Animal & Plant Health Agency

THEME I: Extra-regional experience in Foot-and-Mouth Disease sanitary emergencies: Lessons for the Americas

1.2 United Kingdom Experience

International Seminar Pre-Cosalfa

Quito, Ecuador – April 13-14, 2015

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United Kingdom

Outline of Presentation

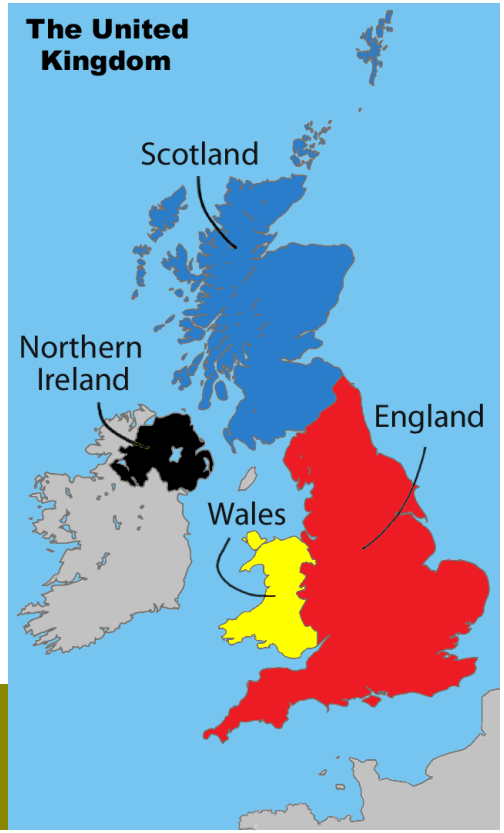
1. Overview of UK
2. Some UK experiences of FMD 2001 & 2007
3. Maintaining Awareness amongst Livestock Keepers
4. UK Contingency Planning & Disease Control
5. Integration and use of Epidemiology
6. Maintaining capacity to respond between disease outbreaks
7. UK International Disease Monitoring & Import Risk Analysis
8. Some Links
9. Acknowledgements

1. Overview of UK

- United Kingdom is the ‘Competent Authority’ in terms of administering disease response/control

- Each Devolved Administration has its own individual legislation:
  England, Wales, Scotland, Northern Ireland
  (& ‘Crown Dependencies’)

- But all response activities must comply with EU Directives/Regulations
  – for FMD = Directive 2003/85/EC .
- Joined up **partnership** approach



A few statistics*

Total cattle population: 9.7 million (3rd largest in EU)
Female breeding herd: Beef 1.5 million
Dairy 1.9 million

Total sheep population: 22.9 million (largest in EU)
Female Breeding flock 14.8 million

Total pig population 4.5 million (breeding herd 486 000)

Total utilised agricultural area in the UK: 17.2 million hectares (approx. 71% of UK land area)

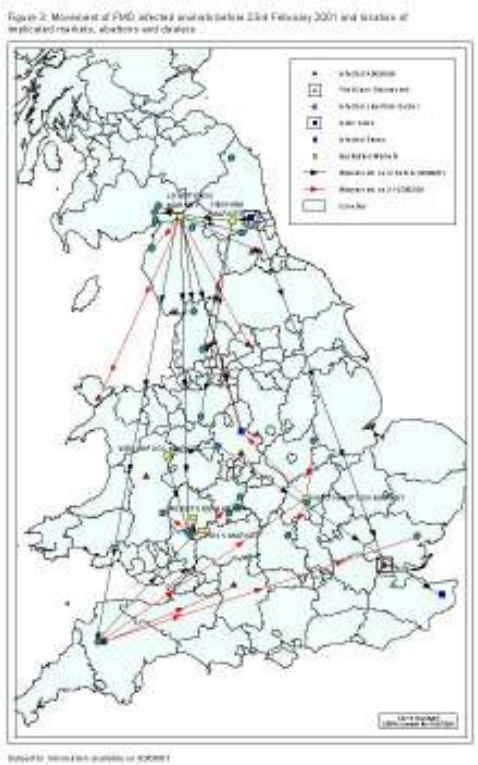
Total agricultural workforce ~ 476 000

*as of 1 December 2014 (source UK Census data)

2. UK experiences of FMD 2001

- Mon 19 Feb 2001 suspicion of vesicular disease in pigs reported by OVS in abattoir
- FMD confirmed 20 Feb - Pan-Asia 0
- Local movement ban 21 February around first infected premises and supplier farms.
- By 22 February 600 tracings to supply farms completed
- Source - pig premises in Northumberland - sows -> abattoir on 15 February 2001.
- National movement ban & closure of livestock markets on 23 February 2001.

- Airborne spread -> neighbouring sheep farm
- 16 sheep -> market 13 February then via 2 other markets
- Onward spread via dealers
- Up to 119 premises in 23 counties had already been infected before 23 February 2001



- No. of new outbreaks <u>confirmed</u> per day peaked at 50 on 30 March 2001.
- In that week **299** cases confirmed

- Last case confirmed 30 September 2001 in Cumbria.
- Total 2030 cases confirmed in UK, spread across over 44 counties/districts

  (1,722 in England, 187 in Scotland, 117 in Wales, 4 in NI)
- 22 January 2002 OIE freedom from disease
- 5 February 2002 EC lifted remaining meat and animal export restrictions
- > 6 million animals slaughtered
  - 4.2 million for disease control purposes
  - 2.3 million for welfare/light lambs scheme
- Estimated cost - public sector £3 billion (~ $4.5 billion)
  - private sector £5 billion (~ $7.5 billion)

Some factors involved in 2001 (versus 2007)

- Dairy cattle -> earlier detection (BUT N.B. milk tankers)

- **Involvement of sheep**
- Airborne spread from index case; and
- Rapid spread via markets before first case detected
  tracings of >100 000 sheep via markets in weeks before 23 February
- Dispersed land - quad bikes/tractors
- Season during peak of outbreak
  (cold and damp favoured virus survival)
- Unprecedented scale of outbreak

- Conflict between rapid culling to control disease versus collection of detailed epi data for each IP - including accurate sampling at culling (sheep serology).

- Lack of manpower: prior to outbreak 213 VOs & 117 TVIs

- At peak
  - vets: 1497
  - technical staff: 1478
  - administrative staff: 1416
  - GIS/IT: 77
  - 2000 Armed Forces personnel
  - 18 Disease Control Centres

- Stand-down period dirty/clean - 72 hours (later 24 hours)

- So led to SOS and some wider strategies being used (inc. Contiguous cull). DC assessment but not enough staff / time

- Epidemic lasted 7 months so had to reassess seasonal risk factors and amend control policies throughout the year
  (e.g. lambing, turn-out, silage, shearing, hefting, harvest etc.)

- Laboratory capacity
  - increased need but constraints due to the necessary containment
  - serology capacity by end August 100,000 blood samples per week, 40,000 more by mid-September
- Slaughter (3.8 million animals slaughtered by 3 Sept (81% sheep); and

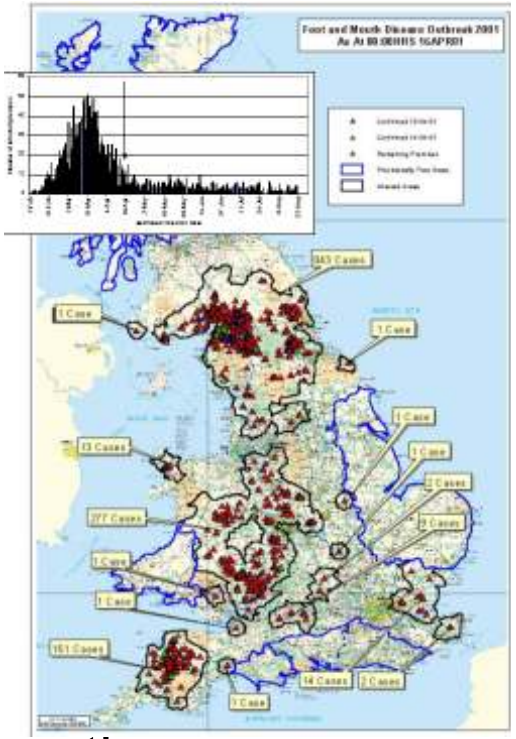
- Disposal - carcases, by-products, slurry, feed (N.B. pre-1996 cattle)

- C&D

Differential Clinical Diagnosis in Sheep

- Unfamiliarity of some Temporary Veterinary Inspectors with UK endemic diseases e.g. ‘Orf’ (contagious pustular dermatitis)
- Compounded by the presence of oral lesions due to "OMAGOD" (Ovine Mouth and Gum Obscure Disease) or "Idiopathic oral ulcers"

Successes in preventing the further spread of FMD in 2001



- Majority of areas disease-free relatively quickly
  (9 / 18 LDCCs: first -> last IP 2 months or less)
- FMD eradicated in 7 months.
- Substantially contained to areas initially infected
- Kept out of much of East Anglia, East Midlands, southern England, west Wales and central & northern Scotland.
- By mid-April 2001 disease had been stamped out in most parts of central and eastern England.
- Once stamped out in an area it did not reappear (cf. 1967/68).

Restricted Infected Areas: ‘Blue Boxes’

- Late July onwards
- Intensive biosecurity to address fomite spread
  - resistant, contagious virus
  - fragmented farms
  - stock outside at grass
  - seasonal activities ongoing

Sero-surveillance

- 2,500,000 sheep blood tested
- 27,000 farms
- 46 flocks Ab positive (640 samples)
- 2 sheep virus positive

2. UK Experiences of FMD 2007

- IP1: FMD confirmed 3 August 07 (Friday)
  - Beef finishing, 64 cattle across 3 locations,
- 38 cattle, all infected - Lesion ages: 3 to 9 days old
- 22 cattle at second site : no FMD lesions; one animal PCR +ve (viraemic)
- Only link between premises: farmer

- **First time pre-clinical viraemic animals detected using PCR in an outbreak**
  - No movements on, movements off only to slaughter
  - 4.5 km from Pirbright laboratory complex
  - Thame market, 21,000 sheep, 3 August

- By 6 August 07 (Monday) IP2 report
  - Virus typed as O1BFS

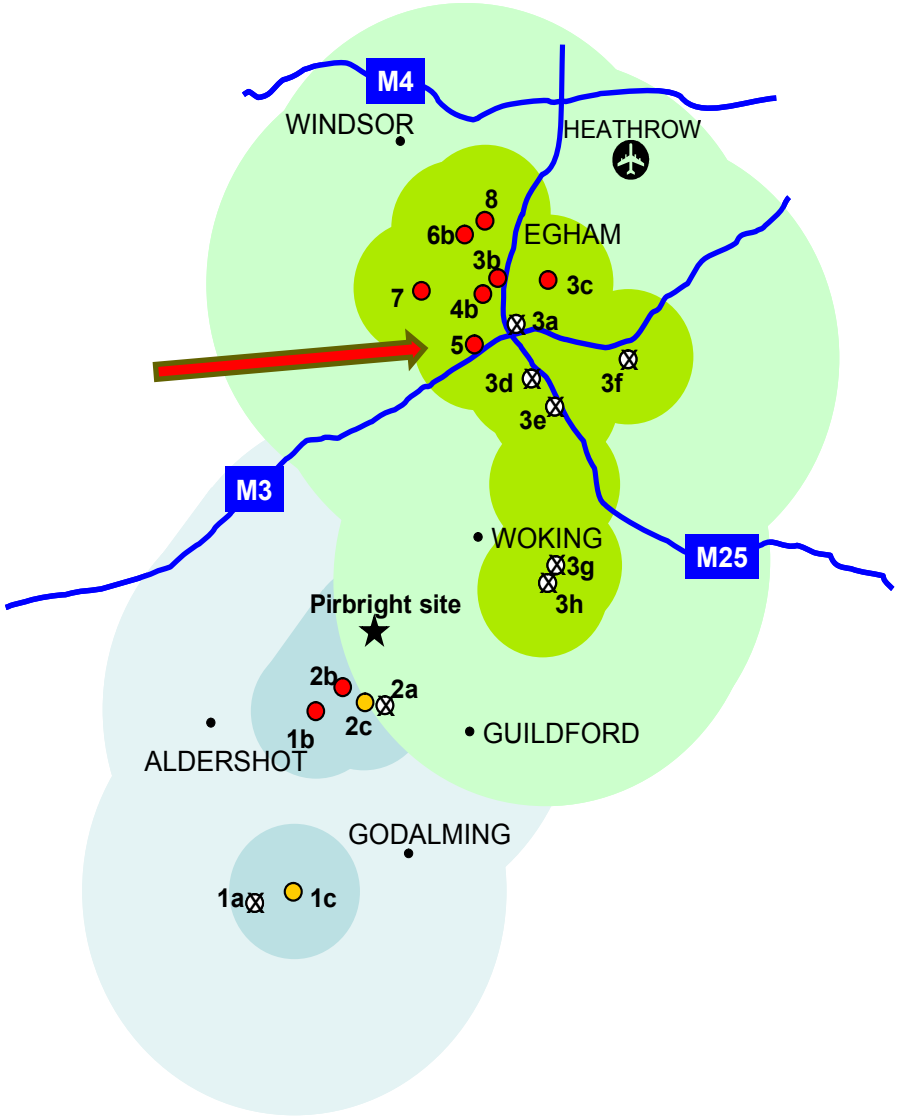
- **Only present in reference laboratories and vaccine production plants**

