

EXPLANATORY MEMORANDUM TO
THE FOOT-AND-MOUTH DISEASE (ENGLAND) ORDER 2006 No. 182
THE FOOT-AND-MOUTH DISEASE (CONTROL OF VACCINATION)
(ENGLAND) REGULATIONS 2006 No. 183

1. Introduction

- 1.1 This explanatory memorandum has been prepared by the Department for Environment, Food and Rural Affairs and is laid before Parliament by Command of Her Majesty.
- 1.2 It contains information for the Joint Committee on Statutory Instruments.
- 1.3 In this memorandum, the following abbreviations are used:
- “The Act” is used to refer to the Animal Health Act 1981, as amended by the Animal Health Act 2002 and the Amendment Regulations;
 - “the Amendment Regulations” is used to refer to the Animal Health Act 1981 (Amendment) Regulations 2005 (S.I. 2005/3475);
 - “FMD” is used to refer to foot-and-mouth disease;
 - “the FMD Order” is used to refer to the Foot-and-Mouth Disease (England) Order 2006;
 - “the Vaccination Regulations” is used to refer to the Foot-and-Mouth (Control of Vaccination) (England) Regulations 2006.

2. Description

- 2.1 This explanatory memorandum covers two, closely related, statutory instruments. The Vaccination Regulations provide for vaccination against FMD in England. The FMD Order provides for the measures other than vaccination in the event of suspicion or confirmation of an outbreak of FMD in England.

3. Matters of special interest to the Joint Committee on Statutory Instruments

- 3.1 The Department considers that the reasons for making three statutory instruments to implement a single Directive will be of special interest to the Joint Committee on Statutory Instruments. Directive 2003/85/EC on the control of FMD is implemented in England by the Vaccination Regulations, the FMD Order and the Amendment Regulations.

- 3.2 The Act includes amendments made in 2002 in the light of lessons learned during the 2001 outbreak of FMD. Much of the Parliamentary debate was focussed on FMD, and some of the amendments apply specifically to FMD even though the general scheme of the Act is for its sections to cover any disease within the meaning of that term in the Act (see sections 62D(1) and (2) for an example of specific application to FMD).
- 3.3 The Department considers that there is an unusually clear Parliamentary intention that the Act should be used to make provision in relation to FMD so the bulk of provision is made in the FMD Order.
- 3.4 However, the power for the Secretary of State to cause animals to be vaccinated in the Act is limited to those animals which have been in contact with or exposed to an infected animal and those which are within an infected area, within the Act's meaning (section 16(1); an infected area is an area declared under section 17). This geographical limitation (to animals located in an infected area) ties exercise of the power to an area drawn by reference to an outbreak. In the Department's view, the Directive requires Member States to empower themselves to vaccinate in other areas. For example, vaccination could be required to create a "firebreak" against advancing disease in an uninfected area, or it could potentially be used to seek to prevent infection entering the UK.
- 3.5 The Department decided to deal with this issue by making Regulations under section 2(2) of the European Communities Act 1972 dealing with the vaccination aspects of the Directive, and to include a provision allowing exercise of the power to cause vaccination in compliance with the Directive (the provision is regulation 17 of the Vaccination Regulations). Regulations under the European Communities Act 1972 cannot be combined in the same instrument as an Order under the Act.
- 3.6 The third instrument is required because of a separate point. The Directive places Member States under a duty to slaughter animals on premises where FMD is confirmed (articles 10(1)(a) and 16(1)(a)). However, the Act gave the Secretary of State discretion over whether to slaughter (paragraph 3 of Schedule 3). The Amendment Regulations inserted a new paragraph 2A into Schedule 3 to the Act to place this duty on the Secretary of State.
- 3.7 The Department decided to subject the Amendment Regulations to an affirmative procedure because of the particular sensitivity of FMD slaughter issues, and because section 32A of the Act requires an affirmative procedure to amend slaughter powers for any other disease (FMD is the only disease for which there is no power in the Act to amend its own slaughter provisions).
- 3.8 The Department considers that the Vaccination Regulations do not contain provisions which require or justify the use of an affirmative procedure so it is subject to the annulment procedure. It is not possible to combine Regulations

made using annulment and affirmative procedures in the same instrument, so a third instrument was required.

4. Legislative Background

4.1 The legislation is being made to comply with the UK's legal obligations in Council Directive 2003/85/EC on the control of FMD (the Directive).

4.2 The FMD Order transposes the bulk of the FMD Directive, as well as some additional provisions preserved from existing legislation. Under the FMD Order, the slaughter of susceptible animals on infected premises remains the principal tool for tackling an FMD outbreak. The FMD Order sets out the procedures and controls required on suspicion and confirmation of FMD and provides for a number of zones of different levels of control. In particular, the FMD Order introduces a number of treatments, such as heat treatment (cooking) and deboning and maturation, that have to be applied to meat and other animal products from infected areas.

4.3 The Vaccination Regulations transpose the vaccination provisions of the Directive. The Regulations move the potential use of emergency vaccination to the forefront of disease control, as an adjunct to the basic slaughter policy. The Regulations ban vaccination except under license by the Secretary of State and also ban the export of vaccinated animals. The Regulations also similarly provide for zones of control, both for where vaccination takes place and where it is expressly prohibited, and introduces treatments for meat and other animal products from vaccinated animals.

4.4 The FMD Order and the Vaccination Regulations will replace and consolidate all existing English secondary legislation dealing with outbreaks of FMD (the Foot-and-Mouth Disease Order 1983 and its subsequent amendments (so far as they apply to England), the Foot-and-Mouth Disease (Infected Areas) (Vaccination) Order 1972 (so far as it applies to England) and the Foot-and-Mouth Disease (Control of Vaccination) (England) Regulations 2001).

4.5 The detail of the legislation is set out in section 7 but the major new requirements include:

- Requirements for various treatments, including heat treatment (cooking) or de-boning and maturation of meat and animal products from vaccinated animals until the UK has regained FMD-free status, in line with OIE rules;
- Requirements for fresh meat and animal products from animals originating or produced in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises) to also undergo the above treatments;

- Prohibitions on animal movements, except to slaughter, in certain zones.

4.6 Article 1(2) of the Directive allows Member States to take more stringent action than that outlined in the Directive. Therefore, the legislation retains some of the measures in the current FMD Order 1983 which were important in controlling the FMD outbreak of 2001. These consist of:

- Requirements to control rodents on premises where disease is suspected or confirmed;
- Requirements to control dogs and poultry in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises);
- Controls on shearing, dipping and scanning of sheep by mobile workers in Restricted Zones (which could extend to the whole country);
- Powers to close land including footpaths (although this is now restricted to Protection Zones rather than nationwide);
- Powers to control shooting, stalking, drag hunting and other gatherings of people in Surveillance and Restricted Zones;
- Powers to control animal gatherings (markets, shows etc) in Restricted Zones.

5. Extent

5.1 These instruments apply to England only. Separate instruments, which are intended to achieve the same result, are being made in Wales, Scotland and Northern Ireland.

6. European Convention on Human Rights

6.1 As the instruments are not subject to affirmative resolution procedure and do not amend primary legislation, no statement is required.

7. Policy background

7.1 The FMD Order includes the following measures on suspicion of disease:

- Those in charge of animals or carcasses are required to notify infection or suspected infection. A notice of suspicion of disease would then be served on the occupier of the premises or on the person in charge of animals in transit.
- Following the detection of suspected disease, a Temporary Control Zone (TCZ) must be imposed around the suspect premises of whatever size necessary to control disease (although in practice it would normally cover a 10km radius of the suspect premises as, if disease was confirmed, it would become a Surveillance Zone). This would impose a ban on the movement of susceptible animals from and to premises within a TCZ, except in limited circumstances and under license. The Secretary of State can also add a set of

additional requirements including restricting the movement of animal products, things, people, vehicles and non-susceptible animals. These measures would be maintained for as long as the TCZ remains in force (likely to be short while the presence or absence of disease is confirmed). A Supplementary Movement Control Zone (SMCZ) may also be declared with a TCZ which could extend to the whole country and would impose a nationwide ban, with limited exemptions, on the movement of animals (including specified non-susceptible animals, eg horses, within the first 72 hours).

- Suspect premises would be investigated by a Veterinary Inspector (VI) of the State Veterinary Service (SVS) to establish the presence or absence of disease. If the outcome was negative then the TCZ (and any SMCZ) would be lifted. However, if the outcome proved positive, the premises concerned would be declared an infected premises, which would trigger the measures set out in the next paragraph. The SVS would also trace contacts from that premises to other premises where there was a risk of contamination or where an epidemiological link could not be excluded. This may result in further premises being declared suspect premises or contact premises (where there was a risk of disease being carried to or from other premises).

7.2 Where FMD is confirmed, the FMD Order includes the following measures:

- Slaughter must take place on the premises unless Defra believes that this would be an unsatisfactory method of disease control. Where the infected premises is a slaughterhouse or a border inspection post, or where animals are in transit when disease is confirmed, animals can be moved elsewhere to be slaughtered (subject to Defra's approval).
- Disposal of carcasses and faecal material from slaughtered animals can only be undertaken under licence from Defra. Occupiers of premises where animals have been slaughtered are responsible for ensuring the isolation of things liable to spread disease, e.g. animal products, manure, feed and litter. This isolation must be maintained until items have been either certified as free of contamination, have been treated in accordance with instructions or removed from the premises and treated.
- Defra must then ensure that cleansing and disinfection takes place according to detailed requirements and may serve a notice requiring the occupier to undertake it. Following completion of cleansing and disinfection, most premises can be restocked after a further 21 days subject to certain conditions, in particular that the premises have been confirmed as disease free.
- A Protection Zone (PZ) and a Surveillance Zone (SZ) must be declared on confirmation of infected premises. A PZ is based on a minimum radius of 3km, and the SZ on a minimum radius of 10km, around the infected premises. Local authorities must erect signs in a conspicuous position on roads entering these

zones on which susceptible animals are likely to be moved. Any premises which are partly inside a zone will be regarded as being fully inside the zone that has the stricter controls. The PZ will remain in force until at least 15 days has passed after all preliminary cleansing and disinfection measures have been carried out; and a survey of susceptible animals has confirmed the absence of infection. The PZ will then become part of the associated SZ. The SZ will remain in force until at least 30 days has passed after all preliminary cleansing and disinfection; and a further negative survey of susceptible animals.

