

Final report on the updated assessment of the Geographical BSE-Risk (GBR) of AUSTRIA - 2002

Provided to the SSC on 16 May 2002

NOTE TO THE READER

Independent experts have produced this report, applying an innovative methodology by a complex process to data that were supplied by the responsible country authorities. Both, the methodology and the process, are described in detail in the final opinion of the SSC on "the Geographical Risk of Bovine Spongiform Encephalopathy (GBR)", 6 July 2000 and its update of 11 January 2002. These opinions are available at the following Internet address:

<http://europa.eu.int/comm/food/fs/sc/ssc/outcome_en.html>

This report, and the opinion of the SSC based on it, is now serving as the risk assessment required by the TSE-Regulation EU/999/2001 for the categorisation of countries with regard to their BSE-status. The final BSE-status categorisation depends also on other conditions as stipulated in annex II to that TSE-Regulation.

1. Data

- The available information was sufficient to carry out the qualitative assessment of the GBR.

Sources of data

- Country dossier (CD) consisting of information provided from the country's authorities in 1998.
- Annual TSE report to the Commission from the Austrian Veterinary Authorities for 1998, 1999, and 2000.
- Monthly report to the Commission on BSE surveillance and monitoring
- Clarification and comments on the draft GBR reports of 1999 and 2000.
- Application and additional information for the determination of the BSE status, January 2002.

Other sources:

- EUROSTAT data on export of "live bovine animals" and on "flour, meal and pellets of meat or offal, unfit for human consumption; greaves", covering the period 1980 to 2000.
- UK-export data (UK) on "live bovine animals" and on "Mammalian Flours, Meals and Pellets", 1980-1996. As it was illegal to export mammalian meat meal, bone meal and MBM from UK since 27/03/1996, exports indicated after that date should only have included non-mammalian MBM.
- Export data from the Czech Republic, Cyprus, Estonia, Lithuania, Slovenia and Switzerland.
- Final reports of Animal Health Missions to Austria with regard to BSE of the European veterinary inspection services (FVO) in 1996, 1998 and 2001.

2. EXTERNAL CHALLENGES

2.1 Import of cattle from BSE-Risk¹ countries

Table 1 shows all cattle imports to Austria from BSE-risk countries. It contains export data from either Eurostat or national export statistics as well as the import data provided by the Country.

According to UK export statistics, only one bull was exported from the UK to Austria during the period 1980 - 1987. In 1988/89/90 the country dossier indicates that 214, predominantly Scottish Highland, breeding cattle were imported for extensive farming. Eurostat shows much smaller numbers for export. Since 1990 import of live cattle from the UK was prohibited.

All cattle that were imported from the UK between 1988 and 1990 have been registered and recorded by the official veterinarians and put under supervision by the veterinary authority since 1990 (Decree of June 1990). This was extended to all cattle imported from countries that declared their first case of BSE. No cases of BSE have been detected in imported cattle so far and animals from countries with domestic BSE still alive are under restrictions. Those animals will not be slaughtered and their movement is strictly supervised.

¹ BSE-Risk countries are all countries already assessed as GBR III or IV or with at least one confirmed domestic BSE case.

