Chapter 2

A chronology of BSE policy in four countries and the European Community
Since BSE was first identified in the south of England in November 1986, almost 180 000 British cattle, from over 35 000 farms, have been officially diagnosed with the disease (DEFRA, 2002). The mean incubation time for BSE is about five years, and most infected cattle therefore did not manifest symptoms of the disease because they were slaughtered between two and three years of age. As a consequence, an additional 750 000 undetected animals are estimated to have contracted BSE, most of which would have entered the human food-chain (Anderson et al., 1996; Donnelly et al., 2002).

In the United Kingdom, the epidemic reached its peak in 1993, when over 34 000 cases were reported. Since then, levels have been declining, but it is widely expected that there will be a long tail to the epidemic and it is possible that the United Kingdom may never completely eliminate BSE.

In the late 1980s it was not obvious that BSE would cause more difficulties than any of a large number of other food safety scares that had arisen in the United Kingdom and elsewhere since the early 1980s. That changed with the British Government’s 20 March 1996 announcement (Hansard, 20 March 1996) that a novel fatal disease in humans (now called vCJD) had emerged and was almost certainly caused by consuming BSE-contaminated food.

At the time of writing [mid-2002], 127 cases of vCJD had been reported in the United Kingdom. There had also been six cases in France, one case in China (Hong Kong Special Administrative Region) in a former resident of the United Kingdom, one case in Ireland, one case in the United States of America in a former resident of the United Kingdom, one case in Canada and one case in Italy.

The incidence of vCJD in the United Kingdom has, thus far, been rising at an annual rate of around 20–30% (Spongiform Encephalopathy Advisory Committee, 2001), but the total number of people who will eventually contract vCJD remains uncertain.

Although BSE has been primarily a British problem, it has caused difficulties for many other jurisdictions too. As a consequence of trade in contaminated British animal feedstuffs and infected cattle, BSE is now present in the domestic herds of virtually all European countries.

Several Member States have rising numbers of reported BSE cases, whilst a number of countries that previously thought they might be free of the disease have recently discovered cases amongst their domestic cattle populations (see, for example, Office International des Epizooties, 2002). In 2001, the Food and Agriculture Organization of the United Nations (FAO) warned that more than 100 countries that had imported meat and bone meal or live cattle from western Europe during the 1980s were at risk from BSE (FAO, 2001). Many countries are likely to face considerable animal and public health problems for some time.

1 At the time of writing, every EU Member State except Sweden had reported cases of BSE.
For many years Germany, Italy and Finland appeared to be free of BSE in their domestic herds. During the 1990s, a handful of cases had been reported in animals that had been imported into Germany and Italy, but until the introduction of a Europe-wide rapid postmortem monitoring regime in late 2000, no cases had been noticed in Italy’s domestic cattle populations and few in Germany. In late 2000 and 2001 the situation changed dramatically. Germany discovered 132 BSE cases (7 in 2000 and 125 in 2001) in its domestic herd. Within 12 months, 48 domestic cases of BSE had been detected in Italy. Finland initially appeared to be an exception, but in December 2001 it too reported a case of BSE in an animal born and raised in Finland.

Just as the reported incidence of BSE has varied considerably between countries, so too have policy responses. BSE has been a serious policy challenge in the United Kingdom since the mid-1980s. Several other European countries such as France, Ireland and Portugal had sufficiently high rates of incidence that their governments recognized the need to place controls on their domestic production systems during the early 1990s. Other countries with lower incidences of BSE registered some concern and undertook regulatory activities, but primarily in relation to traded animals and feedstuffs, and in response to European Community legislation. Germany, Italy and Finland fall generally into this latter category, although there have been differences in policy responses across the three jurisdictions.

This chapter provides a brief chronological description of the different ways in which public policy in five jurisdictions — the European Commission, the United Kingdom, Germany, Italy and Finland — has evolved in response to the emergence of possible threats from BSE. Although the European Commission is not one of the jurisdictions examined elsewhere in this book, a discussion of its activities with regard to BSE is included in this chapter because of its importance in shaping policy development in individual Member States. In discussing BSE policy development, this chapter also outlines the different institutional and procedural arrangements in place to deal with food safety and animal health issues, and the ways in which those arrangements and institutions have evolved. This chapter begins by summarizing some of the key reasons why the emergence of the new disease posed, and continues to pose, such acute challenges for public policy.

**Challenges to policy-making**

**Early dilemmas**

BSE-related policy-making has always been exceptionally difficult because scientific knowledge about transmissible spongiform encephalopathies (TSEs) has been, and remains, incomplete and uncertain.

When a novel, fatal neurological disease in cattle was first recognized in the United Kingdom in late 1986, the symptoms of diseased animals and postmortem pathology closely resembled scrapie, a TSE that has been endemic in British sheep flocks for several hundred
years. TSEs are a group of untreatable brain diseases that afflict both animals and humans. They are very poorly understood and invariably fatal.

The agent responsible for TSEs has not been identified, although many believe that it is an abnormal and virtually indestructible type of protein known as a prion. TSEs have long incubation periods and an animal can be infectious well before its clinical symptoms appear. Until advances in testing were made in the mid-1990s, the presence of the disease could not be detected before the onset of symptoms. The mechanisms by which transmission of the disease occurs are not fully understood, but include the oral route. Transmission occurs most readily between members of the same species but, in some cases, can also occur between species.

In the late 1980s, government scientists in the United Kingdom suspected that BSE had been caught from sheep infected with scrapie and was being transmitted through contaminated feed. The rendered remains of sheep, cattle and other animals, known as meat and bone meal, were routinely incorporated into animal feedstuffs in order to provide a protein-rich nutritional supplement. Contaminated cattle feed was quickly confirmed as the principal vector of the disease, but whether BSE had in fact derived from scrapie or from a spontaneous TSE in cattle, or from another source, remains unclear.

Although sheep scrapie was not thought to be pathogenic to humans, policy-makers could not be sure that the agent causing BSE had in fact derived from scrapie. Each TSE was thought to possess a distinct host range. Moreover, even if the scrapie agent had jumped species into cattle, policy-makers could not be sure that BSE would subsequently have the same transmission characteristics as scrapie. It was not possible to predict what the host range of a given strain of scrapie would be once it had jumped to another species. Experimental precedents for such altered host ranges, following passage to other species, were well known (Kimberlin, Cole & Walker, 1987).

For all these reasons, the key policy and public health question — whether the new disease presented a risk to human health — could not be answered. Even if policymakers in the late 1980s and early 1990s assumed that BSE might be pathogenic to humans, they faced acute difficulties in estimating the magnitude of that possible risk. For example, no one knew how many cattle had been exposed to contaminated feed, or indeed whether there were additional vectors of transmission, aside from the recycling of contaminated meat and bone meal. No one knew how many cattle were already infected with the disease. There was no test that could reliably detect the pathogen in live animals before clinical symptoms appeared, and asymptomatic infected cattle could not be differentiated from uninfected cattle.

