

Regulation of Animal Health

‘Animal disease outbreaks can have a major impact on animal welfare, human health, farmers, the wider rural economy and the environment. Experience has also demonstrated how expensive they can prove to the taxpayer too’ (DEFRA 2003) p.2.

With such a wide range of affected people and animals, the famous visitor from Mars might expect animal health policy to be a hot topic of public and political debate. But it’s not. At least in the normal run of things it’s not. Animal health policy doesn’t have the potential party against party battles that some other policy areas have. There’s no grammar schools vs. comprehensives (bog standard or otherwise) division between the parties. The balance between the public and private sectors in animal health isn’t seriously challenged. There’s no great demand for a National Veterinary Service. There’s no real ideological division in animal health policy, save, perhaps, for the debates on fox hunting where considerations other than those for the fox’s welfare may have played a role for some members of parliament.

No, animal health policy tends to go on with nobody getting terribly excited by it. Until, that is, it goes wrong, the chips are down and there is a crisis. Then Ministers feed their daughters burgers, television reporters don wax jackets and wellies and report from the farm gate using the language of war and, if possible, with a plume of black smoke rising in the background from a pyre as if reporting the aftermath of a rocket attack in central Beirut. Then animal health policy becomes difficult and emerges, blinking, into the light of public scrutiny.

In Britain there have been a number of animal health related policy issues that have caused controversy. These issues, together with others, have been held to contribute to a fall in public trust of what government tells the public. This paper examines recent developments in animal health policy post the 2001 Foot and Mouth Disease (FMD) outbreak. New policies are seen as the animal health version of a wider change from what Lofstedt has called a consensual model of regulatory decision making to one which he labels participatory-transparent (Lofstedt 2004) p.36.

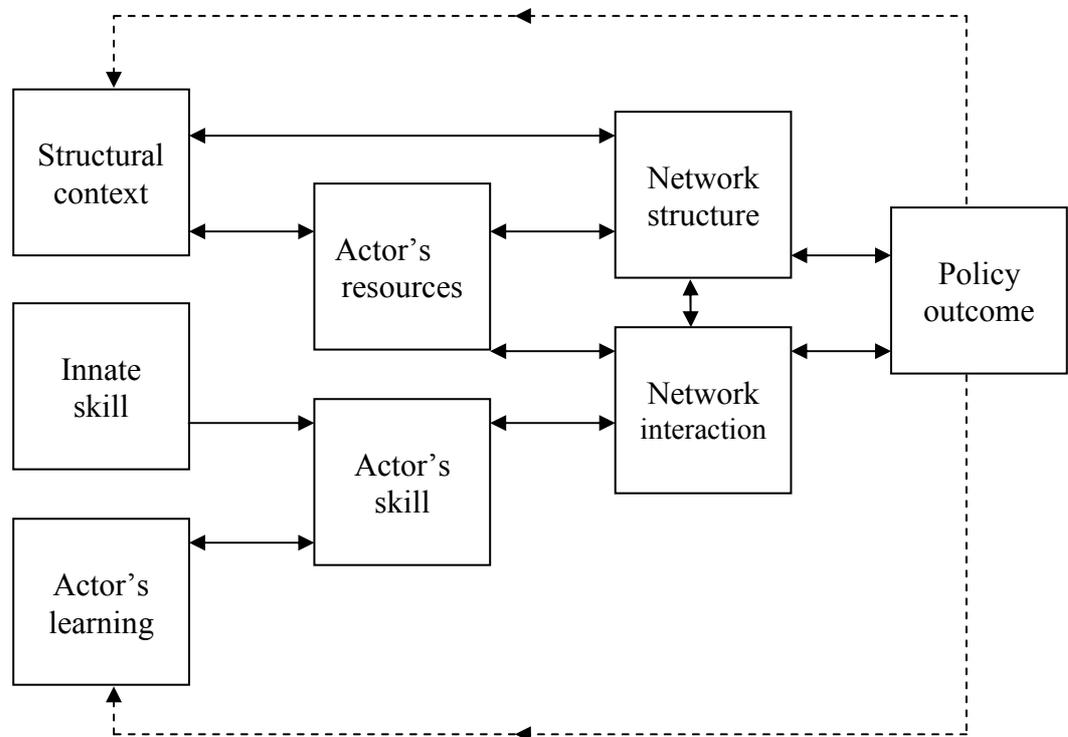
The paper is divided into four main sections. Firstly, there is a description of the methods employed for the collection and analysis of data used in the paper. Secondly, recent animal health policy problems are discussed. Thirdly, the key features of a couple of recent Defra policies on animal health are discussed. The *Animal Health and Welfare Strategy* (DEFRA 2004) and *Government strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain* (DEFRA 2005) are the chosen policies. They are chosen as they illustrate the key themes and, in the case of bovine tuberculosis, are reasonably topical within the framework of ‘normal’ policy making in the field. Finally, using a policy network approach, these policies are analysed.

Methods and Methodology

In studies of policy, the use of policy network models is common. It is not, however, without its critics. The journal Political Studies has been the chosen battleground for one critic of policy networks, Keith Dowding (Dowding 1995; Dowding 2001) and defenders of the approach such as David Marsh and Martin Smith (Marsh and Smith 2001). It is not intended to engage in these debates here, although the fact that a policy network model is employed gives the merest hint of which side of the fence this author sits.

The model employed is Marsh and Smith’s dialectical model (Marsh and Smith 2000). This model is based around three relationships described as ‘dialectical’ by Marsh and Smith. A dialectical relationship is ‘... an interactive relationship between two variables in which each affects the other in a continuing iterative process’ (Marsh and Smith 2001: 5). The relationships considered dialectical are those between the structure of the network and the actors operating within it; the network and the broader context within which it exists and operates; and the network and policy outcome. The model is also described diagrammatically in both Marsh and Smith (Marsh and Smith 2000: 10) and also by Toke and Marsh (p.231) in their study of the GM crops issue (Toke and Marsh 2003). Figure 1 below is adapted from Marsh and Smith.

Figure 1: Policy Networks and Policy Outcomes: A Dialectical Approach



Marsh and Smith argue that in the first of these relationships, neither structures nor individual agency hold supremacy, but that actors' actions are calculated and constrained within the structure of the network, that the structure limits the possible choices open to an actor. In the review of the literature on policy networks it was stated that policy networks can be viewed as a meso-level of analysis, and that if it can be integrated with macro and micro levels of analysis the power of the policy network concept is increased. In seeing the relationship between structure and agency as dialectical, Marsh and Smith's model is an attempt to integrate the meso-level with the micro-level. They see '... first, networks are structures which constrain and facilitate agents; and second, the culture of a network acts as a constraint and / or opportunity on / for its members' (Marsh and Smith 2000: 5). It is not surprising that rational choice theorists such as Dowding oppose policy network analysis since a consequence of the Marsh and Smith approach is that 'In this view, decision makers are satisfiers rather than the classical rational choice theory maximizers' (Daughjerg and Marsh 1998: 68).

