AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

The Irish Agriculture and Food Development Authority

Farm Fatalities in Ireland (1993 – 2014)
Data Visualisation

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Teagasc
Agriculture and Food Development Authority

The Irish Agriculture and Food Development Authority

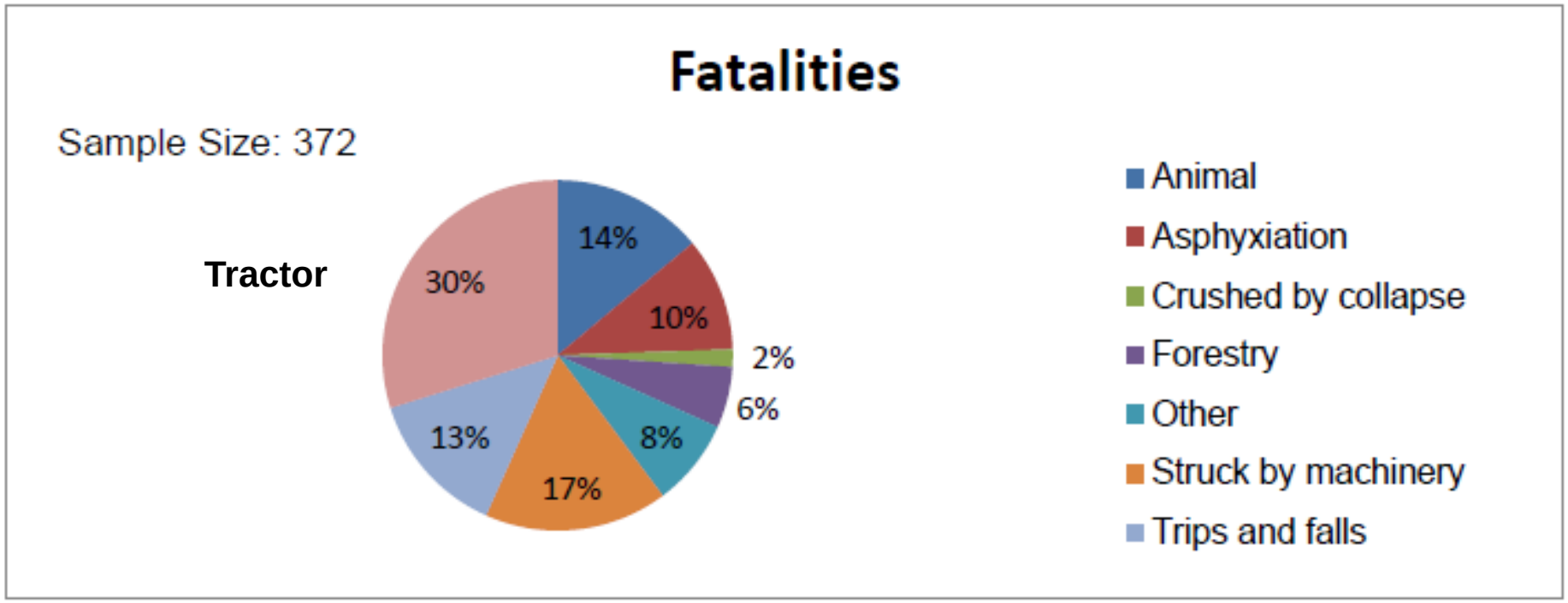


FIGURE 5.2.2 – Percentage of each Accidents Type that has been Associated with Fatalities