Analogies with scrapie and other TSEs indicated that the pathogen that causes BSE is found in its most concentrated form in the brain, central nervous system and
lymphatic tissues of cattle. However, it is not necessarily confined to those tissues. Various other tissues might contain infectivity, as they did in scrapie-affected sheep, albeit at lower levels. No one knew which cattle tissues, if any, would be free of the infectious agent. These topics — on which veterinary science in most respects remains profoundly ignorant — were, and remain, enormously important for public health, for public policy, and for the meat trade. In summary, regulatory regimes in the late 1980s and early 1990s had the unenviable task of responding to the emergence of a novel disease whose nature and implications were entirely unknown.

A wide choice of possible policy responses was available, with a similarly wide range of costs. The total eradication of the disease and its pathogen from agriculture and food would have required, amongst other things, the slaughter and exclusion from the food-chain of all the animals that had received feed known or suspected to have been contaminated with the pathogen. As there was no way of knowing which batches of feed were contaminated, that scenario would have entailed slaughtering and restocking almost the entire national herd.

There were other measures available, that did not involve slaughtering the entire herd and that would have contributed to diminishing human exposure to the pathogenic agent. The extent to which risks were diminished would depend on which tissues were removed from the food-chain and from which animals (e.g. from animals exhibiting conspicuous clinical symptoms of BSE, or from animals that had received feed known or believed to have been contaminated with the BSE pathogen, or from animals above a certain age, or from all animals).

The scientific considerations were never, by themselves, sufficient to indicate what an appropriate policy response would be. Judgements had to be made about how significant the risks might be. Those judgements then had to balance the risks against the costs and difficulties of removing bovine material from the human food-chain and animal feed-chains, or the cost of taking action to reduce or eradicate the disease in the cattle herd. Policy-makers had to make political judgements about which level of protection was worth paying for, and how the costs should be distributed between public and private sources.

One of the many difficulties of BSE policy-making was that much of the relevant scientific research was only indirectly relevant to human risk. Nevertheless, throughout the 1990s, evidence was produced or gathered that might have had a bearing on policy developments. From the late 1980s onwards, for example, evidence repeatedly emerged suggesting that BSE behaved differently from the scrapie agent; thus the fact that scrapie was not pathogenic to humans provided less and less reassurance that BSE was not pathogenic to humans.”

Since it was not possible to carry out research that deliberately infected humans, the question of whether

in four countries and the European Community
BSE was pathogenic to humans could only be resolved by monitoring for a new CJD-like disease amongst the human population. As the head of pathology at the British Ministry of Agriculture’s Central Veterinary Laboratory told his Director in 1988, “[we] cannot answer the question ‘is BSE transmissible to humans?’ That natural experiment is underway in the human population and it remains for epidemiologists to collect data and produce a hypothesis based on it” (Bradley, 1988).

Several commentators expected that it would take decades for any such evidence to emerge. As it turned out, atypical cases of CJD began appearing in young British people aged 19–41 years in the mid-1990s. By the spring of 1996, British scientists had concluded that those atypical cases were most likely to have been caused by BSE. This hypothesis is now very strongly supported by scientific evidence.

• Contemporary dilemmas
After the spring of 1996, the difficulties for BSE policy-making were marginally less acute, but they were still there and they will continue to present considerable challenges in the foreseeable future. Current patterns of exposure to the BSE agent, and the magnitude of the risks that those exposures entail, are still unknown. It is not known how levels of infectivity vary over the period of incubation in different tissues, or if there might be a threshold of human exposure below which the risk will be negligible. It is still not certain which cattle tissues are free of the BSE agent in infected animals.

Although infectivity has been demonstrated experimentally in relatively few bovine tissues — all of which should, under current regulations, be removed from the carcass — the existing tests are not always sufficiently sensitive to detect low levels of the BSE agent (European Commission, 1999). The most sensitive available tests [inoculating cattle with cattle tissues from infected animals] have been carried out on small numbers of animals and a narrow range of tissues, or have not been carried out at all (FSA, 2000, para. 36). For example, infectivity has not been found thus far in cows’ milk or muscle tissue, but the experiments to date have all been conducted by inoculating those materials into mice. If the experiments were to be repeated using calves rather than mice the experiments would be approximately 1000 times more sensitive. Without these more sensitive experiments, there is no certainty that milk, muscle and other cattle tissues from infected animals do not have the potential to

2 From 1988 onwards it became increasingly clear that BSE and scrapie had a different host range, different transmission properties and a different pathogenesis (Phillips et al., 2000, Vol. 2, paras. 3.48–3.61). For example, experiments conducted in 1988 failed to show transmission of BSE to hamsters, a species that is susceptible to scrapie, and they also demonstrated positive transmission to a strain of sheep that is resistant to scrapie. In early 1990 it emerged that a number of domestic cats had succumbed to a TSE. Since cats were not vulnerable experimentally to scrapie, that evidence further suggested that the scrapie model could not be relied upon.

3 All references to seasons [spring etc.] relate to the northern hemisphere.
transmit prion diseases. Despite this lack of certainty, however, policy-makers and their advisers have been making decisions based on assumptions that can be described as optimistic rather than cautious.

Although rapid postmortem tests for BSE now exist, they can only detect infectivity in animals shortly before their clinical symptoms appear. It is not possible, therefore, to estimate empirically the numbers of subclinically infected cattle that are more than a few months away from clinical onset. And, in the absence of a total ban on the consumption of cattle, it is impossible to remove such animals from the human food-chain.

Uncertainties about the transmission of BSE within the animal population also continue to complicate policy-making. Although the main vector of transmission of BSE is known to be contaminated feed, it is now known that maternal transmission (from cow to calf) is likely to occur. There may well be other routes of transmission that are currently unidentified. BSE-contaminated feed has also been fed to other species of farm animals, such as sheep and pigs. BSE has been transmitted orally to sheep under experimental conditions and there is consequently a theoretical possibility that BSE is being maintained in sheep flocks by sheep-to-sheep transmission. There has, however, been insufficient testing of sheep to settle that issue. Nonetheless, it is known that if the BSE pathogen is present in sheep, it is probably distributed far more widely within sheep than within cattle tissues, and that it would be virtually impossible to separate all potentially infected tissues without destroying the saleable carcass (Food Standards Agency, 2000, paras. 21–30).

Many of the policy dilemmas faced by officials and ministers prior to March 1996 therefore still persist. Which cattle (and other farm animals that might have been exposed to the BSE agent) should be allowed into the food-chain? Which tissues should be removed from those animals? How important is complete compliance with any such controls and how can the chosen level of compliance be ensured? Should there be an attempt to eradicate BSE from national herds as fast as possible, and if so, which steps should be taken? What level of protection is worth paying for, and can stability in the beef market be interpreted as evidence of the social acceptability of risks and policies?

**The United Kingdom**

The United Kingdom is a unitary state and constitutional monarchy. Its national government directs most government activity, although there are some administrative differences between its four constituent countries. The institution with primary responsibility for BSE policy-making has been the Ministry of Agriculture, Fisheries and Food (MAFF). Until April 2000, MAFF was expected simultaneously to promote the economic interests of farmers and the food industry whilst also protecting public health. That had been the case since MAFF was first created in the immediate aftermath of the Second World War.
Public health policy is the responsibility of the Department of Health in the United Kingdom. However, on food safety policy, it usually shared responsibilities with MAFF, and on most of those issues usually took a subordinate role to MAFF. That was the case with BSE; indeed, MAFF was primarily responsible for the development, implementation and enforcement of most of the relevant policies.