The relationship between the policy network and the context within which it exists and operates is a response to policy network models which emphasise network and policy change being caused either by factors endogenous to the network or by factors exogenous to it. Marsh and Smith argue that '... the distinction between exogenous and endogenous factors is difficult to sustain' (Marsh and Smith 2000: 7). While networks reflect the broader inequalities found within society (Marsh and Smith 2000: 7, Toke and Marsh 2003: 233), they can be affected by exogenous factors. Both Marsh and Smith and Toke and Marsh accept Marsh and Rhodes (1992) four categories of change: economic, ideological, political and knowledge based (Marsh and Smith 2000: 7, Toke and Marsh 2003: 233). Changes in any of these exogenous factors can influence the network leading either to policy change or the breakdown of the network itself. However, 'All such exogenous change is mediated through the understanding of agents and interpreted in the context of the structures, rules / norms and interpersonal relationships within the network' (Toke and Marsh 2003: 233). Thus this dialectical relationship offers an opportunity for policy network theory to explain policy change, traditionally seen as a weakness of the approach. In this study, the network ostensibly breaks down, MAFF being replaced by Defra and the FSA. However, as will be seen, there are grounds for questioning whether this structural change has been accompanied by policy change.

The final dialectical relationship between policy network and policy outcomes challenges the existing literature's concentration on how networks affect policy outcomes. For Marsh and Smith, outcomes also affect networks in three ways. Firstly, a policy outcome may affect the membership or balance of resources within a network. Secondly, policy outcomes may damage the position of a particular interest in the network. Marsh and Smith give as an example the weakened position of the trades unions in economic policy networks after the Conservative government's change in policy (Marsh and Smith 2000: 9). Thirdly, policy outcomes affect actors: if a particular outcome fails to benefit an actor's interest, then he / she is likely to pursue an alternate course of action in the future.

Another question which emerges from the above debates is the appropriate level of analysis for policy networks. The micro level of analysis focuses on actors'

behaviour, and on interpersonal relationships between actors. The macro level examines broad state institutional structures, and indeed theories of the state itself. Policy networks have thus been often characterised as a ‘meso-level’ concept (Rhodes 1997, Marsh 1998). The advantage in doing this is that ‘Macro-level theories are often abstract and frequently applied to concrete situations with little attention to mediating processes, while micro-level theories tend to ignore the impact of broader structural factors on micro-level decision making settings’ (Evans 2001: 542). Dowding, predictably, argues that the use of ‘meso-level’ has little meaning (Dowding 2001: 96). However, if it is considered that the term has some meaning, then if the meso-level can be incorporated with the macro and micro-levels then an explanatory tool of potentially great power has been created. By recognising the importance of both structure and agency and the effect of each on the other, and by recognising the importance of both network and context (which we may conceptualise as external structure), and their effects on each other, and by accepting that policy outcomes effect networks as well as networks affecting policy outcome, the dialectical model may be a good way of integrating the meso-level concept of the policy network with both the micro and macro levels.

Having set out the analytical framework used, it is now necessary to discuss the methods of data collection used. The policies under consideration have been examined looking for common themes in them. In the case of the Animal Health and Welfare Strategy, minutes of the England Implementation Group (EIG) have been studied. In addition, three meetings of the group were attended between November 2005 and July 2006, plus the first annual conference of the Animal Health and Welfare Strategy held at Leicester racecourse in March 2006.

Interviews were done with private vets, and with Defra policy makers and the minister responsible for animal health. However, some of these interviews were conducted as recently as August 2006. They have not been extensively analysed yet. In addition, ethical considerations prevent the direct attribution of quotes to named respondents without their prior consent. Direct, attributable quotes have therefore been avoided here. Where interview data is used to support a point it is given as ‘Interview data’ as for a bibliographic reference. The conference presentation will discuss this in more detail. Lastly, observational fieldwork was conducted at one of the Veterinary Laboratories Agency laboratories to observe how government science is organised and offered to the veterinary profession.

MAFF’s Policy Problems

In the last twenty years of MAFF’s existence it faced a number of policy problems. Common to these policy problems is that they made animal health policy political and in the public arena. In addition, it has been suggested that these problems contributed to a decline in public support for policies emerging from this old policy-making style. The phrase ‘policy problems’ is chosen deliberately. Some authors prefer the term ‘policy disasters’, for example, van Zwanenberg and Millstone (2003) on the BSE saga. Dunleavy argues that ‘Identifying policy disasters is notoriously difficult. It can only be done with hindsight and even then it is rare for consensus to be achieved’(Dunleavy 1995) p.52 Furthermore, ‘[I]n Britain the sad truth seems to be that policy mistakes on a very grand scale are now accepted as inevitable, almost routine, a natural

corollary of our system of governing’ (Dunleavy 1995) p.54. However, in the BSE case, the charge that it was a policy disaster has come under specific attack by Forbes (Forbes 2004). Furthermore, Fisher writing from a historical perspective has also challenged the idea that BSE constituted a policy disaster. (Fisher 1998). Given that the objective here is to identify factors which placed a policy making style under pressure and not to offer judgement on whether particular policy outcomes constitute a disaster, the milder term, ‘policy problem’ is preferred for this purpose. The three problems discussed, in turn, are: BSE, Salmonella in eggs and FMD.

BSE

Bovine Spongiform Encephalopathy (BSE) is one of a class of diseases known as Transmissible Spongiform Encephalopathies (TSEs). TSEs are invariably fatal diseases affecting the brain. Spongiform refers to the characteristic spongy holes that can be observed in stained histopathological preparations of infected brain tissue. In general, TSEs are not new diseases. Scrapie in sheep and goats has been known to exist for some two hundred years in the UK. TSEs have also been found in farmed mink, first identified in 1947 in the US (Phillips 2000, para. 2.16), and in deer. In humans, TSEs include Creutzfeldt-Jakob Disease (CJD), Kuru, Fatal Familial Insomnia (FFI), and Gerstmann-Sträussler Syndrome (GSS). Kuru is a disease which affected tribes in Papua New Guinea which practiced cannibalism on the dead as a mark of respect. As that practice declined within the tribes, so did the incidence of Kuru. GSS is a very rare disease affecting movement and speech, progressing to dementia. FFI is an inherited disorder. Interestingly, discoveries in these two diseases followed the identification of BSE in cattle. The most common, though still rare, and best understood human TSE is CJD. By 1986, three forms of the disease had been identified (Phillips 2000, para. 2.22); sporadic, that is, randomly occurring, familial, and iatrogenic (as a consequence of medical intervention, for example, treatment with infected human growth hormone). Of these three forms sporadic was the most common, and iatrogenic the rarest with only 40 cases worldwide by 1986 (Phillips 2000, para. 2.25).

