

Summary Report

Agriculture Sector – Farmers and Agricultural Workers 'Safety and Attitudes to Risk' Research

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1. Background and objectives

The level of accidents, fatalities and illness occurring at work has declined across sectors in Britain in recent decades. However, the agricultural sector has not experienced a similar improvement. The sector accounts for around 20% of workplace deaths each year, despite representing just over 1% of the overall workforce.

While other research has been undertaken about risk with this sector, this study aimed to create segments or typologies to enable the Health and Safety Executive (HSE) to prioritise, target and tailor their interventions in the agricultural sector. To create these segments, the HSE commissioned Ipsos MORI to carry out qualitative and quantitative research with farmers, in order to:

- Explore perceptions of risk, risk-taking behaviour and potential accidents in a workplace context amongst farmers and agricultural workers;
- Understand drivers of risk-taking behaviour, including cultural, business and demographic factors;
- Identify the barriers to adopting less risky behaviours, in terms of awareness, engagement and taking action;
- Understand variations in attitudes and behaviour across different sizes and types of farms, and by different demographic groups (including examining possible generational differences);
- Explore reactions to different likely messages and interventions that seek to influence risky behaviours;
- Understand the influences from intermediaries and others that farmers trust (including the role of partners and families), and;
- Identify the needs for information, advice and support.

2. Research methodology

The research took an iterative approach to addressing the objectives, with learning from each phase feeding into the next. The project consisted of the following phases:

A) Scoping phase

The scoping phase was undertaken to gain a greater understanding of the various social and demographic factors which influence risk taking behaviour amongst

farmers, and to generate topics for the discussion guide for the qualitative case studies. The scoping included:

- A review of relevant literature on risk in the agricultural sector and other industries/sectors, including previous research undertaken by the HSE and work conducted outside Great Britain.
- Interviews with stakeholders. Five interviews were carried out, including with a consultant within the agricultural risk area, a senior inspector from the Health and Safety Authority in Ireland, a representative from Unite the Union, a safety ambassador for the NFU, and a senior NFU official.

B) Qualitative case studies

A total of 18 case study visits were made to farms in England, Scotland and Wales. A sample of farms was drawn from the database of farms held by Defra and the devolved administrations, containing the name and address of the farm holder, where the farm is located, the size of farm (in hectares and employees), and type of farm.

The farms were recruited using quotas on geographical area, type of farm, size of farm, history of accidents, number of employees, and farm age. The aim was to achieve a spread of different farms, rather than seeking to be strictly representative of the overall farm population. The table below shows the make-up of the farms by geographical area and farm type.

Table 1: Case study sample breakdown

	South England	Midlands	North England	Wales	Scotland	Total
Arable	3	2				5
Sheep			1	2	1	4
Dairy	1	1	2	1	1	6
Beef		1				1
Mixed			1		1	2
Total	4	4	4	3	3	18

The case studies were half day visits to each farm by Ipsos MORI researchers. They comprised a longer interview with the farmer/farm manager, and shorter interviews with family members and/ or paid farm workers where relevant.

The interviews used a flexible discussion guide, focusing on attitudes and behaviours regarding risks on the farm. This allowed interviewers to explore the broader context for farmers; whether any risky behaviours were understood to be risky; why these risky behaviours were undertaken; and barriers to safer practices. The interviews also explored participants' more general approaches to managing the farm and challenges they faced in their work; their personal and professional networks; and information sources. Learning from this phase generated initial findings, and informed the development of the questionnaire for the quantitative phase.

C) Quantitative survey

The main aim of the quantitative phase was to produce representative data that could be used to develop a segmentation of farm owners and managers.¹ The sample for the survey was drawn from the Defra farm database, and was stratified by region, type and Standard Labour Requirement (SLR) band. A 1-in-n sample of 12,000 records was drawn from the full database. Quotas were set on region, type and SLR band, with the data weighted back to the nationally representative profile after fieldwork. The interviews were conducted by Ipsos MORI's telephone centre in Edinburgh, and a total of 1,638 interviews were achieved, at an average length of 27 minutes per interview.

The questionnaire covered general attitudes to risk; attitudes to farm risks and their consequences; measures of risky behaviours; accidents on the farm; communication channels and networks; and self-reported mental wellbeing.

D) Segmentation

The segmentation was developed by Ipsos MORI from the survey data. It aimed to identify a set of independent sub-groups of farmers with a distinct set of attitudes towards health and safety. In total, 64 survey variables were analysed, covering different attitudes to a range of risks and past behaviours.²

Firstly, a Principal Components Analysis identified and measured underlying relationships between the attitudinal and behavioural variables. This found that the bulk of the variation in the 65 questions could be reduced into 16 principal components – these were then used to create segments in place of the original variables. Next, the segments were created using a Cluster Analysis, which is a

¹ As such, the quantitative findings and the segmentation are based on the attitudes and behaviours of those who own or manage farms, rather than agricultural workers overall.

² Ten survey variables with more than 10% 'not applicable' responses were excluded from the analysis.

hierarchical method of clustering. This identified the optimal number of segments to be four as it generated segments that were a good size (the smallest contained 233 respondents) and that were intrinsically different to each other. The final stage was a K-means clustering, which allocated each respondent to the nearest segment.

3. Main findings

The quantitative analysis identified four distinct segments in terms of farmers' attitudes and behaviours around risk on the farm. These are summarised in Figure 1 below, which indicates that, broadly, there is a spectrum of attitudes and behaviours, from the segment that feels safest and has fewest accidents (Planners) to the segment that feels least safe and has the most accidents (Unclear). However, there are some nuanced differences along this spectrum, and these are highlighted throughout the rest of this summary.

Figure 1: a segmentation of farmers' attitudes to risk



Taking each segment in turn:

- Planners:** this segment is the most cautious, both in their daily lives and on the farm. They worry about the consequences of accidents and are least likely to agree unsafe behavior is justifiable. These attitudes are reflected in their behaviours and experiences: they are the most active risk managers, are least likely to undertake risky behaviors, and have had fewest accidents. This segment also has the best mental wellbeing and feel safest on the farm. While the segments are distributed across demographic groups, farmers in this segment are more likely to be aged between 55-64.

- **Pragmatists:** this segment, like the Planners, feel safe on the farm, know what the risks are and don't think accidents are inevitable. Their defining characteristic is that they are much less worried than any of the other three segments about safety on the farm (for themselves or others), and about the consequences of accidents. However, they exhibit safe behaviours: for example, they are good with risk management practices, rarely work when tired, and do not tend to take risks to save time. In terms of experiences, they are relatively likely to have had accidents, and are most likely to have had longer periods off work (more than 4 months) following an accident. Farmers in this segment are more likely to be aged between 45-54.
- **Risk Takers:** the farmers in this segment are much more likely to enjoy taking risks, and are generally excited when they do not know what will happen, which are the defining characteristics of this group. They are most likely to consider accidents inevitable, and to do things they know are risky. Nevertheless, they are concerned about safety and worried about consequences if things go wrong. They have a relatively high accident rate, second only to Unclear. These farmers are more likely to be aged over 65.
- **Unclear:** despite being relatively cautious in their daily lives, farmers in this segment feel least safe on the farm and less in control of the risks they face, and they are also relatively likely to think accidents are inevitable. In terms of behaviours, they are the least likely to undertake various risk management practices, and they exhibit the riskiest behaviours, including being more likely to work when ill or tired. They have had the most accidents and near misses. While they may need the most support in managing risk, they are least likely to have sought advice about safety. Farmers in this group are more likely to be over 55, and have lower mental wellbeing

Attitudes to risk

The qualitative research found that even if farmers were not implementing formal risk management practices, they generally felt safe on their farm. They typically described this as being familiar with the risks on their farm because they had worked there for many years.

The survey findings support this, with almost all farmers (96%) saying they feel safe carrying out their work on the farm. However, Unclear farmers are less likely to *strongly* agree with this than the other segments (46% compared to 69% overall). Similarly, more than three quarters of farmers (78%) agree that they know the risks on their farm, although Unclear are again much less likely to strongly agree with this (17% compared to 33% overall). By contrast, while most farmers agree their work

comes automatically, this was lower among Planners (55% compared to 64% overall), reflecting their more conscious approach to risk management. Furthermore, most (59%) said they are more careful when working on other farms, reflecting findings from the case studies that work is done in part automatically on their own farm due to familiarity with the environment.

