

Annex A: Terms of reference

This inquiry was commissioned from the Royal Society jointly by the Chief Scientific Adviser and the Permanent Secretary of the Department for Environment, Food and Rural Affairs, on behalf of the Prime Minister and the Secretary of State. The commission stressed that the inquiry should be 'clearly independent': this meant that the terms of reference were agreed mutually between the Society, OST and DEFRA and that the membership of the Committee appointed to carry it out, how the work was done and the publication of the report were matters solely for the Society to determine.

The agreed terms of reference were as follows.

To review scientific questions relating to the transmission, prevention and control of epidemic outbreaks of infectious disease* in livestock in Great Britain, and to make recommendations by Summer 2002.

The inquiry should take close account of related inquiries, notably the administrative inquiry into the handling of the 2001 foot and mouth outbreak and the policy commission on the future of agriculture. It should cover:

a. Transmission/prevention

- the research base for identifying present and future risks of disease—what we know about risks to Great Britain posed by animal diseases world wide; whether we know enough; and whether early warning/horizon scanning arrangements are scientifically and logistically adequate;
- the availability, scientific efficacy and adequacy of preventive measures (including vaccination) in the light of assessment of the risks, including the risks associated with current and future livestock practices.

b. Controls

- the availability, scientific efficacy and safety of current technology (including vaccines) and methods for the surveillance, control and eradication of infectious livestock diseases in Great Britain;
- the potential for enhanced use of quantitative epidemiological models in understanding and predicting the spread of disease and the impact of policy options.

The review should:

- pay particular regard to any hazards to human health;
- identify any actual or potential constraints such as ethics, costs and benefits, economic incentives and social concerns.

*'Transmissible diseases that have the potential for very serious and rapid spread, irrespective of national borders, that are of serious socio-economic or public health consequence and that are of major importance in the international trade of animals or animal products.' [This is the definition of animal infectious diseases included in List A of the Office International des Epizooties (OIE).]

Annex B: Conduct of the Inquiry

I PEOPLE

The Council of the Royal Society appointed the following Committee in September 2001 to carry out the Inquiry.

Sir Brian Follett, FRS, Inquiry Chair

Mr Peter Allen, Farmer and member of the Council of the National Farmers Union

Professor Patrick Bateson, SecRS, Provost of Kings College Cambridge and Biological Secretary and Vice-President of the Royal Society

Mr David Black, Practising veterinarian in Cumbria

Professor Fred Brown, FRS, US Department of Agriculture, Plum Island Animal Disease Centre; formerly Deputy Director, Animal Virus Research Institute, Pirbright

Mr Roger Eddy, Senior Vice-President of the Royal College of Veterinary Surgeons, and practising veterinarian

Ms Suzi Leather, Deputy Chair, Food Standards Agency

Professor Simon Levin, Department of Ecology and Evolutionary Biology, Princeton University

Professor Karl Linklater, Principal, Scottish Agricultural College

Ms Jeanette Longfield, Coordinator of Sustain, The Alliance for Better Food and Farming

Professor Ian McConnell, Director of Research, Department of Clinical Veterinary Medicine, University of Cambridge

Dr Angela McLean, Department of Zoology, University of Oxford

Professor Andrew McMichael, FRS, Director, Weatherall Institute of Molecular Medicine, University of Oxford

Dr Jenny Mumford, Director of Science, Animal Health Trust, Newmarket

Professor Robin Weiss, FRS, Windeyer Institute of Medical Science, University College London

Dr Jorgen Westergaard, Former Principal Administrator – Animal Health and Welfare Unit, European Commission

The Working Group subsequently appointed three specialist Subgroups comprising members of the main Committee and others, to look in detail at specific issues.

Subgroup A: Surveillance and diagnostics

Remit To look at the effectiveness of present surveillance, and recommend any improvements required; and to assess the state of diagnostic science and technology, its application, and scope and prospects for further improvement in the short and long term

Chair Professor Karl Linklater

Members Mr Peter Allen

Professor Fred Brown, FRS

Professor Robin Weiss, FRS

Mr Gareth Davies

Dr Bill Taylor

Subgroup B: Prediction, prevention and epidemiology

Remit To look at techniques actually or potentially available to model disease outbreaks, under a wide range of possibilities, and to consider the information needs of those models; to consider the epidemiology of the diseases in the UK and overseas, and the range of preventive measures available

Chair Professor Patrick Bateson, SecRS

Members Mr David Black

Dr Angela McLean

Professor Simon Levin

Ms Jeanette Longfield

Sir David Cox, FRS (Nuffield College)

Dr Marcus Doherr (University of Bern)

Sir Martin Holdgate (President of the Zoological Society of London; former Chief Scientist, Department of the Environment 1979–1985)

Professor Valerie Isham (Department of Statistics, University College, London)

Subgroup C: Vaccination

Remit To examine the current potential for vaccination both as part of control strategies and its potential as a prophylactic agent, along with the scope for further development in the science and technology

Chair Professor Ian McConnell

Members Mr Roger Eddy

Professor Andrew McMichael, FRS

Dr Jenny Mumford

Professor Peter Beverly (Director, Edward Jenner Institute)

Professor Ivan Morrison (Institute for Animal Health)

Sir John Skehel, FRS (Director MRC National Institute for Medical Research)

The Working Group and Subgroups were supported by the following **Secretariat**.

Dr Malcolm Anderson	Secretary to Subgroup C
Ms Melissa Barrell	Administrative Assistant
Dr Peter Collins	Director Science Policy, Royal Society
Dr Geoffrey Findlay	Inquiry Secretary
Ms Saskia Gretton	Inquiry Administrator
Mr John Horton	Secretary to Subgroup A
Dr Keith Root	Secretary to Subgroup B and Manager Science Policy, Royal Society

The Working Group and Subgroups commissioned **consultants** to advise on particular issues, as follows.