The first case of BSE in the UK was confirmed in March 1987, although Carol Richardson, a veterinary pathologist at the Ministry of Agriculture, Fisheries and Food’s (MAFF) Central Veterinary Laboratory (CVL), had identified a Spongiform Encephalopathy in the brain of one of the dead cows in September 1985 (Rowell 2003, p. 21). Earlier, in late 1984, vets had been called to a farm in West Sussex to investigate an unusual set of symptoms in cows. The delay in obtaining a definitive diagnosis from the onset of symptoms in late 1984 to the final confirmation of BSE in March 1987 seems a long time. Yet, can we be really surprised at the delay? Faced with a disease situation, the natural reaction of both doctors and vets is to try to fit it into their existing frames of reference. This fits in nicely with Kuhn’s description of the workings of science during periods of ‘normal science’ (Kuhn 1970).

Once BSE became recognised, MAFF vets and scientists were able to successfully routinise its diagnosis. These routines became steadily more efficient. Originally, the whole brain of the suspect animal needed to be removed in one of MAFF’s Veterinary Investigation Centres (VICs), placed in formalin and transported to CVL for histopathological examination. This was a physically

difficult and time consuming process. Later it was discovered that diagnosis required only the brain stem of the animal, allowing the use of an instrument to remove the brain stem, rather than having to saw through adult bovine skull. This was a significant advantage, particularly following Stephen Dorrell's 1996 announcement that BSE could pose a threat to human health, as aerosol creation from sawing through bone was eliminated. Histopathology was also devolved out from CVL to VICs, with state vets employed as Veterinary Investigation Officers (VIOs) from the VICs being trained at the CVL in recognising the typical lesions in stained brain preparations. As the disease became routinised, the identification of the typical lesions at histopathology was a task that became well within the grasp of a trained laboratory technician, although final diagnosis was always left to the VIO. Down on the farm, clinical diagnosis became easier with familiarity. The symptoms which had puzzled vets back in 1984, head tremors, aggression even from usually docile cows, and staggering and loss of co-ordination, became recognised as the typical symptoms of a BSE case. Farmers too became expert at the recognition of the symptoms of BSE in the live animal. Anecdotal evidence suggests that a few farmers benefited once 100% compensation was introduced for infected animals by buying suspect animals from other farmers who wished to retain BSE free status at discount prices and then claiming the market rate in compensation once the disease was confirmed.

The precise cause of BSE was, and remains a matter for debate. The early favourite, that BSE was scrapie which had passed directly into bovines was rejected by epidemiological evidence (Phillips 2000, Vol. 2 para. 3.16). The focus then shifted to the infection of cattle by scrapie via scrapie contaminated Meat and Bone Meal (MBM). A similar TSE in wildlife park animals added evidence to MBM being the vector of infection in cattle (Phillips 2000, Vol. 2, para. 3.19). While it became accepted that MBM was the vector of infection, BSE as scrapie in cattle has been questioned due to differences between the two TSEs in terms of host range, transmission properties and pathogenesis (Phillips 2000, Vol. 2, paras. 3.49 to 3.61 for detailed discussion). So far as the possibility of transmission to humans was concerned, this was regarded as remote. Lord Phillips wrote:

‘The fact that scrapie does not affect humans was relied upon by officials in their risk assessment from 1988 right up until March 1996, despite events in 1989 and 1990 which seriously questioned the scrapie origin theory’ (Phillips 2000, Vol. 2, para. 3.72).

The aetiology of BSE and its potential for infection of humans were, and remain somewhat uncertain. Policy makers were therefore operating in a situation in which the scientific knowledge was unknown. Barker and Peters writing about health policy, devised a six-tier schema based upon the level of difficulty in understanding for the non-expert policy maker (Barker and Peters 1993, p. 2). These range from areas amenable to non-expert understanding and study, to those requiring some expert training, through to those where either there are competing scientific views on offer or where the question is scientifically unknown. In the Barker and Peters' schema BSE is clearly a type *vi* policy case in that little was known about the disease. In such cases ‘Any policy based on some particular view or guess as to the facts of the matter would be speculative’ (Barker and

Peters 1993, p. 3). This was certainly the case when policy makers were faced with the challenge of BSE.

Government's response when faced with BSE was to set up an advisory committee chaired by Lord Southwood. This was established by the Chief Medical Officer, Donald Acheson as a joint committee of MAFF and the Department of Health (DH) in April 1988 and was to examine the implications of BSE for both animal and human health. Southwood was a Professor of Zoology at Oxford University; he was not an expert in farming, human health or TSEs. Rowell criticises the failure to appoint Alan Dickinson to the committee, or to ask him to give evidence to it (Rowell 2003, pp. 32 – 36). Dickinson, in contrast to Southwood was an acknowledged expert in scrapie. However, the appointment of Southwood to chair the Advisory Committee does reveal something significant about British use of expert opinion. For Jasanoff, 'In British Advisory Committees, trust is created through embodiment in trustworthy people ... Many have earned knighthoods or other honours in recognition of their contributions to public life' (Jasanoff 1997, p. 227). She contrasts this with the approach in the US where '... trust is reposed in formal processes, such as rule-making and litigation...' (Jasanoff 1997, p. 228). In the UK, the US's adversarial policy culture is rejected in favour of a culture of consensus, and largely private deliberations. For Jasanoff, the UK approach is essentially that because the 'right' people have been appointed to the committee its conclusions are seen as deserving of public support and 'Formal justification of its recommendations then seems uncalled for' (Jasanoff 1997, p. 228). This relationship between expert bodies and public trust in their recommendations was to break down when Stephen Dorrell announced in March 1996 that BSE was the most likely cause of new variant CJD in humans. Jasanoff calls this loss of trust in government experts 'civic dislocation' (Jasanoff 1997, p. 221).

The policy response by government to BSE was guided by the advice it received by the Southwood Committee and its two successors, the Tyrell Committee and the permanent Spongiform Encephalopathy Advisory Committee (SEAC) established in April 1990 originally under the chairmanship of David Tyrell and still operational today. The government was keen to be seen to act on the basis of available scientific advice. Indeed, 'The reliance on scientific evidence has been a feature of the government's management of the crisis' (Winter 1996, p. 553).

What, then, were the actions taken by the government as response to BSE? As Greer notes '[T]he issue was widely discussed within government. ... [and] Perhaps more important, policy development was primarily influenced initially by the conviction that it was an animal health problem' (Greer 1999, p. 600). Given this framing of the problem '[T]he threat to the livestock industry, the desire to provide reassurance to the general public about the safety of British beef and an unwillingness to increase public expenditure were also key influences on policy formulation' (Greer 1999, p. 600). Another consequence of framing BSE as an animal health problem, and from the belief that BSE was derived from scrapie, was that BSE was unlikely to have serious implications for human health. This view was reinforced by the Southwood Report published in February 1989 (Southwood 1989).