Risk is also seen as an inevitable part of working on a farm: 83% of farmers agree working on a farm will always be risky, although only around half as many (39%) agree accidents are inevitable. This suggests many farmers think there are steps they can take to manage risk. Risk Takers are much more likely to agree accidents are inevitable (55%). Farmers working with livestock are generally more accepting of risk.

Although almost all farmers feel safe in their work, three in ten (31%) do things they know are risky on the farm, and around one in six do things they know could get them seriously injured or killed (16%). Risk Takers are much more likely to say they do both these types of things (54% and 26% respectively).

Looking beyond their immediate context on the farm, most farmers agree people would say they are cautious (81%), and few take risks because they enjoy it (12%) or say they are excited when they don't know what will happen (10%). However, Risk Takers were again much more likely to agree they enjoy taking risks (52%) or to say they are excited when they don't know what will happen (40%).

Farmers are more worried about the safety of others (63%) than their personal safety (41%) when it comes to their work on the farm. The case studies showed many farmers therefore take on the riskiest tasks themselves, rather than asking others to do so. Pragmatists are much less worried about their own safety and the safety of others (40% and 19% worried respectively). This is the defining characteristic of this segment.

Farmers are also more worried about what would happen if a family member were killed or injured in an accident (72%) than what would happen if they were (49%). Pragmatists were again much less worried (33% and 22% respectively).

Risk management approaches

Almost all farmers say they are doing the basics of risk management, such as actively taking steps to stay safe on the farm (98%), keeping an eye out for potential hazards when working (98%) and thinking new tasks through before starting them (96%). However, strength of agreement on risk management is much lower among

the Unclear segment (41%, 33% and 29% respectively on these measures) than overall (71%, 69% and 63%).

Most farmers agree they take action straight away when something unsafe has been identified (71%), check machinery and equipment before it's used (64%) and think a task through in order to do it safely (65%). Unclear farmers are again much less likely to do these things than other segments (45%, 29% and 23% respectively).

Knowledge of specific risks is often very high, suggesting that lack of knowledge is not the main barrier to managing risk on farms. For example, most farmers would never allow children being unaccompanied on the farm (87%), and only 7% agree that working with an unguarded PTO shaft is safe if you don't go near the shaft when the machine is running. There are also few segment differences in terms of awareness of risky behaviours.

Risky behaviours

The qualitative case studies support the finding that farmers are generally knowledgeable about the basics of working safely on the farm, but nevertheless do undertake risky behaviours. For example, some said they leave machinery running or do not wait for straw dust to settle to save time, or feel wearing a helmet on a quad bike is unnecessary when familiar with the terrain.

Looking at general risky behaviours, the survey found that 16% of farmers *always* work when overtired and the same proportion always do so when sick or injured. By contrast, doing something they know is risky to save time is much less common (just 1% say they *always* do this).

Unclear stand out when it comes to their general risky behaviour. For example, 55% of farmers overall say they *never* do a job they know is risky to save time, compared to 28% among Unclear. Dairy farmers are more likely to work when sick, injured or tired, reflecting the specific work pressures they face.

When it comes to more specific risky behaviours, Risk Takers are more likely to say they *often* leaving a tractor engine running (28% compared to 19% overall) or allowing children on the farm when work is being done (11% compared to 5% overall). Unclear farmers are also more risky in some specific behaviours: 67% *never* work with an unguarded PTO shaft, compared with 80% overall.

Accidents

The qualitative case studies found that most farmers believe accidents are a part of their job, particularly for farmers working with livestock, who viewed animals as inherently unpredictable. Less serious accidents were disregarded if they did not impact on work.

In the survey, working with machinery (53%) and working with animals (49%) were spontaneously mentioned as the top two most common causes of serious accidents, significantly ahead of other causes. By far the most mentioned long term health risk was respiratory issues (67%), followed by wear and tear to the body (33%).

Accidents are common, with two in five farmers (39%) having suffered an accident in the past 5 years, and one in six having had a near miss. This is higher among the Unclear group, (45% and 23% respectively).

