Decision-making

Farmers & Fire-fighters

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What do Farmers & Fire-fighters have in common?

Both operate in high risk situations

Both domains have a key focus on the reduction of potential risks

Both have to identify and select appropriate options in order to address risk

Both use previous experience to help make effective decisions

Both need **Decision-making** to work safely, in addition to the required technical and procedural knowledge.

What is decision-making?

The non-technical skill of decision-making has been defined as the process of selecting an option or course of action in order to address the needs of a situation.
The way in which a decision-maker reaches their decision can vary according to the type of situation: where time is not an issue multiple potential options can be considered, but in a high risk scenario they may rely on their past experience to make a quick decision.[1]

Farming and Fire-fighting: Lapses versus effective decision-making

Farming

In 2008, six tonnes of straw stored in a farm trailer ignited.[3] The owner of the farm was alerted to the fire in the early hours of the morning and quickly realised that his animals were in danger. He hooked his tractor up to the trailer full of burning straw and pulled it away from the barn.

The farmer's quick thinking saved the animals and straw inside the building, plus the barn itself. The farmer had prevented a much more serious fire and had saved his animals, as well as thousands of pounds in damage repairs in the process.

Fire-fighting

In 2016, a garden centre near Heathrow Airport caught fire.[4] Fireworks were being stored in the centre, but firefighters hosed down the storage area to prevent them from catching fire.

Several cylinders, which can explode when exposed to heat, were also being stored at the garden centre. The firefighters quickly realised the danger and managed to drag the majority of the cylinders away from the fire. The firefighters made quick decisions which prevented a potential explosion.

In both incidents:

- Decisions were made and acted upon quickly.
- The major dangers were realised, then prioritised and tackled first.
- More serious damage was prevented by effective decision-making.

Lapses in decision-making[1]

- Jumping to conclusions: Proceeding with a decision without having all of the relevant information.
- Complacency: Risks not fully considered before proceeding with a course of action.
- Not communicating: Taking action without letting others know what you plan to do.
- Lack of flexibility: Proceeding with a course of action that is not working, not taking the time to stand back and reassess the situation.

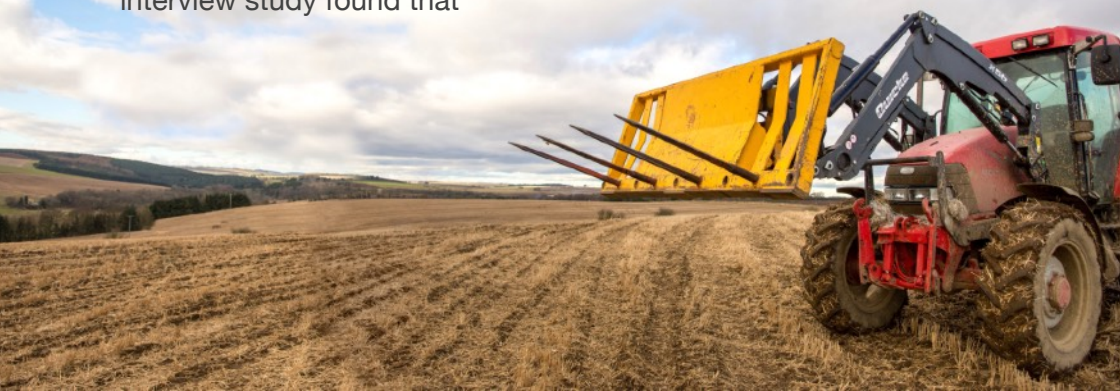
The benefit of

Knowledge and Experience

Researchers studying decision-making want to understand how individuals make difficult decisions when in trying circumstances (high stress, limited time, uncertainty etc.)[2]. This type of decision-making has been named naturalistic decision making (NDM). In essence, NDM is a framework to understand how individuals make decisions in familiar, meaningful situations[5] when under pressure or dealing with high levels of risk.

Research has identified this as the primary method used by experienced fire ground commanders, with over 80% of decisions being made by way of using experience to recognise a situation and implement appropriate courses of action[6]. Similarly, an interview study found that farmers frequently used past experience to make decisions, concerning themselves with the outcomes of previous decisions in similar circumstances when looking to make current decisions.[7]

In practice this means an experienced farmer should have a wealth of knowledge, training and past experiences to draw on when approaching any given scenario. This high level of understanding about potential risks, and methods of dealing with problems that have worked in the past, feed into decision-making. In essence a farmer should be able to recognise elements in a situation based on past experiences, they can then apply patterns of behaviour learned through training and past scenarios, in order to make a decision. This can help to increase the speed of problem assessment and help the decision-maker select a safe and effective course of action.[5]



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Decision-making is an important skill in conjunction with the safety management practices and procedures recommended by the HSE.

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NON-TECHNICAL SKILLS IN AGRICULTURE

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