Country	data	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	0	1	Total
Belgium	CD																2625	135	247					3007
	other								14		23		33	43	80	54	17	54	90	142		2	53	605
Czech Rep.	CD									742	2832	3625	416	416	292				167					8490
	other														48		8	158	38	930	149	14	37	1382
Denmark	CD											62	345	262	381	391	228	37	159					1865
	other											72	352	268	454	700	104	108	132	1420	949	470		5029
France	CD					6												30						36
	other	6	14	4		6	10			1	11	22					16	174	51	98	97	462		972
Germany	CD	3237	2773	771	253	5	24	163	83	400	192	232	71	36	174	823	21102	12505	22881					65725
	other	36	2796	782	326	13	34	135	117	498	266	251	229	42	415	1189	4991	10557	14422	20389	23787	36013		117288
Hungary	CD					350						8390	696	27			1318	270						11051
	other																							0
Italy	CD													23	68		68		1079					1238
	other									7	2						64	479	1173	2355	181	56		4317
Luxembourg	CD								9							50								59
	other																				28	28		56
Netherlands	CD														19		127	156	750					1052
	other								2			70			25		55	709	139	389	4146	32		5567
Poland	CD			5369	15172	1750	2703	10197	1507	11641	11490	22382	3720	3720	1718	4710	1256		1113					98448
	other																							0
Slovak Rep.	CD																870	226	160					1256
	other																							0
Slovenia	CD																							0
	other									2418					48									2466
Spain	CD																34							34
	other																					60		60
Switzerland	CD																							0
	other						2			1		3	3	6	5	4	7	18		1				50
UK	CD	14							70	82	82													248
	other			1					5	30	84													119
ALL TOTALS																								
non UK	CD	3237	2773	6140	15425	2111	2727	10360	1599	12783	22904	26997	4579	4457	2652	7292	26580	13089	26556	0	0	0	0	192261
	Euro	42	2810	786	326	19	46	135	133	2925	302	418	617	359	1075	1947	5262	12257	16045	25724	29339	37188	37	137792
UK	CD	14	0	0	0	0	0	0	0	70	82	82	0	0	0	0	0	0	0	0	0	0	0	248
	Euro	0	0	1	0	0	0	0	0	5	30	84	0	0	0	0	0	0	0	0	0	0	0	120

Table 1: Live cattle imports into Austria (CD) and corresponding exports from BSE risk countries. Source for export data: Eurostat and UK export statistics and, where available, export statistics from other BSE risk countries. Note: Only imports in Risk periods are taken into account. Risk periods are defined according to the SSC opinion of January 2002.

According to the CD, cattle were imported from several European countries which in the meantime confirmed BSE in their national cattle herd, particularly Germany, (imports were stopped when a first case of BSE was notified in these countries).

Substantial imports, mainly of young calves, have entered Austria from Eastern Europe. Although this group of animals is assumed not to carry high infective loads of BSE when they are slaughtered very young for veal, it is also assumed that a small proportion of them could have entered the domestic stock and reached adult age.

It appears that of all bovine imports 186,242 animals or 98.9% of all cattle imports acknowledged in the CD came from the Czech Republic, Germany, Hungary, Italy, Poland, Slovak Republic, and Spain in periods when there was already a risk that such exports could carry the BSE-agent. These imports were not taken into account when assessing the external challenge to Austria in 2000 because the countries of origin had not confirmed BSE cases.

2.2 Import of MBM² or MBM-containing feedstuffs from BSE-Risk countries

Table 2 shows all MBM imports from BSE-risk countries. It contains MBM export data from Eurostat and national export statistics as well as MBM import data provided by the Country.

MBM has been imported, based on a permit system. The imports came mainly from France (up to 1991), Germany and Italy. The annual importation from the latter two ranges from ~7000 tonnes in the late '80s to 500 tonnes in 2000. The import of MBM from the UK has been prohibited since 1990.

It appears that 33.926 tons of MBM, corresponding to about 75% of all MBM imports acknowledged in the CD came from the Germany and Italy in periods when there was already a risk that such exports could carry the BSE-agent. According to Eurostat 78.168 tons were exported from IT and DE to Austria. This corresponds to 83% of all exports from EU-Member states to Austria. Imports from DE and IT were not taken into account when assessing the external challenge to Austria in 2000 because they had no confirmed BSE cases.

² For the purpose of the GBR assessment the abbreviation "MBM" refers to rendering products, in particular the commodities Meat and Bone Meal as such; Meat Meal; Bone Meal; and Greaves. With regard to imports it refers to the customs code 2301 10 "flours, meals and pellets, made from meat or offal, not fit for human consumption; greaves".