- Within both the PZ and the SZ there are bans on the movement of susceptible animals and requirements to control dogs and poultry as well as regular veterinary inspection, record-keeping requirements and various controls on straying, sheep shearing, dipping and ultrasound scanning. There are also controls on the sale of semen, ova and embryos, hides and skins, wool, hair and bristles and other animal products from susceptible animals.
- Within the PZ only, strict controls apply to movements of susceptible animals into or out of the PZ and between premises with certain exemptions, for example slaughter for welfare reasons under license. There are also restrictions on the holding of fairs, markets, shows and other gatherings of animals or people and controls on the breeding and slaughter of susceptible animals for private consumption, transport and sale of fodder and transport and spreading of faecal matter produced within the PZ. There are also restrictions on the transport and sale of milk and milk products and they are required to be heat treated (including ultra heat treatment and pasteurisation). There are also controls on the sale of meat and meat products and detailed requirements concerning the date of production, origin, storage, marking of meat and treatments to be applied. Similar, but overall less strict controls apply in the SZ.
- Crucially, meat and meat products must be heat treated, if they originate in a PZ, to kill any potentially remaining virus. The same applies to pig meat in an SZ but otherwise in an SZ beef and sheep meat may be de-boned and matured. However, the UK would apply to the European Commission for derogations (as set out in the Directive) from any such treatment once the PZ or SZ had been in place for 30 days, and there had been no subsequent cases, if it was taking longer to lift those zones.
- Following confirmation of disease, the Secretary of State may declare a Restricted Zone (RZ) and in practice she would do so immediately. It is likely that the whole of England would become an RZ on the first confirmation. An RZ would impose a number of less strict animal movement and other controls (unless overlaid by any other stricter zone). An RZ could stay in place until FMD freedom or be progressively limited to smaller parts of the country through a policy of regionalisation, to allow freedom from controls for FMD-free areas. Finally, if disease were found in a wild animal, the surrounding area

could be declared a Wild Animal Infected Zone (WAIZ) of such size as is necessary. The WAIZ would impose movement and other controls and requirements to notify the presence of dead wild animals.

7.3 The Vaccination Regulations include the following measures:

- Vaccination is prohibited except under licence from Defra. The Secretary of State must authorise vaccination if she considers that a range of scientific, veterinary and other circumstances are met in preventing the spread of disease or protecting animals from the disease. A decision to undertake a vaccination programme must specify the terms and conditions which apply including whether vaccination is to be protective (to live) or suppressive (to kill), the geographical area involved, the species of animal involved and the duration of the programme.
- Where protective vaccination is specified, a Vaccination Zone (VZ) will be established of such size as is necessary. A Vaccination Surveillance Zone (VSZ) will also be established, for at least 10km around the VZ, where no vaccination is permitted. Various movement controls apply to both the VZ and the VSZ and products from vaccinated animals are generally required to be either heat treated or deboned and matured.
- Keepers of animals are required to provide any information regarding the animals they are responsible for, to submit animals for vaccination as required and to provide any assistance as may reasonably be required in securing animals to facilitate vaccination.
- Those involved in carrying out vaccination are responsible for the identification of vaccinated animals through ear tagging and making a written record. Such tagging must remain for the whole of the life of the vaccinated animal to prevent it from being exported. However, following FMD freedom, vaccinated animals may be traded freely on the domestic market and meat and other products from vaccinated animals does not need to be marked or treated and can be exported.
- A vaccination programme comprises of three phases. Phase 1 starts on the declaration of a VZ and involves the administration of vaccination. Phase 2 starts 30 days after all the animals in the VZ have been vaccinated, or longer depending on the Secretary of State's discretion. During this phase, a clinical and serological survey of all the premises within the VZ will take place, the outcome of which will determine whether premises are classified as infected, reactor holdings (were animals have to be slaughtered) or free of disease. Phase 3 will start on completion of the measures to be undertaken in Phase 2 or may earlier for individual premises which have independently been confirmed as free of disease. It is during Phase 3 that the UK would apply to the European

Commission for derogations (as set out in the Directive) from treatments for meat and other products from vaccinated animals.

- 7.4 Defra carried out a full 12 week consultation exercise on the draft legislation between June and September 2005. A link to the consultation can be found on the Defra website at www.defra.gov.uk/corporate/consult/fmd-directive/index.htm. We received 35 responses from stakeholders none of which raised fundamental objections to the legislation. They raised detailed issues either with the legislation or its practical implementation. However, a number of responses were very helpful in pointing out areas where the legislation could be improved and made more robust and practical.

8. Impact

- 8.1 A full Regulatory Impact Assessment is attached to this memorandum.
- 8.2 The RIA concludes that the economic benefits of FMD control significantly exceed the costs of the disease.
- 8.3 A copy of the Transposition Note is also attached to this memorandum.

9. Contact

- 9.1 Andrew Jones at the Department for Environment, Food and Rural Affairs Tel: 0207 904 8296 or e-mail: andrew.jones@defra.gsi.gov.uk can answer any queries regarding the instrument.

Transposition Note

Memorandum showing how the main elements of **Council Directive 2003/85/EC of 29 September 2003 on Community measures for the control of foot-and-mouth disease repealing Directive 85/511/EEC and Decisions 89/531/EEC and 91/665/EEC and amending Directive 92/46/EEC** have been implemented.

The Directive

The Directive sets down the minimum measures to be applied by Member States in the event of an outbreak of foot-and-mouth disease (“the disease”).

Implementation of the main elements of the Directive

Instruments implementing the Directive

The main elements of the Directive are implemented in England in three statutory instruments. These are (i) the Animal Health Act 1981 (Amendment) Regulations 2005 (S.I. 2005/3475, “the amendment Regulations”) (ii) the Foot-and-Mouth Disease (England) Order 2006 (“the Order”) and (iii) the Foot-and-Mouth Disease (Control of Vaccination) (England) Regulations 2006 (“the vaccination Regulations”).

The amendment Regulations were made on 14 December 2005 and came into force on 10 January 2006. They implement only the provisions of the Directive which impose a duty on the Member State to slaughter animals susceptible to the disease. They achieve this by an amendment to primary legislation which is explained below in the section headed “slaughter: the amendment Regulations”. That section incorporates the substance of the Transposition Note which was laid before Parliament with the draft amendment Regulations.

The remainder of the Directive is implemented through the Order, which deals with everything except the provisions relating to vaccination, and the vaccination Regulations, which deal with those provisions

Over-implementation

The Order does more than is necessary to implement the Directive in the following areas:

- it confers a power to close land or buildings within a protection zone (the area of restriction immediately surrounding a confirmed case of the disease; see below) (article 36 of the Order)
- it requires the control of rodents on premises which are subject to restriction because disease is suspected there, or animals there are suspected of contamination by exposure to the disease, or disease has been confirmed there, or there is a possibility that disease has moved to or from there (paragraph 12 of Schedule 1 to the Order)

- it requires dogs and poultry in protection and surveillance zones (these zones are areas of restriction which are declared on the confirmation of the disease; see below) to be kept under control (paragraph 3 of Schedule 5 to the Order)
- it restricts shooting, stalking, drag hunting, other gatherings of people and gatherings of animals in a surveillance zone or restricted zone (a restricted zone is a further area of restriction which may be declared on confirmation of the disease; see below) (paragraph 27 of Schedule 5 and paragraph 6 of Schedule 7 to the Order)
- it imposes controls on shearing, dipping and ultrasound scanning of sheep by mobile workers in restricted zones (paragraphs 7 and 8 of Schedule 7 to the Order)

Detection and suspicion of the disease

Article 3(1) of the Directive requires the disease to be made notifiable and certain classes of person to be obliged to notify their suspicion of its presence. It is implemented by the notification requirements in articles 9 and 10 of the Order.

Articles 4(1), 4(3), 5, 6(1) and 6(2) of the Directive require measures to be applied on premises where one or more susceptible animals are suspected of being infected with the disease or contaminated by exposure to it, and set out those measures. They are implemented by articles 9(3), 9(5), 10(1), 10(2), 11(2), 14(1) and 14(6) and Schedule 1 of the Order.

That Schedule implements the measures in articles 4(3) and 5 as follows:

Directive article	Objective	Order provision
4(3)(a), (b) and (c)	Creation and maintenance of a census of animals, animal products and other things liable to spread the disease	Schedule 1 paragraph 1
4(3)(d)	To restrict the movement of susceptible animals to or from premises and to ensure the isolation of those animals on the premises	Schedule 1 paragraphs 3 and 4
4(3)(e)	To require cleansing and disinfection on premises appropriate to the situation	Schedule 1 paragraphs 8 and 9
5(1)(a) and 5(2)	To restrict the movement of animal products and other things liable to spread the disease from premises	Schedule 1 paragraphs 5 and 6
5(1)(b) and 5(3)	To restrict the movement of non-susceptible animals from premises	Schedule 1 paragraph 11
5(1)(c) and 5(3)	To restrict the movement of persons on to or off premises	Schedule 1 paragraph 7
5(1)(d) and 5(3)	To restrict the movement of	Schedule 1 paragraph 10

	vehicles on to or off premises	
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Articles 4(2) and 4(3)(f) and (g) of the Directive require an epidemiological investigation into the disease to be carried out at premises where the disease is suspected or where animals are suspected of contamination by exposure. They are implemented by articles 12(1) and 12(3) of the Order.

Article 7 of the Directive provides for the declaration of an area known as a temporary control zone where there is suspicion of the disease and requires that premises within that area are subjected to some of the restrictions in articles 4 and 5 of the Directive. It also provides (in article 7(3)) for the declaration of a further, associated, area of wider restriction on the movement of animals. Article 7 is implemented by articles 16 to 20 of the Order. Articles 7(1) and 7(2) are together implemented by articles 16 to 18 of the Order and the provisions of Schedule 1 referred to in article 17(3) of the Order. Article 7(3), which deals with the area of wider movement restriction, is implemented by articles 19 and 20 of the Order. This area is not named in the Directive. It is called a “supplementary movement control zone” in the Order.