Location of Fatalities

TABLE 5.1.4 – Fatality Location on Farm

Location	Fatalities
Indoors	22
Farmyard	81
Fields	86
Unknown	177
Off Farm	6

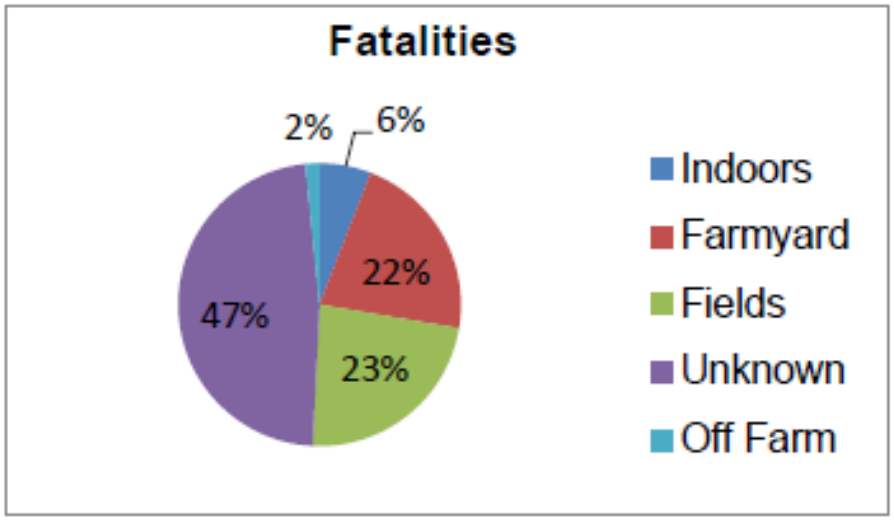


FIGURE 5.1.3 – Fatality Location on Farm

Dangerous Days

TABLE 5.3.1 - Frequency of Fatalities that Occurred each Day

	Mon	Tue	Wed	Thurs.	Fri	Sat	Sun
Count of Fatalities	17	13	**9**	14	**20**	19	17

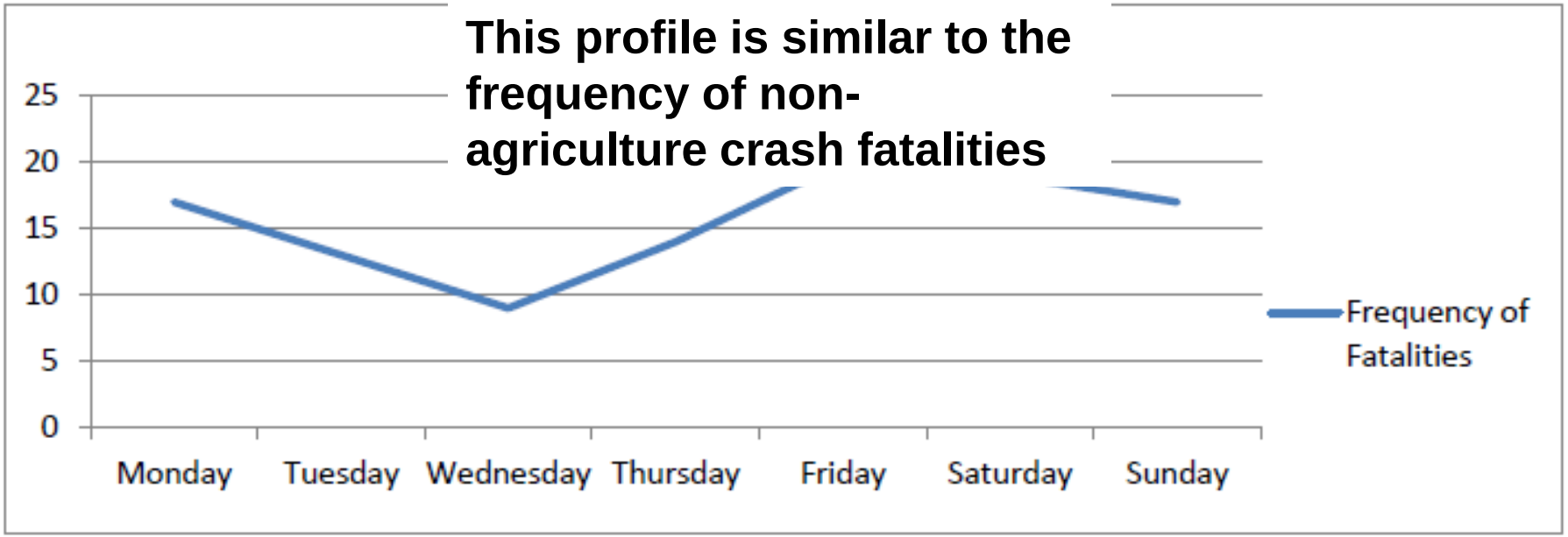
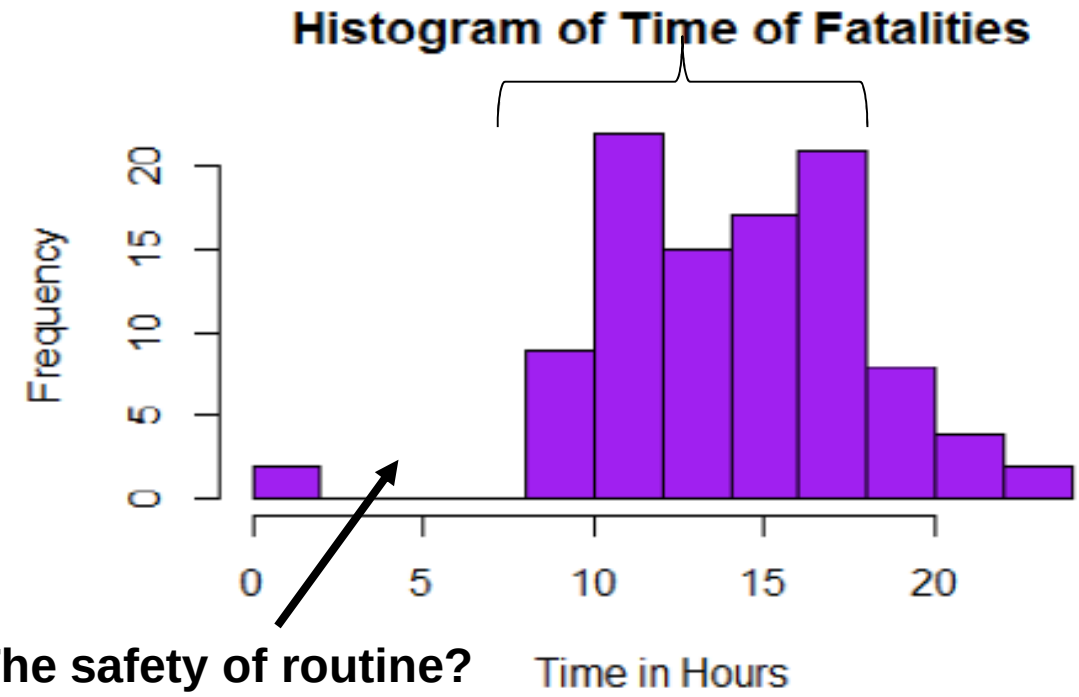


FIGURE 5.3.1 - Frequency of Fatalities that Occurred each Day

Time of day: When do fatalities occur?



11.00 – 12.00

Lunch time drop

The safety of routine?

Farm Fatality Rate (% of total 'farm workers')