Many other institutions and actors have been important players in BSE policy-making. These include the Treasury, which was responsible for authorizing public expenditure by departments such as MAFF, as well as a number of expert committees that were established to advise on the animal and human health implications of BSE. The principal committees were the Southwood Working Party (1988–1989), the Tyrrell Research Committee (1989–1990) and the Spongiform Encephalopathy Advisory Committee (SEAC). SEAC began its work in 1990 and is still in existence.

BSE policy-making in the United Kingdom has been a highly complex and politically fraught issue. As described below in more detail, in the period following the discovery of BSE in the British cattle herd in November 1986, the Government introduced a series of regulatory measures to control the epidemic amongst cattle and to limit human exposure to the BSE agent. The key controls were introduced belatedly, however, and the policy was never one of eradicating TSE pathogens from the herds or from the food supply. Controls fell substantially short of removing all potentially infected material from the animal feed-chains and human food-chains. Nor were the controls properly enforced. As new evidence emerged and as political developments unfolded, the controls were gradually tightened but only in a reactive, not a proactive, fashion.

In March 1996, the Government banned the consumption of all cattle aged over 30 months and further tightened the existing controls in the United Kingdom after its scientific advisers concluded that BSE had probably infected humans. Exports of British beef were banned by the European Commission, which also demanded that the United Kingdom embark on a plan to eradicate BSE as a precondition to lifting the ban. The ban was eventually lifted in 1999, after the Commission had concluded that British beef presented no greater risk than beef produced in other European countries which, by then, were also affected by BSE.

The political fallout of the BSE saga has been considerable in the United Kingdom. One of the consequences was the creation of the Food Standards Agency in April 2000. The new agency took responsibility for “post-farm gate” regulation of BSE as well as for general oversight of BSE policy. MAFF was abolished in 2001, and its functions were transferred to a new Department for Environment, Food and Rural Affairs (DEFRA).

• United Kingdom policy responses prior to March 1996
BSE was first recognized as a novel cattle disease in November 1986 by scientists at MAFF’s Central Veterinary Laboratory. In the months that followed, reported cases of
BSE steadily increased in herds throughout the country. Senior MAFF officials and scientists immediately realized that BSE posed a possible risk to human health. Over the following 12 months, however, the secretaries of state for agriculture, fisheries and food, other ministers in MAFF, and senior civil servants in both administrative and scientific grades, decided to take no regulatory action. Even though MAFF scientists suspected that BSE was being transmitted through food, cattle continued to receive contaminated feed and animals clinically affected with BSE simply went into the human food-chain.

By early 1988, however, senior MAFF officials began to be concerned that, unless clinically diseased animals were removed from the food-chain, the Government would be held responsible if it later transpired that BSE was transmissible to humans (Phillips et al., 2000, Vol. 3, para. 5.41). Recommendations to that effect were nevertheless rejected by the Minister for Agriculture.

By the spring of that year, events internal to the politics of MAFF and the Department of Health led to the establishment of an ad hoc expert committee, known as the Southwood Working Party, to advise on the implications of BSE. Once that committee began meeting in June 1988, two key sets of controls were quickly introduced by the British Government.

- A ruminant feed ban, introduced by MAFF, made it unlawful to feed ruminants with ruminant protein. The ruminant feed ban applied to cattle and sheep only. Non-ruminants, such as pigs and poultry, could still be fed with the contaminated protein even though no one knew whether they might also be susceptible to BSE. No controls were placed on exports of ruminant protein either, even though government officials expected the domestic ban to divert ruminant-derived feedstuffs overseas (Lawrence, 1998).

- A slaughter policy, introduced at the behest of the committee, removed clinically affected cattle from the human food-chain.

The slaughter policy was applied only to clinically diseased cows. Moreover, the level of financial compensation was set for the first 18 months at only 50% of the animals’ value, thus providing a disincentive for farmers to report cases. No controls were placed on animals that were infected but asymptomatic, although these were far greater in number and potentially almost as infectious as clinically affected animals.

Although the Southwood Working Party did not recommend that controls should be imposed on potentially asymptomatic animals, regulations to that effect were

---

4 Ruminants are hoofed animals that chew the cud, and include cattle, sheep and goats.

5 MAFF officials had in fact considered, and then rejected, a ban on feeding ruminant-protein meal to all animals. As the bulk of animal protein was being fed to pigs and poultry, such a ban would have deprived the rendering industry of its principal market (BSE Inquiry Transcript, 29 June 1998, p. 35).

6 Officials’ expectations of a diversion of meat-based meal overseas was correct: in 1988, 12,553 tonnes of meat-based meal were exported from the United Kingdom to Europe and in 1989 that figure had risen to 25,005 tonnes (European Parliament, 1997, p. 8, para. 3).
announced by MAFF in June 1989, less than four months after the Working Party’s report had been published. The ban on specified bovine offal, introduced in November 1989, was the third and final key control. It banned certain central nervous system and lymphatic tissues from all cattle from being used in human food-chains.

The tissues selected for inclusion in the ban (brain, spinal cord, tonsils, spleen, thymus and intestines) were not all those that might have harboured the infectious agent. Analogies with other species indicated that other tissues might also have carried the agent, but those were either commercially valuable or could not easily or cheaply be removed and they were excluded from the offal ban. Animals under six months old were also excluded from the ban on the grounds that they should not have been given contaminated feed; however, policy-makers also assumed, in the absence of any evidence, that maternal transmission would not occur, even though scrapie was thought to be transmitted by that route.

The principal controls described above were tightened on several occasions between 1989 and 1996, in the wake of new scientific data and evidence that the existing controls had not been properly implemented and enforced, as well as in response to political pressures of various kinds. Controls to protect the animal feed-chain were amended at least six times. In September 1990, for example, MAFF banned the use of bovine offal from all mammals in the feed-chain after evidence emerged showing that BSE had been transmitted to pigs under experimental conditions. MAFF was aware that the bovine offal regulations were not being observed, because it collected and analysed figures revealing substantial divergences between the quantities of offal recorded as destroyed at incinerators and the amounts supposedly removed from animals in abattoirs (Fleetwood, 1998). It also became clear that there was cross-contamination between feed destined for non-ruminants and feed destined for ruminants, thus prolonging the epidemic in cattle. In 1996, when the acute BSE crisis erupted, all mammalian meat and bone meal was banned from use in the feed of all farm animals.

Controls on the human food-chain were altered at least 11 times. For example, in March 1992, regulations were brought in to prohibit the use of the head after the skull had been opened (minimizing the risk of head meat being contaminated by the process of brain removal). In June 1994 the specified bovine offal ban was extended to include the thymus and intestines of calves under six months old. In December 1995, MAFF suspended the use of bovine vertebral column (a potentially rich source of nervous tissue) in the manufacture of mechanically recovered meat.

From 1994, a few cases of CJD in young people slowly began to emerge. By March 1996, the CJD Surveillance Unit informed the Government’s Spongiform Encephalopathy Advisory Committee of 10 cases that appeared to be a new variant of CJD. On 20 March 1996
the Government announced in Parliament that the most probable explanation of such cases was exposure to the BSE agent, albeit in the period before 1989. The British Government had no contingency plan for responding to the emergence of evidence in March 1996 that BSE had infected humans.