Article 8 of the Directive provides for the undertaking of a preventive eradication programme. Article 8(1) is implemented by the power to cause slaughter of animals in section 31 and Schedule 3(1) of the Animal Health Act 1981 (“the Act”). Article 8(2) is implemented by article 23 of the Order.

Confirmation of the disease

Articles 10 and 16 (other than 16(1)(f)) of the Directive provide for the measures to be applied on premises where the disease has been confirmed. Articles 11(4) and 18(3), Annex IV and Annex V contain associated provision. These are implemented as follows:

- articles 10(1)(a) and 16(1)(a) require the slaughter of susceptible animals at premises where the disease is confirmed. They are implemented insofar as they deal with the place of slaughter by article 24 of the Order. The duty to cause slaughter of animals under those articles is implemented by paragraph 2A of Schedule 3 to the Act, which was inserted by the amendment Regulations (see the section below titled “slaughter: the amendment Regulations”).
- article 10(1)(b) requires samples to be taken before slaughter. This is implemented by article 23 of the Order.
- articles 10(1)(c), 16(1)(b) and 16(1)(c) provide for the processing of carcasses. They are implemented by article 25 of the Order. The definition of carcass in section 89 of the Act applies to the Order; carcass includes any part of an animal.
- article 16(1)(d) provides for the processing of animal waste and faeces. It is implemented by article 26 of the Order.

- article 10(1)(d) provides for isolation of things liable to spread disease. Article 18(3) contains a derogation for milk on parts of premises organised as separate production units (provision on separate production units is implemented in article 13 of the Order and paragraphs 2A(5) to (9) of Schedule 3 to the Act, inserted by the amendment Regulations; see below). Articles 10(1)(d) and 18(3) are implemented by article 27 of the Order.
- articles 10(2)(a) and (b), 11(4), 16(1)(e) and Annex IV provide for cleansing and disinfection after slaughter. They are implemented by articles 28 and 29 of and Schedule 3 to the Order.
- article 10(2)(c) and Annex V of the Directive provide for restocking of premises after slaughter. They are implemented by article 30 of and Schedule 4 to the Order.

Articles 11 to 15(1), 16(1)(f), 18 and 19 of the Directive provide for other matters arising out of confirmed cases of the disease. They are implemented as follows:

- Article 11(1), which makes general provision in relation to cleansing and disinfection, is implemented by article 8 of the Order.
- Article 12 requires the tracing and treatment of things liable to spread disease. It is implemented by article 21 of the Order.
- Articles 13(1) and 16(1)(f) require an epidemiological inquiry into confirmed cases of the disease. They are implemented by articles 12(1) and (7) of the Order.
- Articles 14(1) provides for the slaughter of non-susceptible animals. Article 14(2) provides for slaughter of animals on premises where the disease has not been confirmed. They are implemented by the power to cause slaughter of animals in section 31 and Schedule 3(1) of the Act, which applies to non-susceptible animals by virtue of article 3(a) of the Order.
- Article 15(1) requires biosecurity measures to be taken in respect of certain types of premises, such as zoos, wildlife parks or premises keeping animals for conservation purposes. It is implemented by article 43 of the Order.
- Article 19 provides for the designation of premises as potentially having contact with the disease and the measures which apply there. It is implemented by articles 14(2) to (6) of and Schedule 1 to the Order. In particular article 19(3) is implemented by Schedule 1 paragraphs 4(2) and (3)).

Slaughter: the amendment Regulations

Regulation 2 of the amendment Regulations inserted a new paragraph 2A into Schedule 3 to the Animal Health Act 1981.

The new paragraph 2A(1), read with 2A(2), implements articles 10(1)(a) and 16(1)(a) of the Directive insofar as they deal with the duty to slaughter susceptible animals (implementation of the obligations relating to the place of slaughter are in article 24 of the Order, as mentioned above).

The duty applies in relation to “infected premises”. Articles 12(11) and (12) of the Order require the Secretary of State to declare premises to be infected premises if a case of the disease confirmed in accordance with Annex I of the Directive is detected there. Schedule 2 of the Order transposes Annex I.

New paragraphs 2A(3) and 2A(4) allow an exception from the duty to slaughter at the premises mentioned in article 15(1) of the Directive. This implements article 15(2).

New paragraphs 2A(5), 2A(6), 2A(7), 2A(8) and 2A(9) allow an exception from the duty to slaughter at premises which are organised as separate epidemiological production units, within the Directive’s meaning. This implements articles 18(1) and 18(2) of the Directive.

Protection and surveillance zones and the measures applying there

Protection and surveillance zones are areas of restriction established around a confirmed case of the disease. A protection zone surrounds premises where the disease is present and a surveillance zone surrounds every protection zone.

Articles 21(1) and (2) of the Directive provide for the establishment of protection and surveillance zones on confirmation of the disease. They are implemented by articles 31 to 33 of the Order. In particular, article 32 provides for the establishment of protection and surveillance zones in England where the disease has been confirmed in Scotland or Wales.

Articles 36 and 44 of the Directive provide for the removal of measures in protection and surveillance zones. They are implemented by article 37 of the Order.

Articles 22 to 33 and 37 to 43 of the Directive oblige the imposition of specified measures in protection and surveillance zones. They are implemented by articles 34 and 35 of and Schedule 5 to the Order as follows:

Directive article	Objective	Order provision
22(1)(a)	Creation and maintenance of a census of animals, animal products and other things liable to spread the disease	Schedule 5 paragraph 1
22(1)(b)	To ensure every premises in a protection or surveillance zone is subjected to epidemiological	Article 35

	investigation	
22(1)(c) and 22(2)	To restrict the movement of susceptible animals from premises in a protection zone	Schedule 5 paragraph 10
23(a) and 24(1)(b) (in relation to susceptible animals) and 24(2)(a) and (b)	To restrict the movement of susceptible animals within a protection zone	Schedule 5 paragraphs 10 and 12
23(b)	To prohibit animal gatherings in a protection zone	Schedule 5 paragraph 14
23(c) and (d), 24(1)(d) and 24(2)(c)	To restrict breeding of susceptible animals (in particular artificial insemination and collection of ova and embryos) in a protection zone	Schedule 5 paragraph 16
24(1)(a) and (b) (in relation to non-susceptible animals) and 24(2)(a), (b) and (d)	To restrict the movement of non-susceptible animals within a protection zone	Schedule 5 paragraphs 11 and 12
24(1)(c)	To restrict gatherings of people in a protection zone	Schedule 5 paragraph 15
24(1)(e)	To restrict the movement of vehicles designed for transporting animals	Schedule 5 paragraph 13
24(1)(f)	To prohibit slaughter of susceptible animals on premises in a protection zone for private consumption there	Schedule 5 paragraph 17
24(1)(g) and 24(2)(e)	To restrict the transport of fodder in a protection zone	Schedule 5 paragraph 18
25(1) and (4)	To restrict the sale of fresh meat etc. derived from susceptible animals originating in a protection zone	Schedule 5 paragraph 21
25(2) and (5)	To restrict the sale of fresh meat etc. produced in a protection zone	Schedule 5 paragraph 22
25(3) and 26	To restrict the sale of meat products produced from meat derived from susceptible animals originating in a protection zone	Schedule 5 paragraph 23
27(1) to (6)	To restrict the sale of milk and milk products produced from susceptible animals originating in a protection zone or produced on	Schedule 5 paragraph 24

	premises in a protection zone	
27(8) and (9)	To restrict the collection and transport of milk and milk products produced in a protection zone	Schedule 5 paragraph 25
28 and 42 (in relation to semen, ova and embryos)	To restrict the sale of semen, ova and embryos collected in a protection or surveillance zone	Schedule 5 paragraph 6
29	To restrict the transport and spreading of dung and manure produced in a protection zone	Schedule 5 paragraph 20
30 and 42 (in relation to hides and skins)	To restrict the sale of hides and skins of susceptible animals originating in a protection or surveillance zone	Schedule 5 paragraph 7
31 and 42 (in relation to wool, ruminant hair and pig bristles)	To restrict the sale of wool, ruminant hair and pig bristles from animals originating in a protection or surveillance zone	Schedule 5 paragraph 8
32 and 42 (in relation to other animal products)	To restrict the sale of animal products produced in a protection zone or from susceptible animals originating in a protection or surveillance zone where this is not specifically provided for elsewhere in the Directive	Schedule 5 paragraph 9
33	To restrict the sale of fodder produced in a protection zone	Schedule 5 paragraph 19
37 and 38	To restrict the movement of susceptible animals from premises in a surveillance zone	Schedule 5 paragraph 26
39(1), (3), (4) and Part B of Annex VIII	To restrict the sale of fresh meat etc derived from susceptible animals originating in a surveillance zone	Schedule 5 paragraph 28
39(2) and (5)	To restrict the sale of fresh meat etc. produced on premises in a surveillance zone	Schedule 5 paragraph 29
39(6) and (7)	To restrict the sale of meat products derived from susceptible animals originating in a surveillance zone or produced on premises in a surveillance zone	Schedule 5 paragraph 30
40(1) to (6)	To restrict the sale of milk and milk products originating in a surveillance zone or on premises	Schedule 5 paragraph 31

	in a surveillance zone	
40(8) and (9)	To restrict the collection and transport of milk produced in a surveillance zone	Schedule 5 paragraph 32
41	To restrict the transport and spreading of dung and manure produced in a surveillance zone	Schedule 5 paragraph 33

Other principal measures applying on confirmation of the disease

Article 45(1) of the Directive provides for the creation of restricted zones where the disease appears to be spreading extensively. Article 45(4) of the Directive requires a thorough epidemiological assessment to be carried out before creating a restricted zone. They are implemented by article 38 of the Order.

Article 46(1)(a) provides for the measures to be imposed in a restricted zone. It is implemented by article 39 of and Schedule 7 to the Order.

Articles 85(3) and (4) and Part A of Annex XVIII of the Directive provide for measures applying on suspicion and confirmation of the disease in wild animals, including the declaration of a wild animal infected area (known as a “wild animal infected zone” in the Order). They are implemented by articles 40 and 41 of and Schedule 8 to the Order.

Vaccination

Vaccination against the disease is provided for in articles 49 to 58 of the Directive. These provisions are implemented by the vaccination Regulations.

Articles 50(1) and (2) of the Directive concern the decision on whether to introduce vaccination as a method of disease control. They are implemented by regulation 9 of the vaccination Regulations.

Article 51(1) of the Directive requires certain information to be specified in that decision. It is implemented by regulation 10 of the vaccination Regulations.

If the decision is to undertake a programme of protective vaccination (commonly known as “vaccination to live”), regulations 12 and 13 provide for the declaration of the area known as a vaccination zone required by article 52(1)(a) of the Directive.

Article 52(2) of the Directive provides for an area known as a surveillance area (a “vaccination surveillance zone” in the vaccination Regulations) which surrounds a vaccination zone, and the measures applying within it. It is implemented by regulations 12 and 13 of the vaccination Regulations (in respect of declaration of the zone) and by regulations 11(2) and 16 (in respect of the measures applying there). Regulation 13 provides for the establishment of a vaccination surveillance zone in England where protective vaccination is undertaken in Scotland or Wales.

Article 53(2) of the Directive restricts the scope of a programme of suppressive vaccination (commonly known as “vaccination to kill”). This is implemented by regulation 11(1) of the vaccination Regulations.

Articles 54(1), 55(1), 56(1), 57(5) and 58(1) of the Directive provide for the start and end points of the three “phases” of a programme of protective vaccination. They are implemented by regulations 15(2) to (5) of the vaccination Regulations.

The remainder of articles 54, 55 and 58 of the Directive require the imposition of specified measures in vaccination zones. They are implemented by regulation 15(1) of the vaccination Regulations and the Schedule, as follows:

Directive article	Objective	Vaccination Regulations
54(2)	To restrict the movement of susceptible animals during phase 1	Schedule paragraph 1
54(3)	To restrict the sale of fresh meat etc. derived from vaccinated animals slaughtered during phase 1	Schedule paragraph 6
54(4) and (5)	To restrict the sale of milk and milk products from vaccinated animals produced in phase 1	Schedule paragraph 12
54(7) and (8)	To restrict the collection and transport of milk produced in a vaccination zone in phase 1	Schedule paragraph 13
54(9) and (10)	To restrict artificial insemination and the collection of semen, ova and embryos in phase 1	Schedule paragraph 14
54(11)	To restrict the sale of (i) hides and skins of susceptible animals, (ii) wool, ruminant hair and pig bristles, and (iii) animal products produced from susceptible animals originating in a vaccination zone in phase 1 where this is not specifically provided for elsewhere in the Directive	Schedule paragraphs 15, 16, 17 and 18
55(2) and (3)	To restrict the movement of susceptible animals during phase 2	Schedule paragraph 2
55(4) and (6)	To restrict the sale of fresh meat etc. derived from vaccinated animals slaughtered during phase 2	Schedule paragraphs 7 and 8
55(7)	To restrict the sale of milk and milk products from vaccinated animals produced in phase 2 and its collection and transport	Schedule paragraphs 12 and 13

55(8)	To restrict artificial insemination and the collection of semen, ova and embryos in phase 2	Schedule paragraph 14
55(9)	To restrict the sale of (i) hides and skins of susceptible animals, (ii) wool, ruminant hair and pig bristles, and (iii) animal products produced from susceptible animals originating in a vaccination zone in phase 2 where this is not specifically provided for elsewhere in the Directive	Schedule paragraphs 15, 16, 17 and 18
58(2), (3), (4) and (5)	To restrict the movement of susceptible animals during phase 3	Schedule paragraph 3
58(6)	To restrict the sale of fresh meat etc. derived from unvaccinated susceptible animals slaughtered during phase 3	Schedule paragraph 9
58(7) and (8)	To restrict the sale of fresh meat etc. derived from vaccinated ruminants and the unvaccinated offspring of vaccinated ruminant dams	Schedule paragraph 10
58(7) and (9)	To restrict the sale of fresh meat etc. derived from vaccinated swine and the unvaccinated offspring of vaccinated swine	Schedule paragraph 11
58(14) and (15)	To restrict the sale of milk and milk products from vaccinated animals produced in phase 3 and its collection and transport	Schedule paragraphs 12 and 13
58(16)	To restrict the sale of (i) hides and skins of susceptible animals, (ii) wool, ruminant hair and pig bristles, and (iii) animal products produced from susceptible animals originating in a vaccination zone in phase 3 where this is not specifically provided for elsewhere in the Directive	Schedule paragraphs 15, 16, 17 and 18

Articles 56(2) and (3) and 57(1) to (4) of the Directive require a clinical and serological survey to be carried out in the vaccination zone and all premises there where susceptible animals are kept to be classified according to their disease status. They are implemented by regulation 25 of the vaccination Regulations.

Articles 57(3) of the Directive makes provision for premises keeping animals suspected of the disease where testing confirms the absence of circulating disease. It is implemented by regulation 26 of the vaccination Regulations.

DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS
26 January 2006

REGULATORY IMPACT ASSESSMENT

1. Title of Proposal

1.1 Transposition of the EU Foot-and-Mouth Disease Directive 2003.

The transposition will be carried out by the following three separate statutory instruments (SIs) (details included in Annex 1):

- The Foot-and-Mouth Disease (England) Order 2006
- The Foot-and-Mouth Disease (Control of Vaccination) (England) Regulations 2006; and
- The Animal Health Act (Amendment) Regulations 2005

2. Purpose and intended effect of measure

(i) The Objective

2.1 This legislation implements Council Directive 2003/85/EC of 29 September 2003 on European Community measures for the control of Foot-and-Mouth Disease (FMD). The Directive sets out measures to be taken if the presence of FMD is suspected or confirmed within the EU. It amends existing EU measures to control and eradicate FMD taking account of:

- The most recent scientific developments in the field of disease control;
- The experience gained in eradicating FMD during the 2001 outbreak; and
- Technical developments in laboratory diagnosis of FMD and vaccines.

2.2 The Directive introduces a number of zones of different levels of disease control where FMD is either suspected, confirmed or where vaccination is used and requires various treatments for animal products from those areas. In particular, the legislation moves emergency vaccination to the forefront of our control strategy. The additional costs of these controls on the farming industry is offset by the benefits of an increased level of disease control which would reduce the economic impact of a disease outbreak measured against the severe impact of the FMD outbreak of 2001.

2.3 The three options set out in this RIA do not involve any change in the Government's FMD control strategy, which was set out in its Response to the Reports of the FMD Inquiries in 2002. The options are all based on the same disease control strategy and only concern its detailed legal base. The policy on controlling FMD is that animals on infected premises and their dangerous contacts would be culled. The role of emergency vaccination will also be considered from the very start of an outbreak.

2.4 The Directive requires a minor technical amendment to be made to the Animal Health Act 1981 to change the Secretary of State's current discretion to slaughter susceptible animals to a duty to slaughter such animals *on infected premises only*, subject to a number of exemptions including for laboratories, zoos, wildlife parks, and for rare breeds and separate production units where we would retain the discretion to slaughter. This would not change existing government policy, which is to slaughter all animals on infected premises, therefore it does not impose any additional costs. It is proposed purely to comply with the UK's legal obligations in the Directive which will create the benefit of ensuring a common approach to disease control across the European Union.

(ii) The background

2.5 Measures for the control of FMD are currently contained in the Foot-and-Mouth Disease Order 1983 (S.I. No 1950) and its fourteen subsequent amendments. Previous Community measures for the control of FMD were laid down in Directive 85/511/EEC, as amended.

2.6 Following the 2001 outbreak, Defra commissioned Risk Solutions to undertake a Cost Benefit Analysis (CBA) of FMD Controls¹. The objective of the CBA is to provide epidemiological and economic information on the impact of a number of specific control strategies that could be adopted in the event of an FMD outbreak. This information will be used to inform decisions as to the most appropriate control strategy to regain "FMD-free status without (routine) vaccination" under a range of defined circumstances. The CBA showed that a future FMD outbreak is unlikely to be on the same scale as the 2001 outbreak for a number of reasons, such as the 6-day movement standstill and an improved contingency plan.

2.7 To inform the content of this RIA, Defra commissioned Risk Solutions to further develop the CBA to compare the net cost benefit position of the three options below. Risk Solutions modelled the likely costs of the control measures against four scenarios: a small and a large sized outbreak and two medium sized controlled outbreaks. This covers the whole range of possible effects. The epidemiological and economic models form the basis of the economic analysis.

(iii) Risk Assessment

2.8 FMD is not considered a threat to human health. It is a disease which affects cloven-hoofed animals, including three of the most economically important species: cattle, sheep and pigs. The disease makes intensive livestock farming uneconomic as infected animals are characterised by long recovery periods with significantly reduced milk production and growth as well as suffering

¹ Risk Solutions: Cost Benefit Analysis of Foot and Mouth Disease Controls published 26 May 2005.
<http://www.defra.gov.uk/footandmouth/pdf/costben.pdf>

welfare problems. As a result of its high economic impact, FMD is listed at the top of the International Organisation of Epizootics (OIE) List A diseases. An outbreak of FMD affects a country's trading status for animals and animal products.

2.9 The National Audit Office (NAO) 2002 study of the 2001 FMD outbreak estimated the total cost to the Exchequer at £3.1 billion: £1.4 billion in compensation for culled animals and £1.7 billion on other disease control activities. The wider cost to the rural economy as a whole is estimated in the region of over £5 billion mainly due to the adverse effect of the outbreak on international and domestic tourism (between £2.7 and £3.2 billion in value added according to MAFF/DCMS estimates). This also includes some £355 million in uncompensated losses by agricultural producers, which represents about 20% of the estimated total income from farming in 2001. Overall, the outbreak is estimated to have reduced the UK gross domestic product by 0.2%. Note that the overall impact on the UK economy is modest because of consumers switching spending away from tourism to other goods and services.