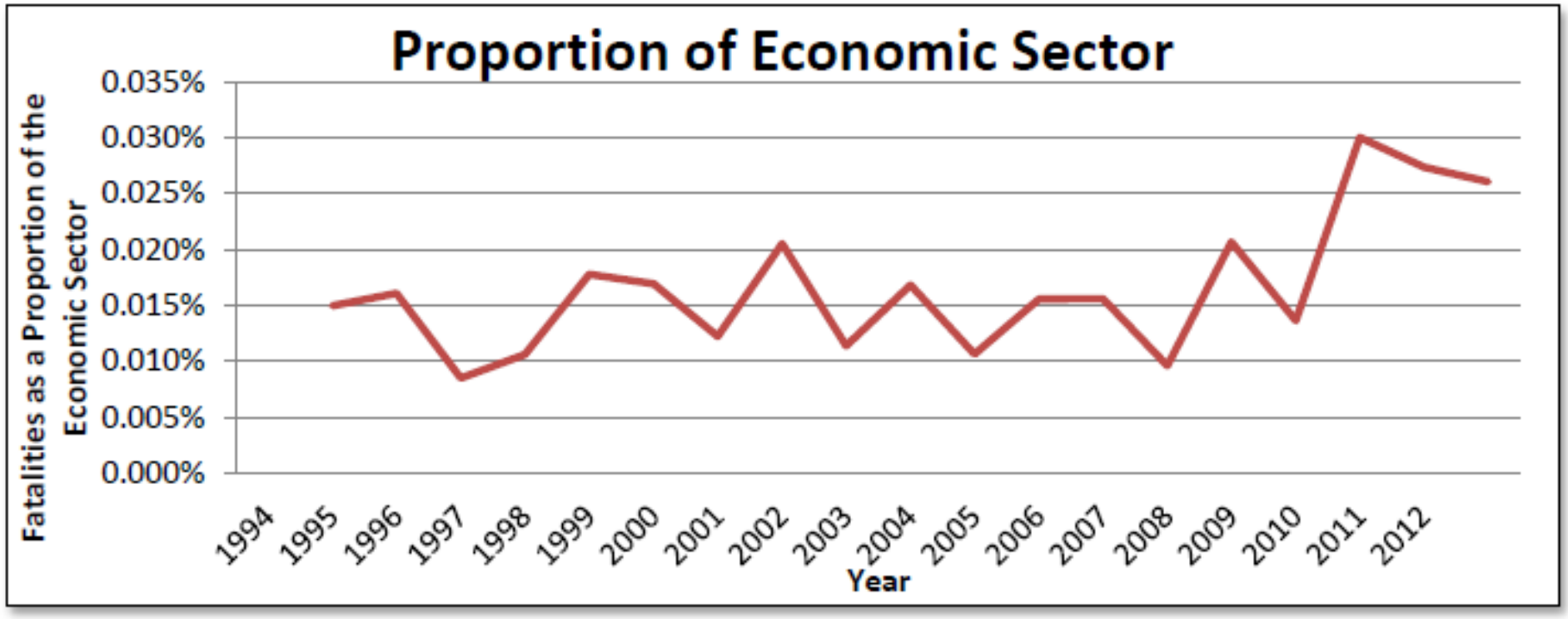
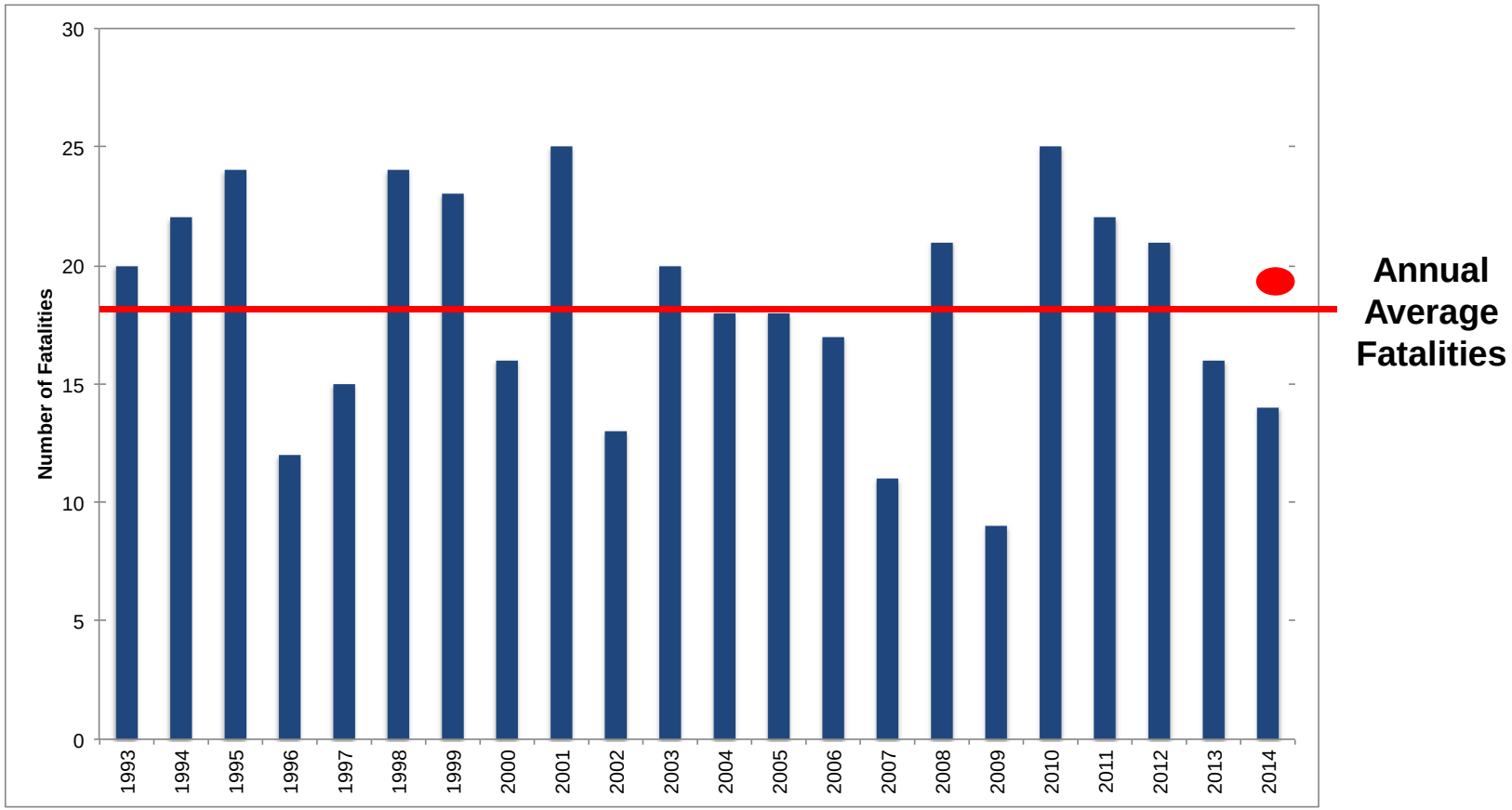
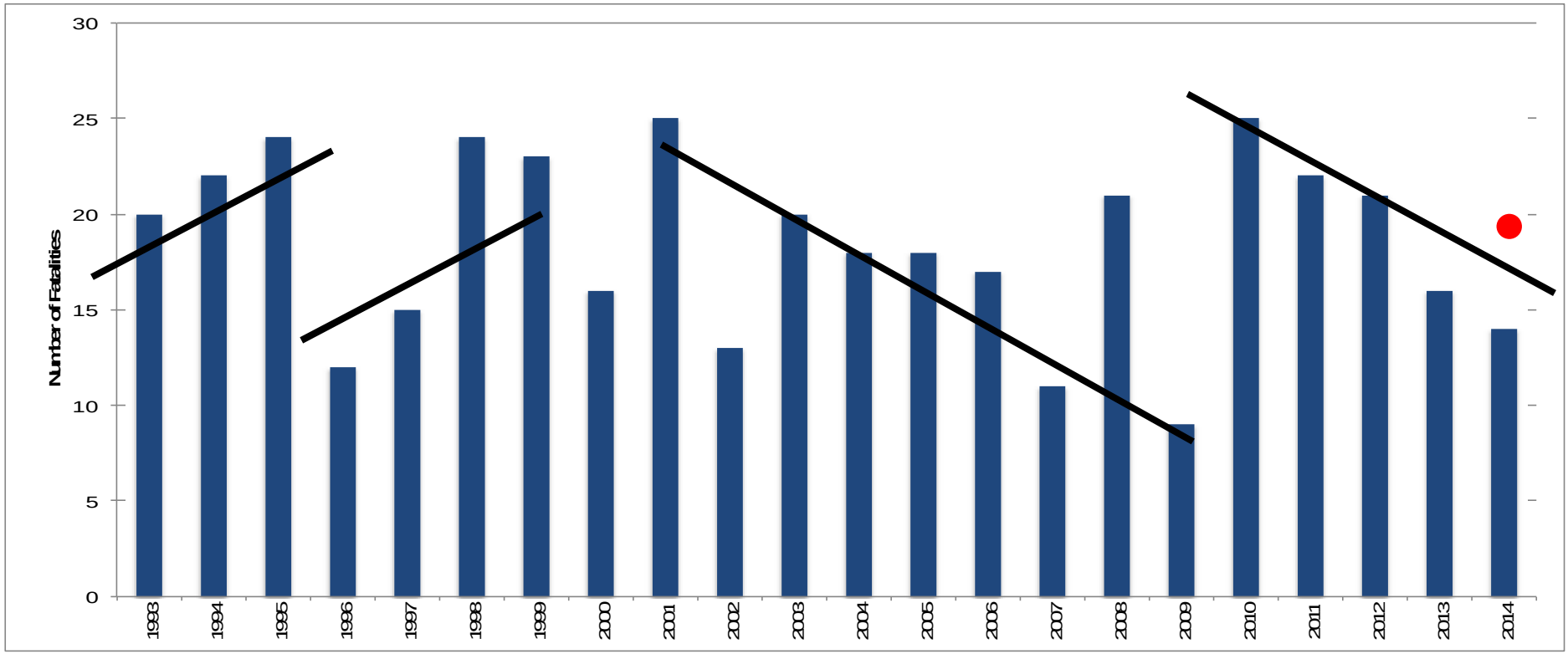