**Policy after March 1996**

The announcement precipitated a major crisis for the United Kingdom and for the European Union as a whole. The European Commission immediately prohibited British exports of live cattle, meat and mammalian-derived meat and bone meal to anywhere in the world (European Commission Decision 96/239/EC). Within the United Kingdom, the Government, acting on SEAC advice, announced that it would require carcasses from cattle aged over 30 months to be deboned, with the trimmings (comprising the nervous and lymphatic tissue including 14 specified nodes) to be kept out of the human food-chain. A few days later, however, the Government announced that, instead of cattle over 30 months being deboned, all cattle over that age would be slaughtered and destroyed. Several leading retailers had indicated that they were no longer prepared to accept beef from animals over 30 months of age. The Over-Thirty-Month Scheme (OTMS) was introduced in May 1996 to organize the slaughter of animals that could no longer enter the food-chain or feed-chain, and to provide compensation to farmers.

The European Commission insisted that its ban on all exports of British cattle products would be maintained at least until the Government provided a comprehensive plan for eradicating BSE. An action framework was agreed with Brussels that included a selective cull of cohorts of older animals, the introduction of a computerized cattle tracking system, and rigorous implementation of regulations. Once those conditions had been met, a step-by-step removal of the export ban could occur, beginning with animals and meat from herds with no history of BSE and no exposure to meat and bone meal. Exports of British beef produced in accordance with the controls outlined at the EU’s Summit Meeting in Florence in June 1996 have been permitted by the EC, and by most EU Member States, since November 1999.

Regulations have been tightened on several occasions, since 20 March 1996. Prohibited bovine tissues now include: the entire head excluding the tongue but including the brains, eyes, trigeminal ganglia and

---

7 For example, lymph nodes and peripheral nerves would almost certainly be highly infectious but could not practically be removed. Organs such as the liver might, by analogy with other TSEs, also contain the infectious agent but were commercially valuable.


10 The unit was set up in 1990 by the Department of Health to monitor for atypical cases of CJD.
tonsils; the thymus; the spleen and spinal cord of animals aged over six months; the vertebral column, including dorsal root ganglia, of animals aged over 30 months; and the intestines from the duodenum to the rectum of bovine animals of all ages. The heads and spinal cords from sheep and goats aged over 12 months are also prohibited for use in food.

Since 1993 the incidence of BSE has been falling, from a peak in that year of over 34,000 cases per annum to approximately 1000 reported cases in 2001. It is likely, however, that many BSE-affected animals would have been slaughtered before showing symptoms, under various culling schemes. The ruminant feed ban is believed to have been thoroughly enforced only since August 1996, and animals born after that date should not have contracted BSE from contaminated feed. There have, however, been over a dozen cases of BSE in animals born after August 1996, perhaps as a result of maternal or other routes of transmission. For the time being they constitute an anomaly that remains inexplicable [European Commission, 2001]. It is therefore likely that some animals under 30 months will be subclinically infected with BSE and will be entering the human food-chain, although numbers will be very small relative to historical levels of exposure.

**New institutional and procedural arrangements**

Following the General Election in May 1997 in the United Kingdom, proposals to separate regulation from sponsorship in the food safety arena were drawn up in the form of a proposed Food Standards Agency (FSA). A Public Inquiry into BSE was also announced in December 1997.

The original intention was that the FSA would be responsible for the entire food-chain, “from the plough to the plate”. In practice it did not quite work out like that. When the FSA was established in April 2000, the Government decided that MAFF would retain primary responsibility for veterinary and agricultural aspects of food policy, so that the FSA’s responsibility runs only from the “farm gate to the plate”. MAFF retained its industrial sponsorship remit and primary responsibility for three key areas of food safety policy — BSE, pesticides and veterinary medicine — while the FSA had indirect oversight of those policy domains.

11 These include: the Selective Culling scheme, which has removed over 77,000 British cattle at greatest risk of developing BSE, based on their herd and feeding histories; the OTMS which has removed nearly 5.6 million older cattle from the national herd; the BSE Offspring Cull, which has found over 25,000 offspring of BSE cases that have been, or will be, slaughtered; and an unspecified number of older cattle culled under the foot and mouth disease culling regime. (Figures from DEFRA at http://www.defra.gov.uk/animalh/bse/bse-statistics.)

12 Current models based on assumptions about the rate of maternal transmission predict very low numbers of animals entering the food-chain. See, for example: SEAC (2001) Minutes of the 71st meeting held 21 November 2001 at DEFRA. (http://www.seac.gov.uk/papers/mins21-11-01.pdf). Estimates (i.e. numbers of cows likely to contract BSE and that subsequently enter the human food-chain) are based on models that assume a 10% maternal transmission risk within six months of clinical onset in the dam, zero feed risk, and no other route of transmission.
Another significant change, prompted by the epidemic of foot and mouth disease in 2000, was the abolition of MAFF in May 2001. MAFF’s remaining functions, as well as its responsibility for environmental policy (formerly located in the Department of the Environment, Transport and the Regions), were transferred to the new DEFRA.

Nevertheless, the FSA is now the primary source of policy in relation to food safety. When the FSA was established, it outlined three core values that would guide its work: to put the consumer first, to be open and accessible, and to be an independent voice. Those guidelines represented an abrupt change and reflected an analysis of some of the principal shortcomings in MAFF’s approach to policy-making. In relation to BSE, for example, the FSA has been far more explicit than MAFF about the uncertainties, the available policy options and the reasons for particular decisions (FSA, 2000).

### The European Commission

The role of the European Commission in establishing EU-wide controls on BSE has obviously been an important influence on BSE policy in the Member States. Before March 1996, the Commission paid scant attention to emerging public health signals about the possible risks posed by BSE. Political and policy activity on the part of the Commission only appeared to take place either when trade was threatened or when other Member States insisted that the issue be discussed at Community level. After 1996, and criticism by a

European Parliament Inquiry of the Commission’s activities on BSE, a process of institutional and procedural reform began. The Commission also became more proactively involved in the development of common EU policy on BSE.

### EU controls prior to March 1996

Prior to 1997, European BSE policy fell within the remit of two Directorates: DG III, which was responsible for the EU’s internal market, and DG VI, which was responsible for agriculture and fisheries. Regulations and legislation were developed by those Directorates in collaboration with two committees: the Scientific Veterinary Committee, which comprised experts appointed by the Commission, and the Standing Veterinary Committee, which comprised official representatives of Member States’ veterinary services.

Following the emergence of BSE within the United Kingdom, the Commission could reasonably have been expected to consider adopting regulatory measures in two key areas: in relation to a known animal disease and in relation to a potential risk to human health.

With regard to control of the animal epidemic, the Commission could have established (a) rules that governed trade in potentially contaminated ruminant protein and live cattle, and (b) controls that governed the practices within individual countries as regards, for example, use of recycled ruminant protein in feed for ruminants and other farm animals.
In July 1989 the Commission made its first intervention in BSE policy by banning the export from the United Kingdom of live cattle that had been born before July 1988 (the date that the ruminant feed ban was introduced in the United Kingdom). However, despite the concerns expressed by several Member States about the fact that potentially contaminated ruminant meat and bone meal from the United Kingdom could be exported and fed to ruminants in other Member States, no measures were taken at that time to control trade in ruminant feed. Nor did the Commission insist that Member States other than the United Kingdom should halt the widely adopted practice of recycling ruminant protein to other ruminants.

