Department for Environment Food & Rural Affairs

WOAH Collaborating Centre for Risk Analysis & Modelling

Determination of risk management options, importance of consistent decision-making process in identification of RM options

Animal disease risk assessment, management & simulation exercises training workshop Abu Dhabi, United Arab Emirates, 17-19 October 2023

Foor and Mouth Disease, Peste des Petits Ruminants, Lumpy Skin Disease, Rift Valley Fever, Sheep and Goat Pox

Environment Agency

Forestry Commission

NATURAL ENGLAND

Learning objectives

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- Understanding risk management requirement
- Different risk management options and when to use them
- Reviewing and evaluating the options and implementation
- Importance of consistency in risk management options
- Communicating the options

Risk Management

- Definition of risk: “the likelihood of the occurrence and the magnitude of the biological and economic consequences of an adverse event or effect to animal or human health” (WOAH)
- Definition: “process of identifying, selecting and implementing measures that can be applied to reduce the level of *risk*.” (WOAH)
- What you must also consider is the acceptable level of risk (ALOR) and the Appropriate Level of Protection (ALOP)
- WTO SPS rules on risk assessment and risk management for trade

Schematic of the different components of risk analysis

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Risk Management

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- A structured process which combines information from the assessment, expert judgement about control measures, communication plans
- Balances the potential benefits versus assessed risks with or without the control measures
  - Economic
  - Reputational
  - Legal
- Apply appropriate management measures to mitigate the risk
- Monitor and review the outcome with audits or inspections

Any SPS measures must be supported by a risk assessment and should not be discriminatory or unfeasible

Risk is acceptable;
Risk is acceptable given the actions are practical;
Risk is unacceptable, no matter the cost.

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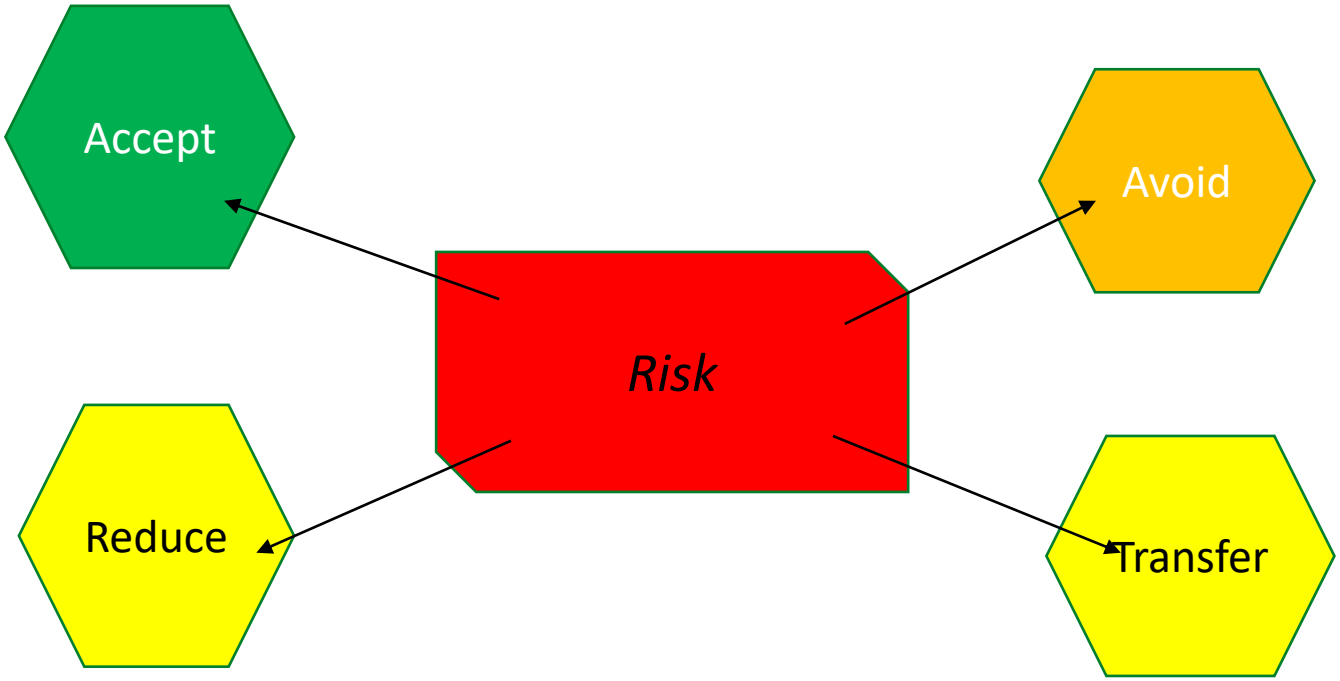

Acceptable Level of Risk

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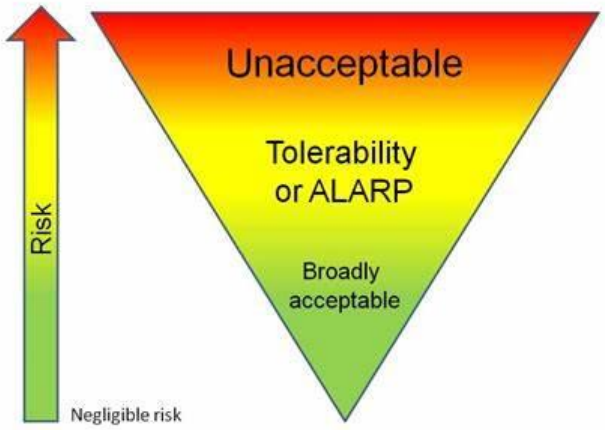
- Each country has the right to set its own ALOR
- It may be exceedingly difficult and expensive to manage a risk down to a negligible level.
- Instead, the RM uses the principle of As Low As Reasonably Practical
- Tolerability = cannot be reduced further without unreasonable cost or impractical solution



