

MODULE 4

FARM MANAGEMENT



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Agriculture is an essential sector in the European Union as it produces an enormous amount of food products. Transport in the agricultural sector is specific both because of cyclicity and transport routes (often field) as well as the transported cargo (livestock, perishable items). When determining the mean of transport, farmers must pay attention to the safety of the transported products (e.g. pigs or massive elements).

Source: Google Images

Many studies have been evaluated to check the role of tractor accidents in the past years concerning occupational safety in the agricultural sector. The main reasons for these events have been described to be rollovers, hits, and collisions. It was also marked that the farmers had a lack of knowledge considering the safe use of tractors. In some of them, the leading reason has been reported as the operator's carelessness.

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Session 1

Farm Regulations



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European Community law sets the minimum requirements which each Member State adopts or can expand accordingly. A number of European directives have been issued on health and safety dealing with:

- minimum standards for workplaces
- vibration
- electromagnetic fields
- manual handling
- biological, chemical and physical agents
- pregnant workers and young people
- work equipment
- visual display units
- personal protective equipment
- noise
- signs
- asbestos
- mobile sites (construction)

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Session 2

Health and Safety on the Farm



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Recent technological advances have led to a renewal of interest in automating farm vehicles. There are now:

- cost-effective task-independent navigation systems
- cheap, efficient embedded vehicle computing components
- affordable Farm Management Software & Tools
- practical robotic, telepresence & artificial intelligence methodologies

Currently, some of these technologies are being applied successfully to what has come to be known as Precision Farming for tasks such as yield mapping and spatially variable herbicide or fertilizer application. Robotics is also finding success in farm applications as diverse as digging or fruit picking.

Health and safety on the farm

Automatic agricultural vehicles



Source: Google Images



LAND MOBILITY

Health and safety on the farm
Children on the farm

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OF THE 152 MILLION CHILDREN IN CHILD LABOUR

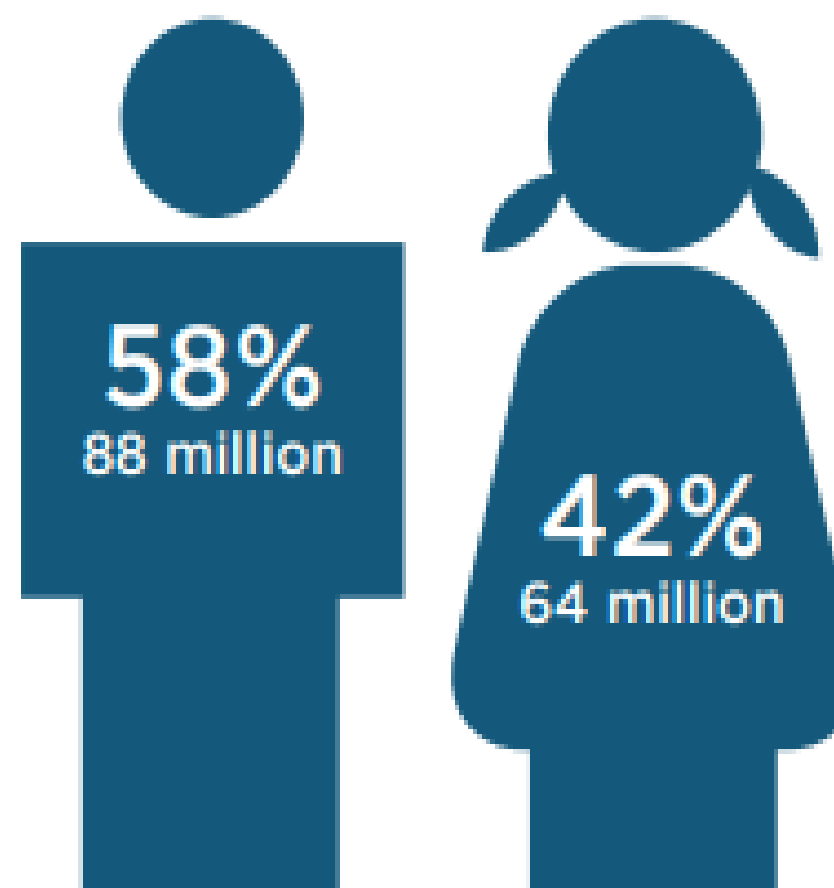
AGE PROFILE

48%
5-11 years-olds

28%
12-14 years-olds

24%
15-17 years-olds

GENDER



ECONOMIC ACTIVITY

 **70.9%**
Agriculture

 **11.9%**
Industry

 **17.2%**
Services

Source: ilo.org

Health and safety on the farm

Children on the farm



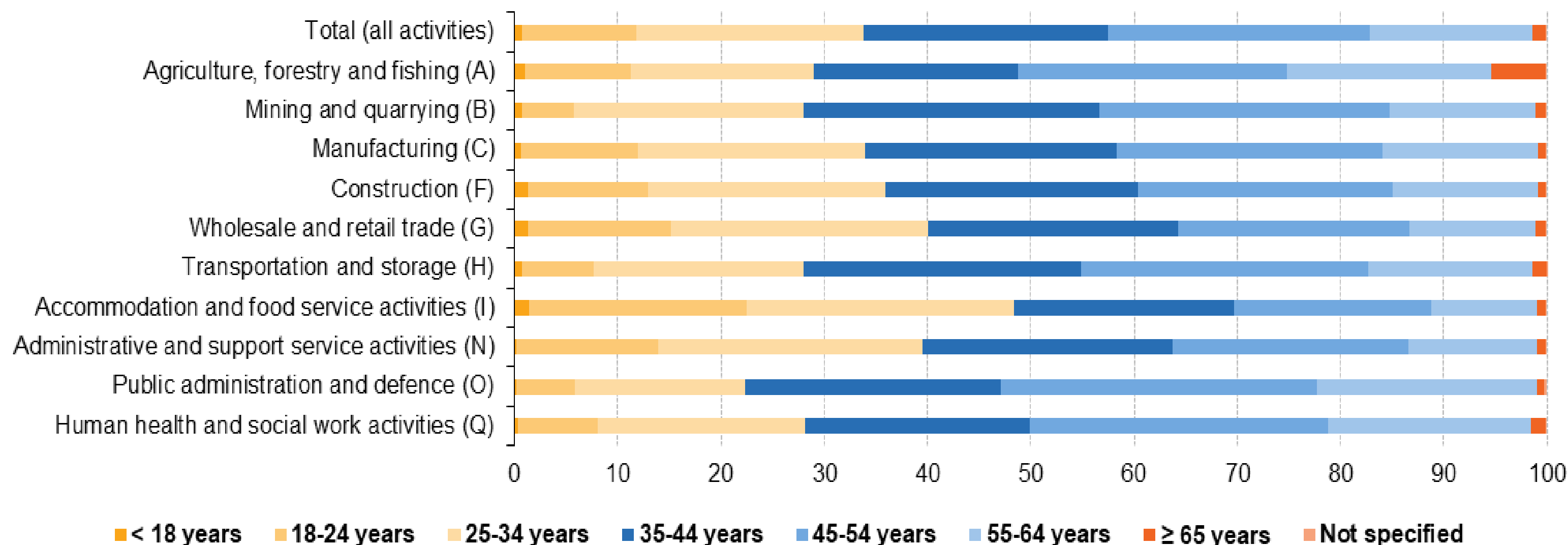
Source: Google Images

Children are fascinated with big vehicles which can lead to accidents. Under no circumstances should it be allowed for them to ride or play on tractors and other pieces of farm machinery. One of the most known hazards is letting a child ride on farm machinery that is not designed for passengers.

Agriculture is known to be one of the most important sectors worldwide - in terms of supplying foods - but also in terms of employing many workers. On the other hand, it is considered as one of the most hazardous sectors in both developing and developed countries. It has extremely high rates of accidental deaths, work-related illnesses, and injuries.

Non-fatal accidents at work, by age and economic activity, EU-28, 2017

(% of non-fatal accidents for each activity)



Note: non-fatal accidents reported in the framework of ESAW are accidents that imply at least four full calendar days of absence from work (serious accidents).

Source: Eurostat (online data code: hsw_n2_03)

Tractors are a primary source of work-related injury on farms, however, not all of the injuries happen while the tractor is being used for work.