The Commission had asked the United Kingdom to ban exports of ruminant-derived meat and bone meal, but this was refused (European Parliament, 1996). Exports to the EU of British meat and bone meal had jumped from 12,553 tonnes in 1988 (the year of the domestic controls in the United Kingdom) to 25,005 tonnes in 1989. It was only in 1996, however, that the Commission banned British exports of meat and bone meal.

In 1989, the Commission had also wanted to introduce a European-wide measure banning the feeding of ruminant meal to ruminants (European Parliament, 1997). There was, however, only limited support for that proposal. Instead, the Commission’s Scientific Veterinary Committee advised, in January 1990, that all Member States should take whatever action was deemed appropriate in their own countries (European Parliament, 1996). The European Commission did not ban the practice of feeding ruminants with mammalian meat and bone meal until 1994.

With the benefit of hindsight, it is clear that exports of contaminated feed from the United Kingdom spread the BSE agent to almost all European countries, and that the agent was again recycled within national herds, thus allowing the disease to become established.

The second key area in which the Commission could reasonably have been expected to consider adopting regulatory measures was in relation to the human food-chain. Here the key issues were the control of trade in potentially contaminated carcass meat and meat products, and controls on the products entering the food-chain within individual jurisdictions.

Outside the EU, many countries banned or restricted imports of British cattle products in the period between 1988 and 1990. Nonetheless, exports of meat from the

---

13 Sweden banned the import of all British cattle in October 1988; Australia and New Zealand followed suit in December 1988 and this was followed by similar decisions from Finland in January 1989, the United States of America in June 1989, Canada and Tunisia in February 1990, and the Russian Federation in March 1990. Bans were also placed on British cattle by Israel and Saudi Arabia. Other countries required certification that cattle came from herds without BSE. These included Brazil, Japan, Morocco and South Africa (Ministry of Agriculture, Fisheries and Food, 1990).
in four countries and the European Community

United Kingdom to the rest of the EU went unregulated until April 1990, when the Commission banned the import of specified bovine offal from the United Kingdom — some five months after the same legislation had been introduced in the United Kingdom. Those controls were marginally tightened in June 1990 in an effort to prevent unilateral action on the part of France and Germany.

After that, in the period 1990–1994, there was no further Community legislation on exports of British beef and virtually no consideration of BSE by the EU’s Agricultural Council, despite the fact that the BSE epidemic reached its peak during that period. Following further threats of unilateral action by Germany, controls on exports of British beef were again marginally tightened by requiring exports of bone-in beef to have come only from herds with no cases of BSE in the previous six years rather than the two years stipulated in the 1990 regulations. No further action was taken by the European Commission until the immediate aftermath of 20 March 1996, when British exports of live cattle, cattle meat and mammalian-derived meat and bone meal were prohibited to anywhere in the world (European Commission Decision 96/239/EC).

• EU controls after March 1996

The European Commission has struggled to deal with the consequences of a serious loss of public confidence in the safety of foods and in food safety policy-making institutions since March 1996. It has responded in a number of ways.

Institutionally there have been substantial changes. For example, in 1997, the Commission relocated its scientific advisory committees to the Directorate General for Health and Consumer Protection (DG SANCO). In 2000, industrial sponsorship, regulation and inspection duties were separated. Regulation was relocated to DG SANCO, while a Food and Veterinary Office based in Dublin, Ireland, became responsible for inspecting Member States’ implementation of food safety-related European Commission legislation. A European Food Safety Authority was established in 2002 to advise DG SANCO.

In terms of legislation, the European Commission has introduced a complex array of controls on BSE. These fall under at least three broad headings: surveillance, controls on animal feed-chains, and protection of the human food-chain.

• Surveillance. Although BSE was made notifiable across the European Community in March 1990, a common surveillance strategy has only been in place since April 1998. From that date, all Member States were required to implement a monitoring system and to test, by histopathological examination of the brain, all animals older than 20 months displaying behavioural or neurological symptoms. Since January 2001 the Commission has also required Member States to monitor for BSE using the new rapid postmortem tests. Such testing must be carried out on all healthy animals over 30 months that are destined for human consumption, as well as on several samples of healthy and ill animals.
A chronology of BSE policy

- Animal feed-chain. Beyond the 1994 ban on using mammalian meat and bone meal in ruminant feed, no major additional restrictions were introduced until 2000. Mammalian meat and bone meal continued to be allowed for use in feed for non-ruminant farm animals, despite the fact that experience in the United Kingdom had demonstrated that a ruminant feed ban on its own was problematic. Indeed the EU’s Food and Veterinary Office repeatedly found that there was a significant risk of contamination of ruminant feed by mammalian meat and bone meal. In December 2000, the European Council temporarily banned the use of animal proteins in feed for all farmed animals and that ban was made permanent as of January 2001.

- Human food-chain. The European Commission proposed in 1996 that EU-wide restrictions be placed on the use in food of "specified risk materials" (SRMs), which are analogous to the specified bovine materials that had been prohibited in British cattle since 1989. Those proposals were, however, rejected by the European Council in December 1996. Proposed again in July 1997, the controls were to have been implemented from January 1998 but were postponed four times until October 2000. Thus, acceptance of the Commission’s proposals to remove SRMs took almost four years after first being proposed. In the interim, three Member States introduced their own bans to protect their consumers.

- Germany

Germany is a federal republic consisting of 16 states (Länder), each of which possesses its own constitution and its own government and parliament. The states have, however, ceded a substantial part of their legislative competence to the Federal Government. The Federal Government is responsible for legislation in certain areas, the state governments in others, and there is a system of mixed competence in a third set of areas that includes food legislation. Most food legislation in Germany is federal law, with the state governments responsible for its implementation.

Until 2001, BSE policy-making in Germany was shared between two departments, the Ministry of Food, Agriculture and Forestry (Bundesministerium für Ernährung, Landwirtschaft und Forsten) and the Ministry of Health (Bundesgesundheitsministerium). The tensions between taking care of long-term public health on the one hand and sponsoring the economic interests of farmers and the food industry on the other were therefore played out between two distinct government departments rather than within one single department, as occurred in the United Kingdom. The arrangement dates from the 1960s and was designed to diminish some of the conflicts between economic and public health interests. The two ministries were often characterized, and saw themselves, as so-called “mirror-departments” (Spiegelreferate). Each of those two ministries had its own Chief Veterinary Officer. Since 2001, the Ministry of Consumer Protection, Food and Agriculture has had primary responsibility for BSE.

---

14 There was a risk of cross-contamination in feed mills between ruminant and non-ruminant feed, and also a risk that farmers might have fed non-ruminant feed to cattle.
15 France in 1996, the Netherlands in 1997 and Belgium in 1998.
policy-making, and there is now only one Chief Veterinary Officer in the Federal Government.

Each state possesses its own administrative arrangements for dealing with health and agricultural policies, and they are similarly structured to the federal ministries. Each state also has its own Chief Veterinary Officer located — depending on the state — inside the State Ministry of Agriculture, State Ministry of the Environment or State Ministry for Social Affairs.