Dr Jonathan Adams (Evidence Ltd)	Bibliometric study on foot and mouth and other infectious diseases
Dr Dennis Alexander (VLA)	Avian Influenza and Newcastle Disease
Dr Philip Mellor (IAH)	Bluetongue and African Horse Sickness
Dr David Paton (IAH)	Classical Swine Fever
Dr Suzanne Plesner Jensen	FMD literature survey
Dr John Ryan (FAO)	International trade and disease control regulations
Veterinary Epidemiology and Economics Research Unit, Reading University (VEERU)	Study of the economic impact of vaccination strategies for FMD in the UK
Dr PJ Wilkinson (IAH)	African Swine Fever

The Royal Society expresses its warm appreciation to all the above contributors to the Inquiry.

II CONDUCT OF THE INQUIRY

On 9 August 2001 the Secretary of State for Environment, Food and Rural Affairs announced the establishment of three inquiries: on the future of farming and food (chaired by Sir Don Curry and published in January 2002), on lessons to be learned from the foot and mouth disease outbreak 2001 (chaired by Dr Iain Anderson, to be published in July 2002), and the present Inquiry.

The Royal Society published the membership of its Inquiry Committee on 12 September 2001.

The Inquiry issued a preliminary call for evidence on 12 September 2001, seeking comments on the major scientific questions that it should address, the key areas of science and the main diseases that should be covered, and the people and organisations whose views should be sought. A more detailed call for evidence was issued on 12 October, asking a series of questions under each of the main topics being examined. As well as being put on the Society's website and being sent to those we knew to be interested, the detailed call for evidence was advertised in *Farmers Guardian*, *Farmers Weekly*, *Journal of the American Veterinary Medical Association*, *Nature*, *Science*, *Veterinary Record* and *Veterinary Times*. Some 400 written submissions were received in response.

The main Committee, and the Subgroups, also held formal and informal meetings with numerous individuals and organisations, commissioned consultants to prepare background papers on specific topics, and examined the relevant scientific literature. The main Committee visited the Institute for Animal Health Pirbright Laboratory and held a Focus Group on animal welfare issues. Subgroup A held Focus Groups on diagnostic techniques and on surveillance, and Subgroup B organised a workshop on modelling.

In addition to these evidence sessions, members of the main Committee visited Cumbria, Dumfries & Galloway, and Abergavenny and spoke with many individuals and organisations affected by the 2001 FMD outbreak. The visit to Cumbria included an open meeting attended by nearly 100 people.

All those who gave formal written and/or oral evidence are listed in Annex C. The evidence itself may be seen on the Society's website (www.royalsoc.ac.uk), and on the CD-ROM enclosed with this report. The Society is most grateful to those who helped the Inquiry in this way.

The Chairman and Secretary participated in an international conference organised by the European Union, in Brussels on 12–13 December, on control and prevention of FMD.

The main Committee held eight plenary meetings, on 3 October, 19 December, 30 January, 25 February, 15 April, 26–27 April, 20 May and 10 June. The Council of the Royal Society reviewed the draft report on 12 June.

In order to allow those interested to follow the progress of the Inquiry, the Society established a dedicated webpage where various items relevant to the Inquiry were placed, and published progress reports on 8 October 2001, 21 November 2001 and 24 January 2002.

The Society was reimbursed for costs incurred in conducting the Inquiry. These totalled £425 000.

Annex C: List of those who gave evidence

In issuing our calls for evidence, we indicated that we intended to make evidence received publicly available unless the author concerned asked us to keep the evidence confidential. We have done this by placing it on the Society's website (www.royalsoc.ac.uk) and by putting it onto the CD-ROM enclosed with this report.¹ For practical reasons we have excluded from the website and CD-ROM material that has already been published elsewhere (since it is already publicly available), and particularly long submissions (where we have included sufficient material to allow readers to judge whether they wish to see the remainder, and information on where it can be found).

The following is a list of the individuals and organisations that gave formal evidence to the Inquiry, in writing (W) and/or orally (O).

The submissions, of course, represent the views of their authors and not necessarily the views of the Royal Society.

The Royal Society is most grateful to those who assisted the Inquiry by providing evidence.

Individuals

Adihetty, Kumu – Farm Animals Welfare Council (W)
Affleck, Jim – Geo-Rheological Survey Company Ltd (W)
Alcorn, Mike – British Veterinary Poultry Association (W + O)
Aldridge, Brian – Ash Moor Joint Report (W)
Alexandersen, Professor Soren – Institute of Animal Health (O)
Allan, Dr Duncan (W)
Allen, Dr William Maurice – Veterinary Laboratories Agency (W)
Allender, Jacquita & Alistair (W)
Anderson, Dr Euan – formerly Pirbright Laboratory, Institute of Animal Diseases (W)
Anderson, Ian – Scottish Executive, Environment and Rural Affairs Department (O)
Anderson, Dr John – Institute of Animal Health (O)
Anderson, Ray – DEFRA (O)
Anderson, Professor Roy, FRS – Imperial College (W + O)
Anscombe, Jane – Abbey Veterinary Centre, Abergavenny (O)
Archer, Libby – Horserace Betting Levy Board (W)

Baird, JH – British Veterinary Association (W)
Baker, Professor Ray, FRS – Biotechnology and Biological Sciences Research Council (W + O)
Barber, Beverley – Country Land & Business Association (W)
Barley, Jason – Sheep Veterinary Society (O)
Barnett, Dr P – Institute of Animal Health (O)
Barrett, Dr Tom – Institute of Animal Health (O)
Barribal, Jane – Farmtalking.com (W)
Barteling, Dr Simon (W)
Bateman, Geoffrey – Environment Agency (O)
Bates, Marcus – National Pig Association (W)
Bayley, Janet – National Foot and Mouth Group (W + O)
Beale, John (W)
Beat, Alan & Rosie – Farmers (W)
Beecham, Sir Jeremy – Local Government Association (W)
Bell, Dr Jon – Food Standards Agency (W)
Bell, Robin – DEFRA (O)
Bell, Rosemary (W)
Belsham, Dr Graham – Institute of Animal Health (O)
Biggar, Donald – Farm Business Steering Group (W)

¹In a very small number of cases, after taking legal advice, we have redacted extracts of evidence – for example, personal or confidential information about third parties – where publication would potentially expose the Royal Society to legal action.