FIGURE 5.1.1 – Proportion of Fatalities that Occurred in the Agriculture Sector by Year

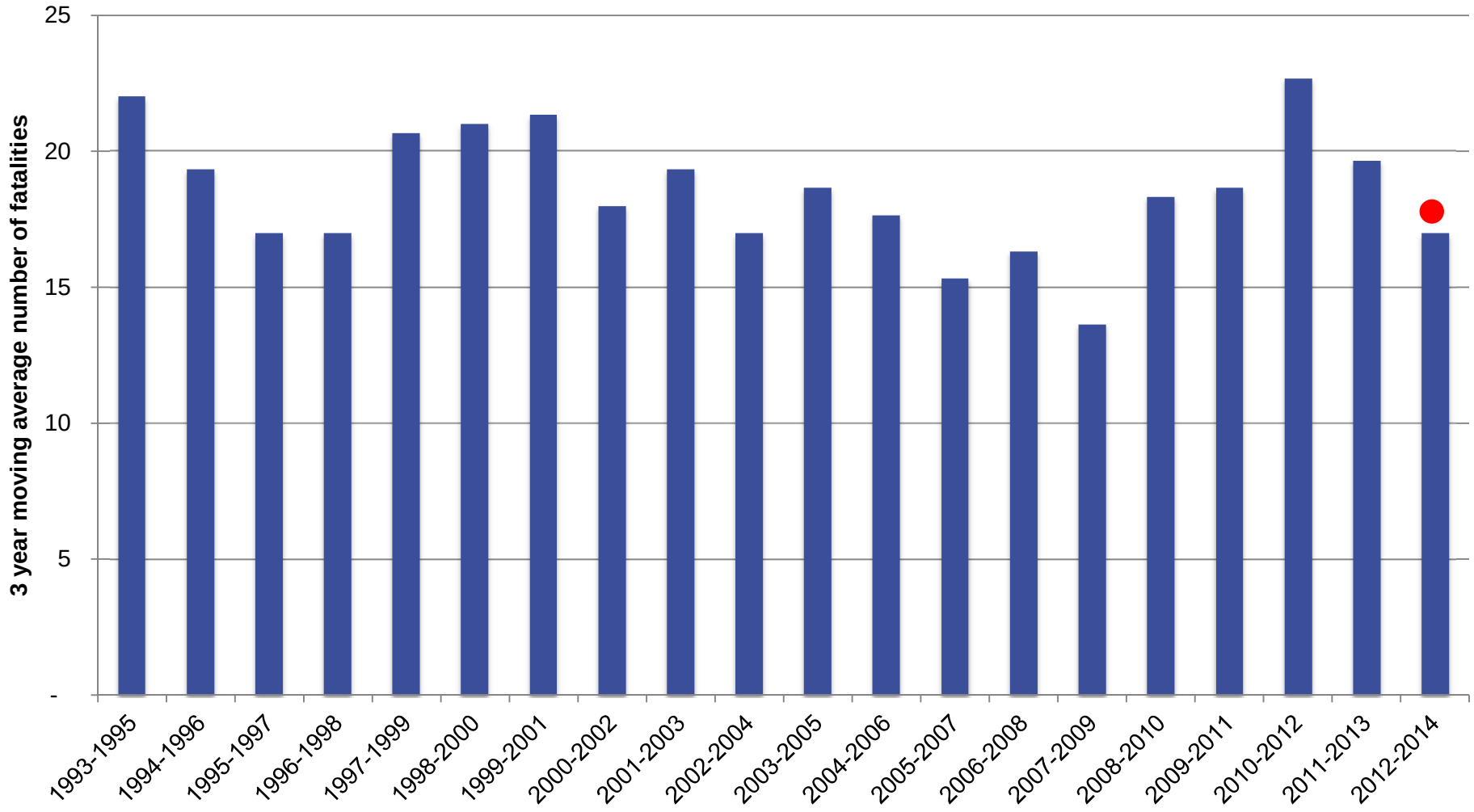
Number of Fatalities: 1993 – 2014 (May figure)