FMD 2007: Spread Investigations, IP1 & 2

- Met. modelling indicated plumes very unlikely
- Full surveillance of PZ and SZ as per FMD Directive; plus
- All live movements out of PZ and SZ traced negative
- Increased, enforced biosecurity throughout PZ & SZ
- Premises at risk from water courses and flooded areas traced negative, sewage from Pirbright – specified handling protocol
- Low susceptible population density & few movements
- Restrictions lifted 8th September 2007

Phase 2: September

- IP3 Confirmed 12th September
- IP4 13th September
- **IP 5 - 16th September**
- IP6 - 21st September
- IP7 - 24th September
- IP8 - 29th September

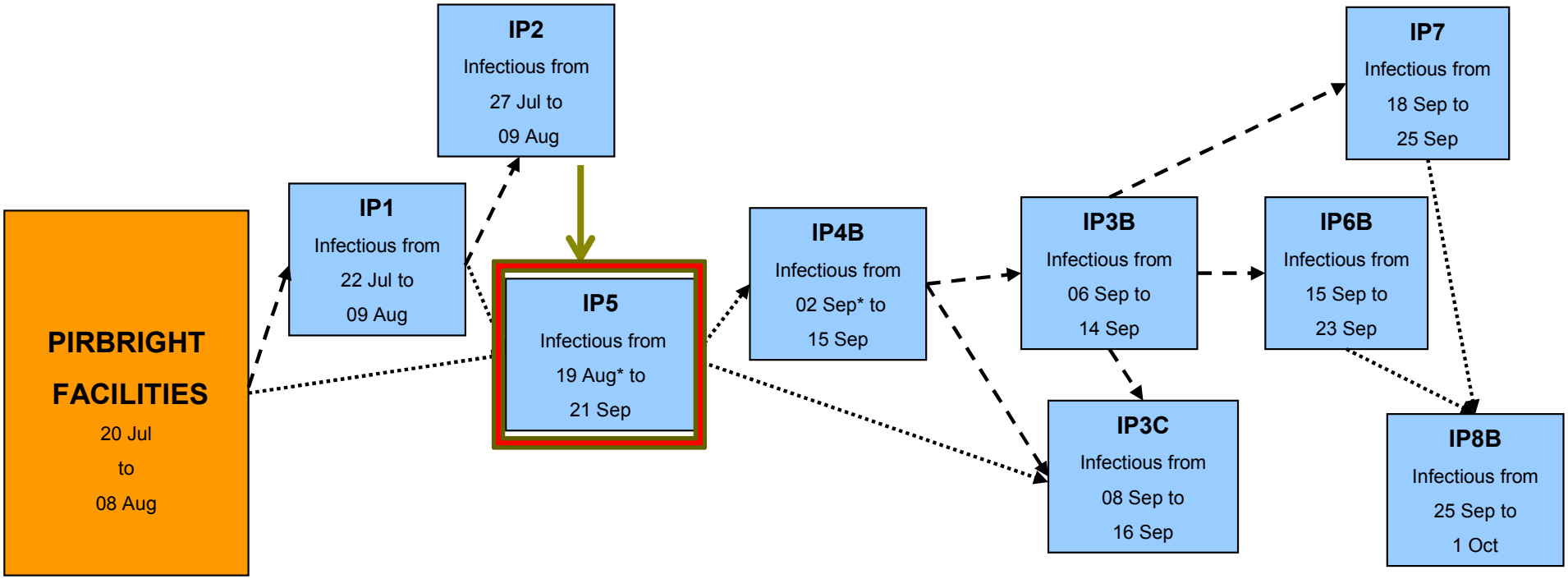


Infected Premises 5

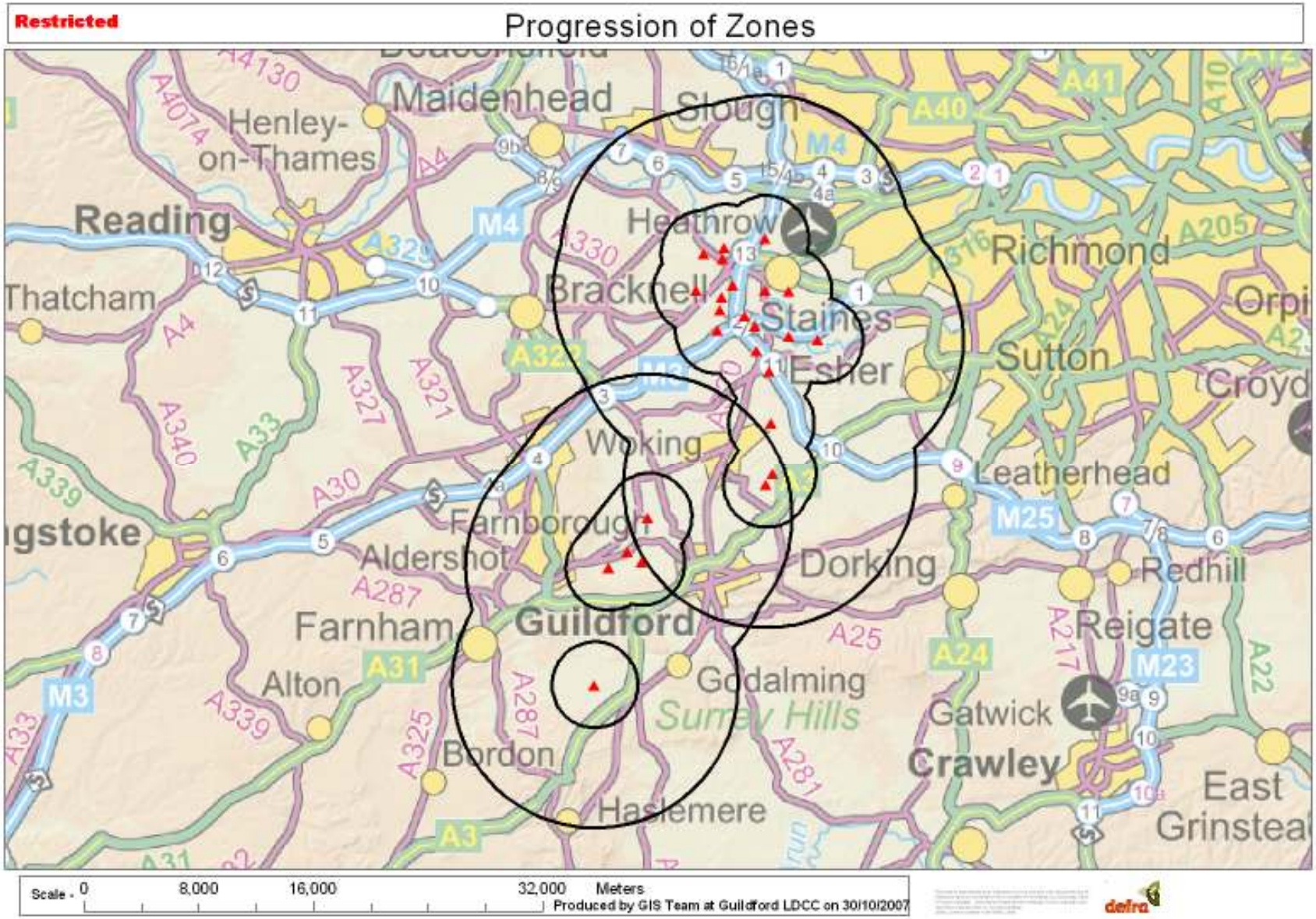
- Detected 16 September by PZ serosurveillance
- 15/16 sheep seropositive; 10 with old lesions
- No clinical signs but 17/ 22 cattle had 4-5 week old lesions
- All seropositive, virus negative.
- First evidence that clinical disease could be missed in cattle
- Source window such that could have been from Pirbright site, IP1 or IP2
  - Local spread causing IPs 3 onwards



Links between IPs

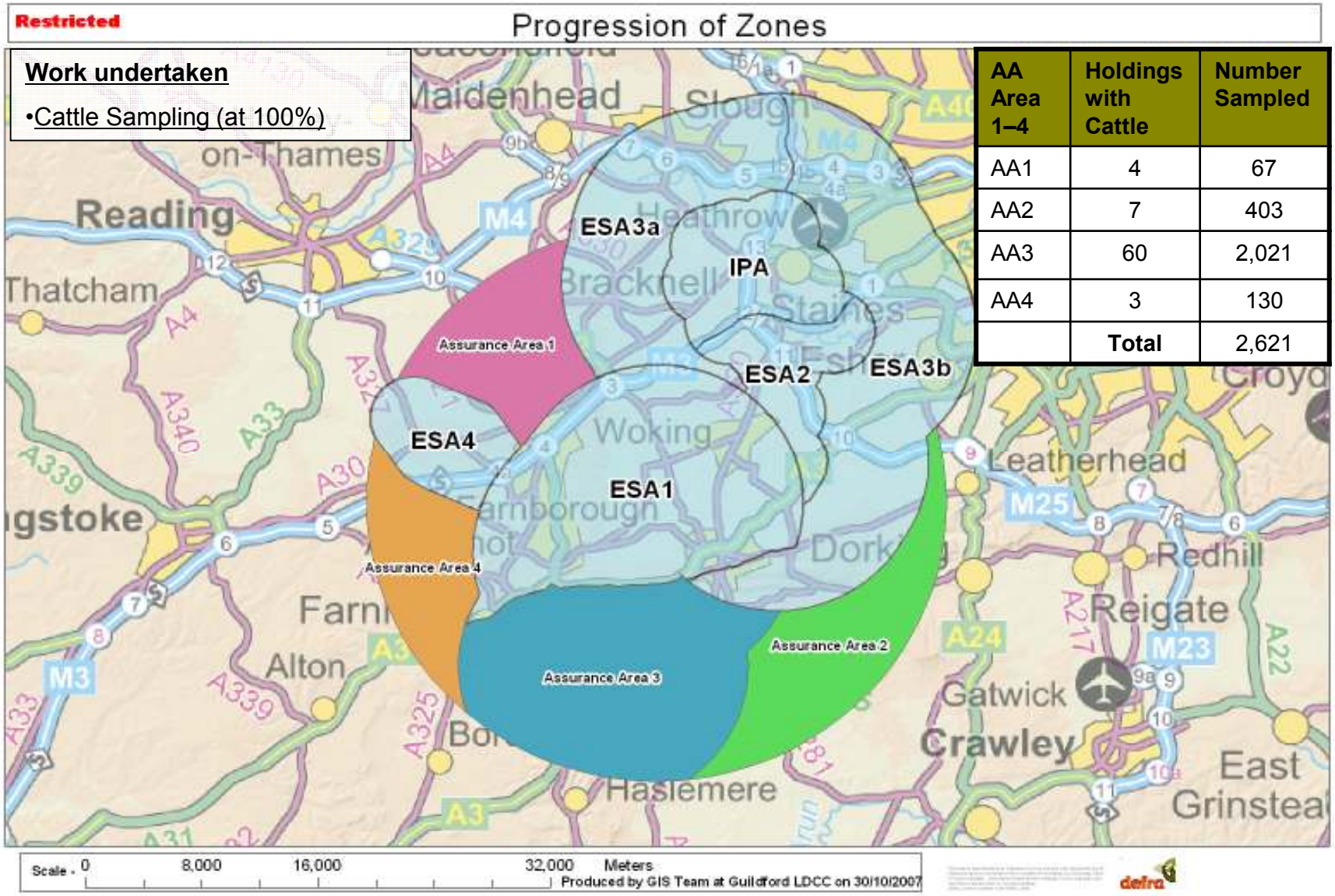


FMD 2007 - August and September PZ / SZ Overlaps



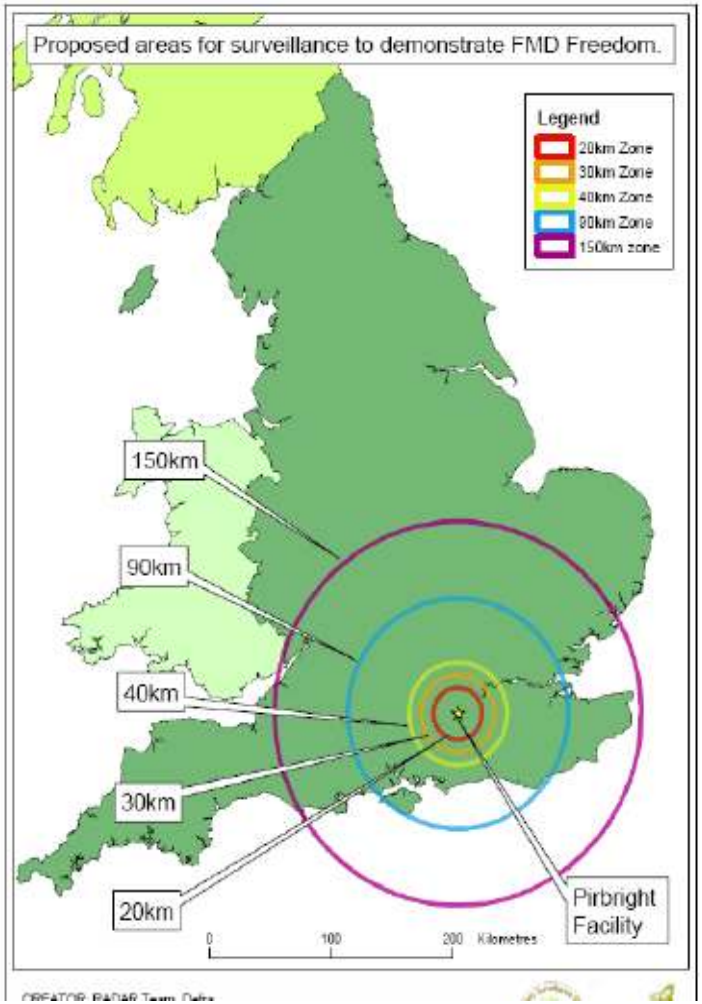
FMD - September 2007 – Additional Assurance (AA)