Early action taken by government was therefore consistent with the framing of the problem in terms of animal health. In June 1988 BSE became a notifiable disease which required vets and farmers to inform MAFF if they suspected the disease on their farm. In July 1988 the decision was taken to slaughter affected cattle and a ban on MBM from ruminant sources came into force. The ban on MBM reflected the then view that BSE had infected cattle via MBM. However, the decision to introduce slaughter of affected cattle was, in hindsight, handled badly. Initially, in August 1988, compensation levels were set at only 50% of the animal's value if it proved positive. Full compensation was only given in the event of the tests proving negative. This decision has been criticised as 'The most serious error...' (Grant 1997, p. 345). In addition, 'There can be little doubt that the low rate of compensation provided an incentive to less scrupulous farmers to conceal the disease by marketing suspect animals at an early stage before the symptoms of the disease were immediately obvious' (Winter 1996, p. 552). Many such animals would have found their way into the human food chain in this way, increasing human exposure to infected food. Again, however, MAFF's framing of the problem explains the decision. As Winter points out, 100% compensation is not automatically available for culls for other notifiable diseases such as brucellosis and tuberculosis (Winter 1996, p. 552). Although clearly a mistake, given the framing of the problem as one of animal health alone, the action is understandable. Full compensation became available in February 1990 and the number of confirmed cases continued to rise until 1992, the peak year for diagnoses (Defra 2004).

Although the prevailing view was that BSE posed no risk to human health, the Southwood Committee recognised that if that proved to be incorrect '... the implications would be extremely serious' (Phillips 2000 Vol. 4, p. 36). This uncertainty led to a number of measures intended to remove infected material from the human food chain. In addition to the slaughter policy described above, specified bovine offals (SBOs) were banned from the food chain from cattle over six months old. SBOs were those offals such as thymus, spleen and spinal cord thought to pose the greatest (theoretical) risk of infectivity. By 1990, the problem had acquired a European dimension. In March of that year the Commission restricted the export of cattle from the UK to those under six months old, and in April, the disease was made notifiable to the European Commission. Fears about the possibility of human infection refused to go away. Humberside Council withdrew British beef from its school menus in April 1990. Also in the early 1990s, the BSE agent was found in domestic cats, and there was an increase in the number of cases of CJD in farmers and young people. While the increase in CJD cases may in part be explained by doctors looking more for the disease, public concern was heightened. The policy response was to tighten up the controls on the use of bovine offals. In June 1994 the ban on the use of thymus and intestines was extended to cover animals under six months of age.

However, in March 1996, Stephen Dorrell announced to the House of Commons that the most likely cause of the new variant CJD was exposure to BSE infected bovine materials before the ban on the use of offals in 1989. Under pressure from the EU, the government introduced the 'over thirty month cull scheme' (OTMS) in May 1996. The idea was to remove older cattle thought to pose the greatest risk to human health from the food chain and thus to restore public confidence in

British beef. The EU meanwhile had taken stronger measures, banning all export from Britain of beef products on 27 March 1996.

Salmonella in eggs

The political problems from *salmonella* in eggs emerged in 1988. Yet, the fact of *salmonella* in Britain's poultry industry was known much earlier than this. Smith quotes the MAFF and the Department of Health finding that 80% of frozen chickens contained *salmonella* in 1980, and the Lancet's publication that *salmonella enteritidis* cases had risen from 1,087 in 1981 to 6,858 by 1987 (Smith 1991, p. 240). The view of the policy community, according to Smith, was that *salmonella* in chickens was inevitable and that it was the duty of the consumer to minimise the possibility of human infection rather than the duty of the farmers or of the government (Smith 1991, p. 241). Smith does not say why this was the view of the policy community, but it is likely that they knew that the conditions in which both broiler and laying chickens were kept rendered the birds susceptible to a number of diseases including salmonellosis that would spread rapidly through the farm.

Because *salmonella* was not just an animal health policy problem, MAFF did not enjoy unchallenged supremacy in dealing with it. The public health implications of *salmonella* in eggs meant that the Department of Health was also an important institutional actor. Smith reports that John McGregor, then Minister for Agriculture was aware of a growing problem with *salmonella* and eggs by 1987. However, '[B]etween 1987 and 1988 discussion of the problem was limited to the policy community as MAFF and DoH attempted to determine the extent of the problem' (Smith 1991, p. 241). Thus, with clear similarities of the government's approach to communicating the risks of BSE to the public, the policy community attempted to keep discussion within itself until science had provided hard evidence of a link between *salmonella* infection and eggs. Furthermore, 'They [the policy community] did not believe it necessary to take precautions whilst evidence was gathered' (Smith 1991, p.242). Once a link was apparent by May 1988, the question of what information to issue to the public inevitably arose. Smith notes a number of meetings between the two ministries and representatives of the egg industry, the NFU and the British Egg Industry Council (BEIC), through the summer of 1988. It was not until November 1988 that a press release warning the general public of the potential dangers posed by eggs was issued. 'The strategy of the community was to try to retain the information and the control of the issue within their own network... They thus discussed what information should be released with the producers – the NFU and the BEIC – who saw the advice before it was made public' (Smith 1991, p.243).

The policy community's attempts to retain control of the issue and to keep it out of the political arena were fatally wounded on 3 December 1988 when the junior minister at the DoH, Edwina Currie, in response to an invitation by a journalist to comment on the increasing incidence of *salmonella*, stated (correctly according to van Zwanenberg and Millstone 2005, p.66) that the majority of egg production in Britain was contaminated with *salmonella*. For Smith, this statement was the culmination of conflicts that had been growing between the DoH and MAFF through the summer of 1988. Smith argues that the DoH considered that MAFF was too protective of producer interests and had succeeded both in delaying and

toning down the public warning in respect of eggs (Smith 1991, p.244). Mrs. Currie's statement brought into the public arena debates which hitherto had been retained within the policy community. Farming interests responded both with a defence of the safety of eggs, and with demands that Mrs. Currie be obliged to resign. Within two weeks the resignation was obtained, both Smith (1991, p.244) and van Zwanenberg and Millstone (2005, p.66) citing threats by the NFU to take legal action against the DoH for loss of revenue as part of the reason for the forced resignation. Currie's claim about the *salmonella* status of British egg production was not challenged, she did not after all claim that most eggs were infected with salmonella, but her words, though accurate, were taken to imply this and egg sales dropped significantly. Mrs. Currie must surely go down in history as one of a very small number of ministers who have resigned for telling the truth.

Smith argues that to see her resignation as evidence of the power of the farmers' lobby would be a mistake (Smith 1991, p. 244). He sees the fact that the issue became political at all, in the sense of generating public controversy, as a sign of the weakness of the farmers' lobby. MAFF saw it as an industry problem, the DoH as a problem of public health. 'Consequently, the community no longer had a shared world view and the issue became political as a result of this interdepartmental conflict' (Smith 1991, p. 244). Nor were farming interests successful in preventing new regulation. A number of measures, including a Food Safety Act, were introduced soon after Mrs. Currie's resignation to deal with the problem. Several factors could be cited to explain the decline in the power of the farmers such as a greater interest on healthy eating, and Britain's membership of the EU. However, Smith sees the rising power of the retail sector, especially supermarkets as particularly important. He sees retailers '[A]ppealing increasingly to customers ... and have used their position to challenge the policy community on behalf of the consumer' (Smith 1991, p.247). Essentially, what Smith is saying here is that supermarkets have been able to force themselves into the policy community and control sufficient resources so as to be able to challenge the previously dominant position of the NFU representing the interests of producers.