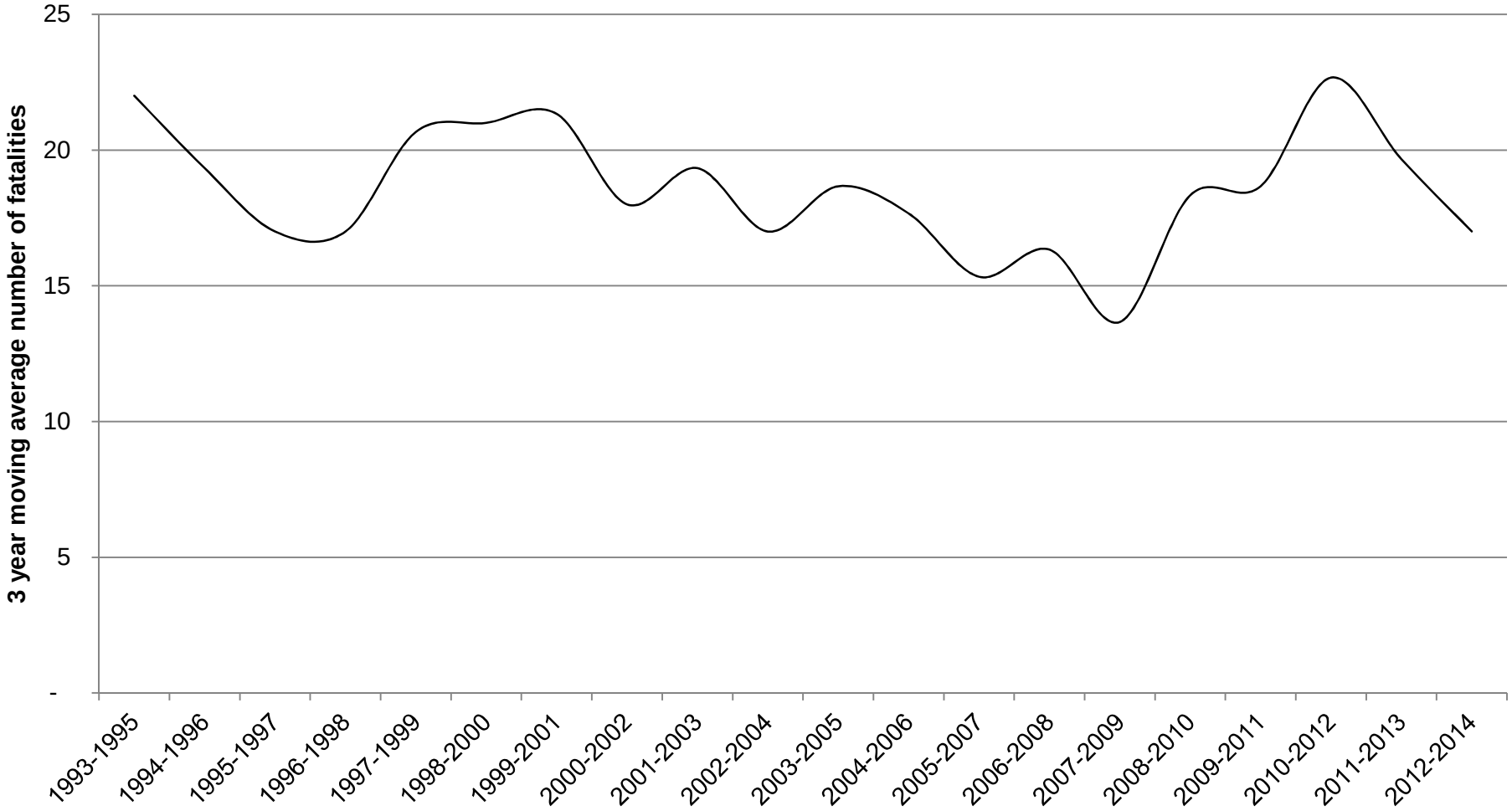
Number of Fatalities: 1993 – 2014 (May 2014 figure)