Biggs, Professor Peter, FRS – former Director Animal Disease Research at the Agricultural and Food Research Council (W)

Birch, Dr Colin (W)

Bishop, Professor Steve – Roslin Institute (W)

Blamire, RV – Veterinarian (W)

Boardman, Suzanne – Wildlife Information Network (W)

Borysiewicz, Sir Leszek – Academy of Medical Sciences (W)

Bostock, Dr Chris – Institute of Animal Health (W + O)

Bowman, Matthew – Farmer (O)

Box, Joan E – Medical Research Council (W)

Bradnock, Peter – British Poultry Council (W)

Braun, Gilbert (W)

Breeze, Roger – United States Department of Agriculture (W)

Brodie, Huw – National Assembly for Wales Agriculture Department (O)

Bromwell, Mr & Mrs (Farm visit, Crickhowell)

Broom, Professor DM – University of Cambridge (W)

Brown, Dr ACM – China–EU Centre for Agricultural Technology (W)

Brown, David – Livestock Auctioneers Association (W)

Brown, Richard – Strathbogie Veterinary Centre (W)

Brownlie, Professor Joe – Royal Veterinary College, British Cattle Veterinary Association (W + O)

Bungard, Peter – Gloucestershire County Council (W)

Burge, Richard – Countryside Alliance (W)

Burke, Chris (W)

Burke, Professor Derek (W)

Butterworth, Andrew – Operating Platforms Ltd (W)

Campbell, Professor RH (W)

Capstick, Gordon – NFU County Chairman (O)

Carabin, Dr Helene – Imperial College (O)

Carter, Stephen – Priory Veterinary Surgery (W)

Catchpole, Dr Mike – Centre for Disease Surveillance and Control (O)

Catlow, David – British Veterinary Association (O)

Cheney, Clare – Provision Trade Federation (W)

Choraine, Pierre – Federation of Veterinarians of Europe (W)

Christian, Mike – Belle Vue Vets (W + O)

Clarke, Alan – Northumberland County Council (W)

Clarke, Dr Judy MacArthur – Farm Animals Welfare Council (W + O)

Clarke, Richard (W)

Cochrane, Graeme – Scottish Executive, Environment and Rural Affairs Department (O)

Cockbain, Will – NFU County Vice–Chairman (O)

Colaco, Camilo – ImmunoBiology Ltd (W)

Collins, Mark – Animal Health Trust, British Equine Veterinary Association (W)

Cook, David – University of Newcastle (W)

Cotgreave, Dr Peter – Save British Science Society (W)

Cowie, Fiona (W)

Crawley, David – Scottish Executive, Environment and Rural Affairs Department (O)

Crispin, Dr Sheila – University of Bristol (W)

Critchley, Mary – Warmwell (W)

Crouch, JRF – Veterinarian (W)

Cutler, Neil – National Farmers Union (O)

Davie, Dr AM – Geo-Rheological Survey Company Ltd (W)

Davies, Gareth – Independent veterinarian (W + O)

Davies, Glyn – National Assembly for Wales (W)

Davies, Glynne – Riverside Veterinary Centre, Abergavenny (O)

Deans, Michael T (W)

de Clercq, Kris – Chairman FAO EUFMD research group (O)

Desselberger, Dr Ulrich – Addenbrookes Hospital (O)

Dewhurst, CP (W)

Dexter, Dr Michael, FRS – Wellcome Trust (W)
 Dobson, Georgina – Council for the Protection of Rural England (W)
 Dobson, Jonathan (W)
 Doel, T – Merial (O)
 Donaldson, Dr Alex – Institute of Animal Health (W + O)
 Done, Professor Stan – Pig Veterinary Society (O)
 Donnelly, Dr Christl – Imperial College (W + O)
 Donovan, Mike – Practical Farm Ideas (W)
 Downes, Ms Jane – Meat Hygiene Service (O)
 Duerden, Professor Brian – Public Health Laboratory Service (W)
 Duff, Dr Keith – English Nature (W)
 Duncan, Dr William – Royal Society of Edinburgh (W)
 Duncombe, Dr Tracey – Society of General Microbiology (W)
 Dunn, George – Tenant Farmers Association (W)

Edelsten, Dr Martyn – Centre for Tropical Veterinary Medicine, University of Edinburgh (W)
 Edington, Professor N – Royal Veterinary College (W)
 Edwards, Professor Steven – Director, Veterinary Laboratories Agency (W + O)
 Ellwood, Professor Derek – University of Newcastle Medical School (W)
 Emberton, John – Farmer (W)
 Etherden, David – Cumbria County Council (W)
 Eykyn, Alicia – FMD Forum (W)

Ferguson, Professor Neil – Imperial College (W + O)
 Ferris, Dr Nigel – Institute of Animal Health (O)
 Finney, Professor John – University College London (W)
 Fletcher, Carolyn – Barwise Aberdeen Angus (W)
 Foote, Jon (W)
 Forster, Robert – National Beef Association (W)
 Fountain, Douglas – Veterinarian (O)
 Fullerton, Dr Helen (W)