From the perspective of Britain's policy style, the *salmonella* in eggs story may be as important as BSE. The policy community tried to keep the issue within its own confines, science was deployed to examine the risks but, crucially, there was reluctance to issue guidelines of a precautionary nature while the evidence was being gathered. It marked the end of the consensus around the idea that production was more important than other considerations in agriculture, and saw the fracturing of the unity between the agriculture and food policy networks. The conservative use of science, and the insistence that food was safe to eat until proven otherwise was also to be seen in the next case, that of BSE.

FMD

In contrast with BSE, FMD has been long understood. Also in contrast with BSE, FMD poses no threat, real or theoretical, to human health. It is an animal health problem, and an economic problem for the farming industry. The 2001 epidemic was the first major outbreak in the UK since 1967.

FMD is a viral disease of cloven footed animals, cattle, sheep, goats, and pigs. The initial presentation is pyrexia, followed by blistering on the feet and / or mouth. Symptoms are easily spotted in the pig and cattle, but are much more subtle in sheep. Mortality is low, although animals can become lame, suffer a loss of milk yield and loss of condition significantly reducing their market value. Infected but recovered animals can continue to act as reservoirs of infection. The virus is highly infectious by contact with an infected animal, or by aerosol contamination. Being a viral infection, antibiotic therapy is useless. Experience of the disease among veterinary surgeons is limited. As the last outbreak occurred in 1967, vets younger than their mid fifties would be most unlikely to have seen a case in a farm setting.

Again unlike with BSE, measures for controlling FMD were well established in 2001. That policy was essentially to slaughter all FMD affected animals and their contacts. This has been the favoured approach in the UK since the 1920s. In mainland Europe vaccination was a tool used as a control measure or to throw a ring around an outbreak. This strategy was rejected for the UK following a report into an outbreak in 1952 – 54, concluding that slaughter remained the right option for the UK (Anderson 2002, p. 22). In the 2001 outbreak, debates raged about the correctness of the ‘no vaccination’ policy.

The 2001 Outbreak

The 2001 outbreak of FMD began in February 2001 with identification and confirmation of FMD in pigs in an abattoir in Brentwood, Essex. By the time control measures had been implemented, the disease had already spread to at least 57 farms via sheep (Bickerstaff and Simmons 2004, p. 397). The fact that sheep acted as the vector of infection helps explain why the disease spread so far before appropriate control measures were put in place as symptoms are far less obvious in sheep than in other species. Confirmation of FMD on 20 February led to an export ban and a restriction on animal movements in affected premises within a day. However, national animal movement restrictions were not in place until 23 February, also contributing to the spread of the disease. Animals on infected premises were supposed to be killed within 24 hours yet this was often not adhered to. Furthermore, there was ‘[A]n unwillingness to initiate additional culling policies that would have halted the disease earlier in the campaign’ (McConnell and Stark 2002, p. 665).

By mid March the Prime Minister assumed control of the crisis in the Cabinet Office Briefing Room (McConnell and Stark 2002, p. 665), effectively removing MAFF as the lead department in the crisis. ‘From late March 2001, the Ministry effectively ceased to make policy. Its role was to deliver it’ (Taylor 2003, p. 543). Culling was stepped up and a policy of contiguous culling introduced. This involved the slaughter of animals within 3km of an infected farm. Troops were employed to provide logistical help with the culling strategy. This policy followed from the reliance by the government on a model of the disease developed by a team of epidemiologists at Imperial College. This model made no allowance for local topography (Bickerstaff and Simmons 2004) and was used by government in preference to its own epidemiologists’ model developed by John Wilesmith at the CVL which did seek to account for local variances. The policy of contiguous culling, and the vast funeral pyres that it created led to much public

disquiet and debate about the merits of vaccination as an alternative control policy. In addition, the effective closure of the countryside was hitting the tourist industry hard in heavily affected areas such as Cumbria. Both Taylor, and McConnell and Stark assert that by this stage the government had accepted the case for vaccination, but that this policy was rejected because of the objections of the National Farmers Union (NFU). By the end of April the peak of new cases had been passed and, with a general election looming, the government moved to relax some controls on movement and to open up the countryside once more. The last new case occurred on 30 September.

Consequence of Policy problems

These three policy problems served to show that all was not well in MAFF. There were concerns about the use of science in both BSE and FMD. Mrs Currie may have grounds to complain that science wasn't used at all in the case of salmonella in eggs since, had it been, the truth of what she said may have been made apparent. As it was, her fate was sealed on the basis of the perception of what she had said rather than its veracity. The effect on the public is widely held to be one that has resulted in a loss of trust not just in MAFF's scientific pronouncements, but also in government expertise more widely.

On another level, BSE and FMD showed just how expensive animal health issues could be for the taxpayer. FMD saw compensation for the farming industry, but these losses were dwarfed by losses in the tourism and other rural sectors [Insert RELU reference] which received no direct aid.

The Policy Response to these Problems

Of the three policy problems discussed only one, FMD, occurred during the present Labour government's period of office. However, it was a big problem. In addition to the huge cost of the outbreak, variously estimated but at least £8bn, the outbreak caused political difficulties for the Prime Minister. Local elections had to be postponed, and the disease threatened to scupper plans for a general election in the early summer of 2001. An election that offered Tony Blair the probability of becoming the first Labour leader to win successive elections with a good majority.

Labour had also experienced other difficulties in the countryside. The Countryside March in Spring 1998 had highlighted a number of complaints among rural dwellers well beyond the traditional concerns of the farming industry. Although opposition to Michael Foster's bill to ban fox hunting certainly swelled the numbers, other issues to do with planning, rural poverty, transport, small rural schools and a feeling that 'townie' Labour MPs were out of touch with countryside problems all were represented.

Then Environment Minister Michael Meacher seemed to concede that consideration was being given in government to the creation of a new Department for Rural Affairs.

'I do entirely understand that one of the issues that people on the march today are concerned about is that there should be a centre within

government which addresses their interests... I understand that the Prime Minister may wish to consider the issue' (Online 1998).

A White Paper was published in November 2000. This attempted to answer some of the complaints of the critics. In particular there was a move to take into account the wider rural interest. 'In the past some voices have been louder than others. Government must listen to everyone' (quoted in (Lowe and Ward 2001)). However, it was MAFF's inadequacies during the FMD crisis which finally brought farming interests under the same departmental umbrella as other rural issues in the newly created Department of the Environment, Food and Rural Affairs (Defra).

In the animal health area, the new department got to work creating a raft of new policies. Two are examined here: the *Animal Health and Welfare Strategy* and the *Government strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain*. The main features of each are discussed in turn, before moving on to the analysis.

