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# NON-TECHNICAL SKILLS IN AGRICULTURE (NTSAg)

*What are they, and why are they important?*



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*(Image provided by Iska's Images)*

## WHAT ARE NON-TECHNICAL SKILLS?

- Non-technical skills are the social and cognitive skills needed, alongside technical knowledge and experience, to perform safely and effectively at work.
- These skills have been identified as important in safety critical industries such as aviation, healthcare, offshore drilling and nuclear power.
- More recently the focus has turned to the importance of these skills in farming:

### Situation awareness

*Awareness of the world around you, anticipation of future problems*

### Decision-making

*Selecting options, managing risk, getting help when required*

### Teamwork and communication

*Working with others, co-ordinating, sharing information*

### Leadership

*Guiding the work of others, providing training and support*

### Task management

*Managing time pressure, monitoring progress, prioritisation*

## WHY ARE NON-TECHNICAL SKILLS IMPORTANT?

- The use of non-technical skills can prevent accidents and injuries.
- Failures in non-technical skills have been linked to patient mortality in healthcare, aircraft crashes in aviation and large scale disasters (such as Deepwater Horizon) in the Oil industry.
- Based on HSE accident reports failures in non-technical skills are also apparent in a range of farming accidents.
- Example (HSE, 2016): Farm worker in Wales died when a worker turned on tractor ignition, not noticing that someone was stood beside the tractor, his colleague was then crushed .
  - Failure in situation awareness (not aware of location of other people)
  - Failure in communication (no exchange of information)

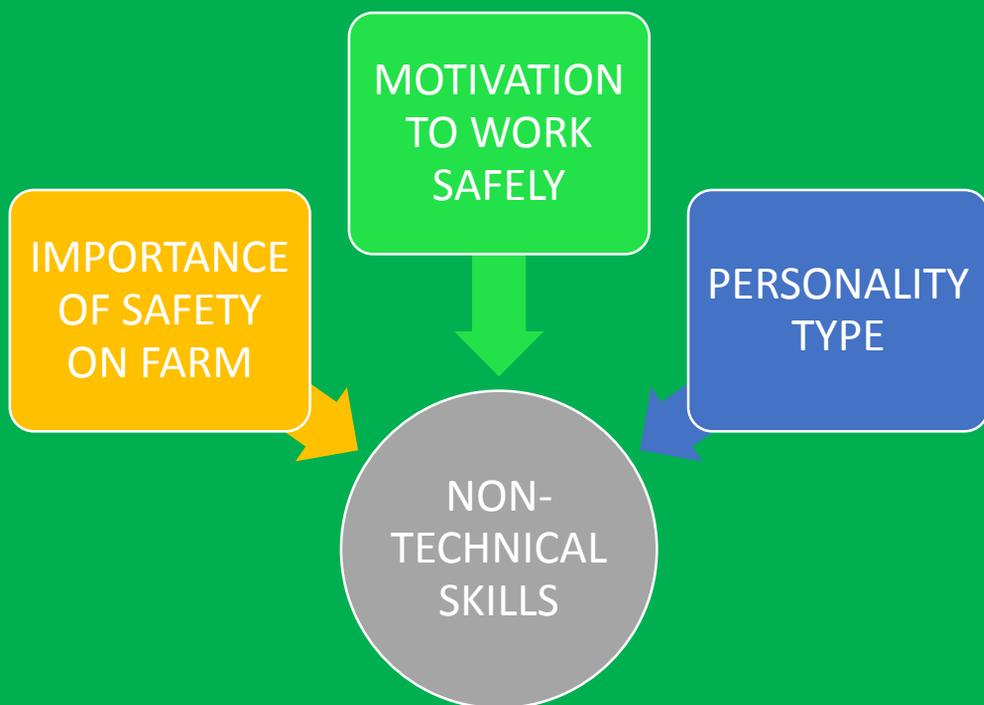
## NEW RESEARCH

- An interview study conducted by the Industrial Psychology Research Centre reported that farmers used non-technical skills when working in a team, and when working alone (see table below for lone skills) .
- When these skills were used successfully accidents and injuries were avoided. When there were failures in these skills accidents occurred as a result.

Non-technical skill category	Skill sub-category	Definition
Situation Awareness	Perception of surroundings	Maintaining an awareness of your surroundings at all times.
	Comprehension of situation	Understanding each situation. Incorporating new information into that understanding as required.
	Prediction of future events	Anticipation of potential problems, such as animal misbehaving.
Decision-making	Assessment and management of risk	Weighing up the risks and trying to minimise them where possible.
	Compensation for changing environment	Being flexible and changing your plans according to the environment.
Task management	Planning	Thinking ahead in terms of what you need to do, including what safety equipment you will need.
	Time management	Managing your time in order to get everything done without rushing.
	Monitor task progression	Keeping an eye on how tasks are going, so you can speed up or take a break as needed.
	Task focus	Concentrating on the task at hand in order to complete it to the best of your ability. Avoiding distractions.

## PERSONAL CHARACTERISTICS

- The Industrial Psychology Research Centre is continuing to conduct research in this important area. The next phase of research looked at the relationship between individual factors such as personality type, attitude towards safety and risk, and non-technical skills.
- The results indicated that farming experience (years of farming practice), neuroticism (the level to which a person worries, or becomes anxious) and conscientiousness (how thorough and meticulous a person is) were all linked to non-technical skills.
- Essentially the less you worry and the more thorough you are, the more likely you are to have a good set of non-technical skills.
- Additionally, the more motivated you are to work safely, and the more important safety is on your farm, the more proficient your non-technical skills are likely to be.



## FIND OUT MORE

- You can read more about the research mentioned here by following this link:  
<http://www.sciencedirect.com/science/article/pii/S0925753514003294>
- To get involved in this research, or to ask any questions you may have, please contact Dr Amy Irwin (a.irwin@abdn.ac.uk)