Gardner, Leslie – Scottish Executive, Environment and Rural Affairs Department (O)
 Garland, Dr Tony – Veterinarian (W + O)
 Gibbens, Jane – DEFRA (W)
 Gibson, David – Third Planet Solutions Ltd (W)
 Gill, Ben – National Farmers Union (O)
 Gill, Jeff – Royal College of Veterinary Surgeons (W + O)
 Gilliland, John – Veterinarian (O)
 Goligher, Sue – DEFRA (W)
 Goodman, Dr Dougal – Foundation for Science and Technology (W)
 Graham, Supt. George – Dumfries and Galloway Constabulary (O)
 Grantham, Simon (W)
 Grantley-Smith, Martin – Meat and Livestock Commission (W)
 Green, Adrian M – Farmer (W)
 Green, Roger – Royal College of Veterinary Surgeons (W + O)
 Greenhill, Suzanne and Peter (W)
 Greig, Dr Alastair – Scottish Agricultural College (W)
 Grenfell, Dr Bryan – University of Cambridge (O)
 Groombridge, Keith & Jean (W)
 Guy, Edward – Public Health Laboratory Service (W)
 Gwyther, Liz (W)

Halliwell, Professor Richard – Faculty of Veterinary Medicine, University of Edinburgh (W)
 Hamblin, Dr Anne – Royal Veterinary College, London University (W)
 Hamblin-Boone, Russell – British Retail Consortium (W)
 Hancock Ian – University of Newcastle Medical School (W)
 Hancock, Dr Roger – Veterinary Laboratories Agency (O)
 Hancox, Martin (W)

Harman, Sir John – Environment Agency (W)
 Harris, Mr and Mrs John (W)
 Harris, Judith – Office of Science and Technology (O)
 Harrison, Wendy – National Farmers Union (O)
 Harwood, David – British Cattle Veterinary Association (W + O)
 Hayward, Andrew – DEFRA (O)
 Henderson, AJ (W)
 Henton, Richard G – National Farmers Union of Scotland (W)
 Hern, Jane C – Royal College of Veterinary Surgeons (W)
 Hird, Vicki – Sustain (O)
 Holden, Patrick – Soil Association (O)
 Holdgate, Sir Martin – former Chief Scientist Department of the Environment (W)
 Holliday, Peter and Alison (farm visit, Cumbria)
 Holliday, Roger (farm visit, Cumbria)
 Holliman, Andrew – Veterinarian (O)
 Horton, Richard – National Farmers Union Wales (O)
 Hovell, Professor Ramsay – University of Khartoum (W)
 Hughes, Peredur – National Farmers Union Wales (O)
 Hughes-Davies, TH (W)
 Hume, David (W)
 Hunter, Dr Archie – Centre for Tropical Veterinary Medicine, University of Edinburgh (W)
 Hutcheon, Gregor – Council for the Protection of Rural England (W)

Inglewood, Lord, former MEP (W + O)

Jackson, Dr Peter – University of Cambridge (W)
 James, Mary – National Farmers Union Wales (O)
 Jeggo, MH (W)
 Jinman, Peter – Jinman & Partners, Hereford (O)
 Johnson, Alastair – British Veterinary Poultry Association (O)
 Johnson, Dr Barry – Royal College of Veterinary Surgeons (O)
 Jones, Carwyn – Welsh Minister for Rural Affairs (O)
 Jones, Lowri – Young Farmers Club (O)
 Jones, Michael (W)
 Jones, TO (W)
 Jordan, Ian – Dumfries and Galloway Council (O)
 Jutzi, Samuel – Food and Agriculture Organisation (W)

Keeler, Martin (W)
 Keeling, Dr Matt – University of Warwick (O)
 Kenyon, Alistair – Fields Veterinary Group, Newport (O)
 Kibblewhite, Dr Mark – Environment Agency (O)
 King, Dr Andrew – Institute of Animal Health (O)
 King, Professor David, FRS – Chief Scientific Advisor, Office of Science and Technology (W + O)
 King, Dr Elaine – National Federation of Badger Groups (W)
 Kirkwood, James – Humane Slaughter Association (W)
 Knowles, Nick – Institute of Animal Health (W)
 Komorowski, Ed – Dairy Industry Federation (W)

Lachmann, Sir Peter, FRS – Academy of Medical Sciences (W)
 Ladell, G (W)
 Lambourn, Anne (W)
 Landeg, Fred – DEFRA (O)
 Lanyon, Lance – Royal Veterinary College, London University (W)
 Laurence, CJ – Royal Society for the Prevention of Cruelty to Animals (W)
 Lawry, F. John (W)
 Lawson, Dr Richard (W)
 Lee, Judith – Veterinarian (O)
 Lewis, Chris (W)

Lewis, Dr DMB (W)
Lillington, Paul (W)
Lindsay, Brian – National Dairy Farm Assured Society (W)
Little, Dr Tony – British Veterinary Association (O)
Lombard, Dr Michel – Merial, France (O)
Long, Dr Alan – Vegetarian Economy and Green Agriculture (W)
Longley, David – Lakeland Veterinary Association (W + O)
Lynn, David – Natural Environment Research Council (W)
Lysons, Mrs Ruth – Merrythought Local Veterinary Investigation Centre (O)

