underreported minor accidents, irregular employment relationships, and difficulties in controlling risks related to seasonality and the presence of immigrant workers.

Interpreting the INAIL data provided an empirical basis for prioritizing the guidelines, strengthening the focus on often overlooked aspects such as the risk of inappropriate posture, work-related stress, and the use of obsolete mechanical equipment. Furthermore, INAIL proposed the use of already available prevention tools (e.g., sector-specific checklists, job specific risk sheets, and information databases), encouraging greater employer accountability in updating the DVRs.

Alongside INAIL, the technical representatives of the SPESAL service of the Apulian Local Health Authority (ASL) helped translate the regulatory content into operational guidelines, clarifying the scope of responsibility of the various company entities and illustrating the proper management of personal protective equipment, pesticides, and work equipment. Their intervention served as a link between agricultural businesses and regulatory authorities, raising participants' awareness of the civil and criminal consequences of safety violations.

Overall, the interaction between production, organizational, and technical stakeholders has allowed us to structure a truly participatory process and enrich the guidelines with content relevant to the local context, also validated from a regulatory and statistical perspective.

### Formalization methods

The formalization of the local agreement in the SAGRI project took place through a process inspired by the principle of voluntary and informed participation, consistent with the objectives of active participation and widespread accountability that guided the entire process. In the absence of a contractual provision for the collection of official signatures from the participating companies, a substantive formalization model was chosen based on documented evidence of participation and qualitative assessment tools.

Specifically, agricultural businesses expressed their consent to the adoption of the guidelines through:

- active participation in the activities planned as part of the November 2024 accompanying action.
- completing the final evaluation forms and questionnaires distributed at the end of the training sessions, which included sections dedicated to the perceived usefulness of the guidelines and the intention to apply them in the company context.
- direct interaction with the trainers, during moments of collective discussion and in thematic workshops, where practical cases were illustrated and qualitative observations were collected.

This approach has allowed us to build a flexible yet traceable formalization model, capable of capturing concrete signs of commitment without imposing formal constraints not foreseen by the project. The documentation collected (attendance signatures, evaluation forms, certificates of participation, photographic material) constitutes a useful documentary basis supporting the validity of the local agreement and can be used for monitoring or replication. In this sense, there has been a widespread willingness to integrate the document's contents into their management tools (e.g., DVRs, internal procedures, periodic training), with the aim of strengthening safety oversight within companies.

Based on this experience, it is suggested that any subsequent actions may include:

- the formalization of the agreement through the signing of a memorandum of understanding by the companies and representative organizations involved.
- the introduction of ongoing technical support (e.g., safety desks, company tutors, support for drafting DVRs) that can strengthen the effective application of the guidelines.

The active involvement of local public bodies, such as local health authorities, employment centers, agricultural schools and regional phytosanitary services, to create institutional synergies and encourage the participation of smaller and more isolated businesses.

Finally, the systematic collection of participants' final evaluations highlighted a general appreciation for the content delivered and its applicability.

**Impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto**  
**SAGRI – HEALTH AND SAFETY IN AGRICULTURE**

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE (SA-0100117), finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a MERUCCI PELLEGRINO in qualità di AMMINISTRATORE  
dell'organizzazione/azienda LA ECO SOC. AGR. con sede in FOGGIA  
tel.: 340 9460481 e e.mail: agricolo@laecomasghe.it

**PREMESSO CHE:**

- l'Organizzazione condivide il contenuto delle "Linee Guida congiunte sulla Sicurezza e Salute in Agricoltura – il caso Puglia" redatto da CIA Puglia;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*  
e

**SI IMPEGNA A:**

1. **valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;
2. **promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

3. **implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;
4. **monitorare l'efficacia** delle azioni intraprese, secondo i principi del miglioramento continuo, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;
5. **condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo, si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Luogo e data

Foligno, 04/07/2025

  
Firma e timbro  
del Legale Rappresentante

**Impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto**  
**SAGRI – HEALTH AND SAFETY IN AGRICULTURE**

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE (SA-0100117), finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a PIANO ANGELO, in qualità di Socio  
dell'organizzazione/azienda EREDI DI PIANO FRANCESCO SS con sede in  
LUCEAT, tel.: 330-436587 e e.mail:  
raffaello.miano@libero.it

**PREMESSO CHE:**

- l'Organizzazione condivide il contenuto delle "Linee Guida congiunte sulla Sicurezza e Salute in Agricoltura – il caso Puglia" redatto da CIA Puglia;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*  
e

**SI IMPEGNA A:**

1. **valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;
2. **promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

3. **implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;
4. **monitorare l'efficacia** delle azioni intraprese, secondo i principi del miglioramento continuo, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;
5. **condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo, si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Luogo e data

Foggia, 4/03/25

Firma e timbro

del Legale Rappresentante



**Impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto**  
**SAGRI – HEALTH AND SAFETY IN AGRICULTURE**

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE (SA-0100117), finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a ROBERTO SILVANA, in qualità di TITOLARE  
dell'organizzazione/azienda ROBERTO SILVANA, con sede in  
MANFREDOPIA, tel.: 339 11 95 372 e e.mail:  
roberto.silvana.sc64@gmail.com

**PREMESSO CHE:**

- l'Organizzazione condivide il contenuto delle "Linee Guida congiunte sulla Sicurezza e Salute in Agricoltura – il caso Puglia" redatto da CIA Puglia;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*  
e

**SI IMPEGNA A:**

1. **valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;
2. **promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

3. **implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;
4. **monitorare l'efficacia** delle azioni intraprese, secondo i principi del miglioramento continuo, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;
5. **condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo, si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Luogo e data

Foggia, 01.07.2025

Firma e timbro

del Legale Rappresentante



**Impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto**  
**SAGRI – HEALTH AND SAFETY IN AGRICULTURE**

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE (SA-0100117), finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a MERCURIO PELLEGRINO, in qualità di TITOLARE  
dell'organizzazione/azienda MERCURIO PELLEGRINO con sede in  
FOGGIA tel.: 3409460488 e e.mail:  
mercurio@agribio.it

**PREMESSO CHE:**

- l'Organizzazione condivide il contenuto delle "Linee Guida congiunte sulla Sicurezza e Salute in Agricoltura – il caso Puglia" redatto da CIA Puglia;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*  
e

**SI IMPEGNA A:**

1. **valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;
2. **promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

3. **implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;
4. **monitorare l'efficacia** delle azioni intraprese, secondo i principi del miglioramento continuo, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;
5. **condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo, si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Luogo e data

Foggia, 04/04/2025

  
Firma e timbro  
del Legale Rappresentante

**Impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto**  
**SAGRI – HEALTH AND SAFETY IN AGRICULTURE**

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE (SA-0100117), finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/p IAKFAZDANO ANDREA in qualità di TITOLORE  
dell'organizzazione/azienda IAKFAZDANO con sede in  
FOGIA, tel.: 3473804513 e e.mail:  
ANISBIA IAKFAZDANO ZSOGHAK.COM

**PREMESSO CHE:**

- l'Organizzazione condivide il contenuto delle "Linee Guida congiunte sulla Sicurezza e Salute in Agricoltura – il caso Puglia" redatto da CIA Puglia;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*  
e

**SI IMPEGNA A:**

1. **valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;
2. **promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

3. **implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;
4. **monitorare l'efficacia** delle azioni intraprese, secondo i principi del miglioramento continuo, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;
5. **condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo, si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Luogo e data

FOGGIA, 04/07/2025

Firma e timbro

del Legale Rappresentante



## CHAPTER 4 STAKEHOLDERS'S COMMITMENT FOR ALBANIAN TERRITORY TO GUARANTEE THE ADOPTION OF THE PROPOSED GUIDELINES



### GUIDE 1: Chemical Risk Management in Agricultural Farms

#### Purpose:

To ensure the safe use, handling, and disposal of agrochemicals (e.g., pesticides, herbicides, fertilizers) in greenhouses, orchards, and vineyards.

#### Instructions for Implementation:

**Inventory and Labeling** o Maintain an up-to-date inventory of all chemical products. o Ensure proper labeling in Albanian and compliance with GHS (Globally Harmonized System) symbols.

#### Storage

- o Chemicals stored in locked, ventilated rooms with spill containment systems.
- o Separate storage from food, feed, and flammable materials.

#### Personal Protective Equipment (PPE)

- o Mandatory use of gloves, goggles, masks, and protective clothing during handling.
- o Provide training on proper PPE use and maintenance.

#### Application

- o Follow the manufacturer's instructions and legal limits (dose, frequency, safety interval).
- o Avoid spraying in windy or high-temperature conditions.

#### Disposal

- o Triple rinse empty containers; puncture and store separately for authorized collection.
- o No disposal in water bodies, soil, or regular waste.

**Emergency Measures** o Display safety data sheets (SDS) in workin areas.

- o Provide eye-wash stations and first aid kits near application areas.

**Training & Documentation** o Annual training sessions for workers. o Logbooks for application dates, chemical used, quantity, operator, weather conditions.

**Monitoring & Inspection Checklist** o Storage room compliant (yes/no) o PPE available and used (yes/no) o Application records maintained (yes/no) o Containers disposed correctly (yes/no)

## **GUIDE 2: Noise and Vibration Risk Management in Vineyards and Orchards**

### **Purpose:**

To protect workers from long-term exposure to machinery noise and vibrations (e.g., from tractors, harvesters, sprayers) in vineyards and orchards.

### **Instructions for Implementation:**

#### **Assessment**

- o The vineyard/orchard manager shall identify machinery with >85 dB(A) noise or vibration exposure exceeding daily action limits.
- o He will conduct annual noise/vibration measurements or request supplier data.

#### **Engineering Controls**

- o The manager will use vibration-dampening seats and anti-vibration gloves.
- o He will maintain machines regularly to reduce excess noise/vibration.

#### **Work Organization**

- o Limit exposure time per operator/day.
- o Rotate tasks to reduce continuous exposure.

#### **Personal Protective Equipment**

- o The operators will be equipped with ear protection: earplugs or earmuffs for all workers exposed to >80 dB(A).
- o The operators will be equipped with anti-vibration gloves for handheld equipment (chainsaws, mowers).

#### **Training & Awareness**

- o Workers shall receive training on the risks and symptoms (e.g., hearing loss, white fingers). Part of the trainings shall be carried out by the Council of Albanian Agribusiness.
- o Posters and signage shall be displayed in high-exposure areas.

#### **Medical Surveillance**

- o The doctor assigned to the business shall arrange for annual audiometric tests and health checks for exposed workers.

### Monitoring & Inspection Checklist

- Equipment noise level assessed (yes/no)
- PPE available and used (yes/no)
- Rotation of tasks implemented (yes/no)
- Maintenance log updated (yes/no)

### **GUIDE 3: Biological Hazard Control in Livestock Production**

#### **Purpose:**

To minimize risks from biological agents such as bacteria, fungi, viruses, mold, and zoonoses (e.g., leptospirosis, Q fever) in livestock farms.

#### **Instructions for Implementation:**

##### **Risk Identification**

- The manager of the livestock farm shall identify tasks with exposure (handling manure, livestock, irrigation water).
- He will monitor for mold or rodent infestation in storage areas.

##### **Hygiene Practices**

- The farm manager will implement handwashing facilities with soap and clean water at multiple sites.
- He will prohibit eating/smoking in work areas.

##### **Protective Measures**

- Gloves, boots, and coveralls for manure, compost, or animal handling will be distributed to all workers as protective measures.
- Respirators will be available when dealing with dust, mold, or spores.

##### **Pest and Rodent Control**

- Regular disinfection of animal areas.
- Use traps or pest control services to limit biological vectors.

##### **Vaccination & Health Surveillance**

- Livestock farm manager will ensure that all workers (e.g., tetanus) are vaccinated as appropriate.
- He will encourage symptom reporting and provide medical follow-up if needed.

##### **Training & Documentation**

- Staff will be trained on biological risks and symptoms (e.g., respiratory or skin conditions). Part of the trainings will be delivered by the Council of Albanian Agribusiness.
- The livestock farm manager will keep health records and exposure incidents on file.

## Monitoring & Inspection Checklist

- Hygiene facilities
- functional (yes/no)
- PPE used properly (yes )
- Signs of infestation addressed (yes/no)
- Training records available (yes/no)

The farms involved signed 3 different letters of commitment with the following content:

### **Letter of Commitment for the Adoption of the Guide on Chemical Risk Management in Agricultural Farms**

I recognize the importance of improving occupational safety and health (OSH) in the agricultural sector to protect workers, enhance productivity, and align with the Albanian legislation and European Union (EU) standards.

By signing below, the agricultural business acknowledges his commitment to the terms of this Letter of Commitment and his shared responsibility for improving OSH in the agricultural sector.

### **Letter of Commitment for the Adoption of the Guide on Noise and Vibration Risk Management in Vineyards and Orchards**

I recognize the importance of improving occupational safety and health (OSH) in the agricultural sector to protect workers, enhance productivity, and align with the Albanian legislation and European Union (EU) standards.