Surveillance Area 16 October – 2 November



AA Area 1–4	Holdings with Cattle	Number Sampled
AA1	4	67
AA2	7	403
AA3	60	2,021
AA4	3	130
	Total	2,621

FMD freedom surveillance – additional sampling within 150 km of Pirbright



- 95% confidence of detecting 1% prevalence of sheep flocks and beef cattle herds = 300 herds
- Sampling plan (with contingency allowance):
- 20 - 30 km = 51
- 30 – 40 km = 51
- 40 – 90 km = 51
- 90 – 150 km = 154
- 95%/5% of animals in each epidemiological group

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{31st December 2007 EU export restrictions lifted; OIE Freedom 22nd February 2008}

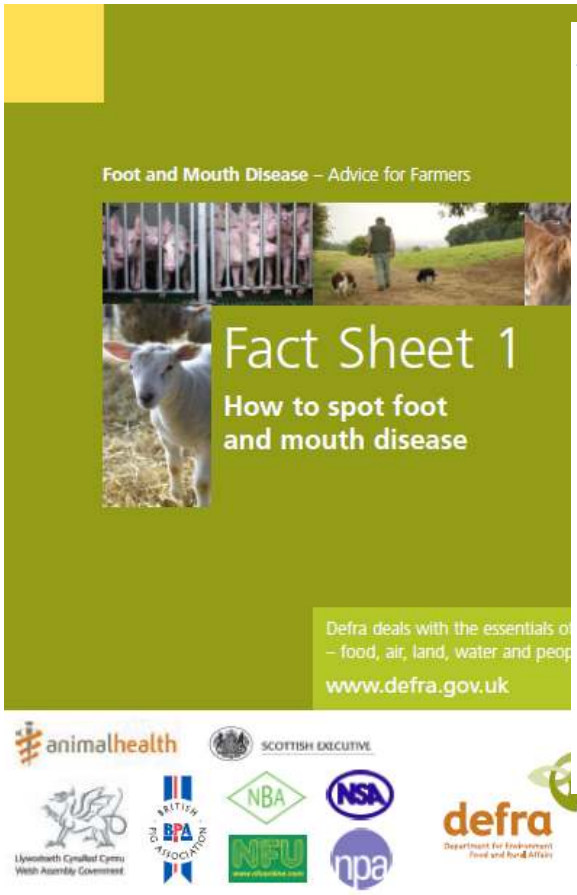
Lessons from the field epidemiology

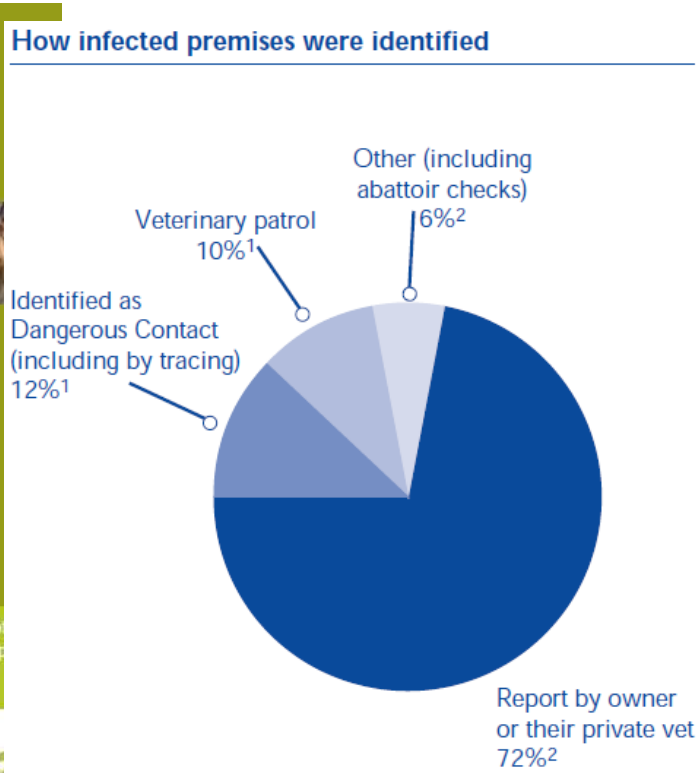
- Epidemiological benefits of lesion ageing, extensive sampling, sequencing virus isolates in real time
  - 2nd phase of outbreaks (IP3 – IP8) shares all the unique changes common to 1st phase
  - Therefore outbreaks are linked and not due to independent sources
  - **IP5 (farm with FMD serology positive cattle and sheep) bridges gap between two phases of the outbreak**
- Diagnosis of preclinical viraemic animals using real-time PCR
- Hobby/part-time farmers – less experienced in spotting signs of disease plus owners with other jobs, inadequate handling facilities
- movement controls meant cattle were in fields without handling facilities, not used to being handled -> time to gather them to closely inspect .

Some factors involved in 2007 (versus 2001)

- Extensive grazing, beef cattle rather than dairy so early clinical signs missed and many lesions were 5-7+ days old at disclosure.
- Few sheep in immediate area and sheep only diseased IP5
- Little market involvement, little animal movement as not commercial farming area
- Localised - easier to focus manpower and control efforts
- Total of 2160 animals culled (total blood samples tested ~ 48 000)
- DCs assessed with limited culling according to level of associated risk
- Different attitude as most people in the area were not farmers - less respect for closed footpaths etc.
- 288 Vets / Cost to public sector was around £47m (~$70m)

3. Maintaining Awareness amongst livestock keepers





2001

This document has been published by the Department for Environment, Food and Rural Affairs.

BIOSECURITY GUIDANCE TO PREVENT THE SPREAD OF ANIMAL DISEASES

BIOSECURITY GUIDANCE ON ENTERING OR LEAVING PLACES WHERE FARM ANIMALS (INCLUDING POULTRY) ARE KEPT OR HAVE BEEN KEPT

*This guidance applies to **everyone** who enters a farm or premises with farm animals, or enters land used for grazing or keeping farm animals. This includes:*
- *Owners of farm animals;*
- *those in charge of farm animals at any time, for example hauliers;*
- *vets and others who provide animals services, including Artificial Insemination technicians, foot trimmers, sheep dippers and scanner operators;*
- *government officials, including Local Government employees and staff working for Non Departmental Public Bodies;*
- *any contractor or other person acting for or on behalf of those already mentioned;*
- *others who access agricultural land, whether for business or pleasure.*

It deals with the precautions to be taken when entering or leaving any premises with farm animals in the absence of an outbreak of exotic notifiable disease; after confirmation of an outbreak of exotic notifiable disease; and to premises under specific animal disease restrictions.

This guidance (prepared in accordance with legislation1) applies generally to all premises with farm animals and to all exotic diseases. When followed it should help reduce the spread of animal diseases to other premises with farm animals.

This guidance is not intended to interfere with sensible public access to land and enjoyment of the countryside.

The message is simple:

- *disease may not always be apparent, especially in its early stages;*
- *be clean, particularly if handling animals or moving between different premises.*

Footnotes
1 Section 15 of the Animal Health Act 2002, amending section 6A of the Animal Health Act 1981, as regards foot-and-mouth disease;
The Avian Influenza and Newcastle Disease (England and Wales) Order 2003 and the Avian Influenza and Newcastle Disease (Biosecurity Guidance and Disease Control (Slaughter) Protocol) (England and Wales) Order 2003, as regards avian influenza and Newcastle disease.
2. This text was amended on 6 November 2006, mainly to update the legislation reference on page 3. No other amendments of substance were made.

Websites, SMS Text Alert System, liaison with industry stakeholders – Vet/Industry publications

Working in partnership – awareness and responsibility sharing

- Government works with stakeholder organisations to develop control strategies for the diseases of most concern, and publishes advice on biosecurity for animal keepers.

- There are also a number of **industry initiatives** to raise awareness and improve the reporting of suspicion of disease, prevent and respond to disease outbreaks.

- APHA Species Expert Groups / Core Groups

- At the regional level, senior APHA managers engage with local operational partners and stakeholders as part of their on-going emergency preparedness arrangements and, where possible, include them in the planning and implementation of local exercises.

4. UK Contingency Planning & Disease Control

- Legal basis – required by EU Directives
- To be prepared! Planning for worst case scenarios

- Delineate the command and control points, structures, powers, responsibilities & **communication routes**

- Overarching UK Contingency Plan for Exotic Notifiable Diseases outlines how **all the administrations work together** in case of an outbreak.

- The devolved administrations each have their own plans that supplement and complement the UK plan.

- Plans reviewed every year (lessons learned e.g. incidents of disease, public consultations or contingency exercises)

- Must be flexible and practical

Who else is involved in preparing the DCP?

- Stakeholders
- Industry
- Disease Experts

- Producers, processors and retailers to give insight on how industry operates

- Provide reality check on control measures and their effectiveness

GB Disease Control Strategies

Developed in collaboration between Defra, Devolved Administrations, APHA and other stakeholders:

- Notifiable avian disease control strategy for Great Britain
- **Foot and Mouth disease control strategy for Great Britain**
- Rabies disease control strategy for England and Wales
- Bluetongue disease control strategy for Great Britain
- African Horse Sickness control strategy for Great Britain
- African and Classical Swine Fever disease control strategy for Great Britain

Goals of a U.K. Disease Response Strategy

- Cause the least possible disruption to the food, farming, and tourism industries, to visitors to the countryside, and to rural communities and the wider economy.
- Minimize the number of animals which need to be slaughtered.
- Minimize the damage to the environment and protect public health.
- Minimize the burden on taxpayers and the public at large.

Industry Core Groups

- Government has established “Core Groups” of stakeholders for the diseases that are of most concern.
- Members of a Core Group attend in a personal capacity rather than as representatives of their particular industry or organisation.
- Provide useful insights during policy development
- Relevant Core Groups also informed when there is a strong suspicion of disease.
- This helps stakeholders to prepare themselves for any disease confirmation and collaborate with government in stamping out disease.

The GB Livestock Core Group comprises senior individuals from a number of organisations:

i. National Beef Association

ii. National Pig Association

iii. Sheep Health and Welfare Group

iv. Royal Association of British Dairy Farmers

v. British Veterinary Association

vi. National Farmers Union

vii. British Meat Processors Association

viii. Meat Promotion Wales

5. Integration and use of Epidemiology

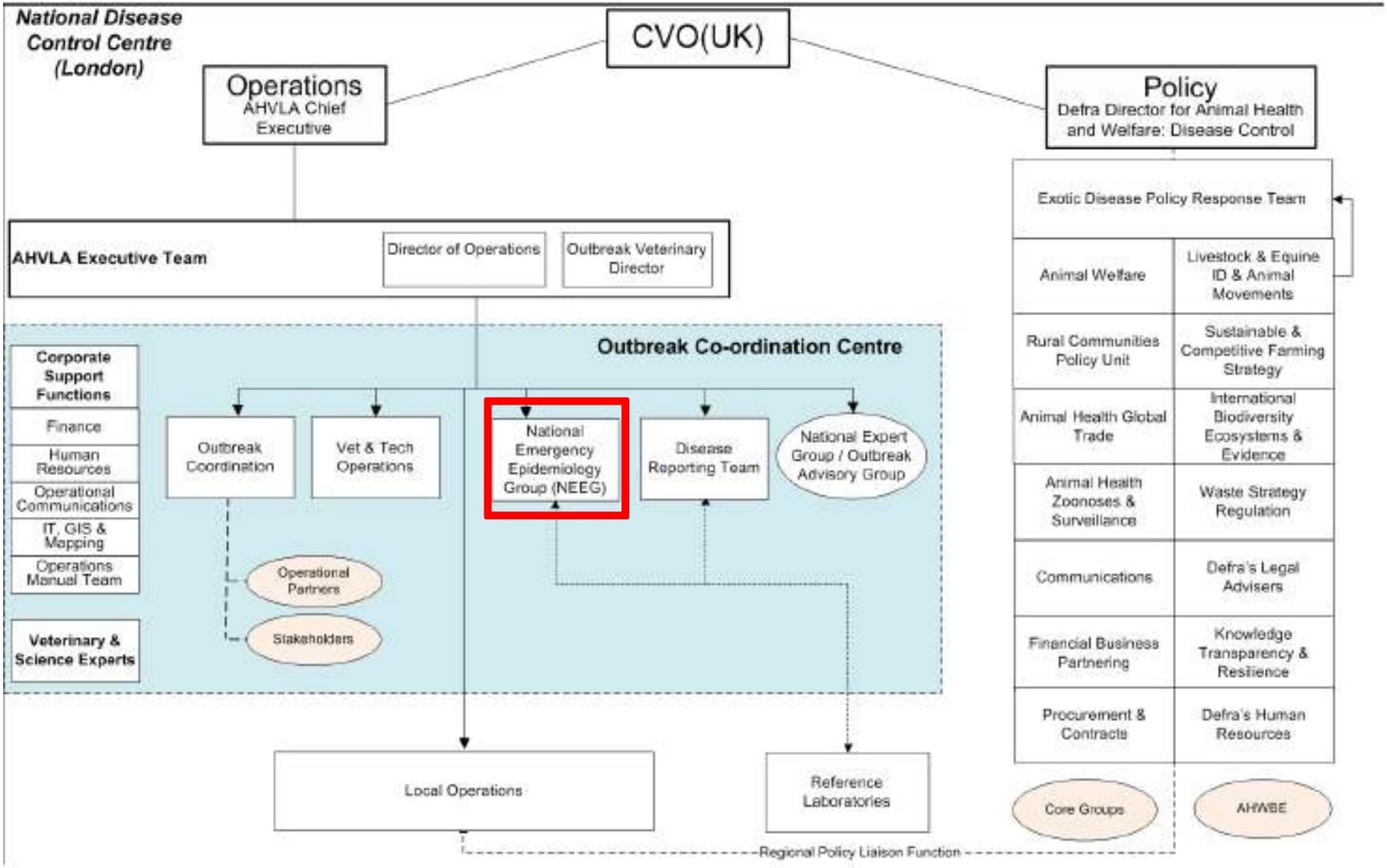
- **APHA Epidemiology & Risk Team**

- **APHA Field Epidemiology Team**
  - Head of Intervention Epidemiology
  - National Veterinary Advisor and Lead for Field Epi
  - 6 full-time regional Field Epidemiology Operational Veterinary Advisors
  - 30 Field Epidemiology Investigators