German policy on BSE was, for many years, concerned primarily with protecting its borders from imports of contaminated animal feed, live animals and meat. Unlike in many jurisdictions, German regulators did not always assume, prior to March 1996, that BSE was only a veterinary problem and would pose a zero or negligible risk to human health. The Federal Government attempted to impose unilateral trade controls on British products on several occasions and played an important role in pushing the European Commission towards taking a more proactive policy role over BSE control. Germany was also the first EU Member State that responded to BSE as a public health issue. What emerged as EU-wide controls were often a compromise between German and other more recalcitrant interests.

Yet, despite recognizing that BSE might pose a risk to human health, Germany did not put in place precautionary controls on its own domestic beef supply. Although countries such as Austria, Denmark, the Netherlands and Sweden banned the use of ruminant-derived meat and bone meal for use as cattle feed in 1989–1990, Germany — together with Belgium, Greece, Italy, Luxembourg and Spain — had no feed ban in place until the EU-wide ban on mammalian proteins for ruminants was introduced in 1994 (Court of Auditors, 2001).

Officials have claimed, however, that it had not been usual agricultural practice in Germany to feed meat and bone meal to ruminants, but only to pigs and poultry (Speakers of the highest regional authorities responsible for veterinary issues and food surveillance, 1996). The German BSE crisis of the last half of 2000 undermined that claim, however, because traces of mammalian protein were detected in ruminant feed.

In late 2000, scores of domestic cases of BSE began to be reported in Germany, following the introduction of rapid postmortem tests. The political fallout from that discovery saw domestic beef consumption plummet and led to the Ministry of Food, Agriculture and Forestry being reconstituted as the Federal Ministry for Consumer Protection, Food and Agriculture.

• German policy prior to March 1996
The Federal Government, in common with those of other Member States, implemented European Commission legislation relating to BSE as and when it was introduced. On a number of occasions, however, it took unilateral action to restrict trade with the United Kingdom. The first such occasion was in May 1989 when Germany prohibited imports of British meat and bone.
meal. The Commission did not introduce an EU-wide prohibition of British meat and bone meal until March 1996. In 1989, several German states also temporarily banned imports of British beef.

In August 1989, Germany announced that, as of November of that year, it would only allow imports of British beef that had been certified as originating from BSE-free herds and only if brain, spinal cord and internal organs had been removed prior to export. The United Kingdom had by that time announced but not yet introduced a specified bovine offal ban. Germany stated that it was entitled to take unilateral measures until such time as Community-wide measures had been introduced that protected the entire European public (Anon, 1989). An EU-wide ban on bovine offal from British cattle was not introduced until April 1990.

The following month, however, Germany banned imports of all British beef, as did France and Italy. Several British domestic cats had been diagnosed with a novel spongiform encephalopathy; this indicated not only that BSE might be transmissible by food to non-ruminant species but also that BSE was unlike scrapie, since the latter cannot be transmitted to cats. This was significant because reassurances about the safety of BSE for humans had been based on the premise that BSE would behave in the same way as scrapie. Germany lifted its ban the following month, although this was after the Council of Agricultural Ministers had reached a compromise on trade in beef and calves from the United Kingdom. The decision required the United Kingdom to certify that all boneless beef for export to Member States had “obvious nervous and lymphatic tissue” removed. It also required certification that bone-in beef for export came from farm holdings where BSE had not been confirmed in the previous two years.

The last major unilateral German policy initiative on BSE did not take place until four years later, following an international symposium on TSEs held at the Federal Health Office (Bundesgesundheitsamt) in December 1993. The effect of those discussions was to reinforce the view of German health officials that eating British beef might be hazardous to public health. In March 1994, following the publication of a risk assessment by the Federal Health Office (Federal Health Office, 1993), the German Government attempted to secure a complete EU-wide ban on the sale of British beef (Carvel, 1994). That attempt failed and a compromise was reached whereby the Commission marginally tightened the rules covering exports of British beef. In the period from mid-1994 until the BSE crisis of March 1996, the German Government continued to be in the vanguard of countries calling within the EU for tighter and more precautionary restrictions on bovine exports from the United Kingdom, to prevent the spread of the disease.

All the major policy initiatives, aside from implementing Commission legislation, were concerned with protecting German borders from imports of diseased animals and feedstuffs. As mentioned previously, Germany did not take seriously, at this time, the possibility that BSE...
might be already present in the domestic herd. Thus the Federal Government did not end the use of mammalian meat and bone meal from rendered animal remains in ruminant feed or other agricultural feedstuffs until 1994, shortly before it was required to do so by EU-wide controls. Nor did it ban the consumption of what the United Kingdom termed “specified bovine offal”. The Federal Government also continued to permit the use of what is known in English as “mechanically recovered meat” and in German as Separatorenfleisch.

Surveillance for possible cases of BSE had been undertaken in Germany since 1990 and in particular since 1992 when the first case of BSE in an imported British cow was detected. Three further cases of BSE were reported in 1994, but they too were in cows imported from the United Kingdom. According to a German scientist who was interviewed, only about 1500 brains of neurologically suspect cattle were examined between 1991 and 1999.\footnote{It is possible that more tests were carried out, but numbers were not officially provided by the state governments.} Surveillance was passive rather than active; it received and checked diagnoses, but it did not actively search for evidence of infectivity. Furthermore, pathologists working at the regional State Veterinary Laboratories were not required to undertake specialist training in the diagnosis of BSE, although some did so voluntarily. Thus domestic surveillance was relatively weak. In practice, official BSE surveillance implied the monitoring and control of international trade in meat, meat products and live cattle — therefore not surveillance in the classical sense but rather control by the customs.

\textbf{• German policy after March 1996}

After the crisis of 20 March 1996, the German health and agricultural ministers prohibited all imports of British beef or live cattle, but not milk. The Federal Health Office had recommended such a ban in December 1993. Similar restrictions were imposed by the European Commission soon after the German announcement.

German BSE policy after March 1996 continued to focus on the threat from abroad. For example, following the fifth case of BSE in an animal imported from the United Kingdom in January 1997, a decision was taken to cull all 5200 cattle that had been imported from Switzerland (which also had a relatively high incidence of BSE) and the United Kingdom. The 14 000 descendants of the slaughtered cattle were to be kept under official surveillance.

In general, German regulators continued to act as if their country was free of BSE. As discussed in the previous section, the European Commission had proposed an EU-wide bovine offal ban in 1996, but that proposal was not actually introduced until June 2000. A few Member States introduced their own bans to protect their consumers, in the interim, but Germany was not one of those countries.
In April 1996, at a meeting on TSEs hosted by WHO in Genoa, Italy, the German Robert Koch Institute recommended that a surveillance system for BSE should be set up in all Member States; in the absence of such a system, no country’s situation should be classified as BSE-free but as “unknown”. The Federal Government did not accept that advice. A fully active surveillance system was introduced only as a consequence of a decision by the Council of Ministers (98/272/EC) in 1998, which obliged all Member States to establish a systematic monitoring programme. Even then the regime was not implemented in Germany until May 1999, and the Federal Government failed to implement all the requirements, such as those regarding training (European Commission Food and Health Office, 2001). According to a German scientist who was interviewed, the states were only asked by the Federal Government to test as many cattle as possible in order to fulfil the European Commission’s requirements.