McConnell, John – University of London (W)
McDowell, David – Royal Society for the Prevention of Cruelty to Animals (O)
MacDuff, Major Lindsey – Chief of Staff to Brigadier Hugh Monroe, 52 (Lowland) Brigade (O)
McIntosh, Derek – Scottish Executive, Environment and Rural Affairs Department (O)
McIntyre, Wuffy – National Farmers Union Scotland (O)
MacKay, David – Veterinary Medicines Directorate (W)
McManus, Siobhan – Humane Slaughter Association (O)
Majendie, Susanna – British Equine Veterinary Association (W)
Mandale, Iain – National Farmers Union(O)
Marshall, Alan – Veterinarian (O)
Marshall, Alistair – National Farmers Union of Scotland (O)
Marshall, Mary – Campaign Against Unnecessary Slaughter of Alpacas and Llamas (W)
Martin, Robert – Farmer (O)
Martlew, Eric, MP (W + O)
Mellor, Dr Phillip – Institute of Animal Health (O)
Mertens, Dr Peter – Institute of Animal Health (O)
Meziani, Gundula – Soil Association (W)
Miller, Allen (W)
Milne, Dr Elspeth – Veterinarian (O)
Moen, Chris – Royal Netherlands Academy of Arts & Sciences (W)
Monaghan, Dr Paul – Institute of Animal Health (O)
Moor, Crispin – Local Government Association (W)
Morgan, Professor Kenton – University of Liverpool (O)
Morgan, Sam (W)
Morris, Nicola and Andrew (W)
Morris, Professor RS – Massey University (W)
Mortimer, Philip (W)
Mottram, Toby – Silsoe Research Institute (W)
Mourits, Dr Monique – University of Wageningen, Holland (O)
Murray, RD – Division of Farm Animal Studies, University of Liverpool (W)

Narang, Dr Harash (W)
Newth, Rodney – British Llama and Alpaca Association (W)
Nolan, Andrea – Committee of Heads of Veterinary Schools (W)
Norris, Dr Ken – University of Reading (W)

Ottaway, P Berry – Institute of Food Science & Technology (W)
Owen, Deirdre (W)
Owen, Janet – Pig Veterinary Society (W)

Paters, Dr Hilary (W)
Paton, Dr David – Institute of Animal Health (O)
Paull, Nicky (W)
Payne, Richard – Veterinarian (O)
Pearson, Dr JE – Office International Epizooties (W + O)
Peel, Jonathan – Food & Drink Federation (W)
Peterson, Ann – National Pig Association (W)
Phillips, Hazel – National Consumer Council (W)
Pitchford, Joe – DEFRA (O)

Plowright, Dr Walter, FRS – former Head of Microbiology, AFRC Institute for research on Animal Diseases (W)
Pluimers, Dr Frits – Chief Veterinary Officer, Netherlands (O)
Potter, Richard – Pig Veterinary Society (O)
Potts, JH – Lancashire County Council (W)
Powell, Glyn – National Farmers Union Wales (O)
Price, E Leslie (W)
Pritchard, David – DEFRA (W)
Pritchard, John – Livestock Specialist, China (W)
Purcell, Mrs Jennifer – West Craven Foot and Mouth Action Group (W)
Pyke, Beverley James (W)

Quilty, Edmund – Office of Science and Technology (O)
Quinn, Lawrie MP (W)

Raine, John – National Farmers Union (O)
Reeves, Nick – Chartered Institution of Water and Environmental Management (W)
Reid, Professor Hugh – Moredun Research Institute, Edinburgh (O)
Richards, Iain – Veterinarian (O)
Richardson, Dr Alan – Veterinarian (W)
Ritchie, Neil – Scottish Executive, Environment & Rural Affairs Department (W)
Roeder, Peter – Food and Agriculture Organisation of the United Nations (W + O)
Rogers, Peter – National Assembly for Wales (O)
Rossides, Stephen – National Farmers Union (O)
Rotheram, Peter – Association of Port Health Authorities (W)
Rudman, Peter – National Farmers Union (W + O)
Rushton, Martin (W)

Samuel, Dr Alan – Institute of Animal Health (W)
Sandu, Mrs G (W)
Schild, Dr Geoffrey – National Institute for Biological Standards and Control (O)
Scott, Andrew – British Veterinary Association (W + O)
Scott, Dr Gordon R (W)
Scudamore, Jim – Chief Veterinary Officer, DEFRA (W + O)
Shadduck, John – Optibrand Ltd (W)
Shadwick, Mark (O)
Shannon, Dr David – formerly Chief Scientist, DEFRA (O)
Shimshony, Arnon – Israeli Veterinary Services and Animal Health (W)
Shingley, Sheila – Institute of Animal Health (W)
Sibbert, David – Trading Standards Institute (W)
Sibley, Dick – Royal Veterinary College, British Cattle Veterinary Association (W + O)
Sinclair, Shaun – Abbey Veterinary Centre, Abergavenny (O)
Smith, Anthony – FMD team in Yorkshire Dales (W)
Smith, IGN (W)
Smith, J – Retired veterinarian (W)
Smith, James – Veterinarian (W)
Smith, Richard (W)
Smith, Robert – Abbey Veterinary Centre, Abergavenny (O)
Smith, Sue (W)
Smith-Maxwell, AL (W)
Soar, Mike – Merrythought Local Veterinary Investigation Centre (O)
Soldan, Dr Andrew (O)
Sparagano, Dr Oliver – University of Newcastle (W)
Spence, Robin – National Farmers Union of Scotland (O)
Stephenson, Peter – Compassion in World Farming (O)
Stevenson, Bob – Usk Veterinary Centre (O)
Stevenson, Ian – Ulster Farmers' Union (W)
Stockdale, Tom (W)
Sumption, Dr Keith – Centre for Tropical Veterinary Medicine, University of Edinburgh (W + O)
Sutmoller, Dr Paul (W + O)

Swarbrick, Olaf (W)

Taylor, Angus – Veterinarian (W)