Of those who have had an accident, 36% were off for one day or more following their most recent, and 21% were off for one week or more, indicating fairly serious accidents. Being off for a day or more was less common among dairy farmers who had had an accident (13%), in line with the finding that they are more likely to work when sick or injured.

Networks and information sources

Family and local networks are much more widely used than national ones. For example, 74% have discussed their work on the farm in the last month with their spouse or partner, 69% with other family members and 67% with local farmers, but just 30% with national farming organisations. This highlights the strength of local networks, which may be harder for a national organisation like HSE to influence.

However, almost all farmers (92%) say they read at least one publication about farming on a regular basis, including those relevant to the type of farming that they do (68%). Magazines and newsletters from national farming organisations are also popular (62%). The segments are broadly consistent in their preferred information sources. This means that targeting individual segments via particular channels would be challenging, but it does suggest that good reach across farmers overall is possible through trade press.

Many farmers use online information sources about farming (44%), and younger farmers (57%) are more likely to do this. More Planners (47%) access information online, whereas Risk Takers (39%) and Unclear (41%) read less. The most common

online sources are email updates from national farming organisations (24%) or related to the type of farming they do (23%).

The HSE are the most trusted to give advice about safety on farms (88%), closely followed by national farming organisations (82%), friends (82%) or family who are farmers (78%), and vets (80%). Lawyers (45%) and family who are not farmers (41%) are much less trusted.

Around four in ten farmers have approached others for advice about safety (41%) or looked for written advice (37%) in the past five years. Planners are the most likely to have sought advice, and Unclear the least. Only one in nine farmers (11%) have approached HSE, despite the organisation being trusted.

Message testing

In the qualitative case studies, different messages were tested with farmers/farm managers to understand which engaged them best in issues around safety and managing risk. Farmers thought messages would work well if they:

- **Make farmers stop and think:** such as by including a statistic they may find surprising, or by including hard hitting examples such as a farmer being found dead by their family.
- **Linking regular farming activities to severe consequences:** for example, leaving an engine running leading to serious injury or death.

Messages related to threats of legal enforcement for non-compliance, financial motivations, or encouraging wider uptake of training were not anticipated by farmers to be as effective.

4. Implications

In considering the implications of the research for future tailoring and targeting of communications, it is important to bear in mind:

- The findings indicate a link between attitudes, behaviours and experiences around risk on farms (although it is not possible to prove causation). This should be explored further.
- Planners are the largest segment (around 45% of the sample), but need the least support. Risk Takers (18%) and in particular Unclear (23%) are more in need of targeting given higher rates of accidents and/ or near misses, and

greater propensity to undertake risky behaviours such as working when tired, sick or injured.

The limited demographic variation between segments means that *targeting* messages to specific segments based on demographic characteristics will be challenging. Nevertheless, the segmentation suggests that developing *tailored* messages may be effective. There are at least four types worth considering:

1. **General** safety messages emphasizing the importance of risk management.
2. **Emotive** messages emphasizing bad consequences for farmers and their families.
3. **Specific** messages about specific behaviours and practices, designed to encourage farmers to stop and think.
4. **Supportive** messages, offering concrete examples and help to manage risk on the farm.

All message types would likely work well for **Planners**, reinforcing what they do already and helping them manage risk better.

Pragmatists are not worried by consequences, therefore emotive messages, focusing on serious consequences, may help engage this segment, by making potentially catastrophic consequences clear.

Emotive messages would also be important for **Risk Takers**, as the findings suggest this group take too many risks. Highlighting the consequences of these behaviours will therefore be important. Furthermore, emphasising via specific messages that make them stop and think would also be valuable in encouraging engagement with risk.

For **Unclear** any messages would need to be supportive, advising more than warning so as not to discourage them. Other message types (e.g. emotive) could discourage this group and so should be used carefully.

In addition to segment differences, there are demographic differences which are useful to bear in mind in terms of tailoring and targeting. Older farmers are more fatalistic, meaning messages that show something can be done and that accidents are not inevitable may be effective. Livestock farmers are more accepting of risk, do more risky behaviours and have more accidents, therefore they may be a priority to target. Men are more likely to be doing risky behaviours therefore messages that make them stop and think about these behaviours may be effective.