Bovine Tuberculosis

Of all the animal health problems facing Britain at the present time, none is more intractable or contentious as bovine tuberculosis (bTB). Apart from the considerable difficulty associated with taking a decision on the role, if any, of culling badgers to control the disease, there is the considerable year on year cost in compensation. The economic cost to the taxpayer has risen from £38.2m in 1999/00 to £88.2m in 2003/04 (DEFRA 2005). This covers the costs of testing and compensation to farmers together with a variety of other bovine TB related expenditure. The cost of testing and compensation alone for 2003/04 was £67.6m. The 2001 FMD epidemic appears to have had an adverse affect upon bovine TB with areas of the country previously with a low incidence of bovine TB experiencing new breakdowns following restocking. In Cumbria for example the vast majority of new TB cases can be linked to restocked herds or to bought in infected animals (DEFRA 2005). It is worth noting that during the FMD epidemic, routine bovine TB testing was in abeyance.

The TB framework strategy is not a stand alone policy document. Its full title describes it as 'a sub-strategy of the Animal Health and Welfare Strategy for Great Britain'. As such it shares the central strategic outcomes of the Animal Health and Welfare Strategy. These are:

1. A partnership approach
2. That prevention is better than cure
3. A clear understanding of costs and benefits
4. Understanding and accepting roles and responsibilities
5. Effective delivery and enforcement.

In the context of bovine TB, a partnership approach entails both a recognition that wildlife transmission of TB is an important concern for farmers in heavily affected areas, and the need for such farmers to understand the importance of cattle movements in disease transmission. Prevention entails the understanding that 'All interested parties must play their part in preventing spread of bTB' (DEFRA 2005). The understanding of the costs and benefits of TB control means

both that government has an interest in protecting the public from the potential harm from bTB, but that also the government takes the view that farmers will also benefit directly from an effective TB policy. Consequently, ensuring that ‘... costs are shared fairly is therefore a long-term aim’ (DEFRA 2005). This suggests, and is supported by other paragraphs in the document, that government is no longer prepared to bear the ever escalating costs of TB control alone. The farming industry will be expected to pick up a greater share of the bill for any policy to control the disease. This aspect of the strategy offers the potential for conflict between DEFRA and farmers, especially if DEFRA determines that badger culling is either not an effective policy, or that it is not an acceptable policy option.

Understanding and accepting roles and responsibilities includes the requirement on farmers to be vigilant and follow good disease prevention practices and to report suspicion of disease to their vet. Both the Animal Health and Welfare Strategy and the bTB strategy include a clearly defined set of criteria for justifying government intervention ‘... where the market on its own cannot deliver some or all of the objectives’ (DEFRA 2004). However, the bTB strategy is clear that these are criteria for determining whether intervention should take place ‘... not who should fund the intervention’ (DEFRA 2005). The reasons which may justify government intervention are: to protect animal health, to protect and promote the welfare of animals, to protect the interests of the wider economy, environment and society and, international trade (DEFRA 2004; DEFRA 2005). In the bTB case, the protection of the interests of the wider economy and society is seen as understanding the value that society places on the conservation of badger populations, and on the understanding of the public of the humaneness of any measures used to implement a cull of badgers in particular areas. Government has already commissioned work at Reading University into societal values in respect of badgers (DEFRA 2005). The acceptability to the wider public of badger culls is clearly an important consideration for government. It will be interesting to see what role, if any, culling plays as policy develops, particularly given that there is unlikely to be a scientific consensus on the merits of such a policy. As an aside, it may be that action by groups in disrupting the current RBCT may be very successful in rendering a wider cull politically unpalatable for ministers, or at least Labour ministers.

Delivering and enforcing standards effectively is again seen as a partnership enterprise. ‘It requires continuing commitment from herd owners, veterinarians, wildlife conservation interests and food businesses, as well as Government and its agencies and local authorities’ (DEFRA 2005). In the context of bTB, government roles include generating policies in partnership with agencies and those directly affected by the policies (DEFRA 2005), presumably mostly farming interests but also wildlife, mostly badger, groups. In addition, the formal machinery of government is to be improved, according to the strategy, by the creation of the State Veterinary Service (SVS) becoming an executive agency from 1 April 2005. This will enable the SVS *inter alia* to ‘... develop further its expertise and professionalism ... and build closer links with other operational partners e.g. the VLA...’ (DEFRA 2005). One potentially significant change once the SVS is an agency is that bTB testing provided by private vets for the SVS will be put onto a contractual basis and that lay testing for bTB is supported by the government with

a pilot project to begin in the spring of 2005. It is likely that lay testing will be opposed by the British Veterinary Association (BVA), the ‘trades union for practicing vets.

The framework document opens with forewords by Margaret Beckett and the agriculture ministers of the devolved Welsh and Scottish governments. While all three emphasise the importance of partnerships, there are interesting variations in the tone of each of the forewords. Mrs. Beckett focuses on the possible role of badgers in the transmission of bovine TB, perhaps reflecting the fact that the badger question is an important one in England, especially the South West. Mr. Jones focuses particularly on the partnership aspects of the process, but notes that farmers will have to bear a share of the costs of any policy that emerges from the framework strategy. Scotland is a very low incidence area for bovine TB. It is therefore no surprise that for Mr. Finnie, ‘Our priority in Scotland, where TB breakdowns most commonly result from imported animals, is to keep bovine TB out’ (DEFRA 2005). In addition, in Scotland, pre-movement testing of cattle from high incidence areas is being introduced.

The strategic framework is the result of a consultation exercise on a previous document ‘Preparing for a new GB Strategy on bovine tuberculosis’ (DEFRA 2004b). The Executive Summary is careful not to set out nationwide disease control policies, seeing these as being regionally based reflecting the different disease profiles of different areas. However, it does state that ‘... the cattle test and slaughter scheme will remain central to controlling the disease’ (DEFRA 2005). Key to the development of new policies in the strategy are the effectiveness of badger culling (as determined by the Randomised badger culling trial (RBCT)) and the value of the gamma interferon diagnostic test (thought by some to be a more reliable test than the skin test).