Taylor, Derek – Fife Council (W)

Tearle, Ian – Health Forum (W)

Tedder, Professor Richard – Royal Free and University College Medical School (W + O)

Tennant, Toby (W)

Thomas, David – State Veterinary Service (SVS Head of FMD operations during the 2001 FMD outbreak) (O)

Thompson, Ian – Merrythought Local Veterinary Investigation Centre (O)

Thompson, Dr Stephen – University of Newcastle (W)

Thorne, KJ (W)

Thorne, Sarah – West Devon Borough Council (W)

Thornycroft, Chris and Eleanor (W)

Thrusfeld, Michael (W)

Twentyman, Keith – National Farmers Union (O)

Tyrrell, Ken – Veterinarian (W)

Tyson, David – British Veterinary Association (W)

Uffold, John – McCartneys Auctioneers (W + O)

Utting, Nick – National Farmers Union (O)

Van Aarle, Paul – Biotechnology and Biological Sciences Research Council (W + O)

Vernon, Ruth – British Cattle Veterinary Association (O)

Waller, Veronica – National Farmers Union (O)

Walker, Mrs P – North Yorkshire Smallholders Society (W)

Walker, Roger – Shropshire County Council (W)

Wannop, Alistair – Farmer (O)

Watkins, Dr Ruth – Country Land & Business Association, FMD Forum (W + O)

Wearne, Steve – Food Standards Agency (W)

Welford, Rod – Millcroft Veterinary Group (W + O)

Western, Richard – Western & McAllister, Brecon (O)

White, David – Biotechnology and Biological Sciences Research Council (W)

Wickenden, Michelle – Natural Environment Research Council (W)

Wight, Peter – Marks & Spencer (W)

Wileman, Dr Tom – Institute of Animal Health (O)

Wilesmith, Professor John – Veterinary Laboratories Agency (O)

Wilkinson, Brian – Devon County Council, Devon FMD Inquiry (W)

Wilkinson, Dr Phil – Institute of Animal Health (O)

Williams, Dr David (W)

Williams, Kirsty – National Assembly for Wales (O)

Wilson, Collin – Abbey Veterinary Centre, Abergavenny (O)

Wood, Kate – Veterinarian (W)

Woods, Abigail – Wellcome Unit for the History of Medicine, University of Manchester (W)

Woods, Peter – Vets for Vaccination (O)

Woolhouse, Professor Mark – Royal School of Veterinary Studies, University of Edinburgh (W + O)

Woolridge, Dr Marion – VLA (O)

Wright, Karen & Lawrence (W)

Wright, Matthew – DEFRA (W)

Wright, Richard – English Nature (W)

Young, Dame Barbara – Environment Agency (W)

Organisations

Abbey Veterinary Centre, Abergavenny
Academy of Medical Sciences
Animal Health Trust
Association of Port Health Authorities

Barwise Aberdeen Angus
Belle Vue Vets
Biotechnology and Biological Sciences Research Council
British Cattle Veterinary Association
British Equine Veterinary Association
British Llama and Alpaca Association
British Poultry Council
British Retail Consortium
British Veterinary Association
British Veterinary Poultry Association

Campaign Against Unnecessary Slaughter of Alpacas and Llamas
Chartered Institution of Water and Environmental Management
Committee of Heads of Veterinary Schools
Compassion in World Farming
Council for the Protection of Rural England
Council of the European Union
Country Land & Business Association
Countryside Alliance
Cumbria County Council

Dairy Industry Federation
Department for Environment, Food and Rural Affairs
Devon County Council, Devon FMD Inquiry
Dumfries and Galloway Constabulary
Dumfries and Galloway Council

English Nature
Environment Agency
European Commission for the Control of FMD
European Commission DG Health and Consumer Protection

Farm Animals Welfare Council
Farm Business Steering Group
Farmtalking.com
Federation of Veterinarians of Europe
Fields Veterinary Group, Newport
Fife Council
FMD Forum
Food and Agriculture Organisation of the United Nations
Food & Drink Federation
Food Ethics Council
Food Standards Agency
Foundation for Science and Technology

Geo-Rheological Survey Company Ltd
Gloucestershire County Council

Health Forum
Hong Kong DNA Chips Ltd
Horserace Betting Levy Board
Humane Slaughter Association

ImmunoBiology Ltd
Institute of Animal Health
Institute of Food Science & Technology
Institute of Science in Society
Israeli Veterinary Services and Animal Health

Lakeland Veterinary Association
Lancashire County Council
Livestock Auctioneers Association
Local Government Association

McCartneys Auctioneers
Marks & Spencer
Meat Hygiene Service
Meat and Livestock Commission
Medical Research Council
Merial, France
Merrythought Local Veterinary Investigation Centre
Meteorological Office
Millcroft Veterinary Group
Moredun Research Institute, Edinburgh

National Assembly for Wales
National Beef Association
National Consumer Council
National Dairy Farm Assured Society
National Farmers Union
National Farmers Union of Scotland
National Farmers Union Wales
National Federation of Badger Groups
National Foot and Mouth Group
National Institute for Biological Standards and Control
National Pig Association
Natural Environment Research Council
North Yorkshire Smallholders Society
Northumberland County Council

Office of Science & Technology
Office International des Epizooties
Operating Platforms Ltd
Optibrand Ltd

Pig Veterinary Society
Practical Farm Ideas
Priory Veterinary Surgery
Provision Trade Federation
Public Health Laboratory Service

Riverside Veterinary Centre, Abergavenny
Roslin Institute
Royal College of Veterinary Surgeons
Royal Netherlands Academy of Arts & Sciences
Royal Society for the Prevention of Cruelty to Animals
Royal Society of Edinburgh