2.10 As a result of globalisation, and in particular the growing world demand for meat and meat products, the increased cross-border movement of livestock and the growth in human travel, the risk of incursion by exotic diseases has increased. The Royal Society Report noted "*... for some years trends were leading to a greater risk of importing exotic diseases.*" In addition, the Director General of the Food and Agriculture Organisation (FAO) noted that "*the last ten years have witnessed dramatic FMD epidemics resulting from the introduction of the disease into formerly disease-free countries.*"² Improved handling of disease outbreaks is therefore important in enabling the UK and the EU to retain the internationally recognised status of "disease-free without vaccination" which is of fundamental importance for international trade in animals and animal products. This legislation aims to allow the UK, and hence the EU, to maintain this status or, in the event of an outbreak, help regain it quickly.

3. Sectors affected

3.1 In the event of an FMD outbreak, any or all of the livestock industry in England with susceptible animals would be affected, either by the disease itself or, more likely through national movement restrictions which are uncompensated. Statistical data shows livestock numbers as:³

- 5.7 million cattle
- 15.9 million sheep
- 4.2 million pigs

² International Conference on Prevention and Control of FMD, December 2001

³ Statistical data from "Agricultural and Horticultural Census for England" June 2004

3.2 Agriculture (including livestock) employs between 1% and 2% of the total UK workforce and accounts for between 0.5% and 1% of GDP. In 2003, there were 177,288 full and part-time principal farmers, partners and directors working on 109,959 holdings with livestock in England.

3.3 An FMD outbreak would also have a serious impact on related industries such as the meat trade, including abattoirs and auction markets, milk companies, food processors and specialist road hauliers as a result of the restrictions imposed. An economic study, by Thompson et al⁴, concluded that in the food chain sectors, downstream from the farm-gate, the cost to the industry in England of the 2001 outbreak was about £115 million. Moreover, the wider food industry could be affected due to the adverse reactions of some export markets.

3.4 Many other rural sectors, particularly tourism, could be affected by a future outbreak. Tourism is a key UK industry, with an annual turnover of £76 billion and with over 7% (approximately 1 million) working in that sector. In England, 86% of tourism income is generated by domestic visitors and the vast majority of lost revenue in 2001 related to reduced spending on domestic tourism.

4. Options

4.1 This proposal is not concerned with decisions about disease control methods. In particular, the decision on the use of vaccination, in addition to slaughter and disposal, would be taken in a similar way under all 3 options. This proposal is primarily about the detail of the powers available to control a future outbreak. The new options (2 and 3) offer slightly different enhancements to existing powers, intended to improve the effectiveness of disease control.

4.2 **Option 1 - Do nothing; continue to rely on present controls in the FMD Order 1983 (as amended). Option 1 acts as the baseline for the other 2 options**

The Government's policy on a future outbreak would be different in some key respects compared to 2001, even under this pre-existing framework. However it is unfeasible to continue with present powers because the 1983 Order does not fully implement the provisions of Council Directive 2003/85/EC. Under Article 226 of the Treaty of Rome, Member States are obliged to implement EU law; failure to do so may result in infraction proceedings and ultimately ECJ action.

4.3 **Option 2 - Transpose the Directive exactly**

The provisions of the EU Directive are similar in many respects to those of the current 1983 Order (Option 1) but more detail is provided for each control measure. The Directive gives more emphasis to the use of emergency

⁴ D Thompson, P Muriel, D Russell, P Osborne, A Bromley, M Rowland, S Creigh-Tyte and C Brown: Economic Costs of the Foot and Mouth Disease outbreak in the United Kingdom in 2001

vaccination, and takes account of the lessons learnt from 2001 within the regulatory framework. Under the new legislation, the option of emergency vaccination would be considered from day one of an outbreak. The important additional requirements in the Directive are summarised in Table A below and in more detail in Annex 1.

Table A – New requirements of the 2003 Directive
Requirements for fresh meat and meat products from animals originating or produced in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises) to undergo various treatments, including heat treatment or de-boning and maturation
Requirements for similar treatments of meat and meat products from vaccinated animals until the UK has regained FMD-free status, in line with OIE rules
Prohibitions on animal movements, except to slaughter, in certain zones

4.5 Option 3 – As Option 2 but with some additional measures retained from the current 1983 Order

The Directive sets down minimum measures but specifically allows, in Article 1, for Member States to take more stringent action. Option 3 goes further than the Directive in a limited number of areas, based on veterinary advice where these measures proved useful in controlling the disease in 2001. These additional provisions are carried over from the 1983 FMD Order and are set out in Table B below:

Table B – Existing Provisions of the 1983 Order to be carried forward
Requirements to control rodents on premises where disease is suspected or confirmed
Requirements to control dogs and poultry in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises)
Controls on shearing, dipping and scanning of sheep by mobile workers in Restricted Zones (which could extend to the whole country)
Powers to close land including footpaths (but only within Protection Zones)
Powers to control shooting, stalking, drag hunting and other gatherings of people in Restricted Zones
Powers to control animal gatherings (markets, shows etc) in Restricted Zones

5. Costs and benefits - general

5.1 A comprehensive cost benefit analysis of the 1967 outbreak concluded that the economic benefits of FMD control exceeded the costs of the disease becoming endemic. This conclusion remains true today.

5.2 Defra published a Cost Benefit Analysis (CBA) of FMD Control strategies⁵ following the 2001 outbreak, the detail of which was set out in paragraph 2.6 above. As this CBA makes clear, considerable changes have taken place in the UK farming industry since 2001. Principally, there is now a 6-day movement restriction for cattle and sheep in England (as well as a retained 20-day standstill for pigs) which has significant implications for the likely size of any future outbreak.

5.3 However, there is another important conclusion from the prediction of the CBA that future outbreaks are likely to be significantly smaller than in 2001. This is that the speed and effectiveness of control measures make a major difference to the costs of an outbreak. The CBA therefore supports the recommendation of this RIA to increase the effectiveness of control measures in the event of an FMD outbreak. More effective controls will reduce the duration of an outbreak and the number of infected premises, so reducing the following costs:

- Disease control costs (including labour and materials);
- Compensation costs (including livestock culled);
- Uncompensated industry costs (including loss of quality and export loss);
- Loss of trade (due to movement restrictions);
- Other costs, including effect on tourism, loss of amenities and environmental impact.

6. Option 1 (Do nothing) – Benefits

6.1 To continue to rely on the 1983 Order would result in a significant under-implementation of the EU Directive. It would also not adequately reflect the changes and developments in FMD policy since 2001 nor the increased emphasis on emergency vaccination. There would be no additional economic, social or environmental benefits from this option.

7. Option 1 (Do nothing) – Costs

7.1 This option is not feasible as the UK is legally obliged to implement the EU FMD Directive into domestic legislation. Failure to do so would lead to a referral to the European Court of Justice (ECJ). The Commission issued a Reasoned Opinion (the final stage of infraction proceedings before referral to the ECJ) in July 2005 and a referral is expected in December 2005 unless the Directive has

⁵ Risk Solutions: Cost Benefit Analysis of Foot and Mouth Disease Controls published 26 May 2005.
<http://www.defra.gov.uk/footandmouth/pdf/costben.pdf>

been transposed by then. A finding against the UK by the ECJ may eventually result in fines being imposed. There would also be additional costs, especially environmental and social, as this option does not adequately reflect the lessons learned from the 2001 outbreak.

8. Option 2 (Transpose exactly) - Benefits

8.1 Table A above lists the provisions of the Directive which would significantly increase disease control effectiveness. The treatment of meat and meat products is one of the key provisions and is necessary to reduce the risk of onward transmission of FMD virus through potential contact with FMD-free animals. Although the size of the expected benefits for this option *may* be relatively small, the large costs incurred in 2001 and the modelled possible reductions in costs (as discussed in section 5 above) means that extra controls will almost always be economically desirable.

8.2 This option also gives greater prominence to the use of emergency vaccination (in addition to the slaughter of susceptible animals on infected premises and those identified as dangerous contacts). Both national inquiries into the 2001 outbreak (the Lessons Learned Inquiry and the Royal Society Report into Infectious Diseases⁶) recommended, and the Government accepted, that the option of emergency vaccination should be considered as part of the FMD control strategy from the start of any outbreak.

8.3 The controls required following vaccination are now explicit in the Directive, which will improve understanding of the possible impact of vaccination in a future outbreak. Greater detail of the disease framework should allow for better preparation for a future outbreak and preparation is key to effective control.

8.4 The CBA scenarios allow us to model various delays in the deployment of vaccine. In a large outbreak beginning in a county with high risk of disease spread a delay in the deployment of vaccine resulted in a roughly 5% increase in total outbreak costs. A speeding up of vaccine deployment reduced costs by around 2%. If high virus infectivity is assumed, then the costs can be expected to increase by around 10% if vaccine deployment is delayed. Faster vaccination deployment may be a reasonable proxy for some of the additional powers under either Option 2 or Option 3, and so these estimates give an idea of the potential benefit in some scenarios. Options 2 and 3 would allow us to implement an effective vaccination programme, if the decision to vaccinate were taken.

8.5 There could be some small reductions in costs to some farmers and others under Option 2 as they would no longer be legally obliged to comply with the provisions of the 1983 FMD Order listed in Table B above. But these would be offset by the reduction in the benefits of increased disease control that these measures would bring.

⁶ The Royal Society Report: "Infectious Diseases in Livestock", July 2002.

8.6 The main environmental benefits from the Directive would be the reduced impact of culling and disposal, as more effective control would reduce the number of infected premises, the duration of the outbreak and therefore the number of animals slaughtered. The Directive explicitly refers to the need "to prevent any avoidable damage to the environment in the event of an outbreak". Unlike in 2001, a disposal hierarchy of incineration, then rendering and only then licensed commercial landfill would be applied to all three options.

8.7 More effective control through the powers under the Directive would also reduce the negative social impacts of FMD such as stress and social disruption. Rural people would benefit as they would be better protected from the effects of FMD or subject to restrictions for a shorter time.

8.8 Modelling of the costs and benefits of these measures show that the net benefits for Option 2 range between a £0.9m cost (for a medium sized outbreak with cattle vaccination) to a £35m benefit (for a large outbreak).