By signing below, the agricultural business acknowledges his commitment to the terms of this Letter of Commitment and his shared responsibility for improving OSH in the agricultural sector.

### **Letter of Commitment for the Adoption of the Guide on Biological Hazard Control in Livestock Production**

I recognize the importance of improving occupational safety and health (OSH) in the agricultural sector to protect workers, enhance productivity, and align with the Albanian legislation and European Union (EU) standards.

By signing below, the agricultural business acknowledges his commitment to the terms of this Letter of Commitment and his shared responsibility for improving OSH in the agricultural sector.

### Implementation & Compliance Sheet – Biological Hazard

Name of Agribusiness/Farm: Fennur - Sokey

Location: Fennur - Sokey - Fier

Date of Implementation Review: 20 / 01 / 2025

Reviewed by (Name & Title): Edmond Sokey

Contact: 0684036186

| No. | Implementation Measure                     | Status (✓) | Comments/Notes                                  |
|-----|--------------------------------------------|------------|-------------------------------------------------|
| 1   | Tasks with biological risks identified     | ✓          | Composting and irrigation water tasks flagged   |
| 2   | Hygiene facilities and procedures in place | ✓          | Soap, clean water and handwash areas functional |
| 3   | Protective clothing used for risk tasks    | ✓          | Gloves and masks used with compost and animals  |
| 4   | Rodent and pest control activities done    | ✓          | Traps and disinfection logs maintained          |
| 5   | Vaccination status checked and updated     | ✓          | Tetanus vaccine updated for 2025                |
| 6   | Training on biological risks conducted     | ✓          | March 2025 training with vet support            |
| 7   | Record of exposures maintained             | ✓          | No reported incidents to date                   |
| 8   | Internal review conducted regularly        | ✓          | Bi-annual review by team lead                   |

Signature of Responsible Person: Edmond Sokey

Position: Administrator

Date: 20 / 1 / 2025

## Implementation & Compliance Sheet – Chemical Risk

Name of Agribusiness/Farm: BIOGREEN SHIP

Location: Sheq i Madh, Fier

Date of Implementation Review: 22/04/2025

Reviewed by (Name & Title): Enxhet Kullaj

Contact: 0686296130

| No. | Implementation Measure                                       | Status (✓) | Comments/Notes                      |
|-----|--------------------------------------------------------------|------------|-------------------------------------|
| 1   | Risk assessment conducted and documented                     | ✓          | 5x5 Matrix used in April 2025       |
| 2   | PPE provided and used by workers                             | ✓          | Gloves, masks, goggles in use       |
| 3   | Training on safe practices conducted                         | ✓          | April 2025, 7 workers trained       |
| 4   | Storage/application rules followed                           | ✓          | Chemical cabinet with ventilation   |
| 5   | Emergency equipment in place (e.g., eye wash, first aid kit) | ✓          | Located near greenhouse             |
| 6   | Record-keeping up to date                                    | ✓          | Application logs updated weekly     |
| 7   | Waste disposal procedures implemented                        | ✓          | Empty containers managed separately |
| 8   | Periodic internal control performed                          | ✓          | Reviewed monthly by site supervisor |

Signature of Responsible Person: Enxhet Kullaj

Position: Administrator

Date: 22/04/2025

## Implementation & Compliance Sheet – Noise & Vibration

Name of Agribusiness/Farm: ReSuli Farm

Location: Vadhize - Fier

Date of Implementation Review: 21 / 01 / 2025

Reviewed by (Name & Title): Enver Kuran

Contact: 0684096126

| No. | Implementation Measure                          | Status (✓) | Comments/Notes                              |
|-----|-------------------------------------------------|------------|---------------------------------------------|
| 1   | Noise/vibration risk sources identified         | ✓          | Tractor and chainsaw listed as main sources |
| 2   | Noise and vibration measurements taken          | ✓          | Measured with dB meter in March 2025        |
| 3   | Use of ear protection and anti-vibration gloves | ✓          | All workers using earmuffs and gloves       |
| 4   | Task rotation implemented to limit exposure     | ✓          | Shift schedule adjusted to reduce exposure  |
| 5   | Machinery maintenance performed                 | ✓          | Engine oil change and seat dampers checked  |
| 6   | Health surveillance in place (audiometry, etc.) | ✓          | Hearing checks in annual health review      |
| 7   | Training on noise/vibration risks conducted     | ✓          | Risk awareness posters installed            |
| 8   | Internal control check conducted                | ✓          | Supervisor logs reviewed quarterly          |