- **Analytical Veterinary Epidemiologists & Epidemiological Scientists**

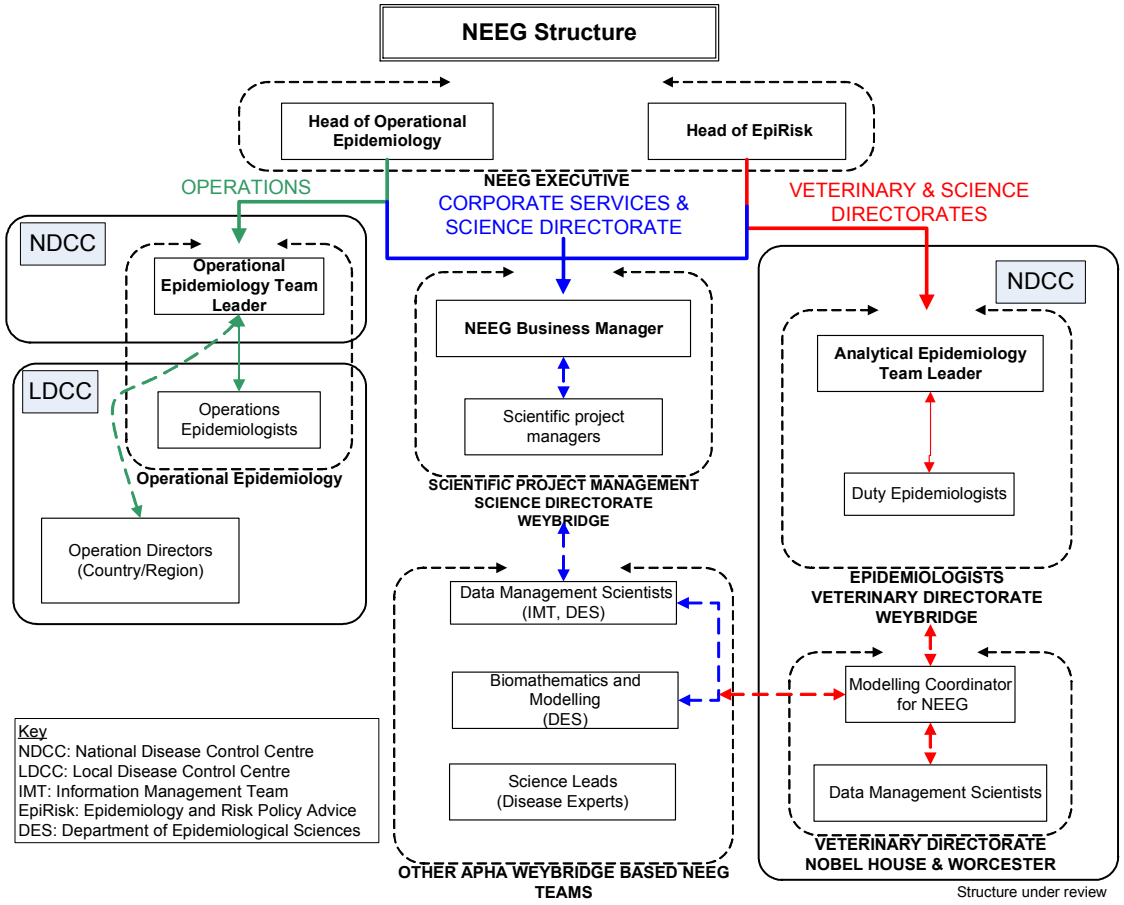
- **National Emergencies Epidemiology Group** (NEEG)

National Disease Control Centre



National Emergencies Epidemiology Group (NEEG)

- Required by the EU
- Coordinates & reports epidemiology of outbreaks
  - To describe and anticipate disease frequency and distribution
  - To identify risk factors and so inform control measures
- Draws relevant expertise from across APHA & disease experts



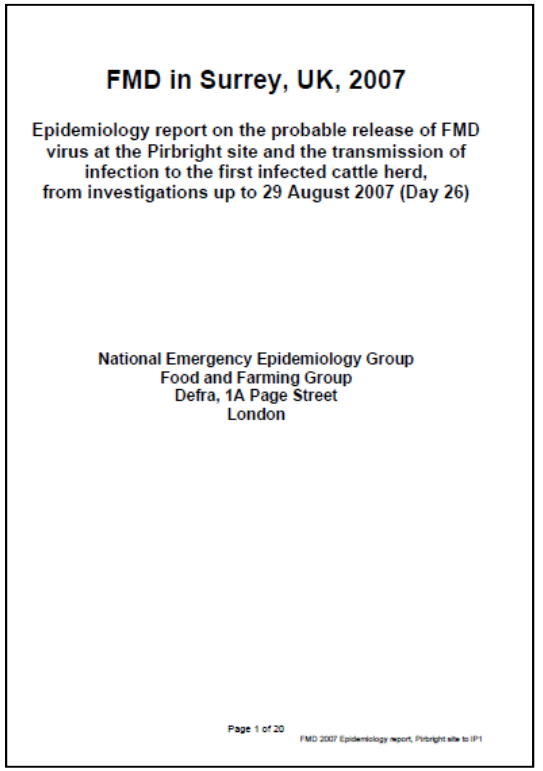
NEEG OBJECTIVES

DISEASE CONTROL

- **protect disease-free farms**
- **remove the disease from infected farms**

- Provide national epidemiological overview & analyses
  - efficacy of control measures
  - provide evidence for policy development
- Provide opinion on outputs & conclusions of disease models from
  - Defra scientists
  - independent modellers
- Information destined for
  - Disease Expert group
  - Policy makers: CVO, ADPG and CSA
  - NEEG
  - APHA

EPIDEMIOLOGY REPORTS - the key deliverable


FMD in Surrey, UK, 2007

Epidemiology report on the probable release of FMD virus at the Pirbright site and the transmission of infection to the first infected cattle herd, from investigations up to 29 August 2007 (Day 26)

National Emergency Epidemiology Group
Food and Farming Group
Defra, 1A Page Street
London

Page 1 of 20

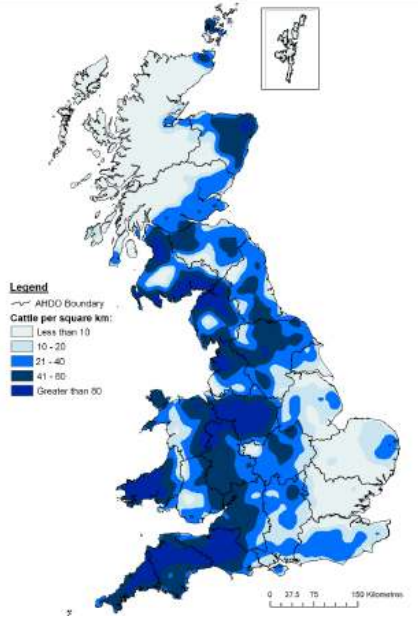
Purpose

- Describes investigations to assess
  - Level)
  - Geographic distribution) of disease
  - Determinants)
- Predicts possible future course
- Identifies potential interventions

EPI INVESTIGATIONS

- Individual investigators – look for patterns on the farm
  - Textbook risk factors provide starting point
  - Epidemiological investigations determine in detail, for each premises
    - Pattern of disease / History / Likely source / Likely risk & direction of spread
- The team – look for patterns that affect the farm and between farms
    - Compare affected farms with population at risk
    - Generate and follow up hypotheses e.g. imports, wild birds
- Key tools are
  - standardised data capture
  - accessible, user friendly databases with the right data!

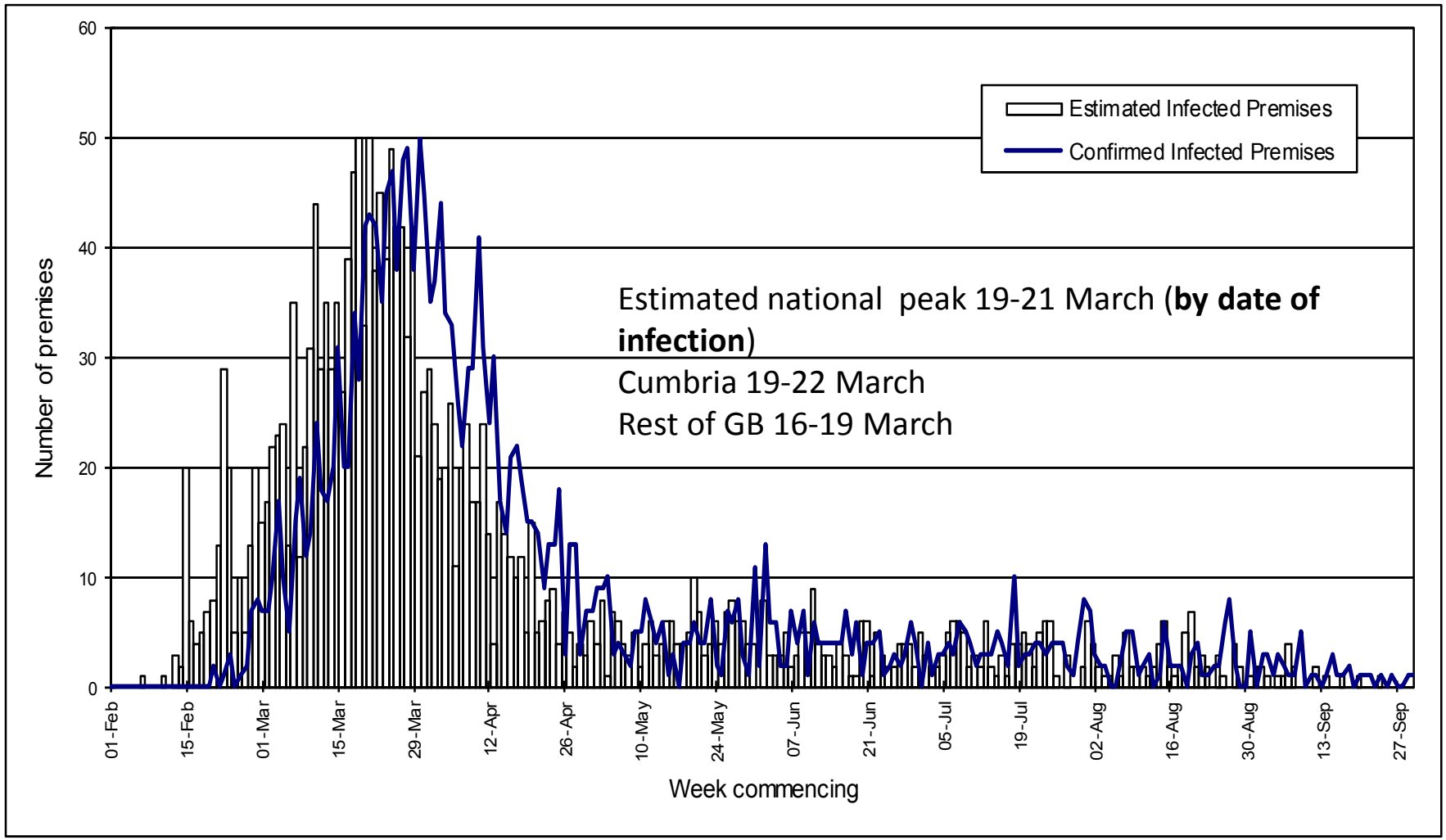
ROLE IN BETWEEN OUTBREAKS



- Maintain expertise in & understanding of
  - Epidemiology
  - Major disease threats
  - Industry sectors that would be affected
    - Husbandry, Movements etc.

- Standardise data collection and capture
  - Lead the veterinary input into the design of data capture and storage
    - Veterinary exotic disease report forms
    - RADAR, NDOMS, VIRDO, MOSS, etc.
  - Review and help validate data
    - Appropriate
    - Accurate
    - Complete (beware bias)

(Same cases plotted against 2 dates)



Gibbens & Wilesmith. Vet Record (2002) 151, 407-412

Benefits of applied epidemiology

- Helps us understand the epidemic, scale, risk factors etc. and so advise on effective disease control options (& evidence of control!).