9. Option 2 (Transpose exactly) - Costs

9.1 One cost would be the reduced effectiveness of controls arising from the loss of some powers under the 1983 Order (set out in Table B). These powers are not in the Directive but were useful in controlling disease in 2001. The veterinary justification for these controls is contained in the benefits section of Option 3 (see section 10).

9.2 The possible earlier use of vaccination under the Directive would be intended to reduce FMD control costs in total. However it may also involve increasing some individual cost elements and this may imply some shift of costs between affected groups and the taxpayer. As the CBA noted, "*an important element to consider in the choice of control strategyis the proportion of the outbreak cost borne by different sectors of the economy*".

9.3 The CBA breaks down the total outbreak costs into five broad categories:

- government opportunity costs;
- government cash costs;
- livestock industry cash costs;
- wider economy cash costs;
- other non-cash costs

The CBA shows that whilst a vaccination strategy might (in some instances) reduce costs to Government through lower cull compensation costs, and also reduce the wider economic impact, there might be an increase in the proportional economic cost borne by the livestock industry through increases in withholding costs (ie the costs of retaining animals longer than would be normally be the

case, eg extra feed) and market losses. There would be no environmental and social costs due to the benefits of reduced disease spread reducing the environmental and social impact of an outbreak.

9.4 The extra control provisions in Option 2, listed in Table A, above may well involve some additional costs for livestock producers. The estimated cost range across the CBA outbreak scenarios are as follows (information on how these costs have been arrived at is contained in Annex 2):

- Requirements for treatment, including heat treatment and deboning and maturation, of fresh meat and meat products from animals from Protection and Surveillance Zones. Although it is difficult to provide a meaningful estimate of the cost of heat treating a carcass, we have estimated instead, with the help of the farming and processing industry, the cost as being the likely reduction in value of a carcass that was heat treated and therefore only able to be marketed as processed product rather than fresh meat. In the case of pig meat (where heat treatment is the only treatment permitted) we estimate that this reduction would represent around half the value of the carcass. If we assume proportionately similar costs for cattle and sheep (which can only be heat treated in a PZ) then it would clearly not be in a livestock producer's economic interests to send his animals for heat treatment in a PZ, or for pigs at all, if any alternative were available. However, the Directive does allow for a derogation from these treatments 30 days after a PZ has been in place and cleansing and disinfection and surveillance testing has been completed. We have therefore assumed that the most realistic scenario is that producers would wait for this derogation to become available (although, in the event that heat treatment does take place, some likely costs are set out in Annex 2). This is because the cost of treatment would outweigh the economic cost of waiting, such as extra feed and the loss of value from not marketing livestock at its optimum weight. These withholding costs over 30 days have been estimated in the CBA to range nationwide from £250,000 to £5.6m.
- Requirements for similar treatments of meat and meat products from vaccinated animals. Estimates of the costs and benefits of an emergency vaccination policy suggest that, for fresh meat from vaccinated cattle, the requirement for both de-boning and maturation would increase the cost of slaughtering by some 5%-15% and require a price discount of broadly 10%. Evidence from the sheep industry suggests that the effects on sheepmeat would be greater due to the practical difficulty of deboning cuts of sheepmeat, other than the leg and shoulder. Such costs would also apply to cattle and sheep producers in Surveillance Zones where deboning and maturation is permitted. Again, it has been assumed that producers would wait for derogations to be available, as they would be in phase 3 of a Vaccination Zone, before sending their animals for treatment. This would result in a similar range of likely nationwide withholding costs

as set out above. In fact, such costs would probably be lower as, depending on the size and epidemiology of the outbreak, the area and number of animals covered by Vaccination Zones would probably be smaller than that covered by Protection and Surveillance Zones, although it is not possible to model with any certainty where such vaccination would take place.

- Prohibitions on animal movements except to slaughter, in certain zones, would obviously prevent animal movements to live in those zones for welfare reasons. However, as animal movements are one of the key routes for disease transmission, there are clear benefits to be gained from establishing tight movement controls. For those animals whose welfare is compromised by movement controls, there remains the option of slaughter as a lower risk of disease spread. In this case the Government would pay for the cost of disposal but, unlike in 2001, would not compensate the producer where the animal is slaughtered for welfare rather than disease control reasons. The CBA identified the cost arising from this control to be between £0.1m to £6.4m which stems from the loss of economic value of livestock due to welfare purposes and the loss of economic value of livestock slaughtered early to avoid welfare culls.

10. Option 3 (Additional measures) - Benefits

10.1 Veterinary advice based on experience from the 2001 outbreak is that the imposition of more extensive controls than those in the Directive, set out in Table B above, would allow any future disease outbreak to be controlled more quickly and effectively. These controls could therefore lead to a reduction in the overall size and duration of an outbreak and limit its wider cost and impact, including in environmental and social terms. The controls are currently all part of existing law (the FMD Order 1983) so do not represent a new burden and are also included in Option 1.

10.2 The benefits of these controls are very similar to those for Option 2 (see section 8 above) except, of course, for the small benefit from the lack of these controls for farmers and others. The veterinary justifications for these controls and the estimated cost range across the CBA outbreak scenarios are as follows (information on how these costs have been arrived at is contained in Annex 2):

- Controlling rodents on premises where disease is suspected or confirmed would prevent those rodents, which are FMD susceptible, from acting as vectors for the disease. This is a particular disease risk if, for example, the inhospitable environment created on an infected premises that is subject to slaughter and cleansing and disinfection caused rodents to move off the premises to neighbouring farms. The cumulative nationwide costs of professional rodent control would range from £14,000 to £1.2m.

- Requirements to control dogs and poultry in Protection and Surveillance Zones would also prevent these animals carrying disease to or from infected premises. Although, unlike rodents, dogs and poultry are not susceptible to FMD, these animals represent a particular risk as they are common on farms, capable of carrying disease on their bodies, difficult to disinfect and prone to extensive movement. Dogs (other than in houses) are required to be confined to a kennel or enclosure, secured to a fixed object by a collar and chain or accompanied by a responsible person keeping them on a lead. Poultry need only be confined to part of the premises, for example free range poultry being kept inside, on the instruction of a veterinary inspector depending on the risk they pose. It is difficult to estimate costs of controlling dogs and poultry – in any case they would be fairly negligible. We have estimated that they might range nationwide between £100 and £12,000.
- Controls on shearing, dipping and scanning of sheep by mobile workers in Restricted Zones (which in effect is likely to cover the whole country, at least in the early stages of an outbreak). These controls were introduced during the 2001 outbreak as these activities pose the highest risk of those involving people moving from farm to farm and handling livestock. However, a prolonged ban on such activities would cause serious animal welfare problems so they can continue with permission from a veterinary inspector. In 2001, a number of these activities were allowed to continue on the basis of veterinary risk assessments and risk management solutions, such as increased biosecurity, being put in place. These provide a means of allowing these activities to continue in most places whilst minimising the risk of disease spread. The economic cost of these controls is made up of the administrative costs of inspection and providing licenses plus the loss in productivity resulting from these controls. The nationwide cost range is estimated to be around £10,000 to £570,000.
- Powers to close land including footpaths (but only within Protection Zones). The movement of people in areas where disease is present obviously poses a veterinary risk, especially where walkers on footpaths may come into contact with livestock. However, in 2001 this power was much broader to allow the closure of footpaths across the country. Not only was this disproportionate in terms of disease risk but also economically damaging to the wider rural economy. Therefore such closures are proposed to be limited to Protection Zones which although only a minimum of 3km around an infected premises may only extend further where justified by disease risk. We have estimated that the nationwide economic loss to tourism from these closures would range from £53,000 to £4m with the costs to Government of closing footpaths ranging from £10,000 to £80,000.

- Powers to control shooting, stalking, drag hunting and other gatherings of people in Restricted Zones. These types of activity are characterised by the proximity of animals and people and are commonly practised in the countryside therefore they pose a particular risk which veterinary advice justifies extending to the whole country. Individual such gatherings may be permitted but only under license which allows biosecurity conditions to be applied. The total cost of this provision ranges from £9,000 to £195,000.
- Powers to control animal gatherings (markets, fairs, etc) in Restricted Zones. Again such animal gatherings are particularly high risk such that they justify controls throughout the country although again they can be held under license. Estimates of the total cost of controlling animal gatherings, and the associated economic loss, range between £228,000 and £961,000.

10.3 The CBA concluded that Option 3 would yield a positive benefit of up to £210m compared to the baseline (Option 1).

11. Option 3 (Additional measures) - Costs

11.1 These are similar to the costs in Option 2 (see section 9) except that, with these additional controls, the significant cost of reduced FMD control (see para 9.1) can be omitted. Option 3 combines the new powers under the Directive with the old powers from existing legislation and will therefore offer the greatest effectiveness of disease control and the lowest impact of a disease outbreak in economic, environmental and social terms.

12. Issues of Equity or Fairness

12.1 In the event of an FMD outbreak, the control measures would be proportionate through being more stringent in areas close to disease - that is Protection, Surveillance and Vaccination Zones - than in uninfected areas such as Restricted Zones. This provides an additional level of variability than existing legislation which only contains two such levels (Infected Areas and Controlled Areas) and therefore much less flexibility.

13. Consultation with small businesses: the Small Firms Impact Test

13.1 The new legislation would affect small businesses in particular - predominantly farmers but also other small businesses in rural areas. However, this would only be in the rare event of an outbreak where such businesses would be more greatly affected by allowing FMD to become endemic, so losing our trading status. During consultation on the draft Directive we received no specific feedback from small businesses. After discussions with the Small Business Service, we carried out a further consultation exercise targeted specifically at

those small business organisations recommended by the SBS but no feedback was received.

14. Competition Assessment

14.1 The legislation would be likely to have only a minor impact on competition in the markets directly affected by it. The major markets affected include the European markets for beef, sheep meat and pig meat as well as markets for the trade in live animals. Other farm types, such as poultry holdings, may incur indirect impacts from the legislation. Furthermore, whole sectors of the rest of the rural economy, such as the tourism industry, may be indirectly affected.