Signature of Responsible Person: Et'hem Resuli

Position: Administrator

Date: 21 / 1 / 2025

## CHAPTER 4 - Local Stakeholders' Commitment to Guarantee the Adoption of the Guidelines in Montenegro



The long-term success and sustainability of the proposed Occupational Safety and Health (OSH) guidelines depend on active engagement and commitment from key stakeholders in

Montenegro's agricultural sector. This chapter provides an overview of how local SMEs were involved in the testing phase, summarizes the formal support gathered through signed Letters of Commitment, and outlines strategic recommendations for institutional follow-up and integration of OSH practices into national policies.

### Involvement of Agricultural SMEs

A total of ten agricultural SMEs were involved in the testing and validation phase of the proposed Occupational Safety and Health (OSH) guidelines in Montenegro. The selection of SMEs was carried out in cooperation with the Safety at Work Association of Montenegro (SWAM), ensuring diversity in terms of geographic location, size, and production type.

The participating SMEs operate across key sub-sectors of agriculture, including:

- Dairy production
- Livestock farming
- Fruit and vegetable production
- Organic farming and olive oil production

These enterprises actively participated in structured training sessions organized as part of the project's testing phase. Each training included theoretical presentations, interactive discussions, and practical demonstrations focused on core OSH topics such as machinery safety, chemical handling, ergonomic risks, and emergency response procedures.

In addition to participating in training and feedback sessions, all ten SMEs were invited to formally confirm their support for the adoption and implementation of the OSH guidelines by signing a Letter of Commitment. This document serves as a declaration of intent, aligning the SMEs with European standards and demonstrating their willingness to improve occupational safety and health practices within their organizations.

The involvement of these SMEs plays a crucial role in ensuring the practical relevance of the proposed guidelines and in promoting a culture of safety and prevention in Montenegro's agricultural sector. Their active participation reflects a shared commitment to improving working conditions and aligning local practices with international standards.

## 4.2 Summary of Signed Commitments and Support

Following the completion of the field testing phase in February and March 2025, all ten participating agricultural SMEs were invited to formalize their support for the adoption of the proposed Occupational Safety and Health (OSH) guidelines through the signing of Letters of Commitment.

As of the date of this report, all ten SMEs have confirmed their willingness to adopt the proposed OSH guidelines and have signed Letters of Commitment. The list of participating and committed SMEs is as follows:

1. Company 1: "13. jul – Plantaže" (Podgorica)
2. Company 2: Dairy „Lazine“ Ltd. (Danilovgrad)
3. Company 3: „Moric“ Ltd. – Luštica, Herceg Novi
4. Company 4: „Monte Bianco“ Ltd. – Danilovgrad
5. Company 5: „Naša Farma“ Ltd. – Spuž (Danilovgrad)
6. Company 6: „Franca“ Ltd. – Bijelo Polje
7. Company 7: „Niksen Čavor“ Ltd. – Kotor
8. Company 8: „Monteproduct“ Ltd. – Tivat
9. Company 9: Raketnić Farm – Kosanica, Pljevlja
10. Company 10: „Naše Voće“ Ltd. – Župa, Nikšić

The Letters of Commitment are non-binding but serve as formal declarations of intent, demonstrating the SMEs' readiness to integrate the proposed OSH guidelines into their internal policies and operational practices. This commitment reflects a joint effort to promote safer and healthier working environments in Montenegro's agricultural sector, in line with the objectives of the Interreg IPA CBC South Adriatic Programme.

## Recommendations for Follow-up and Institutional Support

To ensure the sustainable adoption and continuous improvement of Occupational Safety and Health (OSH) practices in the agricultural sector in Montenegro, several follow-up actions and institutional support mechanisms are recommended:

- **Establishment of a Permanent National OSH Working Group for Agriculture**  
dedicated multi-stakeholder body involving representatives from the Ministry of Labor and Social Welfare, the Ministry of Agriculture, Forestry, and Water Management, agricultural SMEs, OSH experts, and workers' associations should be formalized. Its role would include monitoring guideline implementation, updating national policies, and coordinate awareness-raising campaigns.
- **Integration of OSH Guidelines into National Agricultural Development Strategies**  
The proposed OSH guidelines should be officially integrated into relevant national development strategies and programs, such as rural development measures, IPARD support schemes, and food safety frameworks, ensuring that safety and health become standard components of Montenegro's agricultural growth.