- To do this need good data on animals (species, housing and husbandry, locations, farming practices etc. (data, industry and wider stakeholder links)

- Focus resources on highest risk
  - Reduce impact of outbreak (e.g. # IPs)

- Efficient use of resources
  - Sample size 'fit for purpose'
  - Risk based

- Use existing data to improve efficiency

- Scientifically defensible disease control strategy
  - Evidence based policy justifiable to stakeholders
  - Achieve agreed objectives e.g. rapid resumption of trade

Investigate source and prior spread ('backward' and 'forward' tracing)

- Define time window for source and spread tracings
  - Incubation period & Infectious period
- Identify activities that could have introduced or disseminated disease
  - Geographic distribution
  - Methods of transmission (vectors, fomites)
  - Agent viability
  - Enterprise type, management practices
- **Use resources in risk order -** Need to prioritise
  - define holdings by risk level
  - determine time periods for risky behaviours
    - Type of exposure
    - Longevity/ resistance of agent
  - Determine likely prevalence for detection of disease, given precipitating exposure
- **Start with highest risk**

7. UK International Disease Monitoring & Import Risk Analysis

GOV.UK

Search

Departments Worldwide How government works Get involved
Policies Publications Consultations Statistics Announcements

Collection

Animal diseases: international monitoring

From: Department for Environment, Food & Rural Affairs and Animal and Plant Health Agency
First published: 31 July 2014
Last updated: 3 February 2015 , see all updates

International monitoring for major, notifiable or new and emerging animal disease outbreaks worldwide.

Contents
- Preliminary outbreak assessments
- Qualitative risk assessments

We monitor any major, notifiable or new and emerging animal disease outbreaks worldwide. We do this as an early warning to assess the risk they may pose to the UK, in particular those diseases which impact on animal health and welfare, international trade, public health or wider

- Defra monitors any major, notifiable or new and emerging animal disease outbreaks worldwide.

- Early warning system to assess the risk of diseases being introduced to the UK through:
  - trade in animals or animal-related products (legal or illegal)
  - movement of wildlife; or
  - through movement of things such as insects and wild birds which may carry a disease.

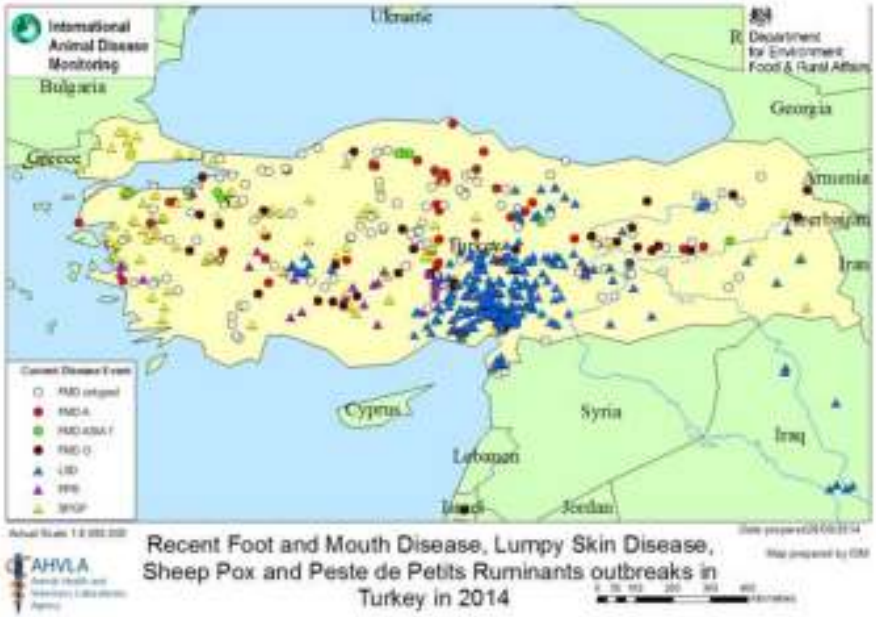
- POAs/QRAs help decide how to manage / reduce the risks.

Horizon scanning

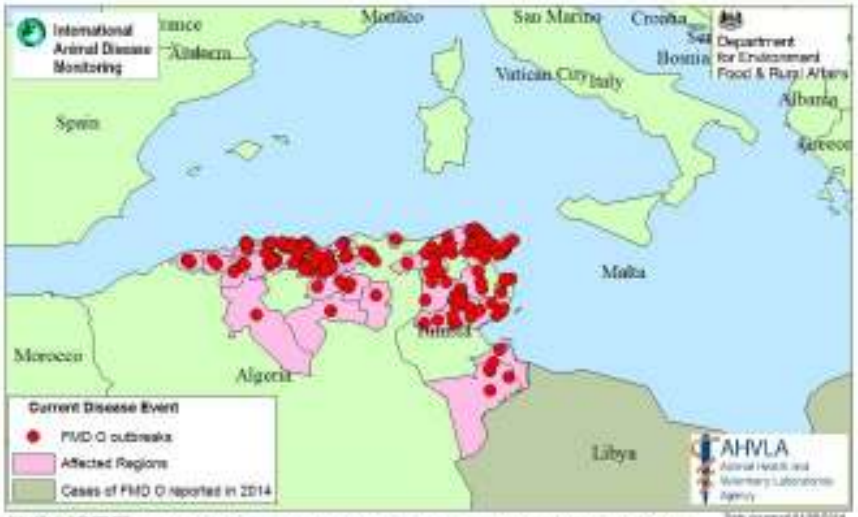
- Pick your horizon!
- Official disease reports – OIE, EU, FAO, FCO
- Unofficial disease reports – ProMed, the PigSite, scanning websites for key words, insider information from the Species Expert Groups and APHA Surveillance Intelligence Unit etc.

Constant threat to the EU borders

Migration Routes into the Europeon Union



Recent Foot and Mouth Disease, Lumpy Skin Disease, Sheep Pox and Peste de Petits Ruminants outbreaks in Turkey in 2014



Recent Foot and Mouth Disease outbreaks (FMD O) in Tunisia and Algeria July - August 2014

Trade routes and the EU rules

- OIE rules for trade
- FMD Directive for control of outbreaks and safe trade within the EU
- Restriction on live animal imports into the EU (Regulation 206/2010, as amended, restricts the list of countries: e.g. USA, Canada, Australia, New Zealand, Chile etc.)
- Restriction on the import of products of animal origin – deboned matured beef; processed products; skins, hides; dairy products

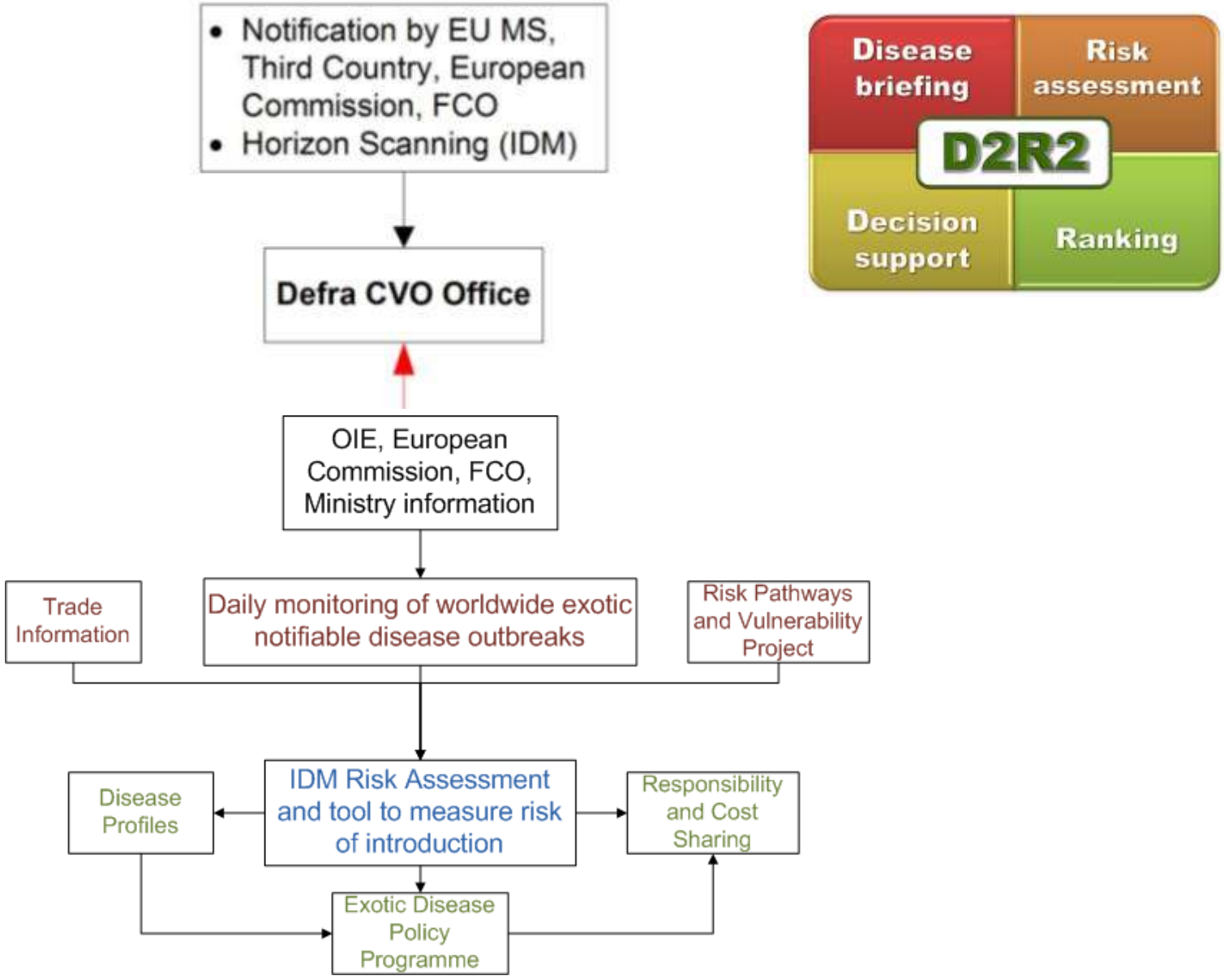
UK Border Force / APHA

UK Sniffer dog in action

Port of Felixstowe

Courtesy of Dr Matthias Kramer, Germany Ministry of Agriculture

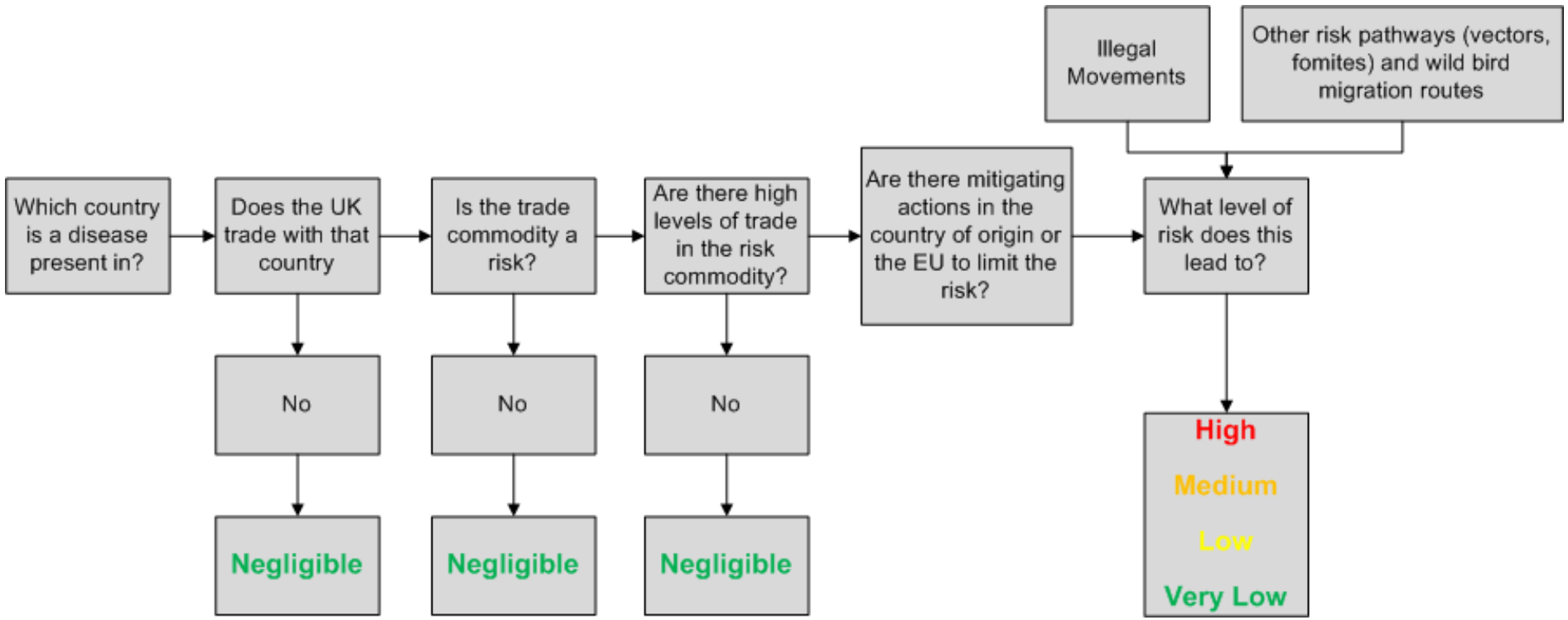
Plus advice provided to UKBF to aid checks for POAO


• Notification by EU MS, Third Country, European Commission, FCO
• Horizon Scanning (IDM)
Defra CVO Office
OIE, European Commission, FCO, Ministry information
Trade Information
Daily monitoring of worldwide exotic notifiable disease outbreaks
Risk Pathways and Vulnerability Project
Disease Profiles
IDM Risk Assessment and tool to measure risk of introduction
Responsibility and Cost Sharing
Exotic Disease Policy Programme
Disease briefing
Risk assessment
D2R2
Decision support
Ranking

Assessing the risk

- OIE guidance for qualitative risk assessment
- Using TRACES to look for consignments
- Disease experts (e.g. The Pirbright Institute)
- Our risk assessments are specifically looking at the period **prior to disease reports** (when official controls come into play)
- Usually we look at consignments coming in **two incubation periods** prior to disease report