14.2 Of the markets directly affected by the legislation, all are characterised by low levels of concentration; no firm has 20% market share and no three have 50%. The legislation would affect some firms substantially more than others. The shocks to supply would not be due to competitive distortions.

14.3 The legislation would have a temporary impact on the market structure if an FMD outbreak occurred, reducing the number of meat and animal suppliers. There would be no extra set-up or ongoing costs for new entrants to meet compared to existing firms. Firms' ability to choose the price, quality, range and location of their products would be affected. However, English consumers are not expected to suffer as a result of this, since substitution to imports or other non-affected meat, such as poultry, will be possible.

15. Enforcement and Sanctions

15.1 The legislation would be enforced, in Great Britain, by the State Veterinary Service Agency, as with existing EU and national law, and in Northern Ireland by the Department of Agriculture's Veterinary Service. Local Authorities would assist in enforcement. According to returns submitted to Defra, under existing legislation there were 44 prosecutions taken in 2001 and 78 in 2002.

15.2 As these provisions apply only in the event of an outbreak, there are no significant new burdens on these enforcement agencies. During an outbreak, any additional burdens on the farming industry would, except for the treatments outlined in paragraph 9.4 above, be no greater than under existing legislation and would be more risk-based and proportionate as they are based on different levels of control in the various zones. Defra's forthcoming Farming Regulation and Charging Strategy will set out the Government's intention to work in partnership with the farming industry in exploring risk sharing mechanisms in tackling animal disease, including future financing options and simplifications in the regulatory burdens on the farming industry.

15.3 The EU Commission has responsibility for monitoring enforcement by Member States in order to ensure uniform application of EU legislation.

16. Monitoring and Review

16.1 Monitoring of the effectiveness of the legislation will arise from regular National Contingency Plan exercises.

17. Consultation

17.1 Within Government - In the development of this legislation and the production of this RIA, we have consulted the Cabinet Office, the Small Business Service, the Office of Fair Trading, other policy makers in Defra, departmental economists and colleagues in the Devolved Administrations.

17.2 Public Consultation - A full written public consultation exercise giving stakeholders the opportunity to comment on the proposed Directive ran from 7 February until 2 May 2003. A further consultation period, specifically targeted at small businesses, ran from 28 July to 17 October 2003. Following the adoption of the Directive, the transposing legislation was also the subject of a full written public consultation exercise which ran from 9 June until 1 September 2005. A draft version of this RIA, inviting further data to be provided, accompanied that consultation. Those respondents who expressed a view preferred Option 3 as it offered the greatest degree of protection in a disease outbreak.

17.3 A series of stakeholder meetings to discuss the implications of the disease control strategies arising from the draft Directive began in January 2003. Issues and concerns raised by stakeholders at these meetings were highlighted during negotiations on the Directive and improvements were secured, for example in the treatments of products from vaccinated animals. Further meetings were held with stakeholders during June and July 2005 to discuss these issues in more depth.

18. Summary and Recommendation

18.1 The Directive being transposed by this legislation seeks to update and consolidate existing EU measures for the control of FMD, particularly in the light of the experience gained during the 2001 outbreak. The legislation provides a full range of disease control measures, including emergency vaccination, to limit the size of future FMD outbreaks and so limit the impact not just on the farming and food sectors but on other rural businesses and tourism. However, these detailed control measures will impact on the meat and milk sectors in particular.

18.2 Defra's consultants modelled eight possible scenarios to estimate the costs of an FMD outbreak under each of the three policy options in this RIA. The main results are set out in Table C below. Option 3 was the best option in six of the eight scenarios, meaning that the savings made from more effective control of the outbreak were more than enough to justify the extra costs of the powers

under Option 3. In the scenario of a large outbreak with a cull only policy, Option 3 yielded net savings (net benefits) of £177 million over Option 2 and £213 million over Option 1. Option 3 was also the best Option in the scenarios of medium or large outbreaks controlled with vaccination. Here the advantage of Option 3 was less dramatic but still amounted to benefits which were double, five times or twelve times the costs of the extra powers. The two scenarios in which Option 3 was not the best option involved the smallest scale of outbreak (total cost £20m to £40m) and there was little to choose between the options in that case.

Table C

Scenario	Cost of outbreak (£ million)			Advantage of option 3 compared to next best
	Option 1	Option 2	Option 3	
Small outbreak, IP DC cull	21.8	22.6	21.9	-0.1
Small outbreak, IP DC cull + cattle vaccination	38.2	37.5	37.8	-0.3
Medium outbreak 1, IP DC cull	102.7	98.3	91.4	+6.9
Medium outbreak 1, IP DC cull + cattle vaccination	111.8	112.7	106.5	+5.3
Medium outbreak 2, IP DC cull	158.0	150.2	128.9	+21.3
Medium outbreak 2, IP DC cull + cattle vaccination	176.9	167.4	152.7	+14.8
Large outbreak, IP DC cull	648.3	612.2	435.1	+177.1
Large outbreak, IP DC cull + cattle vaccination	381.6	348.2	308.9	+39.3

18.3 The results clearly suggest that the powers available under Option 3 are capable of delivering major savings in the costs of a large or medium sized FMD outbreak which amply justify the minor extra costs involved.

18.4 We therefore recommend Option 3, as this combines the new powers under the EU Directive with the old powers from the 1983 FMD Order and will offer the greatest effectiveness of FMD disease control in the event of an outbreak.

For Final RIA only

Declaration:

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed by the responsible Minister:

Ben Bradshaw, Minister for Local Environment, Marine and Animal Welfare

3 November 2005

Contact: Andrew Jones, FMD Directive Transposition Project Manager, Defra

ANNEX 1

SUMMARY OF NEW FMD LEGISLATION

1. Where FMD is suspected (prior to confirmation of an outbreak)

The FMD Order includes the following measures on suspicion of disease:

- Those in charge of animals or carcasses are required to notify infection or suspected infection. A notice of suspicion of disease would then be served on the occupier of the premises or on the person in charge of animals in transit.
- Following the detection of suspected disease, a Temporary Control Zone (TCZ) must be imposed around the suspect premises of whatever size necessary to control disease (although in practice it would normally cover a 10km radius of the suspect premises as, if disease was confirmed, it would become a Surveillance Zone). This would impose a ban on the movement of susceptible animals from and to premises within a TCZ, except in limited circumstances and under license. The Secretary of State can also add a set of additional requirements including restricting the movement of animal products, things, people, vehicles and non-susceptible animals. These measures would be maintained for as long as the TCZ remains in force (likely to be short while the presence or absence of disease is confirmed). A Supplementary Movement Control Zone (SMCZ) may also be declared with a TCZ which could extend to the whole country and would impose a nationwide ban, with limited exemptions, on the movement of animals (including specified non-susceptible animals, eg horses, within the first 72 hours).
- Suspect premises would be investigated by a Veterinary Inspector (VI) of the State Veterinary Service (SVS) to establish the presence or absence of disease. If the outcome was negative then the TCZ (and any SMCZ) would be lifted. However, if the outcome proved positive, the premises concerned would be declared an infected premises, which would trigger the measures set out in the next paragraph. The SVS would also trace contacts from that premises to other premises where there was a risk of contamination or where an epidemiological link could not be excluded. This may result in further premises being declared suspect premises or contact premises (where there was a risk of disease being carried to or from other premises).

2. Where FMD is confirmed

Where FMD is confirmed, the FMD Order includes the following measures:

- Slaughter must take place on the premises unless Defra believes that this would be an unsatisfactory method of disease control. Where the infected premises is a slaughterhouse or a border inspection post, or where animals are in transit when disease is confirmed, animals can be moved elsewhere to be slaughtered (subject to Defra's approval).
- Disposal of carcasses and faecal material from slaughtered animals can only be undertaken under licence from Defra. Occupiers of premises where animals have been slaughtered are responsible for ensuring the isolation of things liable to spread disease, e.g. animal products, manure, feed and litter. This isolation must be maintained until items have been either certified as free of contamination, have been treated in accordance with instructions or removed from the premises and treated.
- Defra must then ensure that cleansing and disinfection takes place according to detailed requirements and may serve a notice requiring the occupier to undertake it. Following completion of cleansing and disinfection, most premises can be restocked after a further 21 days subject to certain conditions, in particular that the premises have been confirmed as disease free.
- A Protection Zone (PZ) and a Surveillance Zone (SZ) must be declared on confirmation of infected premises. A PZ is based on a minimum radius of 3km, and the SZ on a minimum radius of 10km, around the infected premises. Local authorities must erect signs in a conspicuous position on roads entering these zones on which susceptible animals are likely to be moved. Any premises which are partly inside a zone will be regarded as being fully inside the zone that has the stricter controls. The PZ will remain in force until at least 15 days has passed after all preliminary cleansing and disinfection measures have been carried out; and a survey of susceptible animals has confirmed the absence of infection. The PZ will then become part of the associated SZ. The SZ will remain in force until at least 30 days has passed after all preliminary cleansing and disinfection; and a further negative survey of susceptible animals.
- Within both the PZ and the SZ there are bans on the movement of susceptible animals and requirements to control dogs and poultry as well as regular veterinary inspection, record-keeping requirements and various controls on straying, sheep shearing, dipping and ultrasound scanning. There are also controls on the sale of semen, ova and embryos, hides and skins, wool, hair and bristles and other animal products from susceptible animals.
- Within the PZ only, strict controls apply to movements of susceptible animals into or out of the PZ and between premises with certain exemptions, for example slaughter for welfare reasons under license.

There are also restrictions on the holding of fairs, markets, shows and other gatherings of animals or people and controls on the breeding and slaughter of susceptible animals for private consumption, transport and sale of fodder and transport and spreading of faecal matter produced within the PZ. There are also restrictions on the transport and sale of milk and milk products and they are required to be heat treated (including ultra heat treatment and pasteurisation). There are also controls on the sale of meat and meat products and detailed requirements concerning the date of production, origin, storage, marking of meat and treatments to be applied. Similar, but overall less strict controls apply in the SZ.