Country	data	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	0	1	Total
Denmark	CD								41	5	6		4											56
	other							8							10									18
France	CD	3112	3872			677	380	267	316	344	187													9155
	other	3984	2973	2726	1135	676	380	315	316	344	237	20	15											13121
Germany	CD	1786	2091			3779	926	1460	3047	4726	2862	1253	2613	1247	942	9	1670	1367	1124					30902
	other	2468	3370	3457	2603	6114	4692	4375	5313	5048	3141	3781	2831	1806	1260	1182	1204	858	728	876	1265	334		56706
Hungary	CD			251	83	237					219						58	38	29					915
	other																							0
Ireland	CD																							0
	other																					923		923
Italy	CD					696	86	224	393	607	164		284	447					123					3024
	other				764	2301	2814	1784	1576	1835	2030	902	1257	1681	934	600	543	395	641	975	218	212		21462
Netherlands	CD						114	46									103							263
	other										20	25					24	165	164	431	1413			2242
Slovenia	CD																							0
	other		238	33	10	45	0,1				300	24			21						20			691
Switzerland	CD			30			45	145	178	152	73	60												683
	other									18			31										52	101
UK	CD																							0
	other																							0
TOTALS																								
non UK	CD	4898	5963	281	83	5389	1551	2142	3975	5834	3511	1313	2901	1694	942	9	1831	1405	1276	0	0	0	0	44998
	other	6452	6343	6183	4502	9106	7886	6482	7205	7227	5428	4728	4103	3487	2194	1792	1771	1418	1533	2282	3819	546	0	94472
UK	CD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2: MBM imports (metric tons) into Austria (CD) and corresponding exports from BSE risk countries. Source for export data: Eurostat and UK export statistics and, where available, export statistics from other BSE risk countries. Note: Only imports in Risk periods are taken into account. Risk periods are defined according to the SSC opinion of January 2002.

2.3 Overall assessment of the external challenge

The level of the external challenge that has to be met by the BSE/cattle system is estimated according to the guidance given by the SSC in its final opinion on the GBR of July 2000 (as updated in January 2002).

- Live cattle imports:

Between 1980 and 2000 the country imported about 190.000 (CD) live cattle from BSE risk countries, of which 248 (CD) came from the UK. Together these imports represent a very high external challenge. Broken down to 5 year periods the resulting external challenge is as given in table 3. This assessment takes into account the different aspects discussed above that allow to assume that certain imported cattle did not enter the domestic BSE/cattle system, i.e. were not rendered into feed. It shows that in the early eighties the external challenge from cattle import was low. It then was high for the periods 1986-1990 and 1991 to 1995 and very high for the period 1996-2000

- MBM imports:

Between 1980 and 2000 the country imported about 45,000 (CD) or 94,000 (Eurostat) tons MBM from BSE risk countries other than the UK. These MBM imports represent a very high external challenge. Broken down to 5 year periods the resulting external challenge is as given in table 3. It indicates that MBM imports were always posing a very high external challenge.

External Challenge experienced by <u>AUSTRIA</u>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
Period	Overall Level	Cattle imports	MBM imports	Comment
1980-1985	Very High	Low	Very High	
1986-1990		High		
1991-1995		High		
1996-2000		Very High		

Table 3: External Challenge resulting from live cattle and/or MBM imports from the UK and other BSE risk countries. The Challenge level is determined according to the SSC-opinion on the GBR of July 2000 (as updated in January 2002).

On the basis of the available information, the overall external challenge is as given in the table above. As a result of the combined effect of the cattle and MBM imports, Austria has experienced a very high external challenge from 1980-2000. This makes it very likely that the BSE-agent was imported into the country.

3. STABILITY

3.1 Overall appreciation of the ability to avoid recycling of BSE infectivity, should it enter processing

Feeding

- Since 1954 the inclusion of MBM in compound feed for ruminants has been prohibited by the feed legislation. This is regarded as being a *de facto* MMBM-ban. Its efficiency was supported by the fact that plant protein imported from USA on the basis of a bilateral tariff of trade agreement (specifically no customs on soybean products) which still exists, has made soybean meal very competitive throughout the period taken into consideration (1980-2000).
- A formal ban to feed any animal-protein to ruminants was introduced into the veterinary legislation of AT on 28 November 1990.
- A “total feed ban” is in force since January 2001, prohibiting feeding of MBM to any farmed animals.
- The assumed compliance with the feed regulations of 1954, and the animal protein ban of 1990 is regarded as having been generally satisfactory. However, cross-contamination (see below) or inappropriate use of MBM containing feedstuffs for other farmed animals cannot be fully excluded, particularly before the formal feed ban of 1990.
- It is concluded that, on the basis of existing legislation and controls, MBM has not been deliberately included into ruminant compound feeds destined for the Austrian market since the 1950s.