In May 2000, the European Commission’s Scientific Steering Committee completed a geographical risk assessment of BSE in Germany, which concluded that “it is likely that domestic [German] cattle are [clinically or pre-clinically] infected with the BSE-agent but it is not confirmed” (European Commission, 2000a). The Food and Veterinary Office’s assessment was based on the assumption that the current surveillance system was passive and therefore unable to detect all clinical BSE cases. It argued that there was a “significant” probability that BSE would be confirmed in Germany in the next few years, in particular if active surveillance was adopted.

In November 2000, only a few months after the publication of the Scientific Steering Committee’s Geographical Risk Assessment, the first domestic case of BSE was detected in the north of Germany. The case was identified using one of the new rapid diagnostic tests that were being used in anticipation of the European Commission legislation that would require active surveillance from January 2001 (European Commission, 2000b).

**New institutional and procedural arrangements**

The disclosure of the first genuine German BSE cases triggered a crisis of credibility in the risk assessment and risk management abilities of official German institutions, and led to substantial reorganization and restructuring of various political institutions. By mid-January 2001, as domestic demand for beef slumped, both the Agriculture Minister and the Health Minister resigned from the Federal Government. In January 2001, under Green minister Renate Künast, the Agriculture Ministry was abolished and replaced by the Ministry for Consumer Protection, Food and Agriculture (*Bundesministerium für Verbraucherschutz, Ernährung, und Landwirtschaft*). Künast declared consumer safety the new top priority of the new ministry.

In May 2001, the Federal Government also introduced a TSE research policy designed to ensure that all relevant German research-funding institutions (at both federal and state level) adequately addressed research questions relating to TSE. An important part of that policy
was the establishment of the German TSE “research platform”, initiated and predominantly funded by the Federal Ministry of Education and Research. Its task is to provide a communication and service network for all German TSE researchers, and both to inform the public about TSEs and to enable a dialogue between TSE scientists and the public.

In January 2002 a new bill was introduced requiring that there should be a strict institutional separation between risk communication and risk management on issues relating to food and food safety. The organization responsible for risk assessment and risk communication issues is the Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung), whilst the institution responsible for risk management is the Federal Institute for Consumer Protection and Food Safety (Bundesamt für Verbraucherschutz und Lebensmittelsicherheit). Both institutions started work in November 2002.

**Italy**

Italy is a parliamentary republic administratively divided into regions, provinces and districts. Regions are relatively autonomous territorial units with their own powers and functions. Each region exercises some of its administrative authority directly, but can also delegate several functions to the provinces and districts. Often policies are framed at the centre but responsibility for enforcement is delegated to local government. In Italy, the primary responsibility for all health issues (including both humans and farm animals) is taken by the Ministry of Health. BSE policy-making has thus primarily been the responsibility of the Ministry of Health. The Italian Ministry of Agriculture, which is responsible for sponsoring the farming and food industries, was not centrally involved in the management of the BSE problem, but nevertheless played an influential secondary role.

Prior to March 1996, beef consumption in Italy was the second highest after France, averaging an annual 26 kg per person between 1990 and 1995 (Eurostat, 1998). The country produced only two thirds of the beef it consumed, with about 6% of imported beef coming from the United Kingdom. Historically, and throughout the 1990s, Italian farmers used large amounts of animal feedstuffs containing meat and bone meal.

Until the first cases of BSE in imported animals appeared in 1994, and the events of March 1996, Italian policy focused on the formal translation of European directives into national measures. The sole but important exception was a 1989 ban on the import of British meat and bone meal for use in ruminant feedstuffs. As in Germany, BSE was primarily viewed as an external problem and not as a threat to Italian cattle. Thus no

---

17 For a critical discussion of that approach see the Böschen et al. (2002) report to the Office of Technology Assessment of the German Parliament.

18 The Italian chronology is based in part on a report by Estades et al. (1999).
domestic controls on the use of ruminant meat and bone meal in ruminant feed were introduced until the European Commission (EC) took the initiative in 1994, and no controls on bovine offal from domestic animals were put in place until common EU controls were introduced in 2000.

From November 2000 onwards, however, the situation changed dramatically. The discovery of BSE-infected cattle in France and Germany, and then the detection of the first cases in Italy some months later, created a high degree of concern amongst Italian consumers. During the second half of November 2000, beef purchases fell by almost 36% and remained at that level until mid-December. At the end of January 2001, sales of beef in Italy were 60–65% lower than the levels seen one year earlier.

• Italian policy prior to March 1996

When BSE first emerged in the United Kingdom, it aroused the interest of a small number of Italian scientists who had developed expertise in TSEs, but that interest was not generally shared by health or agricultural policy-makers in Rome. In general, BSE was not seen as being a threat to Italian cattle but only as a veterinary problem concerning imported animals. The aim of Italian policy was therefore to protect the country from British cattle and British feedstuffs.

Aside from a ban on imports of British meat and bone meal, introduced in November 1989, regulatory restrictions to reduce the risk from BSE were introduced by the Italian Government as European Directives were adopted. After European Directive 90/200 was issued by the Commission, the Italian Government decided that all animals displaying antemortem clinical signals of BSE must be slaughtered separately and have their brains removed for analysis (Ministerial Decree No. 2683 of April 1990).

During 1991, however, key officials in the Italian Government became increasingly concerned about the risks posed by BSE. The Government responded by establishing a National Centre for Animal Encephalopathies and by recruiting two laboratories of the Higher Institute of Health to work on TSE research. In the early 1990s, therefore, the Italian Government began constructing an institutional framework to try to manage the risks posed by BSE.

Two animals in Italy were found to have BSE in 1994 but they came from a group of 50 animals that had been imported from the United Kingdom. All those cattle were slaughtered, the farmers compensated and tighter controls placed on herds containing animals imported from the United Kingdom. However, those two cases of BSE did not provoke much debate or concern.

• Italian policy after March 1996

In the wake of the British announcement of 20 March 1996, the Italian Government sought to reassure domestic consumers and consequently adopted more restrictive measures than those required under
European Commission legislation. For example, in April 1996, the Italian Government imposed restrictions on cattle and meat imports from France (Ministerial Decree No. 2666), and similar restrictions on imports from Switzerland in June (Ministerial Decree No. 4566).

In mid-December 2000, after the discovery of BSE in cattle in France and Germany and amid rising public concern, the Government appointed a Special Commissioner for BSE in order to coordinate the action of the ministries of health and of agriculture and of other public authorities concerned with the disease. At the end of December, systematic tests of cattle older than 30 months started. In January 2001, the first case of BSE was detected and, at the end of March 2001, when 60 000 tests had been performed, seven cases of BSE had been identified. This created what has been described as a “wave of panic” in the population.

Media coverage of BSE rose rapidly, and much of it was focused on the alleged shortcomings of the Italian policy-making and enforcement systems.

**Finland**

In Finland, responsibility for policy relating to foodborne risks resides with the Ministry of Agriculture and Forestry (MAF). Once foodborne infection is suspected in humans, the responsibility for managing such an outbreak shifts to the Ministry of Social Affairs and Health (MSAF). Thus, responsibility for BSE policy rests within MAF, while responsibility for vCJD surveillance is under the jurisdiction of MSAF.