Save British Science Society
Scottish Executive, Environment & Rural Affairs Department
Select Committee on Environment, Food & Rural Affairs
Sheep Veterinary Society
Shropshire County Council
Silsoe Research Institute
Society of General Microbiology
Soil Association
State Veterinary Service
Strathbogie Veterinary Centre
Sustain

Tenant Farmers Association
Third Planet Solutions Ltd
Trading Standards Institute

Ulster Farmers' Union
United States Department of Agriculture
Usk Veterinary Centre

Vegetarian Economy & Green Agriculture
Veterinary Laboratories Agency
Veterinary Medicine Directorate
Vets for Vaccination

Warmwell
Wellcome Trust
Wellcome Unit for the History of Medicine, University of Manchester
West Craven Foot and Mouth Action Group
West Devon Borough Council
Wildlife Information Network

Young Farmers Club

Annex D: Glossary

adjuvant	compounds added to vaccine to enhance the immune response
aerosol	a suspension of fine solid or liquid particles in gas
aetiology	causes of a disease or abnormal condition
agronomy	a branch of agriculture dealing with field-crop production and soil management
AHS	African horse sickness
AI	avian influenza
anthelmintics	expelling or destroying parasitic worms especially of the intestine
antibody	a protein produced in the blood that fights diseases by attacking and killing bacteria or viruses
antigen	a substance that causes the production of antibodies in the body
antisera	serum containing antibodies
anti-viral	intended to treat an infection or disease caused by a virus
APMV-1	avian paramyxovirus type 1
artiodactyla	large group of mammals with even toes: either cloven hoof with two toes, or a spreading foot with four. Group includes swine, hippopotamuses, camels, giraffes, deer, pronghorns and bovinds
ASF	African swine fever
assay	method for measuring the amount of a substance
atrophic rhinitis	wasting away and inflammation of the mucous membrane of the nose
basal epithelial	progenitor cell layer for epithelial tissue such as skin
BBSRC	Biotechnology and Biological Sciences Research Council
BCVA	British Cattle Veterinary Association
beef suckler	calf that will enter the food chain
BHV	bovine herpes virus
biosensor	device that is sensitive to a physical or chemical stimulus and transmits information about a life process
biphasic	having two phases
BPP	bovine pleuro-pneumonia
brucellosis	infection with or disease caused by brucellae
BSE	bovine spongiform encephalopathy
BT	bluetongue
BVA	British Veterinary Association
BVD	bovine viral diarrhoea
BVDV	bovine viral diarrhoea virus
campylobacter	rod-shaped bacterium, sometimes pathogenic in domestic animals and humans
clostridium	anaerobic soil or intestinal bacterium
coccidiosis	infestation with or disease caused by coccidia
colostrum	milk secreted for a few days after giving birth and characterized by high protein and antibody content
contagious	(of a disease) able to be caught by touching someone with the disease or a piece of infected material
CSF	classical swine fever
culicoides	biting midges
cull	to kill animals, especially the weaker or diseased members of a particular group
cyanosis	bluish or purplish discoloration (as of skin) due to deficient oxygenation of the blood
DC	dangerous contact
DEFRA	Department for Environment, Food and Rural Affairs
diagnosis	the art or act of identifying a disease from its signs and symptoms
distomatosis	congenital state of having two mouths
DTI	Department of Trade and Industry
dyspnoea	difficult or laboured respiration

EBL	enzootic bovine leucosis
echinococcosis	infestation with or disease caused by an echinococcus
E. coli	Escherichia coli: a bacterium that exists widely. Certain strains can exist in food that has not been cooked properly and can cause serious or fatal illness
EEE	Eastern equine encephalitis
ELISA	enzyme-linked immunosorbent assay
emergency vaccination	vaccination during an outbreak
encephalitis	inflammation of the brain
endemic	(of a disease) established in a country
endometritis	inflammation of the mucous membrane lining the uterus
enterovirus	a genus of picornaviruses that typically occur in the gastrointestinal tract but may be involved in respiratory ailments, meningitis and neurological disorders
enzootic abortion	very common infectious abortion in sheep caused by chlamydial infection
epicardium	visceral part of the pericardium that closely envelops the heart
epidemic	the appearance of a particular disease in a large number of animals/people in the same period of time
epidemiology	a branch of medical science that deals with the incidence and distribution of disease in a population
epithelial	a membranous cellular tissue that covers a free surface or lines a tube or cavity of an animal body
EU	European Union
EUFMD	European Commission for the Control of Foot-and-Mouth Disease
exotic	(of a disease) not normally present in a country
finishing	fattening of prime animals for slaughter
FMD	foot-and-mouth disease
FMDV	foot-and-mouth disease virus
haemorrhagic	any of a diverse group of arthropod-borne virus diseases characterized by sudden onset, fever, aching, bleeding in the internal organs, skin rash and shock
HIV	human immunodeficiency virus
HPAI	highly pathogenic avian influenza
husbandry	branch of agriculture concerned with the production and care of domestic animals
hydatidosis	widespread cysts in the tissues caused by the intermediate stages of tapeworm parasites
IAH	Institute for Animal Health
ICPI	intracerebral pathogenicity index
IHN	infectious haematopoietic necrosis
immunity	protection against a particular disease by virtue of the immune system being primed to react against it
immunocompromised	having the immune system impaired or weakened
immunogenic	producing an immune response
incubate	(of harmful bacteria or viruses) to grow and reproduce, but not yet produce the effects of disease in a human or an animal
infection	an illness caused by the movement of an organism into a living thing
IP	infected premise
IPN	infectious pancreatic necrosis
ISA	infectious salmon anaemia
IVPI	intravenous pathogenicity index
JE	Japanese B encephalitis
lachrymation	secretion of tears especially when abnormal or excessive
leptospirosis	any of several diseases of humans and domestic animals that are caused by infection with leptospire
lesion	abnormal change in structure of an organ or part due to injury or disease
listeriosis	serious type of food poisoning, caused by listeria, which is particularly harmful to babies before they are born.
LPAI	low pathogenic avian influenza

LVI	local veterinary inspector
maedi visna	slow virus infection of lungs and central nervous system in sheep caused by an AIDS-like lentivirus
MAFF	Ministry of Agriculture, Fisheries and Food (formed into DEFRA in 2001)
mastitis	soreness and usually swelling of the udder
MDV	Marek's disease virus
morbidity	prevalence of disease in an animal population
mortality	the number of deaths in a given time or place; the proportion of deaths to population; the number lost or the rate of loss or failure
MRC	Medical Research Council
multivalent	pool of antibodies that recognise different antigens or pathogens
myocarditis	inflammation of the middle muscular layer of the heart wall
ND	Newcastle disease
nematode	elongated cylindrical worm parasitic in animals or plants or free-living in soil or water
nephropathy syndrome	abnormal state of the kidney, especially one associated with or secondary to some other pathological process
neuraminidase inhibitors	compounds that inhibit the enzyme neuraminidase
NSP	non-structural viral proteins
oedema	abnormal infiltration and excess accumulation of serous fluid in connective tissue or in a serous cavity
OIE	Office International des Epizooties
orbiviruses	viruses belonging to the family Reoviridae such as bluetongue and African horse sickness viruses
oropharyngeal	relating to the mouth and pharynx
oropharynx	part of the pharynx that is below the soft palate and above the epiglottis and is continuous with the mouth
OST	Office of Science and Technology
ovine epididymitis	inflammation of part of the genital tract in sheep
pandemic	(of a disease) existing in almost all of an area or in almost all of a group of people, animals or plants
pasteurisation	partial sterilization of a substance at a temperature and for a period of exposure that destroys objectionable organisms without major chemical alteration of the substance
pathogen	any small life form, such as a bacterium or a virus, that can cause disease
PCR	polymerase chain reaction
PDNS	porcine dermatitis and nephropathy syndrome
petechia	a minute reddish or purplish spot containing blood that appears in skin or mucous membrane especially in some infectious diseases
pharyngeal cavity	relating to or located or produced in the region of the pharynx
PHLS	Public Health Laboratory Service
Picornaviridae	very small RNA viruses such as FMDV
PMWS	post-weaning multi-systemic wasting syndrome
polymerase	any of several enzymes that catalyze the formation of DNA or RNA from precursor substances in the presence of pre-existing DNA or RNA acting as a template
PPR	<i>peste des petits ruminants</i>
prion	protein particle that lacks nucleic acid and is believed to be the cause of various Infectious diseases of the nervous system (such as scrapie, bovine spongiform encephalopathy and Creutzfeldt-Jakob disease)
probang	slender flexible rod with a sampling cup at one end used especially for removing samples from the esophagus
prophylactic	intended to prevent disease
prostration	complete physical or mental exhaustion
PRRS	porcine reproductive and respiratory syndrome
pyrexia	abnormal elevation of body temperature

quantitative trait loci	quantitative measure of those genes involved in a particular function
quarantine	period of time during which a person or animal that might have a disease is kept away from other people or animals so that the disease cannot spread
RCVS	Royal College of Veterinary Surgeons
rhinitis	inflammation of the mucous membrane of the nose
rinderpest	an acute infectious febrile disease of ruminant mammals (such as cattle) that is caused by a paramyxovirus related to the virus causing measles in humans, and marked by diarrhoea and inflammation of mucous membranes
RNA	ribonucleic acid
rotavirus	a virus that causes diarrhoea in vertebrates including humans
RSV	respiratory syncytial virus
RT-PCR	reverse-transcription PCR
ruminant	even-toed hoofed mammal (such as sheep, giraffes, deer, and camels) that chews the cud
salmonella	group of bacteria, some types of which live in food and cause illness in people who eat the food
serotype	group of intimately related microorganisms distinguished by a common set of antigens
sinusitis	inflammation of a sinus of the skull
sloughing	loss of surface tissues by abrasion
soliped	horse
SPF	specific-pathogen-free
stomatitis	inflammatory disease of the mouth
supraorbital fossae	bony depression in skull above the eye socket
SVD	swine vesicular disease
SVS	State Veterinary Service
swill	waste food that has traditionally been fed to pigs
TB	tuberculosis
titre	level of compound in body fluids or tissue samples
torticollis	twisting of the neck to one side that results in abnormal carriage of the head and is usually caused by muscle spasms
transcriptase	polymerase that catalyzes the formation of DNA using RNA as a template, found especially in retroviruses
transcutaneous	passing, entering or made by penetration through the skin
trypanosomiasis	infection with or disease caused by trypanosomes
TSE	transmissible spongiform encephalopathy
tupping	copulating with (a ewe)
TVI	temporary veterinary inspector
USDA	US Department of Agriculture
vaccine booster	challenge of an immunised animal with a second or subsequent vaccination with the same vaccine
VEE	Venezuelan equine encephalitis
VEERU	Veterinary Economics and Epidemiology Research Unit
vesicle	membranous and usually fluid-filled pouch (such as a cyst, vacuole, or cell) in a plant or animal
VHS	viral haemorrhagic septicaemia
viraemia	presence of virus in the blood of a host
VLA	Veterinary Laboratories Agency
WEE	Western equine encephalitis
WNF	West Nile fever
WTO	World Trade Organization
zoonosis	disease communicable from animals to humans under natural conditions
zoosanitary	sanitary or biosecurity procedures applied to animals