Potential for cross-contamination and measures taken against

- In February 2001 there were 135 commercial feed mills in AT of which 122 used mammalian proteins in 1999 and 2000. All mills producing ruminant feeds were also producing non-ruminant feed – and none of these feed mills has completely separated production lines.
- About 1.000.000 tons of compound feed is produced in commercial feed mills, about 20% for cattle. In addition home compounders, using protein concentrates delivered by commercial feed mills, produce about 3.000.000 tons of feed.
- Cross-contamination in feed mills (and by home compounders producing for different species) was possible throughout the reference period as feed for ruminants and non-ruminants was produced in the same production lines.
- The GMP, as described in the “Manual for good practice in order to control the spreading of animal meals in ruminant feed” issued by FEFAC (last amended 9/11/98), is applied by the Austrian feed industry. In order to reduce the risk of cross-contamination in feed mills, flushing had to be carried out before changing from batches that include MBM to batches without MBM.
- Cross-contamination could also not be excluded during transport, storage and use on farms. The latter is of particular importance because a significant fraction of all compound feed is produced on farm.

- Potential cross-contamination of ruminant feed with MBM is controlled by sampling and subsequent microscopic examination. This has been documented since 1997.
- The 2001 FVO mission report state that between 1997 up to and including the year 2000, 544 feed samples were checked by microscopic testing for their MBM content. This test can distinguish fish bones from other animal particles, but not between poultry and mammalian. Two samples were clearly positive (content >0.5%), 25 contained traces (<0.5%) and 42 samples contained small traces (<0.1%). Depending on their severity, breaches are subject to legal measures ranging from formal written warnings to fines.
- The FVO report from spring 2001 concludes that if contaminated meat and bone meal was on the Austrian market until December 2000, it can not be excluded that cattle had access to the BSE-agent because the feed ban of 1990 (or even 1954) was not effectively enforced.

Therefore it is assessed that as long as MBM was allowed to be fed to non-ruminant farmed animals (until end of 2000) cattle could have had access to (traces of) mammalian MBM.

- The AT authorities presented data on their feed ban control activities in 2001, showing that cross-contamination of MBM into ruminant feed was still an issue in January and February 2001. However, since March 2001 the number of MBM findings in ruminant feed dropped significantly and became very low. It is concluded that the “total feed ban” is effectively enforced since then.

Rendering

- Domestic production of MBM was about 16,900 tons in 1997 destined for pig and poultry feed. Production in previous years is assumed to have been in the same order of magnitude.
- Up to 1 October 2000, when an SRM ban was implemented, raw material for rendering consisted of slaughterhouse waste from animals fit for human consumption, any animal waste (including SRM), and fallen stock. There was no separation of ruminant and non-ruminant raw material.
- Four rendering plants process since mid 1988 all material into MBM applying a batch pressure cooking process according to standard.
- In addition, there is one emergency rendering plant for high-risk materials. It is stated that similar rendering practices were used before 1988. As reason for this it is indicated that rendering was regarded to be primarily for hygienic purposes and therefore the conditions had to be sufficient to destroy the most resistant agent known.
- According to the country, effective reviews of the rendering plants occur on a regular basis. The 1996 report of the FVO inspection, however, revealed that in one plant the rendering parameters were not sufficiently maintained. The Austrian authorities explained that these irregularities were found to have been a technical problem linked to the inappropriate installation of the temperature sensor that underestimated the temperature in the cooker. This was immediately rectified. The 1998 FVO inspection noticed the improvement in the system.

- Since 1/1/2001 all MBM produced in the country is to be incinerated.

SRM and fallen stock

- Before 1 October 2000, SRM was included in the material rendered for feed production, together with fallen stock, throughout the reference period.
- On 1/10/2000 an SRM ban came into force and SRM is now processed at designated plants and incinerated. However, the mission report from 2001 concludes that although actions have been taken to implement EC requirements, some non-compliance and deficiencies were still found. Given the fact that no rendered material can be fed to farmed animals (except fur animals), and that all MBM produced in the country is to be incinerated, the risk that any small failures in the SRM ban implementation could lead to exposure of cattle is regarded to be negligible.

Conclusion on the ability to avoid recycling

- In light of the above-discussed information it is possible that the BSE-agent, if it entered the territory of Austria, has reached domestic cattle and was recycled as unintentional exposure of cattle to MBM was to be expected until 1 March 2001.

3.2 Overall appreciation of the ability to identify BSE-cases and to eliminate animals at risk of being infected before they are processed

Cattle population structure

- In 1987 the total national cattle population comprised 2.59 million head. This decreased slowly to 2.163 million in 1997.
- In 1996 cattle kept for beef production made-up about 40% (or 0.934 million) of the entire herd, and dairy cattle made-up about 60% (or 1.338 million).
- The number of dairy cows above 2 years of age decreased from 1.042 million in 1987 to 1.019 million in 1997.
- The total number of cattle slaughtered decreased from 852,000 in 1985 to 736,000 in 1997. In 1997, 149,000 calves, 409,000 animals between 1 and 2 years of age, and 178,000 adult cattle were slaughtered.
- The most relevant type of cattle in Austria is the dual production type as represented by Simmenthal and Braunvieh breeds. Only a small proportion of cattle breeders has specialised on pure beef production. The average herd size is relatively small (about 10 heads).
- The large majority of farms is raising cattle as well as pigs and/or poultry. About 75% of all cattle are kept in these farms.
- Cattle used to be identifiable by the use individual marks, until 1995. Since then, cattle are, according to the CD, marked and identified by ear tags in accordance with EU legislation. Monitoring of movement has been improved recently by introducing double ear tags and a central database, in which all animals born after 1-1-1998 are registered.

BSE surveillance

- The surveillance of herds and flocks is based on the system of notification of transmissible diseases, also in cattle. All persons involved in animal husbandry are obliged to communicate to the state veterinary service every suspect case of an infectious disease.
- BSE is a notifiable disease in the country since 1991. Regulations include complete compensation of the full market value in case of BSE suspicion or confirmation. Any case of a TSE will lead to destruction of the complete herd or flock.
- Passive surveillance including training of persons involved and an adequate education has been largely improved over the past decade.
- Surveillance of neurological disorders in ruminants has been in place, especially in areas where rabies was present. Full compensation is paid for all rabies suspect cases and since 1990 it is required to examine all rabies-negative cattle brains for BSE-lesions (histopathologically).
- Between 1991 and 1997, approximately 60 to 80 brains of cattle with nervous symptoms have been annually examined for the presence of BSE lesions. It is unclear whether these were all from adult cattle. This number is slightly below the expected number of cases as stated by the OIE in 1997. NoBSE cases have been found as a result of this passive surveillance.
- An additional BSE monitoring and surveillance programme was initiated in 1998 to reach the OIE requirements. In 1998, 72 cattle brains from cattle with progressive (neurological) disorders were examined for BSE, but only 35 of those were from animals belonging to the relevant sub-populations (animals displaying symptoms where BSE cannot be excluded, moribund animals without signs of infectious or traumatic illness and animals with other progressive disorders).
- In 1999, 137 out of 598 samples came from these sub-populations and the corresponding figure for 2000 was 280 out of 757 brains that were examined.
- All these tests were negative for BSE.
- Laboratory testing included histopathology and for positive or inconclusive cases, additional analyses were performed in Tübingen, Germany. In 1999 immunohistochemistry was introduced.
- From 1 January 2001, the surveillance has been extended to include the following categories of bovines:
 - all slaughtered cattle over 30 months of age;
 - cattle that could have consumed potentially contaminated feed over 30 months;
 - first generation of offspring to BSE infected dams over 30 months;
 - all fallen stock over 20 months.
- In addition all cattle over 20 months of age displaying CNS symptoms and all emergency slaughtered cattle over 20 months are targeted.