The low prevalence of BSE in Finland is probably due to the country’s comparative isolation, traditional farming practices, and high level of overall animal health, rather than to surveillance and control. In Finland, cattle are raised on small and isolated family farms, the average herd size is small and the grazing area per ruminant is large compared to EU averages. There is little trade in cattle, and no system exists for gathering cattle for markets.

Finnish policy on BSE, prior to 1994, was based on banning cattle imports from the United Kingdom and imports of meat and bone meal generally, and on surveillance of cattle that had already been imported. After joining the European Economic Area (EEA) (in 1994) and the EU (in 1995), measures to control BSE were largely driven by European Community requirements. In the years after Finland joined the EU, the country’s surveillance systems assigned BSE only marginal importance compared to other challenges to animal health such as *Salmonella*.

The current arrangement for dealing with food and feed safety in Finland results from the restructuring of March 2001. BSE policy is overseen by MAF, whose Health and Food Department is responsible for general animal health and health policy. Risk assessment and risk management of foodstuffs are divided between two different institutions. The National Veterinary and Food Research Institute is responsible for risk assessment
concerning animal health and food of animal origin, while the National Food Agency (NFA) is responsible for risk management regarding foodstuffs. The NFAs responsibilities include surveillance of food safety and quality from the farm to the dinner table. A third institution, the Plant Production Inspection Centre, is responsible for feed. While all of these institutions are within MAF’s administrative responsibility, they are guided and coordinated by a working group for food control that also includes representatives of MSAF and of the Ministry of Trade and Industry.

Following the introduction of the rapid postmortem testing regime in 2001, Finland initially appeared not to have the same problems as had begun to occur in Germany, Italy and Spain, for example. In December 2001, however, the first case of BSE in a domestically reared cow was reported.

• Finnish policy prior to March 1996
Before Finland joined the EEA in 1994 and the EU in 1995, the importation of farm animals was subject to the consent of MAF. Levels of imports were very low.

Between 1980 and 1990, Finland imported almost 120 000 tonnes of meat and bone meal. The major source was the Netherlands, but others included Austria, Denmark, Germany, New Zealand and Sweden. However, the use of imported meat and bone meal in feed for ruminants was banned in 1990. This measure, along with a ban on imports of British cattle and a policy of monitoring already imported cattle, was seen by the Government as prudent and sufficient.

Between 1980 and 2000, Finland imported between 919 and 1148 live cattle from countries in which BSE was known to be present. When the Government of Finland imposed a ban on the import of British cattle, it stated that the country contained only 84 cattle that had been imported directly from the United Kingdom [European Commission, 2002a,b]. It is known that some of these, including 11 cases from farms with established BSE cases in the same birth cohort, went into feed-chains or food-chains.

Domestically, however, little was done to monitor actively for BSE. Between 1990 and 1996, the number of cattle brains tested annually for BSE varied between 5 and 23, and this testing was based only on examination of reported suspects. Until 1995, it was lawful for farmers in Finland to use domestically produced ruminant protein in animal feed. Under those conditions, therefore, if BSE had entered Finland it might have been amplified domestically through the closed loop of the food-chain. That practice, banned within the EU in 1994, was prohibited when Finland joined the EU in 1995.

Eurostat/UK recorded, however, that 127 cattle were exported from the United Kingdom to Finland during the period cited by the Government of Finland. The reason for the discrepancy between these two figures is not known (European Commission, 2002b).
in four countries and the European Community

• Finnish policy after March 1996
Since 1995 (when Finland became an EU member), all measures to control BSE have derived from European Commission requirements. Finnish officials who were interviewed said that until the discovery of BSE in Finland in December 2001, many in the Finnish administration assumed that the domestic measures required under European Commission rules were necessary only for legal and administrative reasons but were scientifically unnecessary and that they represented a disproportionately high cost.

Since March 1996, beef of British origin has been excluded from the food-chain in Finland. In 1996, all animals imported from the United Kingdom were ordered to be removed from the human and animal food-chains, examined in case of death, and destroyed when owners surrendered them. By 1997 the offspring of cattle imported from Britain had been tracked down and excluded from the food-chain. Since the beginning of 2001 special surveillance measures have been applied to all ruminants imported from countries in which BSE has been found. At the time of slaughter, their origin and age have to be reported. All ruminants over 20 months have to be tested.

Since 1998, EU legislation requires producers to report cases of cows over 20 months of age with suspected symptoms of BSE to municipal veterinarians [European Commission, 1998]. In the same year, a national system for cattle identification was introduced that enabled information on the bovine products’ country of origin to be provided, as required under current Finnish legislation. Since then the number of BSE-screened cattle has been higher than in previous years (European Commission, 2002b).

The Commission’s 1996 proposal for an EU-wide bovine offal ban, as noted previously, was not actually introduced until June 2000. Finland was not one of those few Member States that introduced their own ban in the interim. Furthermore, until the introduction of EU-wide controls in 2001, it remained lawful to feed ruminant proteins to non-ruminant farm animals. Finnish authorities allowed the feeding of cow fat to cattle until 2000, and pig fat was used in calf feeding until early 2001. Separate production lines for animal feeds containing meat and bone meal were not required until 2001.

Under European Commission rules, Finland started BSE screening in 2001. However, Finland was allowed an exception and was not required to screen all cattle slaughtered at the age of more than 30 months. During 2001, a total of 20 000 cows were to be tested for BSE. In addition, a sample of about 5000 healthy non-suspect cows were to be tested [European Commission, 2001].

In February 2001, a suspected case was provisionally identified but subsequent histopathological tests on that animal were all negative. The Ministry of Agriculture and Forestry in Helsinki did, however, report Finland’s first (and so far only) case of BSE on 7 December 2001. The disease was detected in a dairy cow born in Finland in 1995. No meat or bone meal had reportedly been
used in that herd for more than 20 years. No evidence of BSE was found in any of the other animals in that herd. The authorities presented the finding of this first case as proof that surveillance works, noting that the cow had been identified as a risk animal prior to slaughtering. To date, no conclusion has been reached about the source of the infection, although suspected sources include vegetable-based protein supplements contaminated by meat and bone meal or contaminated fat in milk-replacer feeds for calves.

The case has raised concern about animal feed in Finland, and attention has been drawn to the problem of identifying sources of feed, since according to the European Commission regulations only nutritional content is required to be reported. According to the media and to interviews with Finnish authorities in the aftermath of the first BSE case, it became evident that, even though countries such as Denmark had suspected that BSE could spread through the use of fat products, the Finnish authorities had considered such products to be safe. They also considered the German decision to ban all animal-based feed for cows to be politically motivated. Continuing to allow feeding with animal fat was justified by the lack of evidence that it might be risky. While the European Commission had forbidden the use of animal proteins for feeding cows, the use of fats was considered safe.

References
European Commission (1996) Commission decision 96/239/EC total ban on dispatch of live cattle and all products from the UK.

in four countries and the European Community

1998 on epidemic-surveillance for transmissible spongiform encephalopathies and amending Decision 94/474/EC.


Niederschrift über die Sitzung der Referenten der für das Veterinärwesen und Lebensmittelüberwachung zuständigen obersten Landesbehörden. [Speakers of the highest regional authorities responsible for veterinary issues and food surveillance.] Minutes of the meeting held on 5 August 1996: