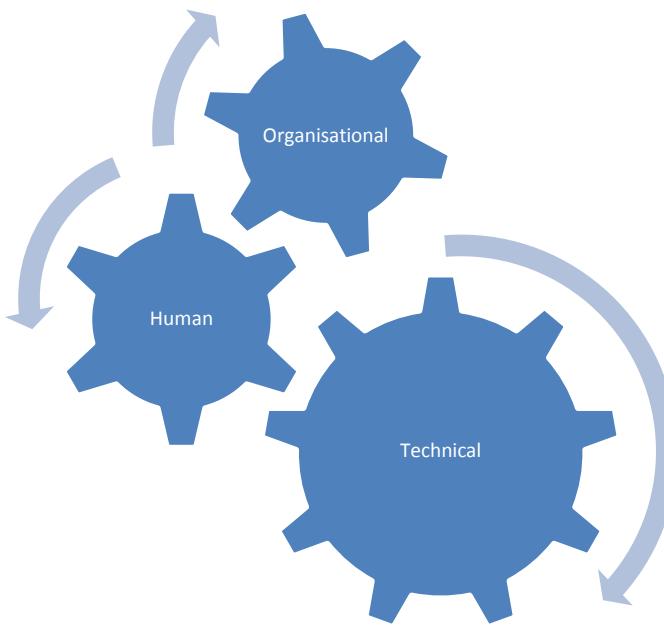


PROGRAM:	ERASMUS+
ACTION / SUBPROGRAM:	Key Action 2 / Strategic Partnerships
PROJECT TITLE:	"OSH+ for the European Agriculture sector - Stimulating growth in rural areas through capacity building for providers (and beneficiaries) of occupational medicine and OSH services"
DOCUMENT:	Preventive Measures

Introduction

The purpose of this chapter, is to explain the strategic, technical, and organizational aspects to effective prevention measures, so that the reader is able to understand the context with which corrective actions are allocated within the field of discussion, to provide some practical examples, that could be investigated further as potential solutions to live issues within their organization.



When looking at the Agricultural sector, you must look to tackling 3 aspects to this sector (1,WHO,1999) which are detailed as the following

Organizational

Central Government organizations have an important role to fulfill when tackling safety prevention. They have the important function of guiding, developing, and then communicating performance, recent developments, and general awareness within the sector. There are significant gaps between individual countries in terms of

the organizations available and the performance levels that they have been charged to oversee. With the introduction of new member states, there needs to be a period of transition, where the Government organizations, industry organizations and the actual sectors appreciate the new standards of reporting and ultimately performance is required. Each state will have its own set of parameters and pressure points when taking on these new standards. An example of this will be with the recent entry of Eastern European member states, who have a significant high labor/low technical (2, Thompson, 2016) starting point, when compared to existing Northern European states. Other organizational aspects, will be the safety culture within the individual organizations, and the need for agricultural organizations to participate and help shape future requirements.

Human

Human behavior has a significant impact on safety performance, and the labor market within the agricultural industry has a number of unique characteristics, that can have a significant adverse effect on safety performance. Certain sectors have a high reliance on transitory labor during peak harvesting periods, therefore the pressure is to "get bums on seats", whether these are trained or competent are not the first questions asked. The labor force, is also contains a higher than normal proportion of workers over 65, which have their own risk factors when looking at manual work, and use of equipment. There is also a heavy reliance on the workforce organization, with the "family"

being the core source of labor availability and the pressures of conforming to normal commercial structures and chain of command, with the existence of commercial property including personal property adding to the complexity within certain sectors.

Technical

Technical area covers the physical plant and equipment used, software used to drive equipment, along with the recent growth in media sources such as social media and material available on the internet. This is one area, where significant improvements have been made in plant design to reduce detrimental events such as fatal or non fatal injuries, yet there still remains significant scope for further development and deployment across the sectors for new technology, and the use of social medial/internet for improved communication, participation, awareness, and risk reduction.

When you are looking at all these aspects, there is the risk of "getting lost", and therefore you require a number of tools to overcome this paralysis. The most significant, is that is RISK ASSESSMENT.

This tool, will help list the risk, hazards present, it will help prioritize the levels of risk, and help develop a program of corrective actions to make the workplace(s) safer. The source of this risk assessment can be through the pan-European organizations that exist already (3, Palmerk, 2016), through individual Government organizations (4, HSE,2016), Industry specific support groups (trade, or labor based) (5, Farmwise, 2017), or even private commercial organization or individual (company standard or private consultant).

Derived from this risk assessment will be a list of corrective actions required, or open ended questions, which need answers to be sought to ensure that the correct actions are put in place. There will also be different tactics available in which to tackle this hazards. The "best fit", is what should be being sourced, so that the organization is not financially burdened beyond its capacity, that the corrective action is understandable in what it will achieve, so that the workforce adopts it, and it becomes standard practice. There are thousands of examples where tools and equipment have been purchased and the workforce never uses them, as they do not reduce the original risk, take too long to use, or introduce new risks and where supervision agrees with the workforce.

Hierarchy of Controls	
ELIMINATION	Most effective method of prevention tactic Physically remove hazard Hardest to achieve
SUSTITION	Second most effective prevention tactic Physically change hazard to a safer alternative Change Powder to liquid
ENGINEERING CONTROLS	Commonest starting point used when dealing with risk assessment Isolation between the hazard & workforce through use of barriers or equipment
ADMINISTRATIVE CONTROLS	Looks at how workforce interaction is arranged : operating procedures/rules. Effective training & awareness : changing of behaviors
PERSONAL PROTECTIVE EQUIPMENT (PPE)	Least effective, but most frequently used tactic Reliant on individual to make them self safer Short term relief, reliant on strong supervision

Preventative Measures

The following table is designed to highlight a known hazard, link it to its risk group and then suggest a preventative measure(s). These examples and solutions are not exhaustive, and may not be the best fit depending on the level of risk and the organization. This is where additional support is essential, as 1 individual does not have all the answers, in fact the risk assessment process is reliant on the involvement of a group of employees & this collaborative approach should continue especially when dealing with challenging hazards.

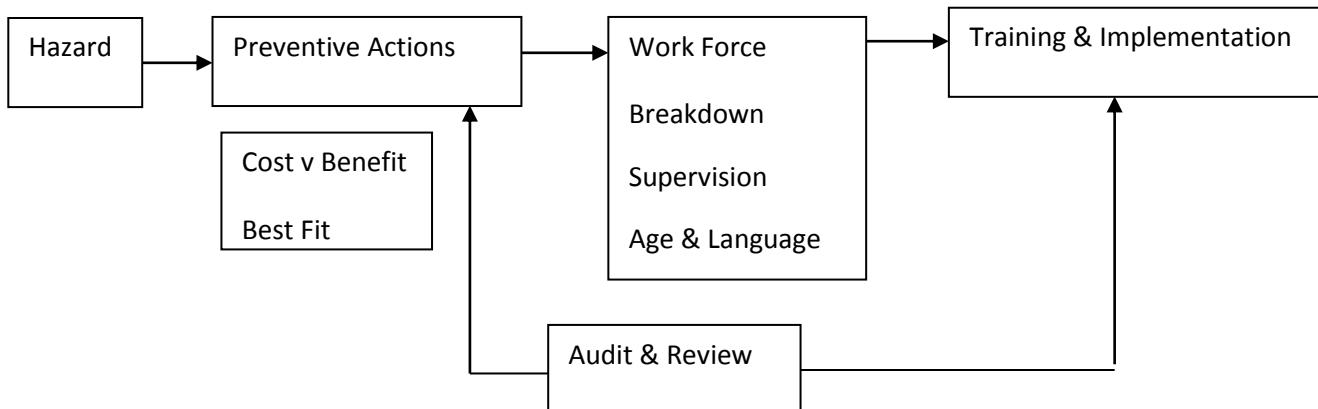
HAZARD	RISK	PREVENTION	HIERARCHY
Risk of falling out of tractor when moving from field 1 to field 2	Transportation / Machinery Contact / Crushing	Fit safety belt/harness to all vehicles. Training & Awareness on use of new safety device On-Spot inspection on new measure in use	Eng. Control & Administrative Control
Contact on Public Highway with Farm vehicle	Transportation / Machinery Contact / Crushing	Audible/Visual signage at entry points to highway. Drivers with Public license only allowed on highway. Inspection of road bound vehicles [lights] Use of Radio/Phone	Eng. Control & Administrative Control
Dust release from fertilizer bag when diluting	Biological exposure	Review chemicals with supplier & switch all powder products to either liquid or solid Purchase LEV Booth for dilution task Purchase Respiratory equipment along with Gloves, apron, Glasses	Substitution / Eng. Controls, PPE
Falling off hay barn roof	Fall from Height	Investigate the hire or purchase of drone for repair inspection tasks through farm. Discuss with local emergency services rescue provision Purchase and complete training on fall arrest equipment Barrier off work area & provide 2nd person	Elimination, Eng. Controls, Administrative Controls, PPE
Manually lifting strawberry tray onto van	Manual Handling	Investigate switching to smaller tray with lighter load Fit lifting platform into collection areas Provide improved lifting training Allow "Micro breaks" & encourage stretching exercises	Eng. Control, Administrative control.
Contact point between Vehicle & Workers	Transportation / Contact Machinery	Create barrier "drop off" zones where only vehicle allowed, or pedestrian allowed at any time : No Go zones for pedestrians Create walkway for pedestrian Install audio alarms onto vehicles Change type of vehicle used (pedestrian pallet truck instead of fork lift) High visibility jackets & Safety boots worn	Substitution / Eng Controls / Administrative Controls / PPE