- **Regular Monitoring and Evaluation Mechanisms**

National monitoring mechanism should be established to regularly assess the implementation of OSH measures in agricultural SMEs. This could include periodic field visits, data collection on occupational injuries and risks, and structured feedback loops between inspectors, enterprises, and institutions.

- **Financial and Technical Support for SMEs**

Small and medium-sized enterprises often lack the financial capacity to fully implement OSH measures independently. Therefore, the introduction of subsidy programs, cofinancing schemes, or tax incentives aimed specifically at improving OSH infrastructure (e.g., protective equipment, digitalization tools, workplace adaptations) is recommended.

- **Development of Standardized Training Modules and E-Learning Platforms** In cooperation with vocational education centers and professional associations, standardized OSH training modules tailored to the agricultural sector should be developed. This includes both in-person and digital formats to reach rural areas more effectively.

- **Promotion of OSH Awareness through Public Campaigns**

national public awareness campaign should be launched to highlight the importance of OSH in agriculture, targeting both employers and workers. Such initiatives would support cultural change and foster a more proactive approach to risk prevention.

By implementing these recommendations, Montenegro can strengthen its institutional framework for OSH in agriculture, ensuring that the guidelines developed through this project become a lasting and functional part of the national safety and health system.

These recommendations complement the strategic guidelines presented in Chapter 2 and reflect the collective input from participating SMEs and institutional partners engaged throughout the project.

#### CHAPTER 4- LETTER OF COMMITMENT LOCAL STAKEHOLDERS MOLISE REGION



**Oggetto:** *Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY*

*IN AGRICULTURE, finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro*

Il sottoscritto/a **Cianfagna Mariarosaria**, in qualità di titolare dell'azienda Agricola Cianfagna, con sede in Via XXIV Maggio, 60 - Civitacampomrano

##### **PREMESSO CHE:**

- l'azienda agricola condivide il contenuto delle "Linee Guida sulla Sicurezza e Salute in Agricoltura" redatto dal GAL Molise;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

##### **CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*

e

#### SI IMPEGNA A:

**valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione; promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;

**condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

**promuovere l'informazione** e la formazione dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

**implementare strumenti operativi** ispirati alle linee guida, quali: check-list, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;

**Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo,**

si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Firma e timbro  
AZIENDA AGRICOLA  
**CIANTAGNA MARIA ROSARIA**  
LABORATORIO DI PRODUZIONE  
C.so XXIV Maggio, 58 - 06030 CIVITACANTÙ (RM)  
Tel. 0874 748333 - Cell. 334 2705567  
Partita IVA 00977300706

**Oggetto:** *Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE, finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro*

Il sottoscritto/a **Carelli Silverio**, in qualità di titolare dell'azienda Agricola Li.Si., con sede in Via Cuoco, 38 - Civitacampomrano

**PREMESSO CHE:**

- l'azienda agricola condivide il contenuto delle "Linee Guida sulla Sicurezza e Salute in Agricoltura" redatto dal GAL Molise;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*

e

**SI IMPEGNA A:**

**valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;  
promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;

**condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

**promuovere l'informazione** e la formazione dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

**implementare strumenti operativi** ispirati alle linee guida, quali: check-list, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;

**Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo,**

si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

**AGRICOLA LISI SAS**  
**di CARELLI SILVERIO & C.**  
Via Vincenzo Gucco, 38  
86030 CIVITA' CAMPOMARANO (CB)  
Part. IVA 01532600703

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE, finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a Salvatore Michele, in qualità di titolare dell'azienda Agricola Salvatore Michele con sede in Borgata Caccavelli, 48 - Spinete

**PREMESSO CHE:**

- l'azienda agricola condivide il contenuto delle "Linee Guida sulla Sicurezza e Salute in Agricoltura" redatto dal GAL Molise;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*

e

**SI IMPEGNA A:**

**valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;  
promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;

**condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

**promuovere l'informazione** e la formazione dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

**implementare strumenti operativi** ispirati alle linee guida, quali: check-list, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;

**Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo,**

si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Firma e timbro  
AZIENDA AGRICOLA  
**Salvatore Michele**  
B.ta Caracciolo, 48 - 86028 SPINETE (CB)  
C.F.: SLVMHL65R22I910I - P.I.: 00950440701  
Cod. Azienda 003 CB 152