Tool for the risk of introduction of disease



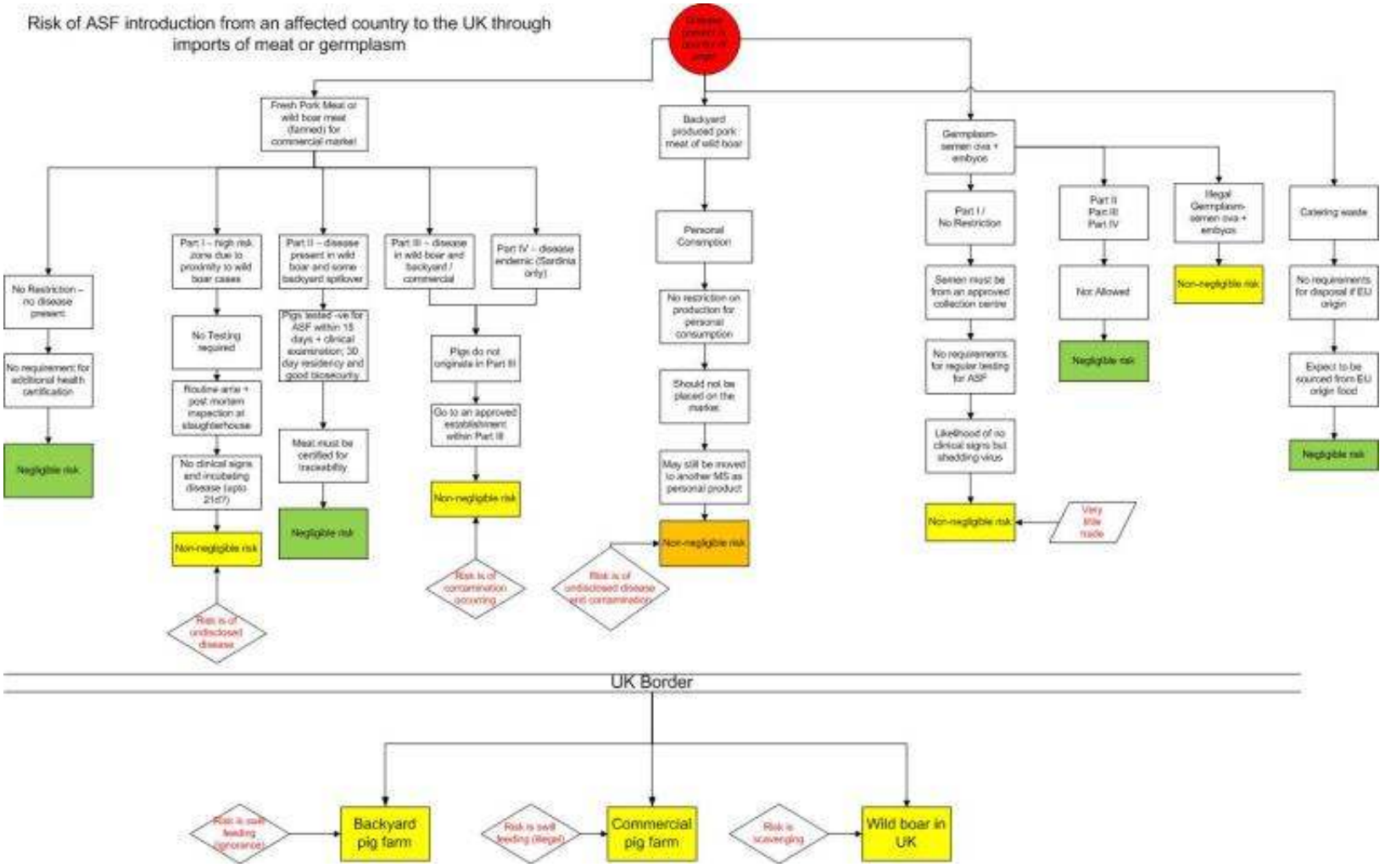
Assessing the risk of disease introduction in imports: Helen Roberts, Mia Carbon, Matt Hartley, et al. *Veterinary Record* 2011 168: 447-448

Risk Management

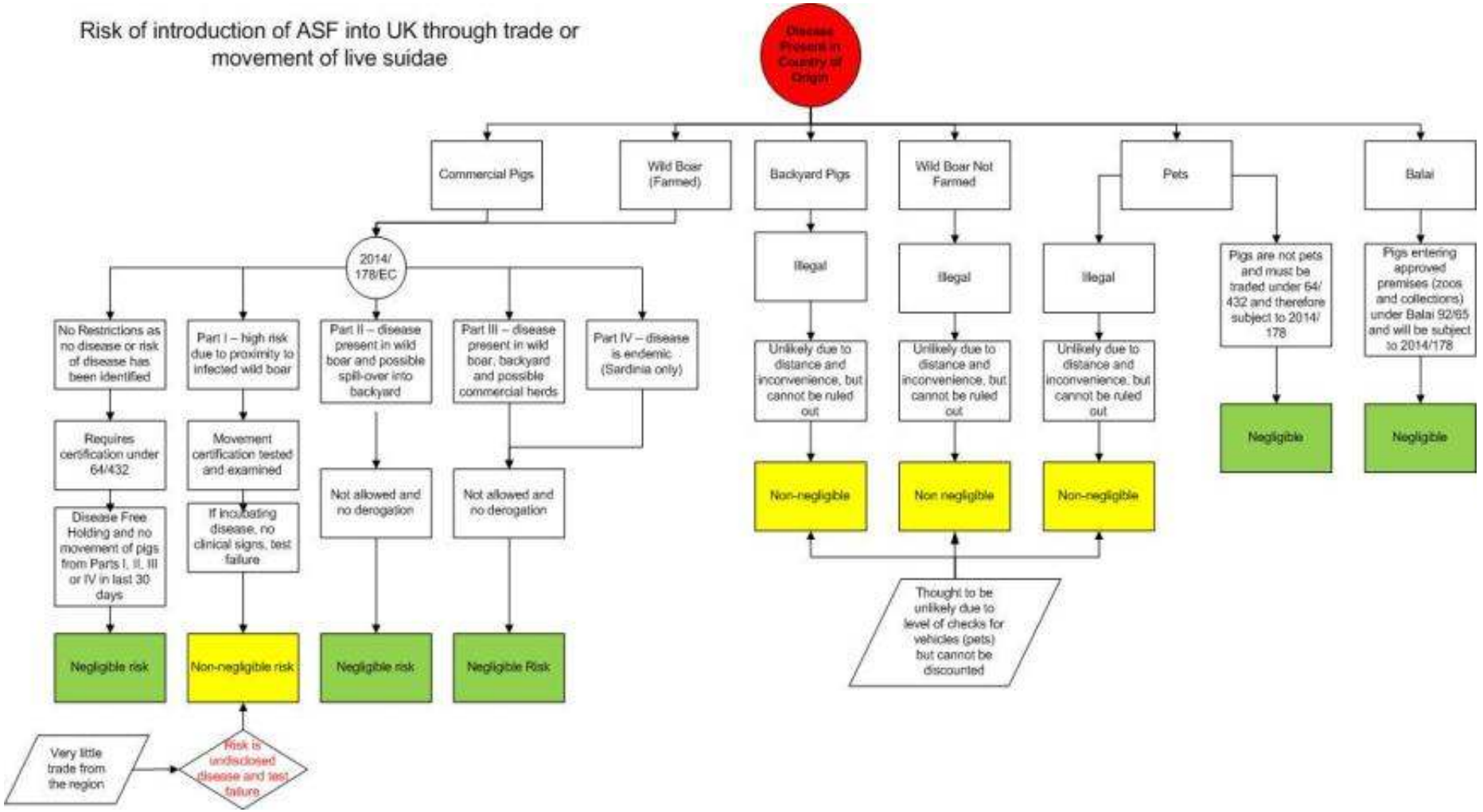
Assessed Risk	Risk Category	Terminology	Regulatory action taken						
			Check Traces	Enforcement			Increased Surveillance	Disease control	
				Inform UKBF	Inform BIP	Post-import		Investigation	Disease control
Negligible	G	So rare, does not merit consideration	✓						
Very low	G/A	Very rare, but cannot be excluded	✓	[✓]	[✓]				
Low	A	Rare, but does occur	✓	✓	[✓]	[✓]	[✓]		
Medium	A/R	Occurs regularly	✓	✓	[✓]	[✓]	[✓]	[✓]	
High	R	Occurs very often	✓	✓	✓	[✓]	[✓]	[✓]	[✓]
Very high	R	Events occur almost certainly	✓	✓	✓	✓	[✓]	[✓]	[✓]

Risk terminology follows the epidemiological definition of likelihood or probability and does not include the impact or consequences of infection. References to levels of risk refer to probability outcomes and follow the terminology as stated in the table above (EFSA, 2006) .

POAO risk routes



Live pigs risk routes



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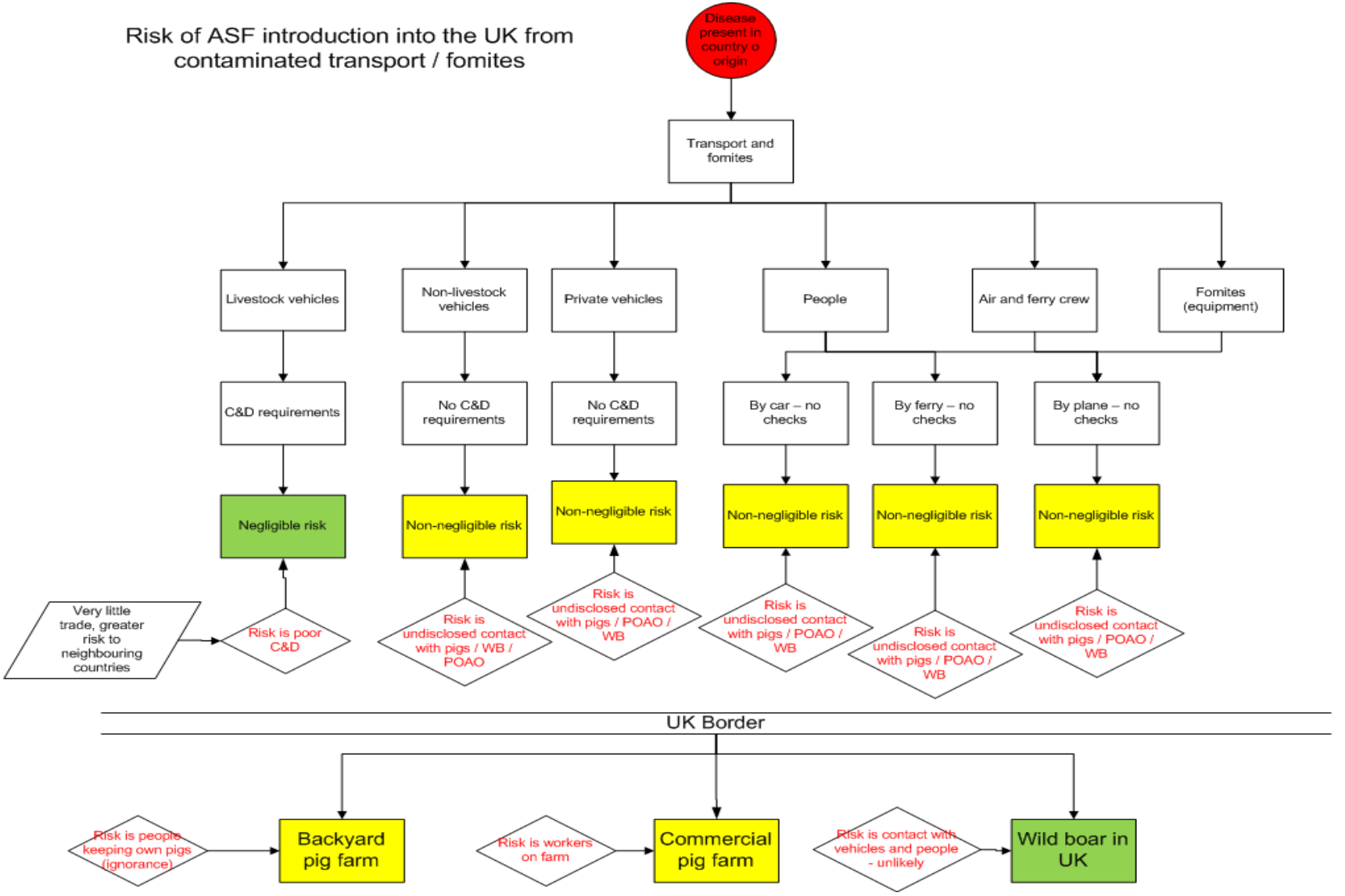
Transport risk routes



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Communicating the risk

- Veterinary Risk Group
- HAIRS Group
- Defra Core Groups
- CVOs
- Public


Department for Environment, Food and Rural Affairs
Animal Health & Veterinary Laboratories Agency
Veterinary & Science Policy Advice Team – International Disease Monitoring

Updated Outbreak Assessment

Update on African Swine Fever in Estonia, Latvia, Lithuania and Poland

10 September 2014 Ref: VITT/1200 ASF in Eastern EU – Update 2

Disease Report

The disease situation in North East EU Member States continues to cause concern. More wild boar cases and backyard farms have reported disease in Latvia, while in Lithuania there are further cases along the border with Belarus and Latvia. In Poland, disease seems to be restricted to the border region with Belarus and, in a new development, Estonia has reported ASF in two wild boar, 25 km apart, for the first time in a region already under restriction due to the high risk of outbreaks from proximity to cases in Latvia. Ukraine has reported a new case in a wild boar on the Russian border, while the Russian Federation continues to report cases and outbreaks. Information is available at the OIE / WAHID website: http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI

Department for Environment Food & Rural Affairs

Public Health England

VRG Veterinary Risk Group

DH Department of Health

Animal & Plant Health Agency

https://www.gov.uk/government/collections/animal-diseases-international-monitoring

Department for Environment, Food and Rural Affairs
Animal Health & Veterinary Laboratories Agency
Veterinary & Science Policy Advice Team - International Disease Monitoring

Preliminary Outbreak Assessment

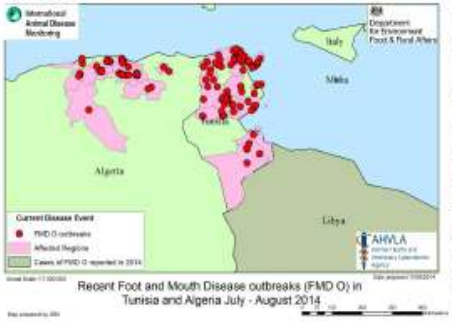
Foot and Mouth Disease in Algeria and Tunisia

13th August 2014 Ref: VITT/1200 FMD in Algeria and Tunisia

Disease Report

The Algerian Authorities have reported multiple outbreaks of Foot and Mouth Disease (FMD) serotype O in cattle in several regions along the coast (OIE, 2014a; see map). According to the disease report, FMD was first introduced via the illegal movement of (presumably unvaccinated) cattle. Disease control measures are in place including vaccination.