Comparing risk intervention strategies

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- Helps managers understand different interventions and prioritise them
- May consider all interventions along a chain (Import to Farm to Fork)
- Use a baseline model or assessment then add in interventions
- Interventions include vaccination, movement restriction, quarantine, testing or treatment

Risk management consequences

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- The RM should consider the primary and secondary consequences of a risk management measure.
- Both positive and negative
- The impact on the food producer, the consumer, the environment are direct primary impacts
- Secondary could include employment, social impacts, community changes

Foot and Mouth Disease 2001, UK

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- >2,000 establishments
- >2 million animals on 8,000 establishment preventively culled
- Epizootic lasted 18 months
- Costs to government were around £3 billion and to wider society were £5-6 billion more
- Costs for government were mostly on compensation and the personnel used for managing the restrictions and the on-farm testing
- Costs for wider society including closing the country to tourists, loss of income for businesses and event cancellation; mental health impacts not costed

Measures to prevent movement onto a farm

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- First, consider the type of movements and the transmission pathways
- Airborne, fomite (contaminated equipment), waterborne, close contact, sexual transmission
- What are the steps in the pathway and which step can be easily prevented?
- What if animals are being moved to slaughter, to milking, to breed
- Where is it sensible to sample and test, and what do you do with the outcome?

Measures to prevent disease spread into a new region

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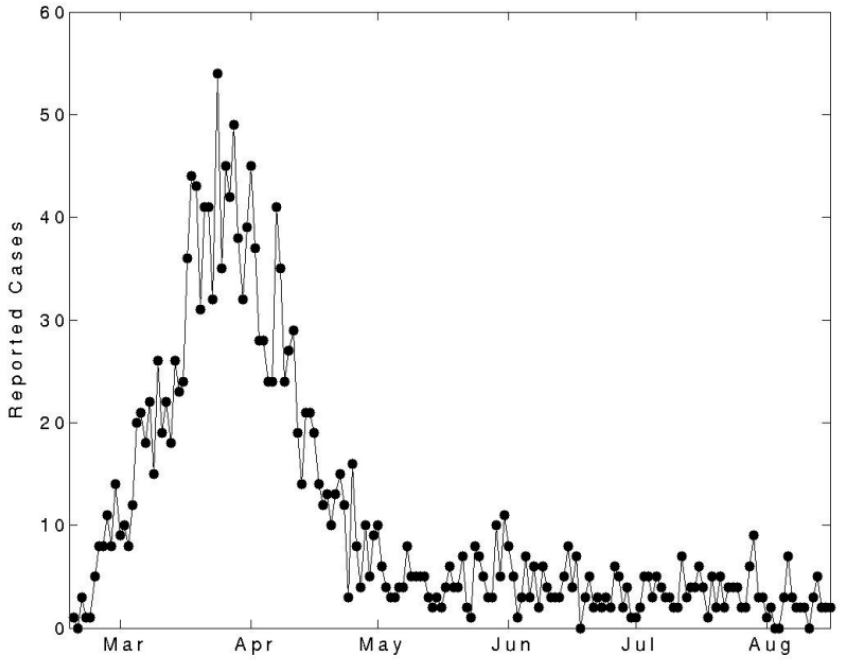
- National movement restrictions
- Of what? How long do they last?
- Which moves are suspended?
- What about moves to slaughter, non-susceptible animals?



FMD 2001

The costs of the UK 2001 outbreak can be split into five main categories:

- Direct Costs to the Farmer (compensation and disposal) - £3 billion
- Welfare Cull costs - £0.2 billion
- Costs to the Wider Agricultural Sector - £0.3 billion
- Costs to the Tourist Industry - £5 billion
- Export Costs - £0.3 billion
- The nationwide movement ban and related restrictions was directly responsible for increased costs in several of these categories (though may, of course, have significantly reduced the outbreak size).

- Direct Costs: Proportional to total livestock culled (~£1200/cattle, ~£320 sheep)
- Welfare Costs: Proportional to total number of farms per day subject to movement restrictions (~£5 per Farm Day Restricted)
- Agricultural Costs: Proportional to total number of movements prevented (~£140 per movement prevented)
- Export Costs: Proportional to length of the export ban (~£400,000 per day)
- Tourism Costs: Proportion to scale of outbreak (~£170 per Farm Day Restricted
- livestockmovements.shinyapps.io/movement_control/

Measures to prevent disease introduction to the country

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- WOAH guidelines for safe trade for different diseases are the basis of preventing disease incursion
- However, live animals and products may be consigned during the period of silent spread before disease is reported
- What are the options?
  - Pre-movement testing
  - Quarantine
  - Post movement testing
  - Treatment
- But if disease is spread by wildlife or vectors, options are more limited

How do you compare?

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- Ideally, you go back to your risk assessment and include control measures
- Can be easier to do with a quantitative model
- You need data on costs and values (as it all comes down to money!)
- But you can also use simulation exercises which will be the subject of next part of the training!

Questions or comments?