The Randomised Badger Culling Trial has been organised by the Independent Scientific Group (ISG). The ISG was set up in 1998 following publication of the Krebs Report in 1997. Following the Krebs Report the government set out a five point plan of action in respect of bovine TB. This plan included measures to protect public health including liaison with the Department of Health to monitor *M. bovis* infection in humans, research into developing a vaccine for *M. bovis*, research into knowledge of disease transmission both within and between cattle and across species, the continuation of the cattle testing programme for TB, and, a randomised badger culling trial to test the effectiveness of badger culling in reducing TB in cattle. The ISG was to oversee the RBCT and was to advise the government on other aspects of bTB policy. The ISG reports regularly, and these reports can be found on DEFRA’s website. The new strategy envisages that the results of this trial will be available to ministers in early 2007. It is unlikely that further major culls will be authorised before that time. Furthermore, government is careful not to exclude the possibility ‘... of continuing to seek to control bTB through cattle based measures alone’ (DEFRA 2005)

For the purposes of my research, the ISG is interesting. It was set up prior to the release of the OST guidelines on government use of science ((OST) 2000; Technology 2000). Currently, the ISG is represented on a body called the TB Forum which was established in 1999 and is a stakeholder group representing the

industry, wildlife groups, the veterinary profession and the ISG itself. The purpose of the TB Forum is to ‘consider new measures which might be taken to control TB in cattle’ (DEFRA 2005) and was intended to take into account the views of stakeholders in developing policy. The current strategy proposes the replacement of the Forum by a new National Advisory Group. This is because in the opinion of the government, the Forum has not been able to achieve from all partners ‘... active and positive contributions to achieve better control of bTB’ (DEFRA 2005). In addition, the strategy argues that the interests of deer organisations and consumers have not been represented on the Forum. A question to address is whether the inclusion of deer and consumer groups will ‘dilute’ the influence of those groups currently represented on the Forum which favour a badger cull? This new advisory group would be a non departmental public body and would advise the CVO and ministers on policy options and issues of policy implementation.

This body is not the only alteration to governance arrangements. In addition to this group, the strategy proposes creating a sub group of DEFRA’s Science Advisory Council (SAC) to advise the Chief Scientific Advisor on options for bTB. If a new body is considered necessary to advise ministers on the science of bTB, then the new body would have close links with the Advisory Group, and its composition ‘... would need to meet the tests set by the Phillips (BSE) Inquiry on scientific committees, and the Office of Science and Technology (OST) Code of Conduct for Scientific Committees’ (DEFRA 2005). This would seem to be a tacit admission that the current ISG doesn’t meet those tests or guidelines. If a new body were to be created, it seems likely that it would have to be open about the lack of scientific consensus on the role of badgers in TB transmission. In these circumstances of policy making under conditions of scientific uncertainty, might a large scale badger cull become difficult to justify in terms of public acceptance of such a policy? Finally, as with the Veterinary Surveillance Strategy, an annual conference of stakeholders is proposed.

Animal Health and Welfare Strategy for Great Britain

Then Secretary of State at Defra, Margaret Beckett, wrote in the Foreword to the Strategy, ‘This strategy...provides a route map for regaining public and consumer confidence in the food we produce and the restoration of our international reputation for the highest standards of animal health and welfare’ (DEFRA 2004). The implication of this is clearly that, in the government’s view, both consumer confidence in the food we produce was lost as was our (Britain’s) reputation for animal health and welfare in the aftermath of both BSE and FMD. Together with the Strategy for Sustainable Food and Farming, the Animal Health and Welfare Strategy marks a new approach in the eyes of Defra to policy making in the field.

The strategy has a number of key themes which run through it which together the strategy expects to deliver its vision:

Defra is very keen to set out reasons for government intervention in animal health and welfare. The strategy lays out four reasons: to protect human health, to protect and promote the welfare of animals, to protect the interests of the wider economy, environment and society and for reasons of international trade (DEFRA

2004) p.29. However, government clearly expects stakeholders and the industry to play a full role in bringing about change and improvement.

Indeed partnership working is a key theme in the strategy. In part this is necessary because many statutory delivery bodies either enjoy agency status with a degree of autonomy from Defra, such as the State Veterinary Service, or else are outwith the control of Defra completely. However, the main focus since the publication of the strategy has been in getting industry stakeholders to play a more active role. One example of this is a sheep scab eradication scheme in North Yorkshire. Seed funding was provided by Defra, but the scheme was run by non-Defra people with the active support of local sheep farmers. A consequence of this partnership approach is that the National Farmers' Union does not enjoy unchallenged status as voice of the farming industry. The door have been opened to a far wider group of industry organisations.

The cost of FMD to the tax payer has produced an emphasis on prevention being better than cure within the strategy. This is reflected in a concern that farmers use appropriate biosecurity measures, but more particularly in a strong advocacy of Farm Health Plans and greater use of vets by farmers. As will be seen in the discussion, Farm Health Plans have proved very difficult to promote.

The strategy is also keen to promote a clear understanding of costs and benefits. The strategy trumpets the sums being spent on science and research, and highlights the amounts of money that have been spent on TB compensation. The strategy points clearly towards a future when industry will have to bear a greater share of the costs of animal health.

Discussion

On the face of it the new policies mark a significant break with past practice within MAFF. In particular, the dominance of the NFU within the policy process appears to have been challenged. I analyse these new policies and this apparent change in the light of the three dialectical relationships identified in the Marsh and Smith model, namely between structure and agency, the network and the broader context and the network and policy outcome.

Structure vs. Agency

For Marsh and Smith, the policy community of MAFF was a product of the particular circumstances of the Second World War and its aftermath. Britain needed food, and needed the farmers to produce it. The farmers wanted guaranteed prices for that food which government was willing to grant during wartime. The close relationships between the Ministry and the NFU forged during the war were carried over to peacetime (Marsh and Smith 2000).

The NFU, therefore, was accorded a privileged position within the agricultural policy community. Within animal health, the BSE and FMD policies can be seen as reflections of that position. Another reflection of the position can be seen in the shared understanding of animal health among the members of the policy community and the exclusion of critical groups from the community. Thus the Soil Association was welcomed within the sub community concerned with

organic food but excluded from participation in wider farming issues where its perspective would be seen as overly critical of the status quo.

While the policy network within MAFF can be seen as representative of a policy community, the present network appears to have moved away from that extreme. While it would be a mistake to claim that in the case of animal health policy an issue network now exists, it is certainly true that more interests are now heard and in a more public way. One example from the Animal Health and Welfare Strategy is the England Implementation Group. These meetings take place in public, and can be attended by anyone who cares to register their interest. The Chair of the Committee is Helen Browning, a leading member of the Soil Association. While it is certainly the case that she represents a symbolic opening up of the policy network, in interviews, respondents were at great pains to deny that she was appointed in part for that symbolic appeal. Instead, it was claimed, indeed insisted upon, that she was appointed for her personal skills and qualities, and not for her membership of the Soil Association. In fact, all members of the EIG were appointed in this way as individuals, and not as representatives of particular groups or interests (Various interviews). However, looking at the membership of the EIG, it can be seen that producer interests are still well represented on the group. But in addition, there are members with a background in local government, academia, retail and consumer groups as well as the veterinary profession.

The public nature of the meetings also suggests that the structure of the network so far as the Animal Health and Welfare Strategy (AHWS) is concerned is more open and broader based. Stakeholders in the audience are permitted, at particular times and with the invitation of the Chair, to make their points directly to the EIG. Interview data, too, points to Defra welcoming a far wider range of interests than was previously the case. In part, of course, this stems from the fact that Defra has reduced capacity for action itself following many years of New Public Management changes within the Civil Service. Defra thus cannot make the policy a success without commitment from a wide range of stakeholders.