This is the first report of FMD since 1999 in Algeria. Annual vaccination is carried out as part of the OIE Official Control Programme, which includes vaccination against type O for resident animals.



Recent Foot and Mouth Disease outbreaks (FMD O) in Tunisia and Algeria July - August 2014

Meanwhile, Tunisia continues to report outbreaks of FMD O in cattle and small ruminants, with 114 outbreaks now reported. Disease control measures include vaccination (OIE, 2014b).

Situation Assessment

Given the situation in Tunisia and North Africa in general, it is very likely that the same strain of FMD O in Algeria is now circulating there, identified as the FMD O ME-SA Ind-2001d lineage, closely related to outbreaks from Libya and the Middle East (The Pirbright Institute, 2014).

VETERINARY & SCIENCE POLICY ADVICE TEAM
International Disease Monitoring

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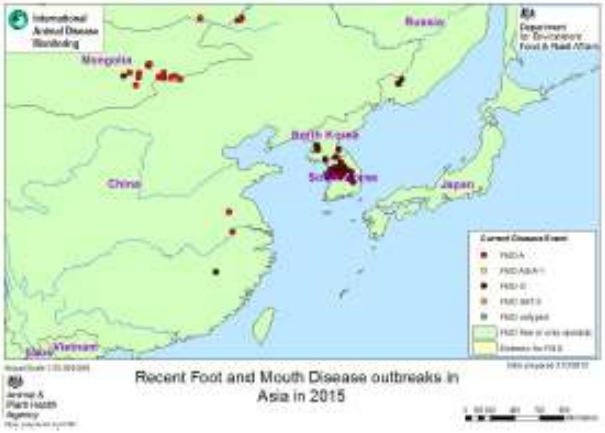
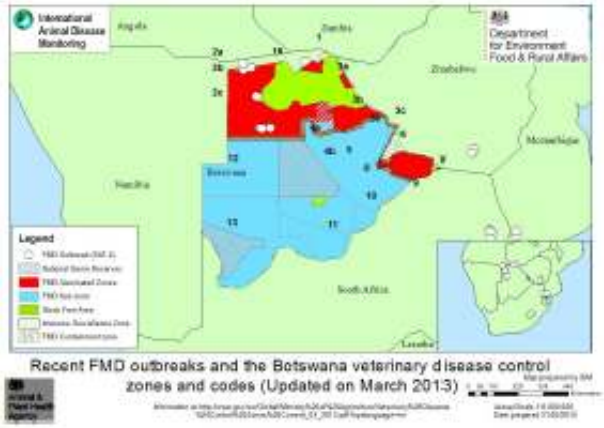


Recent Foot and Mouth Disease outbreaks in Asia in 2015

Recent Foot and Mouth Disease outbreaks (FMD O) in Algeria January - March 2015



Recent FMD outbreaks and the Botswana veterinary disease control zones and codes (Updated on March 2013)

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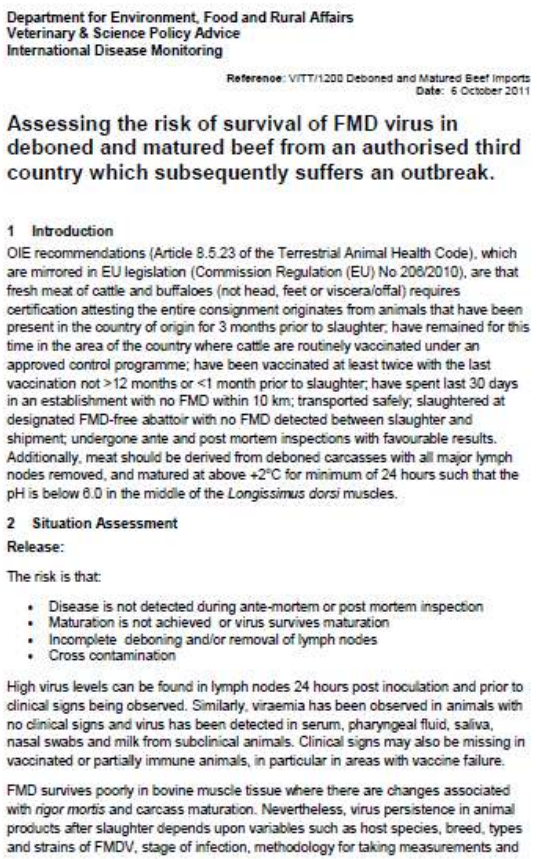
Risk of importing deboned beef

in relation to FMD from any country

First step

- Yes reportable
- Yes present in exporting country
- No not present in UK
- Yes, deboned beef can act as a vehicle if not treated properly
- Yes, it is a hazard



Department for Environment, Food and Rural Affairs
Veterinary & Science Policy Advice
International Disease Monitoring

Reference: VITT/1200 Deboned and Matured Beef Imports
Date: 6 October 2011

Assessing the risk of survival of FMD virus in deboned and matured beef from an authorised third country which subsequently suffers an outbreak.

1 Introduction

OIE recommendations (Article 8.5.23 of the Terrestrial Animal Health Code), which are mirrored in EU legislation (Commission Regulation (EU) No 206/2010), are that fresh meat of cattle and buffaloes (not head, feet or viscera/offal) requires certification attesting the entire consignment originates from animals that have been present in the country of origin for 3 months prior to slaughter; have remained for this time in the area of the country where cattle are routinely vaccinated under an approved control programme; have been vaccinated at least twice with the last vaccination not >12 months or <1 month prior to slaughter; have spent last 30 days in an establishment with no FMD within 10 km; transported safely; slaughtered at designated FMD-free abattoir with no FMD detected between slaughter and shipment; undergone ante and post mortem inspections with favourable results. Additionally, meat should be derived from deboned carcasses with all major lymph nodes removed, and matured at above +2°C for minimum of 24 hours such that the pH is below 6.0 in the middle of the *Longissimus dorsi* muscles.

2 Situation Assessment

Release:

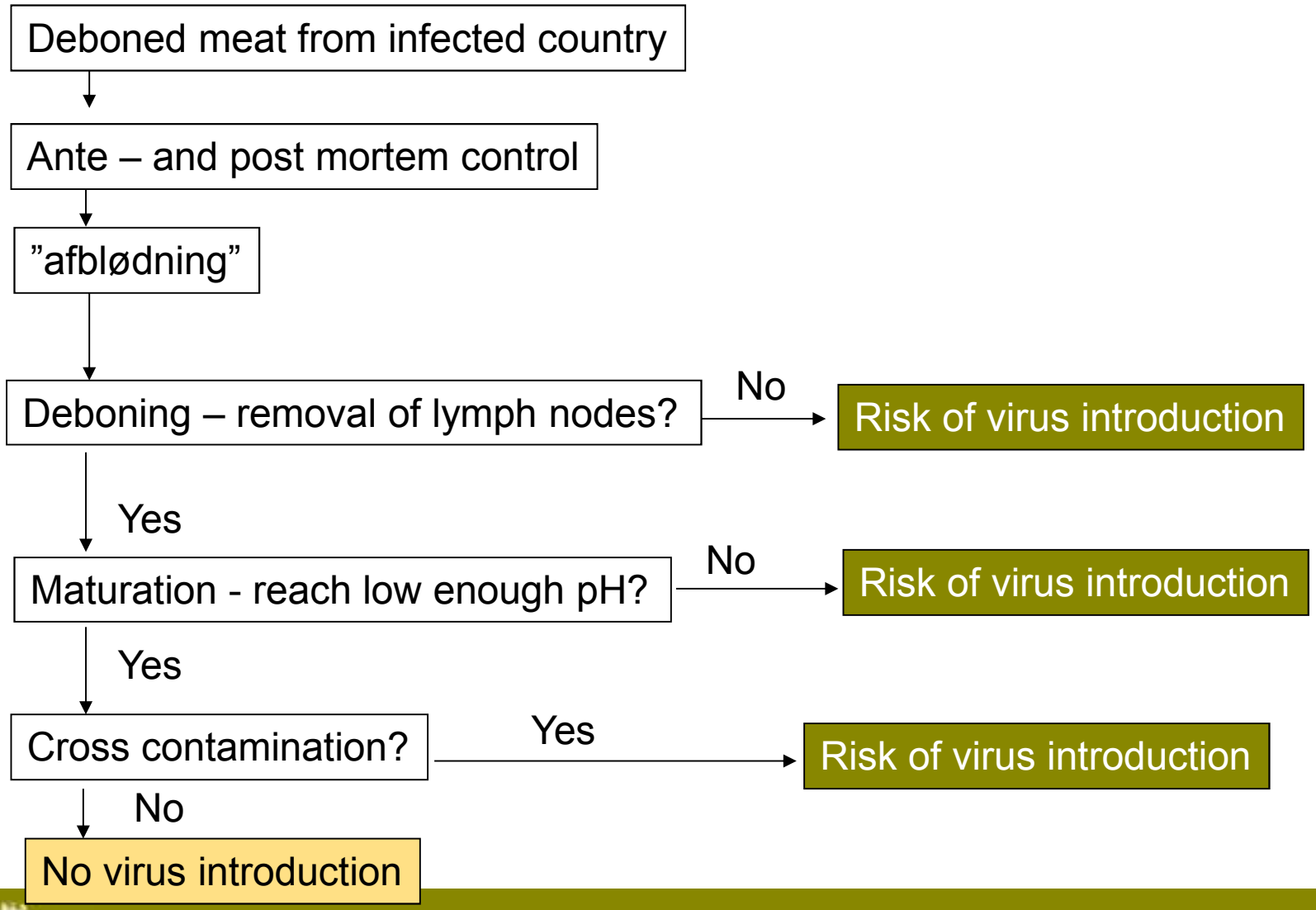
The risk is that:

- Disease is not detected during ante-mortem or post mortem inspection
- Maturation is not achieved or virus survives maturation
- Incomplete deboning and/or removal of lymph nodes
- Cross contamination

High virus levels can be found in lymph nodes 24 hours post inoculation and prior to clinical signs being observed. Similarly, viraemia has been observed in animals with no clinical signs and virus has been detected in serum, pharyngeal fluid, saliva, nasal swabs and milk from subclinical animals. Clinical signs may also be missing in vaccinated or partially immune animals, in particular in areas with vaccine failure.