- Samples found to be “positive” in the rapid test are subjected to immunohistochemistry and if still positive, they are submitted to a reference laboratory (Weybridge, UK or University of Bern) for confirmation.
- From January to December 2001, a total of 225,588 cattle had been tested of which 96% were healthy animals subject to normal slaughter. Four per cent of the animals tested (9,513) belong to the risk groups (fallen stock, emergency slaughter, animals found sick at ante-mortem inspection). Only 2 animals have been tested based on clinical suspicion. In the period 1.1.2002 to 31.3.2002 in Austria 57,638 cattle were tested, without any additional BSE case.
- On 6 December 2001, Austria reported its first case of BSE. The animal was a 6-year old beef animal, found among healthy cattle destined for slaughter. As a consequence of this, a culling system was implemented for the first time. All bovines on the affected holding were culled and destroyed and all animals in the herd over 24 months of age were tested for BSE. None was positive.
- Up to 1997, the surveillance system was relying on notification of CNS-suspects, and the number of brain samples from suitable animals that were examined annually was below the requirements of the OIE as established in 1997. It cannot be expected that the system would have been able to identify single BSE cases, should they have occurred. Also the small number of BSE suspects notified in 2001 indicates a potential shortcoming.
- Measures initiated in 1998 improved the system but it remained insufficient.
- The active surveillance that started in 2001 has substantially improved the ability to identify cases of BSE. With the high number of tests needed to find the first case it is confirmed that the incidence of BSE in Austria is probably very low.

3.3 Overall assessment of the stability

For the overall assessment of the stability, the impact of the three main stability factors (i.e. feeding, rendering and SRM-removal) and of the additional stability factor surveillance, has to be estimated. Again, the guidance provided by the SSC in its opinion on the GBR of July 2000 is applied.

Feeding

Including MBM into cattle feed was not allowed since 1954 (feed standards) and since 1990 the use of MM, MBM, animal meal, blood meal, bone meal etc. for feeding ruminants is prohibited. As feeding mammalian MBM to non-ruminants was allowed until end 2000, and feedmills produced feed for ruminants and non-ruminants in the same lines, cross-contamination of cattle feed with animal protein is likely to have occurred. Feed controls have been implemented since 1990 but data on controls and findings are only available since 1997, indicating that cross-contamination still appeared until February 2001, when the situation significantly improved. Feeding is therefore regarded “**reasonably OK**” since 1980 and as “**OK**” since (March) 2001.

Rendering

Before 1996 rendering was already “**reasonably OK**”. From 1996 onwards, when the system was further improved and rendering is regarded to be “**OK**” since then.

SRM-removal

Before October 2000, there was no SRM ban. Therefore SRM removal was "**not OK**" up to 1/10/2000. Since October 2000, with the ban in place, the situation improved. In addition the likelihood that SRM are rendered and the produced MBM reaches Austrian cattle is regarded to be low enough to judge SRM-removal from the feed chain as being "**OK**".

BSE surveillance

Passive BSE surveillance is in place since the late 80s but only since 1999-2000 the number of cattle brains annually checked for BSE is above the OIE-requirements as established in 1997. Only two BSE suspects were notified in 2001, which indicates a limited ability to detect cases by this approach. The targeted active surveillance that started in 2001 has substantially improved the ability to find BSE-infected animals, as demonstrated by the first case found in December 2001. It is concluded that surveillance did somewhat reduce stability until 1998, its impact was then neutral and it is enhancing the stability since 2001.

Stability of the BSE/cattle system in <u>AUSTRIA</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM removal	BSE surveillance
1980-1996	unstable	Reasonably OK	Reasonably OK	Not OK	↓
1997-2000	neutrally Stable		OK		→ since 1998
2001-current	optimally stable	OK		OK	↑

Table 4: Stability resulting from the interaction of the three main stability factors and the BSE surveillance. The stability level is determined according to the SSC-opinion on the GBR of July 2000.

On the basis of the available information it has to be concluded that the country's BSE/cattle system was unstable until 1996, i.e. it would have slowly but constantly recycled and amplified BSE infectivity. Since 2001, it is optimally stable due to the introduction of an SRM ban in combination with the fact that domestic MBM is incinerated and because the measures against cross-contamination are assessed to be sufficient since March 2001.

4. CONCLUSION ON THE RESULTING RISKS

4.1 Interaction of stability and challenges

In conclusion, the stability of the Austrian BSE/cattle system in the past and the external challenges the system has coped with are summarised in the table below. From the interaction of the two parameters "stability" and "external challenge" a conclusion is drawn on the level of "internal challenge" that emerged and had to be met by the system, in addition to external challenges that occurred.