- Crucially, meat and meat products must be heat treated, if they originate in a PZ, to kill any potentially remaining virus. The same applies to pig meat in an SZ but otherwise in an SZ beef and sheep meat may be deboned and matured. However, the UK would apply to the European Commission for derogations (as set out in the Directive) from any such treatment once the PZ or SZ had been in place for 30 days, and there had been no subsequent cases, if it was taking longer to lift those zones.
- Following confirmation of disease, the Secretary of State may declare a Restricted Zone (RZ) and in practice she would do so immediately. It is likely that the whole of England would become an RZ on the first confirmation. An RZ would impose a number of less strict animal movement and other controls (unless overlaid by any other stricter zone). An RZ could stay in place until FMD freedom or be progressively limited to smaller parts of the country through a policy of regionalisation, to allow freedom from controls for FMD-free areas. Finally, if disease were found in a wild animal, the surrounding area could be declared a Wild Animal Infected Zone (WAIZ) of such size as is necessary. The WAIZ would impose movement and other controls and requirements to notify the presence of dead wild animals.

3. Requirements for emergency vaccination

The Vaccination Regulations include the following measures:

- Vaccination is prohibited except under licence from Defra. The Secretary of State must authorise vaccination if she considers that a range of scientific, veterinary and other circumstances are met in preventing the spread of disease or protecting animals from the disease. A decision to undertake a vaccination programme must specify the terms and conditions which apply including whether vaccination is to be protective (to live) or suppressive (to kill), the geographical area involved, the species of animal involved and the duration of the programme.

- Where protective vaccination is specified, a Vaccination Zone (VZ) will be established of such size as is necessary. A Vaccination Surveillance Zone (VSZ) will also be established, for at least 10km around the VZ, where no vaccination is permitted. Various movement controls apply to both the VZ and the VSZ and products from vaccinated animals are generally required to be either heat treated or deboned and matured.
- Keepers of animals are required to provide any information regarding the animals they are responsible for, to submit animals for vaccination as required and to provide any assistance as may reasonably be required in securing animals to facilitate vaccination.
- Those involved in carrying out vaccination are responsible for the identification of vaccinated animals through ear tagging and making a written record. Such tagging must remain for the whole of the life of the vaccinated animal to prevent it from being exported. However, following FMD freedom, vaccinated animals may be traded freely on the domestic market and meat and other products from vaccinated animals does not need to be marked or treated and can be exported.
- A vaccination programme comprises of three phases. Phase 1 starts on the declaration of a VZ and involves the administration of vaccination. Phase 2 starts 30 days after all the animals in the VZ have been vaccinated, or longer depending on the Secretary of State's discretion. During this phase, a clinical and serological survey of all the premises within the VZ will take place, the outcome of which will determine whether premises are classified as infected, reactor holdings (were animals have to be slaughtered) or free of disease. Phase 3 will start on completion of the measures to be undertaken in Phase 2 or may earlier for individual premises which have independently been confirmed as free of disease. It is during Phase 3 that the UK would apply to the European Commission for derogations (as set out in the Directive) from treatments for meat and other products from vaccinated animals.

ANNEX 2

ADDITIONAL INFORMATION ON THE COSTS OF FMD CONTROL MEASURES

Table A – New requirements of the 2003 Directive	Overall costs	Source	Key variables
<p>Requirements for fresh meat and meat products from animals originating or produced in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises) to undergo various treatments, including heat treatment or de-boning and maturation</p>	<p>The CBA assumes that farms in Protection and Surveillance Zones would seek to retain livestock as long as possible, so that the 30 day derogation will eventually enable them to send livestock to slaughter without any treatment requirements.</p> <p>We have assumed that the animal in question would have been sold onto the market at optimal moment. Overall economic costs consider both maintenance costs and loss of market value. The total expected cost would depend crucially on the size of the outbreak.</p> <p>We have estimated maintenance costs at £1 per bovine animal per day and £0.10 and £0.15 for sheep and pigs respectively. The delay in marketing is expected to lead to a 10% price loss per animal.</p> <p>We have taken heat treatment costs to be £37.50 per pig.</p> <p>We estimate the price discount on heat treated meat to be in the region of 30%-50%.</p>	<p>Working assumption</p> <p>Working assumption</p> <p>Based on work on costs of the 6 day standstill regime, plus Thompson et al paper on the cost of the 2001 FMD outbreak.</p> <p>Industry estimates in the 2001 Classical Swine Fever RIA</p> <p>Working assumption. This cost may be offset</p>	<p>Number of farms marketing meat inside the zones.</p> <p>Number of livestock from these farms which would have been marketed during the period where treatments required.</p>

		in some cases by improved market access under OIE rules for some categories of meat where the alternative is disposal and destruction.	
Requirements for similar treatments of meat and meat products from vaccinated animals until the UK has regained FMD-free status, in line with OIE rules	<p>De-boning and maturation is an alternative to heat treatment which is available for cattle and sheep in SZs and Phase 2 of a VZ.</p> <p>De-boning and maturation represents an increased cost to the abattoir around 5-15% of the cost of slaughtering, likely to be on the low side of this range i.e. around £10 per bovine animal. There will also be additional an cost for the disposal of bones, according to the Animal By-Products Regulations.</p> <p>In addition there may be a price discount on the final product, possibly around 10%, to reflect the fact that meat from vaccinated and non-vaccinated animals needs to be kept separately, and meat from vaccinated animals may not reach the same markets.</p>	Calculated roughly based on increased costs of slaughtering BSE animals from MLC data. Also MAFF estimates in Cumbria at the time of the FMD outbreak in April 2001.	Number of vaccinated animals passing through abattoirs – depends on scale and geographical distribution of outbreak.
Prohibitions on animal movements, except to slaughter, in certain zones	In cases where a welfare movement would have been permitted but must be replaced by a movement to slaughter, there are two economic costs. Firstly there is the drop in value of livestock culled for welfare purposes. Secondly there would be the loss of value of livestock slaughtered early to avoid welfare culls. Total costs vary from £0.1m to £6.4m		Number of welfare movements permitted under existing legislation depending on size of outbreak.

Table B – Existing Provisions of the 1983 Order to be carried forward	Overall costs	Source	Quantity
Requirements to control rodents on premises where disease is suspected or confirmed	These are measures that a good stockman would be expected to take in any case as part of the efficient running of his farm. There may be a rodent control contractor cost, estimated at £858 per farm.	Average of industry quotations	Number of farms where disease is suspected or confirmed
Requirements to control dogs and poultry in Protection and Surveillance Zones (a minimum of 3km and 10km respectively around an infected premises)	<p>Dogs are simply required to be confined or controlled so this should not result in any extra costs.</p> <p>In the unlikely event that we would want to control poultry, such control may simply involve restricting the movement of free range birds in which case there is also likely to be no costs. For the purposes of assessing whether any costs may arise at all, we have taken the worst case scenario that the only way of effectively controlling a flock might be to destroy it. We have estimated a cost of 30p per bird to reflect the likely level of bird culls - although we cannot foresee any circumstances where such extreme action would be necessary.</p>	Working assumptions based on the average value of birds and the likely level of culling.	23,000 susceptible farms (i.e. poultry farms that also have either cattle, sheep or pigs).

<p>Controls on shearing, dipping and scanning of sheep by mobile workers in Restricted Zones (which could extend to the whole country)</p>	<p>The controls on shearing, dipping and scanning of sheep could allow for these activities to continue, but only under certain licence conditions.</p> <p>The costs to Government of administering such controls are estimated at £3 per licence per farm per activity.</p> <p>The loss of productivity associated with these activities is estimated at £1.50 per sheep for shearing, and £0.46 per sheep for scanning and dipping. We have also assumed a 10% loss in productivity due to these restrictions.</p>	<p>State Veterinary Service estimates</p> <p>Sheep Industry estimates</p>	<p>Number of licences issued.</p> <p>Number of sheep farms adapting practices (or number of sheep affected).</p>
<p>Powers to close land including footpaths (but only within Protection Zones)</p>	<p>Approximately 75% of affected domestic tourism expenditure is transferred elsewhere in the economy. The usage of closed footpaths in PZs would therefore be displaced to other areas of the countryside and footpaths that are open - as there will no longer be a national closure of footpaths as in 2001. We have therefore assumed a maximum 25% of tourism revenue within PZs will be lost (measuring lost benefits with no alternative use of resources).</p> <p>The other related cost is the actual resource cost of closing footpaths. This has been estimated to take 2 hours per km² at a labour cost of £27.10/hour for Local Disease Control Centre (LDCC) admin personnel.</p>	<p>Estimate from national rural tourism figures, 2001 and CBA</p> <p>Working assumption</p> <p>Defra estimates</p>	<p>Total area of PZs</p> <p>Labour hours at the LDCC</p>

<p>Powers to control shooting, stalking, drag hunting and other gatherings of people in Restricted Zones</p>	<p>There are two elements to the likely overall cost of these powers: the actual costs of preventing shooting, stalking and dragging; and the economic losses that arise from the suspension of these activities.</p> <p>For the first of these we have assumed that the resource costs are proportional to the length of the PZ restrictions, and that it will require 2 hours of LDCC admin time per day (at £27.10 per hour).</p> <p>The associated economic costs are based on the annual direct expenditure for these activities (£620m estimated for 2004). This figure is scaled down to take account of the timing, duration and location of the outbreak.</p>	<p>Risk Solutions and Defra estimate</p> <p>Estimates based on 1997 Cobham report on Countryside sports.</p>	<p>Length of restrictions and Labour hours at the LDCC</p>
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<p>Powers to control animal gatherings (markets, shows etc) in Restricted Zones</p>	<p>There are two elements to the likely overall cost of these powers: the resource costs of controlling animal gatherings and the associated economic losses from the suspension of such gatherings.</p> <p>For the first of these we have assumed that the resource costs are proportional to the length of the PZ restrictions, and that it would require 2 hours of LDCC admin time per day (at £27.10 per hour).</p> <p>The economic losses were calculated using animal movement data and the estimated total value added at risk (£50m). This information was used to predict the total losses due to cancellation of gatherings and reduced attendance.</p>	<p>Risk Solutions and Defra estimate</p> <p>Defra estimates based on losses from 2001 outbreak</p>	<p>Number of show movements affected.</p> <p>Number of market movements affected.</p>
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