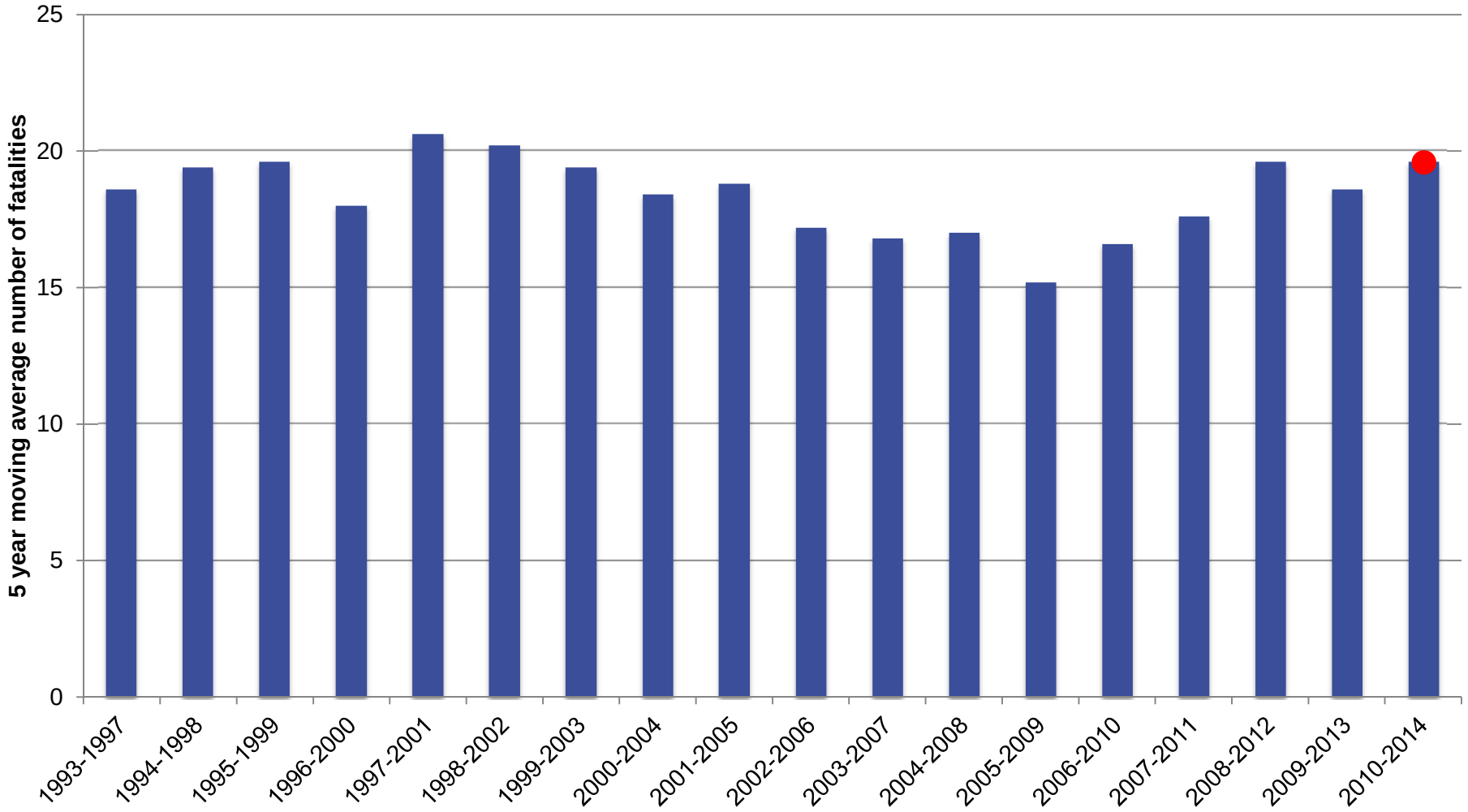
Average Fatalities (3 year average)



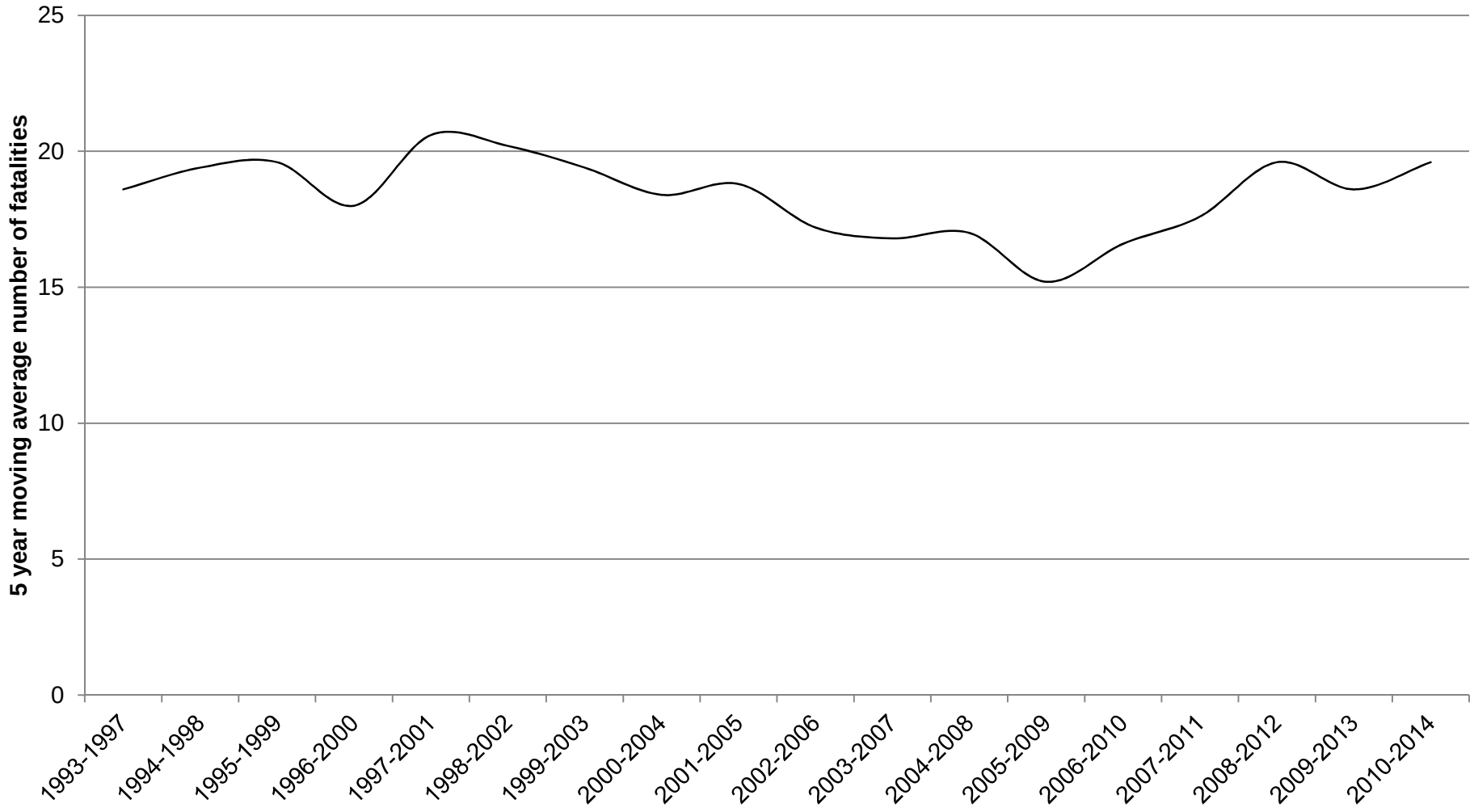
Average Fatalities (3 year smoothed average)