- The BSE/cattle system of Austria has been exposed to a very high external challenge between 1980–2000, as a result of both imports of MBM and of live cattle from BSE-risk countries at a period when these imports did already carry a risk of carrying the BSE agent.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN AUSTRIA			
Period	Stability	External Challenge	Internal challenge
1980-1996	unstable	Very High	Likely to be present and growing
1997-2000	neutrally stable		Likely to be present and constant
2001-current	optimally stable	<i>Not assessed</i>	Present but declining

Table 5: Internal challenge resulting from the interaction of the external challenge and stability. The internal challenge level is determined according to guidance given in the SSC-opinion on the GBR of July 2000.

An external challenge resulting from cattle import could only lead to an internal challenge once imported infected cattle were rendered for feed and this contaminated feed reached domestic cattle. Cattle imported for slaughter would normally be slaughtered at an age too young to harbour plenty of BSE infectivity or to show signs, even if infected prior to import. Breeding cattle, however, would normally live much longer and only animals having problems would be slaughtered younger. If being 4-6 years old when slaughtered, they could suffer from early signs of BSE, being approaching the end of the BSE-incubation period. In that case, they would harbour, while being pre-clinical, as much infectivity as a clinical BSE case. Hence cattle imports could have led to an internal challenge about 3 years after the import of breeding cattle (that are normally imported at 20-24 months of age) that could have been infected prior to import.

In the case of Austria potentially infected cattle could theoretically have been imported to Austria since the early 80s from DE, PL, and later also from the CZR and SK. This indicates that a theoretical risk exists that the BSE agent was introduced, due to cattle imports, into the Austrian BSE/Cattle system since the second half of the 80s.

On the other hand imports of contaminated MBM, MM, BM or greaves would lead to an internal challenge in the year of import, if fed to cattle. The feeding system is of utmost importance in this context. If it could be excluded that imported, potentially contaminated feed stuffs reached cattle, such imports might not lead to an internal challenge at all.

In the case of Austria significant amounts of potentially contaminated MBM were imported from FR, DE, IT, and SK since the early 80s.

- For a major part of the period assessed, between 1980 and 1996, the high external challenge met a system that was unstable and which potentially recycled and amplified BSE infectivity. This might have resulted in an internal challenge already in the early 80s but probably since the late 80's. Since then it was likely to be present and growing. The likelihood of this scenario is significantly increased by the continuous inflow of potentially BSE-contaminated MBM and live

animals. Since 1995, the year of birth of the Austrian BSE case, BSE was present in the country, albeit at a very low level of prevalence.

- Since (March) 2001 the system is optimally stable and it is therefore assumed that the internal challenge will decline at the rate at which cattle born before optimal stability was reached leave the system.

4.2 Risk that BSE infectivity entered processing

- The BSE-agent was potentially imported into the country already in the early 80s via infected MBM but also by live cattle imports. Around the mid 80s the first BSE incubating cattle could have entered the Austrian processing system while approaching the end of the incubation period. In view of the potentially increasing internal challenge, fuelled by internal recycling of the agent as well as continuing imports of potentially contaminated MBM and live cattle, this risk increased since then. It will decrease when animals born after the date the system became stable and optimally stable start entering processing.

4.3 Risk that BSE infectivity was recycled and propagated

- It is likely that BSE infectivity was recycled and propagated as soon as it entered processing, e.g. since the mid 80s. Recycling continued to be likely until the late 2000, despite the reasonably OK feeding and rendering. Since (March) 2001 recycling of BSE infectivity is regarded to be highly unlikely.

5. CONCLUSION ON THE GEOGRAPHICAL BSE-RISK

5.1 The current GBR

- The current geographical BSE risk (GBR) level is *III*, i.e. it is *confirmed at a lower level* that domestic cattle are (clinically or pre-clinically) infected with the BSE-agent.

5.2 The expected development of the GBR

- Assuming that measures in place continue to be appropriately implemented the GBR will decrease over time at the rate at which already infected animals leave the system. However, this does not exclude that other cattle infected in the past may be discovered as clinical cases in the future.
- If the measures in place are effectively implemented import of live animals cannot increase the risk because the infectivity that could theoretically be harboured by them would not reach domestic cattle.