FMD survives poorly in bovine muscle tissue where there are changes associated with *rigor mortis* and carcass maturation. Nevertheless, virus persistence in animal products after slaughter depends upon variables such as host species, breed, types and strains of FMDV, stage of infection, methodology for taking measurements and

Second step – scenario pathway



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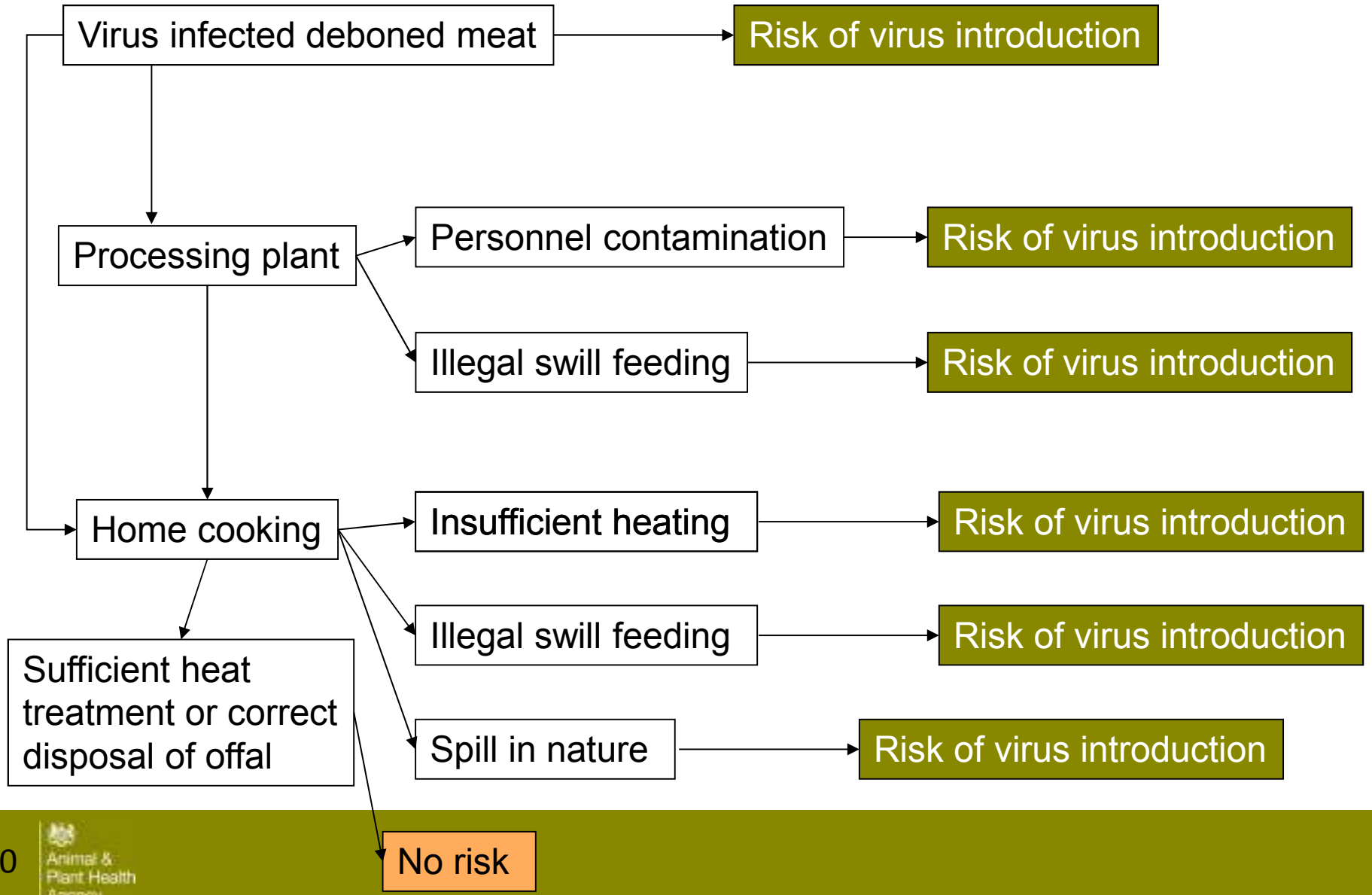
3rd Step: Exposure Assessment



Consequence assessment

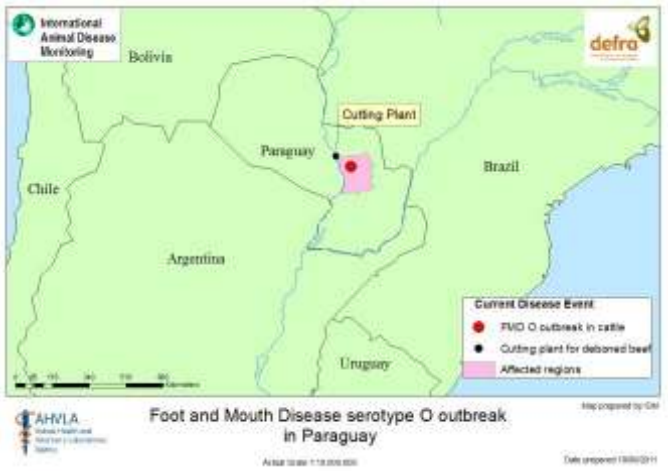
- Very low risk of introduction to livestock population
- International trade
- Wider social impact
- Animal welfare
- (Public health)
- Economic impact – devastating

Risk estimation

Very low risk

Specific example: FMD reported in Paraguay in 2011

- Trade partner; in an area where trade is allowed for deboned and matured beef
- Check TRACES
- Identify the commodities, time of slaughter, place of slaughter, treatment of commodity
- Notified of 2 consignments
- Carry out risk assessment and discuss with policy and the Commission
- Notify the port of entry and the importer
- Suspension from EU list
- Recall by authorities



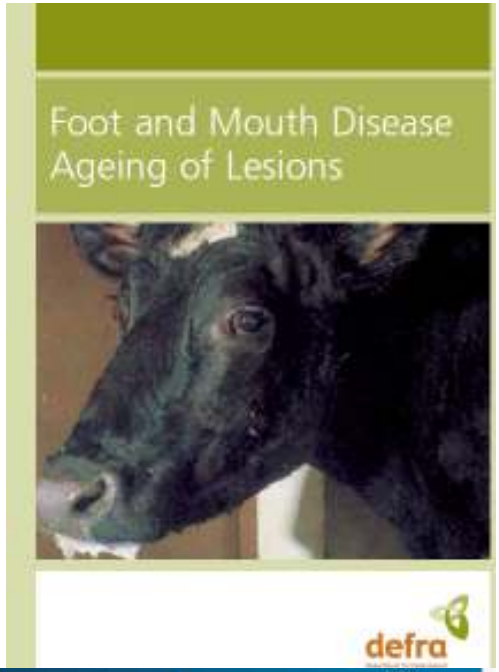
6. Maintaining Capability to Respond between outbreaks

Staff Training

- Standardised Operating Instructions

- Training for frontline staff in recognition and response to suspect exotic notifiable disease – induction / refresher

- Others e.g. BTSF
  OIE



- Debrief, audit & feedback on field reports from all suspect disease investigations - QA
- More specific training for field epidemiology investigators

- **EUFMD 'Real Time Training' & on-line FMD Emergency Preparation Course (pending)**

- Regular programme of national and regional contingency exercises

- 'Exercise Silver Birch' 2010 – FMD
- 'Exercise Walnut 2013' – CSF
- Planned National FMD Exercise Autumn 2015

Exercise Silver Birch 2010

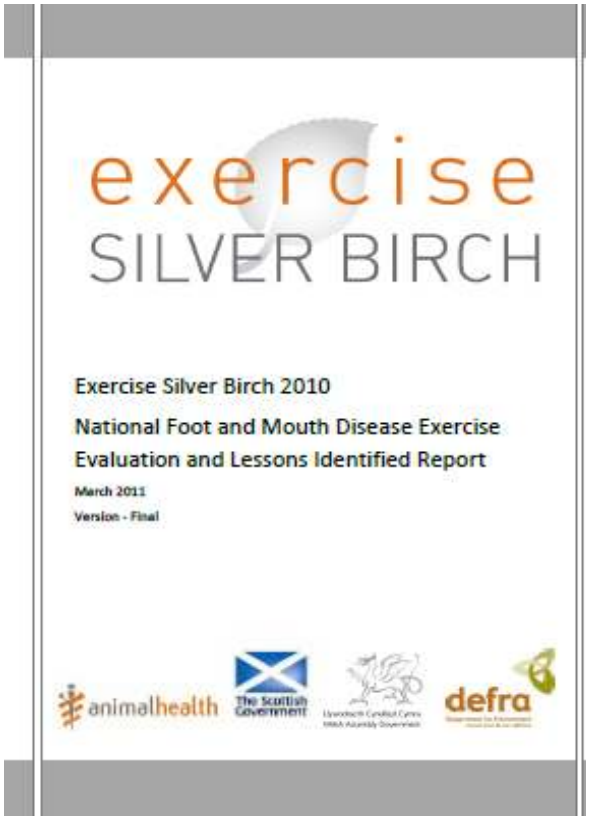
- The EU FMD Directive 2003/85/EC requires Member States to undertake real-time exercises to assess their Foot and Mouth Disease contingency plans **twice within a five year period** or “two times during the five years period after an outbreak of a major epizootic disease has been effectively controlled and eradicated”..

- Exercise included:
  - a field operational element,
  - a table top exercise,
  - simulated strategic meetings and exercise briefings
  - concluding with a two day live exercise involving participants from across the UK
  - tested strategic, tactical and operational control levels

- Over 600 participants Ministers -> frontline staff/operational partners
- Industry stakeholders attended the exercise as observers and participants
- National Disease Control Centre (NDCC) and multiple Local Disease Control Centres (LDCCs) were setup

The Exercise tested out elements of the UK Contingency Plan:

- Carcase disposal
- Deployment of vaccination
- Animals at risk (Breeds at Risk)
- Laboratory capacity, mobile testing equipment (inc. on farm diagnostic testing)
- Export and movement of livestock / products
- Movement standstills
- Animal welfare
- Financial considerations
- Meat and food chain issues
- Operational resourcing issues
- Rural community issues
- Communications and policy between UK Administrations



8. Some useful links in case of requiring further information:

Foot and Mouth Disease Control strategy for Great Britain

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69456/fmd-control-strategy111128.pdf

United Kingdom Contingency Plan for Exotic Notifiable Diseases of Animals

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411162/pb14239-animal-disease-plan-2015.pdf

Contingency Plan for Exotic Notifiable Diseases of Animals in England

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288901/pb14115-animal-disease-plan-140312.pdf

Controlling animal disease

https://www.gov.uk/government/policies/protecting-animal-health-and-preventing-disease-including-in-trade/supporting-pages/controlling-animal-disease

Defra & APHA International Disease Monitoring

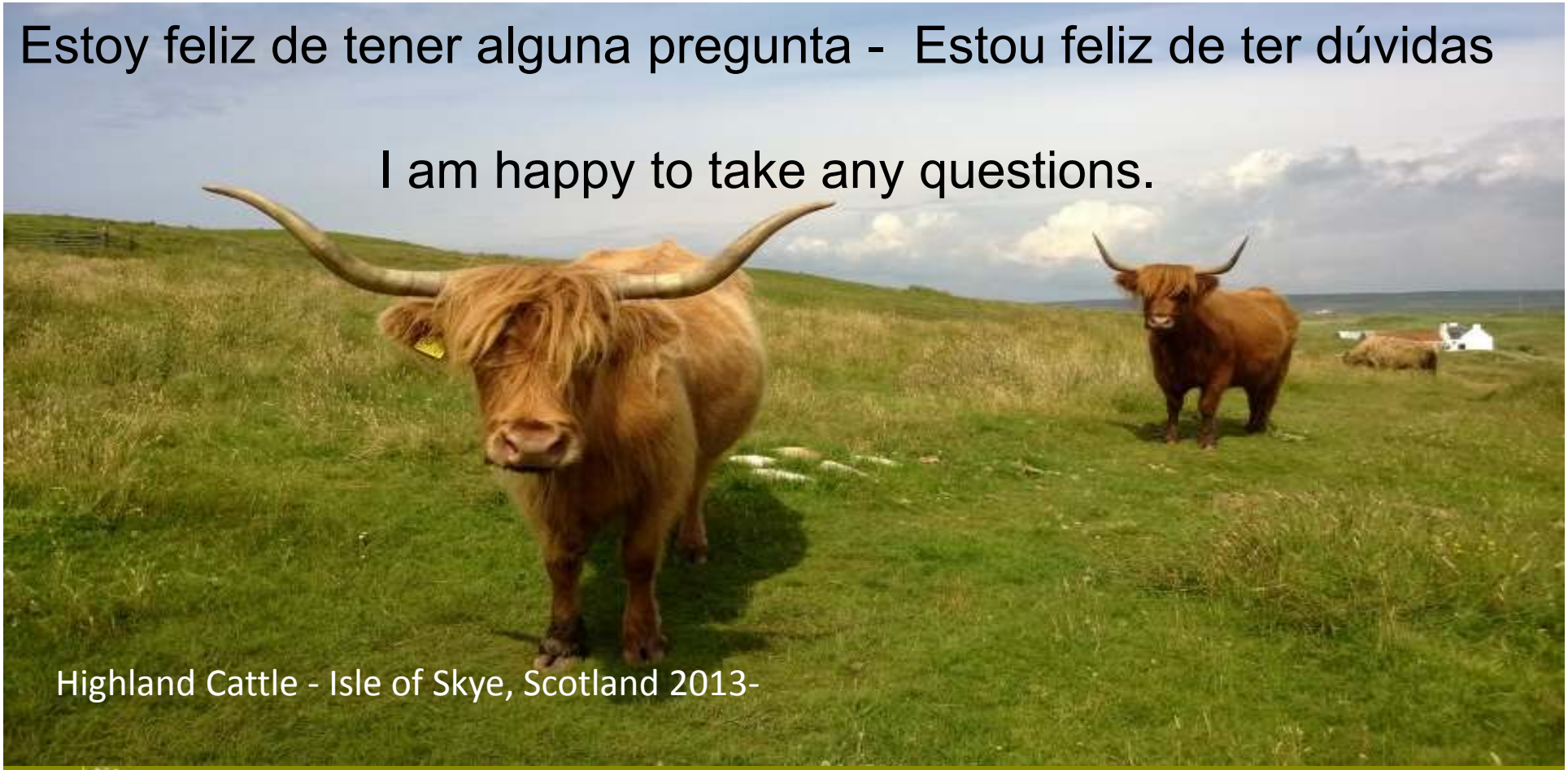
https://www.gov.uk/government/collections/animal-diseases-international-monitoring

9. Acknowledgements:

- **PANAFTOSA & COSALFA**
- **Animal & Plant Health Agency** (APHA)
- **Dr Helen Roberts**: APHA Exotics and Risk, Veterinary and Science Policy Advice team (Imports)
- **Jane Gibbens** BVetMed, MSc (TropVetSci), MSc (Epidem) Dip ECVPH, MRCVS: Head of Epidemiology & Risk Team, APHA
- **Kate Sharpe** BVetMed, MSc (VetEpi), MRCVS
  (former Head of Surveillance & Intervention Epidemiology, APHA)
- **Sam Mansley** BVMS, MVM, MRCVS (formerly State Veterinary Service/Animal Health)
- **EUFMD**

Gracias por su atención! - Obrigado pela sua atenção!

Thank You for your attention!



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