Source: Google Images

There are three popular *types of tractor runover incidents*:

- **when a passenger (extra rider) on the tractor falls off.** Extra rider incidents happen because there is only one safe place for a person to be on a tractor, and that is in the operator's seat.
- **when the tractor operator either falls off the tractor** as it is operating **or is knocked out of the seat** by a low-hanging tree branch or another obstacle. This most often happens on older tractors that do not have a Roll-Over Protection Structure and have an older seat that has no arm or backrest.
- **when a person who is on the ground near a tractor gets run over.** This may include the tractor operator who tries to start a tractor from the ground while the tractor is in gear. This usually involves an older tractor that can be started in gear or a newer tractor when an operator attempts to bypass a newer tractor's safe start-up design.



Source: Google Images

Walk-behind rotary tillers are electric or gas-powered machines designed to cut and blend the soil by power-driven rotary action. The cutting power necessary for these machines to break hard ground or cultivate loose soil is enough to do serious harm if not used properly.

Most accidents happen when the operator:

- does not clear away loose foreign items that can be hazardous,
- does not wear protective goggles or safety glasses
- does not wear safety shoes with non-slip soles
- wears short pants
- has bare hands, as well as no ear protection



Harvester operators often do not recognize when they have "had enough" and rely on stimulants to keep them going or take depressants to calm their nerves. Drugs and alcohol are also used to work against the keen awareness.

Source: Google Images

Furthermore, operators should be dressed for comfort and safety, yet sometimes they forget about protective footwear and close-fitting clothes when working in and around machinery. Also, they are exposed to risks by not wearing appropriate safety gear such as noise, dust, or toxic materials protection.

Driving a tractor-trailer requires special training and expertise. When truck drivers fail to operate their vehicles safely, the results can be catastrophic for the drivers and passengers in the vehicles around them.



Source: Google Images

Commercial truck drivers, like all motorists, have blind spots that make it difficult to see certain areas around the car while at the controls. These "no-zones," as they are commonly referred, include the danger areas around trucks where accidents most frequently occur. Additional zones exist on either side of the truck, however, the exact boundaries on either side are undefined.

Large wind gusts created by large commercial vehicles are common factors in many tractor trailer-involved accidents. Keeping both hands on the steering wheel while passing or getting passed by a tractor trailer helps motorists maintain control of their cars despite these heavy gusts. It is also recommended to travel at a slower speed when passed or passing a tractor trailer as well.

Health and safety on the farm

General types of risk



Source: Google Images

Three basic **groups of hazards** in land mobility:

- fall,
- fall from heights,
- noise and vibrations

Specific hazards can be caused by:

- tools
- rotating elements
- maintenance, adjustment, and repairs
- fire
- electricity





Source: Google Images

Only **qualified electricians** should be employed to design, install, maintain, and repair electrical installations. Otherwise, the worker or the user of the facility runs a serious risk of electrocution and death.

General types of risk

Workers prone to land mobility risks



Source: Google Images

Furthermore, there are a few types of workers prone to land mobility risks:

- Disabled workers
- Immigrant workers
- Young workers
- Elderly workers
- Pregnant workers
- Family members

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Session 3

Risk Assessment



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The primary objective of risk assessment is to help understand farmers' exposure to risk and to provide a basis for developing appropriate solutions for transferring, mitigating, and dealing with agricultural risks.

Periodical risk assessments can provide valuable guidance to help design new plans and improve the existing ones.

Risk prevention in land mobility in the agricultural sector

General safety recommendations

Each hazard has its own rules to obey, but some recommendations can be applied in various situations. *General recommendations for farmers are:*

- purchasing high-quality tools
- periodic maintenance
- turning off all power sources when working with electricity
- checking the wear of belts, chains, and their replacement



Source: Google Images

When transporting material on public roads, the local traffic law must be obeyed. Most importantly, the total weight of the vehicle, trailer and load must be consistent with the restrictions. It is not permitted to combine trailers into double sets. Tipping the load platform on one pin or with a total angle greater than 50 degrees is forbidden. It is unacceptable to exceed the vehicle's load capacity.