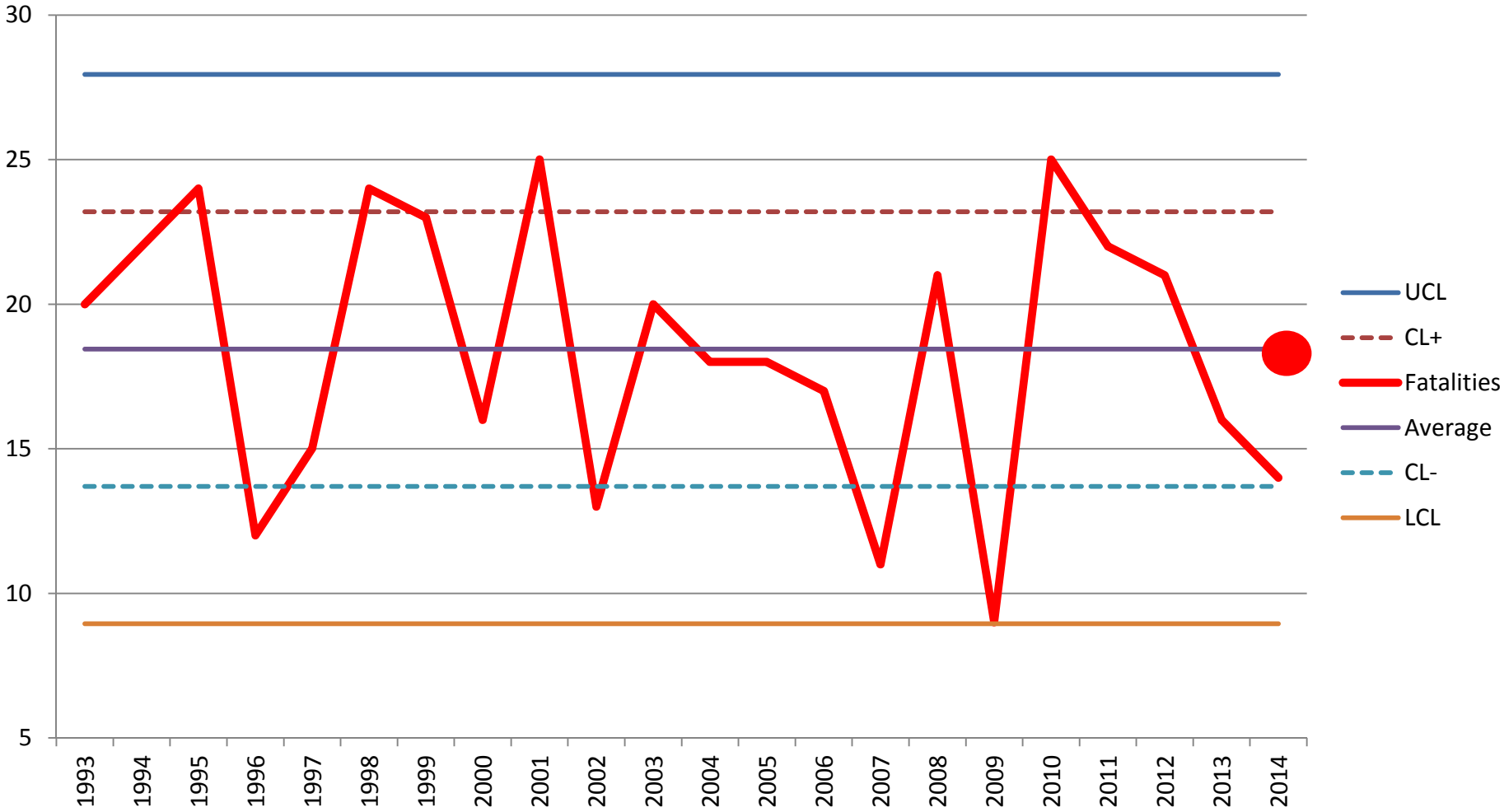
Average Fatalities (5 year average)



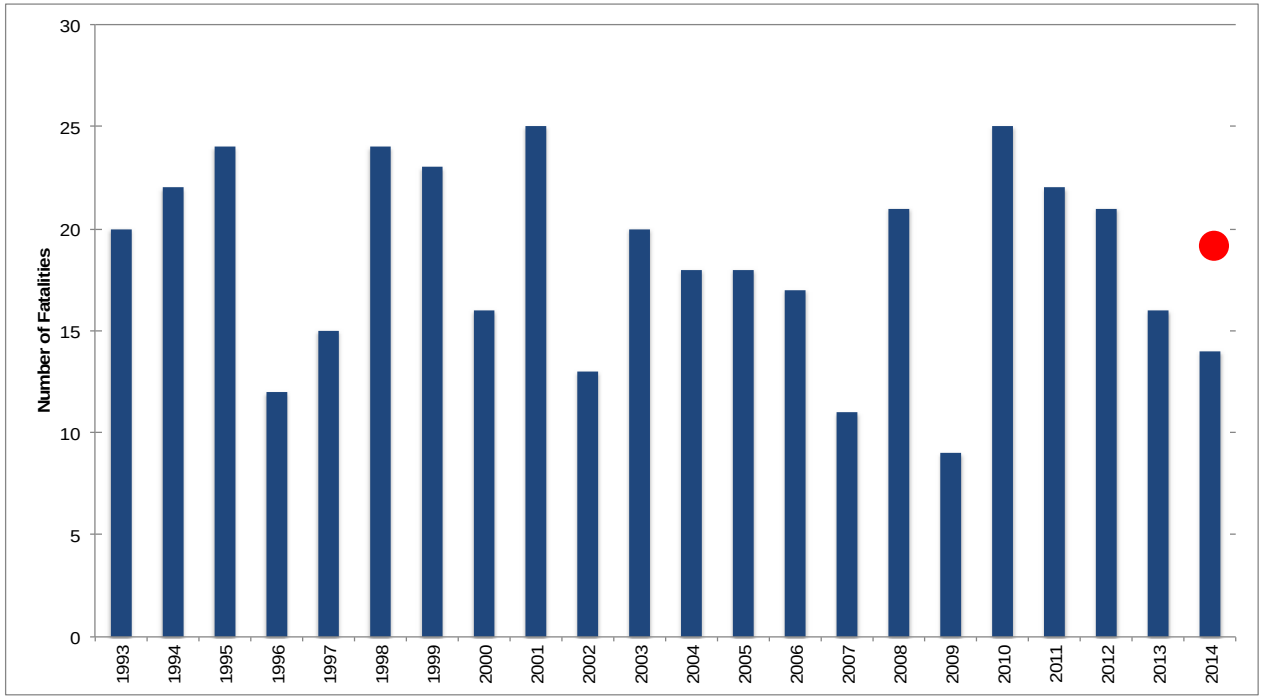
Average Fatalities (5 year smoothed average)



Statistical Process Control



Number of Fatalities: 1993 – 2014 (May 2014 figure)



- No obvious trend
- Substantial annual variation
  - Average = 18.45
  - StDev = 4.75
- There are interesting features:
  - Years with above average fatalities tend to be followed by years with lower number of fatalities – regression to the mean or something much more interesting?

Farm Fatalities: Temporal Effects

- Recently completed statistical research establishes that a fatality has an effect on the sequencing of subsequent fatalities, i.e. time is a significant factor in understanding fatalities.
  - The time since the previous fatality occurred has a significantly different effect on the number of fatalities that occur and that the variation associated with different amounts of time that have past is not due to random noise.
  - The results of this analysis suggest that fatalities are less likely to occur one to two months after a previous fatality occurred.
    - Further research is required to establish the effect of the seasonality of fatalities on these results.

Identify behaviours resulting in increased exposure to occupational risks and evaluate models of intervention that seek to alter such behaviours

- Influencing Behaviour: what works and why?
  - A review of research and initiatives concerned with influencing behavioural change in general and occupational behaviours in particular. The issue of risk cultures and behaviours will be considered in detail.

- Baseline assessment of farm workers, managers, households and community attitudes to farm safety, in general, and exemplar risks, in particular.
  - This research will involve the collection of data and information in locations that have experienced high levels of farm fatalities and those that have had lower levels of fatalities. The purpose is to quantify and evaluate any differences (individual – community) in attitudes to farm safety and exemplar risks.

Identify behaviours resulting in increased exposure to occupational risks and evaluate models of intervention that seek to alter such behaviours

- Understanding occupational risks and risk takers: An ethnographic study of farm work on dairy farms in Ireland.
  - This research focuses on a detailed study of work practices among a small (N=10) group of farm enterprise. Taking known risks, the study evaluates the context (individual, household, community and working environment) within which these behaviours occur. The study seeks to develop an understanding of how the exposure to risk is shaped and mediated by cultures and environments.

- Evaluation of current discussion group based approaches to farm safety.
  - Farmer discussion groups are engaging with the issue of occupational and workplace safety to varying extents using different approaches.
  - This research evaluates three approaches that have been adopted by different discussion groups ranging from intensive and active engagement to passive initiatives.

Statistical Process Control: A novel approach to evaluating fatality trends

- Statistical Process Charts (SPCs) track process statistics, i.e. deaths, over time to detect the presence of special causes variation.
    - To analyze a process in order to monitor, control, and improve it. The objective is to have a stable, consistent process that produces the fewest deaths.

- There are two kinds of variation in any process:
    1. Common causes refer to occurrences that contribute to the natural variation in any process.
    2. Special causes are unusual occurrences, e.g. that are not normally (or intentionally) part of the process.

Statistical Process Control: A novel approach to evaluating fatality trends

- While some degree of common cause variation will naturally occur in any process, in the instance of occupational safety we can envisage a scenario where we move to a lower baseline number of fatalities.

- To reduce ‘common cause variation’ and thereby move to a lower level of fatalities it is important to modify the ‘process’ (behaviour).

- It is important to identify and attempt to eliminate special causes of variation.

Statistical Process Control