**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE, finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a **Nardoia Maurizio**, in qualità di titolare dell'azienda Agricola Rocconardi con sede in c/da Piane, snc - Ferrazzano

**PREMESSO CHE:**

- l'azienda agricola condivide il contenuto delle "Linee Guida sulla Sicurezza e Salute in Agricoltura" redatto dal GAL Molise;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*

e

**SI IMPEGNA A:**

**valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione; promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;

**condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per il miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

**promuovere l'informazione** e la formazione dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

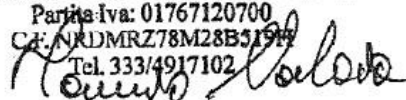
**implementare strumenti operativi** ispirati alle linee guida, quali: check-list, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;

**Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo,**

si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.

Firma e timbro

Azienda Agricola "RoccoNardi"  
di Nardoia Maurizio  
Contrada Piane s.n.c. - 86010 Ferrazzano CB  
Partita Iva: 01767120700  
C.F. NRDMRZ78M28B3194  
Tel. 333/4917102



**Oggetto:** Lettera di impegno per l'adozione delle Linee guida congiunte per la prevenzione dei rischi per la salute e la sicurezza nel settore agricolo, nell'ambito del progetto SAGRI – HEALTH AND SAFETY IN AGRICULTURE, finanziato dal Programma Interreg IPA CBC Italy–Albania–Montenegro

Il sottoscritto/a **Michela Petrino**, in qualità di titolare dell'azienda Agricola Terre di Cerreto con sede in Via Cerreto, snc – San Massimo

**PREMESSO CHE:**

- l'azienda agricola condivide il contenuto delle "Linee Guida sulla Sicurezza e Salute in Agricoltura" redatto dal GAL Molise;
- le linee guida rappresentano uno strumento operativo per il supporto tecnico-scientifico di esperti e rappresentanti istituzionali, tecnici e operatori del settore agricolo per rafforzare la cultura della prevenzione nel comparto agricolo;
- l'adozione delle linee guida si inserisce nella strategia di miglioramento continuo delle condizioni di salute e sicurezza sul lavoro, in coerenza con quanto previsto dal D.Lgs. 81/08 e con i principi del ciclo PDCA (Plan-Do-Check-Act);

**CON LA PRESENTE LETTERA,**

**DICHIARA** la volontà dell'organizzazione di **aderire volontariamente** ai contenuti delle *Linee Guida*

e

**SI IMPEGNA A:**

**valutare criticamente** l'applicabilità delle indicazioni contenute nel documento, con l'obiettivo di integrare le misure più pertinenti all'interno del proprio sistema di prevenzione e protezione;

**promuovere l'informazione e la formazione** dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

**implementare strumenti operativi** ispirati alle linee guida, quali: *check-list*, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, promuovendo un approccio partecipativo alla sicurezza che coinvolga anche figure chiave come l'RSPP, l'RLS, il medico competente e i lavoratori stessi;

**condividere, su base volontaria**, eventuali buone pratiche, criticità riscontrate o suggerimenti per miglioramento delle linee guida, contribuendo così al consolidamento di una rete transfrontaliera di apprendimento e scambio.

**promuovere l'informazione** e la formazione dei lavoratori e dei collaboratori in merito ai rischi agricoli specifici (chimici, biologici, fisici, meccanici, ergonomici e psicosociali), anche attraverso l'uso di strumenti e materiali prodotti nell'ambito del progetto;

**implementare strumenti operativi** ispirati alle linee guida, quali: check-list, schede di valutazione del rischio, protocolli per l'uso dei DPI, schede di controllo delle attrezzature, procedure semplificate per la gestione dei compiti e la comunicazione del rischio;

**Con l'auspicio che tale impegno possa contribuire a rafforzare una cultura della prevenzione condivisa, sostenibile e applicabile alle reali esigenze del settore agricolo,**

si conferma la disponibilità dell'organizzazione a restare in contatto con i partner del progetto SAGRI anche dopo la conclusione delle attività progettuali.