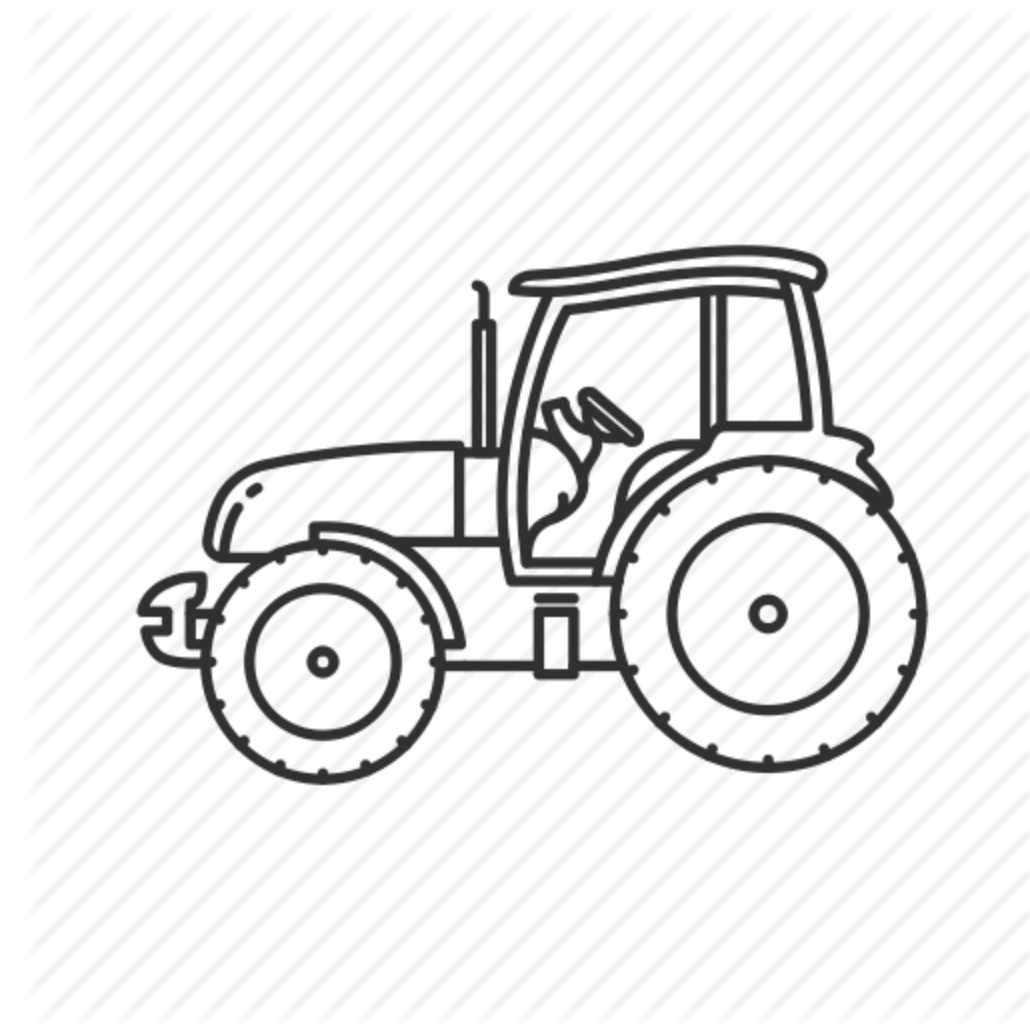


Source: Google Images

Furthermore, each vehicle must be technically suitable for road transport and marked with a special, triangular differentiating sign. It should also have work lights, designed to light up the workplace. Protruding parts, which may affect the stability of the vehicle or endanger the safety of other road users, should be disassembled, or collapsed while driving.

Risk prevention in land mobility in the agricultural sector Roll-over Protection Structure

Earthmoving machines are particularly prone to loads resulting from accidents such as rollovers or hits by falling objects. Structures protecting the machine operator during roll-overs are mandatory. Heavy vehicles operated on an uneven surface frequently roll over to the side.



The requirements for the operator protection structure on the machine during rollover are specified in the standard PN-EN ISO 3471:2009 "Earth-Moving Machinery. Roll-Over Protection Structures. Laboratory Tests and Performance."

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