HAZARD	RISK	PREVENTION	HIERARCHY
Entry into grain silo to carry out repair	Confined space / Drowning / Lone working	Discussion with local emergency services or contract specialist Provision of correct & appropriate rescue equipment Selection, awareness, & training provided given circumstances & task at hand	Eng. Controls / Administrative Controls
Repair to fish farm netting in situ	Drowning/ Entanglement	Task to be performed during daylight hours in good climatic conditions only. Appropriate rescue personnel & equipment in use. Selection, awareness, & Training provided given circumstances & task at hand	Eng. Controls / Administrative Controls
Risk of crushing from cattle	Husbandry / Crushing	Isolation holding pens, stockade equipment Use of hand tools/sticks Appropriate selection , training & awareness of risks with workforce Available local communication devices Safety shoes & impact resistance clothing	Eng Controls / Administrative Controls, PPE
Jammed equipment	Entanglement / Contact Machinery	Equipment fitted with E stops Isolation process clearly understood (ways of working), signs & training. Use of appropriate stop sticks/wedges Available local communication devices Cut resistant gloves, local lighting	Eng. Controls / Administrative Controls, PPE
Exposure to long summer weather	Biological exposure	Erection of screening from sun (fixed/mobile) Provision of protective clothing (hats with neck covers, glasses, long sleeved shirts) Use of sun creams Regular medical checks & further awareness Switch to night time working hours	Eng. Controls / Administrative controls/ PPE
Lone working	Fatigue	Manual log sheet & communication device with regular contact required Reduced hours/task rotation Restricted tasks allowed to be completed	Administrative Controls
Poor posture when harvesting apples	Muscular Skeletal	Mechanical equipment available for harvesting (crop type/ environment / cost) Manual tool [sticks, scissors, stilts) made available : team lifting training Design crops to grow in particular shape/position to make easier harvesting	Eng. Controls / PPE
Labor force of mixed language	Communication	Use of on line translation software for written material / video material from manufacturers Use of another employee to coach/train Use of diagrammatic material Restricted task training until competency demonstrated.	Administrative Controls
High levels of aged workforce	Fatigue	Increased level of eye & hearing inspections Restricted tasks when related to physical strength work Closer level of supervision & clear instructions	Administrative Controls

Recommendations

As mentioned throughout all the material, the starting point is the Risk Assessment. Make sure you have an assessment in place (carried out within the last 12months), if this does not exist - make a positive plan to complete as appropriate, and plan to complete with other employee's in attendance.

Make the risk assessment known to all relevant work force, unless they know it exists, and realize the hazards and risks associated with their work. This form of communication may take the form of a text to inform all where assessment is located, and or posted on line.



If you are unsure, seek advice from a Trade or Labor organization. Seek guidance from Government sources on the concept of assessments and look for other related assessments already completed that may help you in the process- you are not alone.

Do not worry, if it seems to be taking a long time, to complete an effective assessment you should visit each part of the operation, asking questions of the workers as you go about the hazards and asking for potential solutions from them. You may have to complete the process in a number of sessions but you will be rewarded with an accurate picture of the risks and priority list of tasks for your organizations to work towards.

Try to use resources already created, such as on line assessment forms, guidance materials on use of tractors, chain saws and other similar equipment, use manufacturers training material as part of your training. Contact industry trade representatives to ask for information, and other guidance information. Within the UK there are Approved Codes of Practice - which provide step by step guides on most aspect and sub sectors of agriculture-other member states will have their own (if not translate UK)

Link Risk Assessment information into your ways of working, so include in any training, briefings and general staff awareness. This training should be recorded (initialled by attendees), and should move towards competency based training with end test/assessment to demonstrate learning. Consider using you labor resource to help complete the training - you may be surprised by hidden talent and improved compliance.

Readily accept the breakdown of your work force, young (under 18years of age), children (under 14), aged over 60, whether migratory and develop ways of working to tackle their special needs, so translating material to their native language, using manufacturer material in their language, assigning work of a less physical nature.

Participate within industry sector prevention or improvement programs (6, IOSH, 2018) run nationally, as the information if freely available, general enough for all to understand, and starts to build up reference material and improved knowledge.

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