### **Annex 3 : Signed Letters of Commitment from Participating SMEs (Scanned Copies)**

1. "13. jul – Plantaže" – Podgorica
2. Dairy "Lazine" Ltd. - Danilovgrad
3. "Moric" Ltd. – Luštica - Herceg Novi
4. "Monte Bianco" Ltd. – Danilovgrad
5. "Naša Farma" Ltd. – Spuž - Danilovgrad
6. "Franca" Ltd. – Bijelo Polje
7. "Niksen Čavor" Ltd. – Kotor
8. "Monteproduct" Ltd. – Tivat
9. "Raketić Farm" – Kosanica, Pljevlja
10. "Naše Voće" Ltd. – Župa, Nikšić



## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme

Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**13. jul – Plantaže**“, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 19 March 2025

Company Name: "**13. jul – Plantaže**" – Podgorica

Name of Company Representative: **Milica Filipović**

Position: **Occupational Safety and Health Officer**

Signature: \_\_\_\_\_



## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme  
Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Dairy "Lazine" Ltd**, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 23 April 2025

Company Name: **Dairy "Lazine" Ltd – Danilovgrad**

Name of Company Representative: **Milutin Đuranović**

Position: **Owner and Managing Director**

Signature: \_\_\_\_\_

*Duranovic M.*

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme

Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Moric**“ Ltd, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 4 April 2025

Company Name: "**Moric**" Ltd, Luštica – Herceg Novi

Name of Company Representative: **Ilija Moric**

Position: **Founder and Director**

Signature: Ilija Moric

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme

Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Monte Bianco**” **Ltd**, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 19 March 2025

Company Name: "**Monte Bianco**" **Ltd** - Danilovgrad

Name of Company Representative: **Nataša Kalezić**

Position: **HR Manager**

Signature: Nataša Kalezić

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme

Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Naša Farma**“ **Ltd**, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 17 March 2025

Company Name: "**Naša farma**" **Ltd**, Spuž - Danilovgrad

Name of Company Representative: **Veselin Masoničić**

Position: **Farm Manager**

Signature: \_\_\_\_\_

*Masoničić V.*

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme  
Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Franca**“ **Ltd**, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 9 April 2025

Company Name: "**Franca**" **Ltd- Bijelo Polje**

Name of Company Representative: **Radmila Bujanja**

Position: **Chief Legal Officer**

Signature: \_\_\_\_\_

*Bujanja Radmila*



## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme

Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Niksen Čavor**“ Ltd, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 17 March 2025

Company Name: "**Niksen Čavor**" Ltd, - Kotor

Name of Company Representative: **Milovan Radovanić**

Position: **Farm Manager**

Signature: \_\_\_\_\_

*Milovan Radovanić*

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme  
Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Monteproduct**“ Ltd, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 7 May 2025

Company Name: "**Monteproduct**" Ltd, - Tivat

Name of Company Representative: **Sibirjak Terzić**

Position: **Head of Technology**

Signature: *Terzić Sibirjak*

## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme  
Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Raketić Farm**“, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

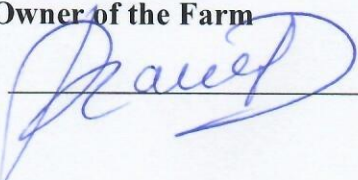
Place: Podgorica

Date: 14 May 2025

Company Name: "**Raketić Farm**", Kosanica - Pljevlja

Name of Company Representative: **Dragoje Raketić**

Position: **Owner of the Farm**

Signature: 



## LETTER OF COMMITMENT

Project: SAGRI – Interreg IPA CBC South Adriatic Programme  
Deliverable: D.1.2.9–1.2.13 – Guideline to Prevent Safety and Health Risks in the  
Agricultural Sector in Montenegro

To whom it may concern,

We, the undersigned representatives of „**Naše voće**“, hereby confirm that our company participated in the testing and validation activities related to the development of the document entitled:

“Guideline to Prevent Safety and Health Risks in the Agricultural Sector in Montenegro”, prepared within the framework of the SAGRI Project implemented under the Interreg IPA CBC South Adriatic Programme.

By signing this Letter of Commitment, we confirm our support for the objectives of the project and express our willingness to:

- support the adoption and application of the **proposed Occupational Safety and Health (OSH) Guidelines** within our company;
- promote preventive measures aimed at improving safety and health conditions for workers in agricultural activities;
- contribute, where possible, to the dissemination of good practices related to OSH in the agricultural sector in Montenegro.

This Letter of Commitment represents a declaration of support for the objectives of the project and does not create any legal or financial obligations for the Company.

Place: Podgorica

Date: 28 May 2025

Company Name: "**Naše voće**", Župa - Nikšić

Name of Company Representative: **Marija Kaluđerović**

Position: **Head of Human Resources**

Signature: \_\_\_\_\_