However, in the particular case of bovine TB, elements of the old system are easier to identify. The new Advisory Group on bTB is in the process of being appointed at the moment. Its Chair has been announced as Peter Jinman, a vet and also a member of the EIG. While the exact details are yet to be worked out, the TB group is to be much smaller than the EIG, and its meetings are more frequently to be closed meetings, with few public sessions. In addition, it is less likely to be as independent of government as the EIG (Interview data). In addition, farming interests were successful in securing a delay in the implementation of pre-movement testing and in securing additional funding to pay for the tests.

When considering the role of agents within structures, the model argues that structures fetter the choices available to agents (Marsh and Smith 2000). The new policies with the wider membership of the network poses a challenge for network members. Defra, being the government representative, remains the agent with the most resources. It also possesses the ultimate power to introduce legislation should it deem that necessary. Further, it is the determiner of what an animal health problem is. Ultimately, as one respondent put it, ‘... if it raises to the level

of a crisis in the Minister's eyes, it becomes a crisis for as well' (Interview data). However, even Defra has its room for manoeuvre limited by context, both by broader government policy and by the fact that the EU is responsible for a large body of animal health regulations.

The NFU is also in an interesting position. To start with, it is difficult for the NFU to claim to speak for all farmers, as many are not members. In addition, it will need to adjust to the new reality of a greater pluralism in animal health policy. In interviews it has been suggested that the NFU has threatened to withdraw support for the ANWS unless there is movement to cull badgers as part of a TB policy. Further work is needed to discuss this with the NFU. However, it seems unlikely that the NFU would wish to endanger its position within the network by withdrawing from such a significant policy and risk losing its continuing access to policy makers and Ministers.

Network vs. Context

'It is a common criticism of the policy network literature that it is better at explaining policy continuity than policy change' (Toke and Marsh 2003). When considering the new policies on animal health it is impossible to escape the conclusion that context has had a considerable influence on the network, as has the next relationship between network and outcome. Looking at the new policies, two contextual factors stand out: wider government priorities and public opinion.

The concern of the government to be seen to be responding to the wider rural interest has already been discussed briefly. In part, this must explain the creation of Defra. However, within animal health, more mundane considerations were also at work. Animal health policy can be expensive. The Labour government had already had to foot the bill for FMD, and bTB continues to be a considerable expense. Under Gordon Brown's tenure as Chancellor 'prudence' has been a watchword. Clearly there was a political interest in reducing the government's bill for animal health. Compared to health and education, agriculture and animal health were not priority areas for the government. Its desire to constrain expenditure in this area is clearly reflected in the AHWS's reasons for government intervention discussed above.

Public opinion is rarely an issue in animal health policy. This changes of course when there is a crisis such as FMD or BSE when managing public opinion becomes of importance to Ministers. Securing public input into the new policies has been difficult. On the EIG the public appear to have been constructed as consumers (Observation). In addition, Smith's observation that the supermarkets set themselves up as guardians of the public during the Salmonella in eggs controversy (Smith 1991) is reflected in a supermarket man being on the EIG, although this also is a recognition of the power that supermarkets hold in agriculture as major customers of the farmers' produce.

With bTB, obtaining public representation on the new Advisory Group proved so difficult that the idea was dropped (Interview data). However, bTB is a case where public opinion is an important element of the wider context. The recent Defra consultation on badger culling produced a massive response from the public. While many responses were doubtless drummed up by pressure groups

seeking to defend the badger, the sheer size of the response suggests that on this issue, public opinion can and will be mobilised. Currently, there are no plans to order a cull of badgers. While this is defended on grounds of practicality and a recent unexplained fall in the incidence of the disease (Interview data), clearly politicians may have a problem in ordering a cull even if the science were to point conclusively in that direction.

Network vs. Outcomes

‘The existing literature concentrates upon the question of whether, and if so to what extent, networks affect policy outcomes’ (Toke and Marsh 2003). Animal health policy offers the opportunity to study a case where the relationship definitely runs in both directions.

In MAFF, the network contributed to the policy outcomes in part because of how the particular problems were framed. BSE was framed as an animal health problem by MAFF, Salmonella in eggs was seen as an issue for the industry and where what was seen as interference by the DH was resisted by the network. FMD was framed as a farming problem, not as a problem for the wider rural economy. These frames affected outcomes.

In BSE, maintaining public trust in British beef became a goal of policy one which, arguably, led to a decline in trust in government advice once the human implications of BSE began to be understood. Salmonella in eggs again saw defence of the industry as a goal of policy. The FMD policy of slaughter dated back to the 1920s. The NFU’s refusal to countenance a vaccination strategy and MAFF’s acceptance of that position also arose from the structure of the network.

Clearly, however, outcomes of these policies have had an effect on the network. Indeed, one could argue that they led to the ending of that network and its replacement by a broader based one. The new policies have produced a change in membership of the network by widening the membership of the network at least in the sub sectoral level of animal health. In addition, the bringing together of environment with agriculture within Defra has introduced new perspectives into policy making as civil servants have moved within the department and there has been more ‘mixing’ between environment and agriculture (Interview data).

The position of the NFU is interesting. Policy outcomes have changed the membership of the network to make it broader. On paper the NFU’s position is much weaker than it was. Yet interview data is somewhat inconclusive on this point. Many respondents genuinely believe there is a greater plurality of interests represented in the animal health policy network. However, it is also suggested that, at least in terms of access to Ministers, the NFU remains if not the dominant interest then perhaps *primus inter pares*.

Conclusion

New policies on animal health have emerged from the perceived failures of past policy. The old Ministry of Agriculture was wound up and replaced by Defra with a wider policy brief. Both the AHWS and bTB policy are ambitious strategies. They both rely on science for guidance, but both also recognise that a new policy style that is more open and transparent is required to secure public acceptance of

policy consequences. Throughout the AHWS there is a concern to minimise both the potential impact of animal disease on human health and to reduce the burden to the taxpayers. A move away from blind support for farming and a concentration on zoonotic diseases can be seen. The farming industry is being expected to bear a greater burden for its own welfare. A partnership approach is offered by Defra to help the industry to do this.

The Veterinary Surveillance Strategy (DEFRA 2003), not discussed here, considers in depth the use of science in bringing about this element of policy. The EIG is a new type of governance arrangement in which stakeholders and policy makers can meet and share views in an open forum. Wider public involvement is still limited, however, by the construction of the public merely as consumers. The consultation on badger culling demonstrated that, at least so far as TB policy was concerned, the public was prepared to act beyond this narrowly defined role. Interestingly, it is with TB policy that Defra seems most reluctant to depart from a closed policy style. The uncertain nature of the science of bTB, especially the role of badgers, means that policy has to be made in this uncertainty. Public stakeholder meetings are resisted by Defra as resulting in ‘posturing’ and offering little in the way of progress (Interview data). Yet it is difficult to see how a retreat into closed meetings can produce a policy that will be accepted widely, particularly if badger culling were to ultimately form one element of that policy.

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