



Are We Heading for Another Foot and Mouth Disease Outbreak?

By David Campbell and Bob Lee

The *Lessons Learned* inquiry, the last of three inquiries the government commissioned into the 2001 epidemic of foot and mouth disease (FMD), has now reported. Unfortunately, the most important lesson to be learned is sadly missing. The epidemic was not merely badly managed by the government but was *caused* by the government's agricultural policies. FMD control is an object lesson in regulatory failure which the government still shows little sign of being able to address.

FMD is probably the most infectious disease of livestock, partly because it is rarely fatal. For most animals, it is comparable to flu in humans, though often accompanied by painful sores. Animals with the disease live to transmit it, either by direct contact, via their wastes (in which FMD virus can survive for weeks or months), or by exhaling the virus, which can then be wind-blown over considerable distances.

As it is so contagious, FMD is epidemic in a sporadic fashion in most areas of the world where livestock is reared. It took enormous post-war efforts to bring FMD under control in Europe. Until the 2001 epidemic, the EU had been largely free of FMD since 1990 because it operated a policy of "stamping out" outbreaks by the slaughter of infected and seriously at risk animals. In most parts of the EU, but not the UK, this has been supported by vaccination.

Under the Animal Health Act 1981, MAFF (now DEFRA) has complete responsibility for dealing with disease control. Stamping out is, of course, only practicable as a government policy, since it requires rapid detection and assessment followed by the rapid slaughter and disposal of all infected and at risk animals in a way no private body could possibly undertake. In 2001, absolutely none of the required steps were taken in time. The *Lessons Learned* Report confirms that the government's initial response to the outbreak of the disease was hopelessly inadequate. MAFF had no reliable monitoring in place and was slow to identify the danger. By the time it did so, infected animals had been scattered around the country, spreading the disease to an unknown and uncontrollable extent. MAFF was then slow to assess the epidemiology of the outbreak and impose measures to limit it. Political interference may well have made things worse during this stage of the epidemic, but the basic problem was that the disease had gone beyond MAFF's power to compute and control it. In the end, stamping out was abandoned in all but name. Given the unknown extent of the disease, the slaughter became general, as animals in a radius of 3 km from each suspected outbreak were "contiguously culled".

In the end, up to 10 million animals were killed. Perhaps 90% of them were not infected. The disease was eventually controlled, but only because contiguous culling had become almost indiscriminate killing in disregard of the economic, human and animal welfare costs. The direct economic cost is put at up to £10 billion, but this is a remote indication of the extent of the disaster. There was widespread illegality as MAFF in its panic could not respect the relevant criminal, public and private laws. In particular, it was impossible to ensure that all the animals were killed humanely. Very large numbers were criminally killed in ways so horribly cruel that they should occasion lasting national shame.

In the light of this catastrophe, the *Lessons Learned* Report is the latest influential call for the government to prepare better contingency plans. With hindsight, many extra provisions for dealing with another outbreak have been proposed: greater numbers of vets to identify the disease; more officials to enforce precautionary measures, particularly the inspection of overseas meat imports; bigger rendering plants; greater vaccine stocks; and so on. The costs of controlling a future outbreak in this way will be enormous, indeed they appear quite fanciful. Even more worryingly, this expenditure will be wasted. As has been realised outside of agriculture, throwing money at problems in this way is a mistake. The correct answer to the question: *“How much public money should be directly spent on disease control?”* is not *“a lot more”*. The correct answer is: *“a lot less”*.

Controlling the risk of an epidemic is not merely a question of expenditure on disease control, but also of the livestock rearing practices which produce the risk. Take an illustration of a paint manufacturing business using combustible materials. That business inevitably runs the risk of a fire harming its factory, its employees and the surrounding area. This risk can never be completely eliminated, though it will be increased or diminished depending on how the business is run.

To deal with unavoidable risks, the business will need insurance cover. The insurance premiums will reflect the probability and potential costs of fire damage. Those costs will reflect the risk to the surrounding area if the business is legally liable to other parties at risk, as it normally is. Obtaining cover at the lowest premium acts as an obvious incentive to minimise risk by running the business well. Some risks will be taken nonetheless, perhaps because a particularly combustible material improves manufacturing efficiency, or being near to population concentrations saves transport costs. The business will look to balance the profits of such risk-taking against the costs of insurance. The optimum level of risk will be run because of the discipline imposed by the costs of insurance.

Substituting “livestock rearer” for “paint business” in this example, one can see how MAFF caused the 2001 epidemic. Having complete responsibility for disease control, MAFF provided farmers with very generous compensation and insulated them from liability for losses caused to others, such as the tourist industry. MAFF thereby made the costs of precaution irrelevant to the farmer. In the language of economics, the risk which is an “internal” cost in the factory example was made an “externality” to farmers. Farmers have little economic incentive to themselves tackle that externalised risk. Accordingly, they haven’t, instead putting

considerable effort into criticising the government's efforts to control the disease. MAFF created a situation of "moral hazard" in which livestock rearing practices are devised in disregard the costs of disease control, because those costs are borne by others. The result is that animals are reared extremely intensively, sanitary measures have a low priority, and, absolutely crucially to livestock rearing as it is now practised, there are millions of live animal movements each year.

The stamping out policy is classic "blackboard economics"; a policy adopted because it works on the blackboard but which would be an object of ridicule if the costs of actually implementing it were properly evaluated. Stamping out works *if* FMD can be quickly detected; *if* it can be quickly localised; *if* infected and at risk animals can be identified, slaughtered and disposed of quickly; and *if* other appropriate precautionary measures can be quickly put in place. This may happen in a small-scale outbreak. But as livestock rearing proceeded on the basis that disease control was the government's, not the farmer's concern, everything was put in place to turn a small-scale outbreak into a major one. Stamping out could be thought a sensible response to a large-scale outbreak only because it was never properly costed for that purpose. MAFF's epidemiological model massively underestimated the size of the threat. Little thought was given to the costs of actually implementing stamping out. It was especially foolish that no thought was given to the costs it would impose on farmers unable to move stock but ineligible for compensation, or on the tourism industry, or on those living near pyres.

Now that the call for better contingency planning is leading to stamping out being properly costed, the use of stamping out alone will almost certainly be abandoned. The likeliest response is that it will instead be supplemented by vaccination, as it is in most of the EU. Widespread use of vaccination may improve the handling of the disease and reduce the amount of appalling cruelty because it will probably give the government more time to think before slaughtering. But vaccination is also very costly and cannot solve the problems if current intensive rearing practices and the mass movement of live animals continue. These will always threaten to turn an outbreak into an epidemic. If those practices are not changed, we are headed for another catastrophe even if vaccination is adopted. And if vaccination is not adopted, stamping out is again bound to decay into mass, cruel slaughter when the next major outbreak occurs.

If the government told our fictional paint business that, after a fire, it would not be liable for its own or others losses but would be compensated on a more generous basis than it could earn through normal business, we would hardly be surprised to see the factory burn down. It might even happen that the owner might set fire to the factory, just as it is suspected that some farmers infected their own animals. This is far less important than the fact that the government's policies all but eliminated the incentive on farmers to take the appropriate level of precaution. The result was that the enormous post-war public investment in disease control produced the largest epidemic of FMD the world has seen. Had FMD been treated as a normal business risk, to be borne by those engaged in the business, it could have been

treated as a normal business expense. There would then have been every incentive to avoid the livestock rearing practices that caused this catastrophe.

Though making the costs of disease control internal to the decision-making of farmers is essential, this should not be thought of as a proposal to replace 'regulation' with a 'market'. The government will have to take the major role in the necessary 'reregulation'. To do so, it will have to change its entire regulatory stance towards agriculture, away from public subvention to encouragement of self-reliance. The first of the commissioned inquiries to report, *The Future of Farming and Food*, looked at general changes to farming. It was a serious mistake to separate this inquiry from *Lessons Learned*. Change more radical than either inquiry alone would consider is needed. Unless farmers are made to internalise the costs of disease, including FMD control, and devise their livestock rearing practices accordingly, there is every likelihood that there will be another epidemic. We believe it is inevitable.

The process by which another epidemic will be caused has already begun. Movements of live animals have started again, including the cross-channel shipment of live lambs. This not only raises very serious animal welfare problems but obviously constitutes a grave risk which at present the farmer ignores. Autumn livestock auctions are pending. These will involve millions of animal movements, but farmers have flatly told DEFRA they will not comply with the (anyway insufficient) proposed precaution of delays on movement. DEFRA, entirely predictably, is backing down over these. There has recently been a serious FMD scare created by animal movements like the ones which started the 2001 epidemic. The animals involved *were not tagged*, though DEFRA's strategy entirely depends upon this happening. The farmer responsible simply disregarded the precautionary measures, but then this selfishness is just what the regulations encourage.

It has not been possible to trace this farmer, but this is hardly surprising. Experience overwhelmingly tells us that economic regulation based on criminal sanctions is unlikely to work, and that financial incentives are a superior regulatory mechanism. It is a sickening joke that whilst the animals involved in the last scare were not tagged, the farmer DEFRA claims was responsible for the 2001 epidemic *was tagged* as part of his home arrest. This farmer's rearing practices were certainly bad, but as they were common, this is fruitless scapegoating. Effective criminal sanctions require an impossibly costly inspection regime and are unnecessarily draconian compared to the simple solution of making farmers insure against the risk of the disease.

Those who, like ourselves, eat meat in the belief that livestock will be humanely killed must realise that, unless there is radical change, this will not be the case. Animals which provide meat will be killed humanely. But behind them there will inevitably be huge numbers of animals cruelly killed in the panic, mass slaughter which has been the government's response to the epidemics which its agricultural policies cause. So far, all it has done to deal with the next outbreak is pass secondary legislation to give it powers to contiguously cull which it did not have during the 2001 epidemic, and change the name of MAFF to DEFRA.