

**Final report on  
the updated assessment of  
the Geographical BSE-Risk  
(GBR) of  
LITHUANIA - 2003**

**10 April 2003**

**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](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. However, the lack of most information concerning the period before 1991 adds to the remaining uncertainty. Reasonable worst case assumptions are used in cases where the available information was not complete.

### Sources of data

- Country dossier (CD) consisting of information provided from the country's authorities in 2000-2002.

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" (customs code 230110), covering the period 1980-2001.
- UK-export data (UK) on "live bovine animals" (1980-1996) and on "Mammalian Flours, Meals and Pellets", 1988-1996. As it was illegal to export mammalian meat meal, bone meal and MBM from UK since 27/03/1996, exports indicated after that date under customs code 230110 should only have included non-mammalian MBM.
- Export data from Cyprus, the Czech Republic, Estonia, Hungary, Romania, Slovenia and Switzerland.

## 2. EXTERNAL CHALLENGES

Lithuania became an independent country in 1991 before it was part of the Soviet Union. Therefore, Eurostat and other data for the Former Soviet Union are also presented for this assessment in order to indicate the overall context in that period.

### **2.1 Import of cattle from BSE-Risk<sup>1</sup> countries**

Table 1 provides an overview of the data on live cattle imports, as provided in the country dossier (CD) and the corresponding data on relevant exports as available from BSE risk countries that exported to Lithuania. Only data from risk periods are indicated, i.e. those periods when exports from a BSE risk country already represented, according to the SSC opinion on the GBR method of January 2002, an external challenge.

- According to the CD, Lithuania did not import cattle from the UK since 1980. This information is confirmed by the export statistics of the UK and Eurostat export data.
- According to the CD, Lithuania imported 2,045 cattle from Denmark and Germany between 1993 to 2000. Data on cattle imports before 1991 are not available.
- Out of 1,854 cattle imported between 1993 and 2000 from Germany, 1,281 are still alive (158 died, the others were slaughtered) and out of the 191 cattle imported between 1994 and 1999 from Denmark, 144 are still alive (8 died, 39 have been slaughtered). No information was provided on the date when the cattle that have been slaughtered or that have died were imported. It is assumed that the cattle, which were imported in the latest years are still alive.

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

- According to Eurostat and other data, Lithuania imported 1,911 cattle between 1993 to 2000, i.e. 1,703 animals from Germany, 205 cattle from Denmark, 2 cattle from the Czech Republic (1997) and 1 individual cattle from Switzerland (1997).
- Information on imports of cattle from BSE risk countries to the Lithuanian territory of former Soviet Union before 1991 is not available. According to Eurostat and other data, 66,374 cattle have been exported from EU Member States to the former Soviet Union between 1980-1991. A reasonable worst case hypothesis is that a certain number of those imports remained in the part of the Soviet Union corresponding to the territory of Lithuania.

## **2.2 Import of MBM<sup>2</sup> or MBM-containing feedstuffs from BSE-Risk countries**

- According to Eurostat and other data, 36,665 tons of MBM were exported to Lithuania between 1994 to 2001, mostly from Denmark (29,324 tons), and to a smaller extent from Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Spain and the UK. The CD data does not show any imports from Finland or Spain (table 2).
- During the GBR process, Lithuania widely confirmed Eurostat data. Lithuania imported 36,426 tons of MBM between 1994 to 2001, mainly from Denmark (29,097 tons) and also from Belgium, France, Germany, Ireland, Italy, the Netherlands and the UK. Data prior to 1991 are not available.
- It is assumed that the MBM imports from the UK in 1999 and 2000 were of poultry origin. The CD indicates that these imports from the UK were re-imported blood meal from pigs.
- Since 1992, in accordance with its Law on Veterinary Activities, Lithuania has banned imports of MBM and of feedstuffs containing MBM from countries where BSE cases were reported. However, Eurostat has registered significant exports of MBM from Denmark, Belgium, Germany and the Netherlands to Lithuania in the period 1994-2001.

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<sup>2</sup> 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 230110 “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	
Czech Rep.	CD																								0
	other																			2					
Denmark	CD															14		8	64	35	70				191
	other															29				35	141				205
Germany	CD														10	13	174	220	691	562	182	2			1854
	other														10	14	76	71	744	579	209				1703
Switzerland	CD																								0
	other																			1					1
UK	CD																								0
	other																								0
TOTALS																									
non UK	CD	0	0	0	0	0	0	0	0	0	0	0	0	0	10	27	174	228	755	597	252	2	0		2045
	other	0	0	0	0	0	0	0	0	0	0	0	0	0	10	43	76	71	747	614	350	0	0		1911
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	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	0

**Table 1: Live cattle imports into Lithuania (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 (grey shaded) are taken into account for assessing the external challenge. Risk periods are defined according to the SSC opinion of 2000 as amended in 2002.**

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																	731	252	2018				3001
	other																	731	252	2018				3001
Denmark	CD															36	959	1245	2142	5095	15113	4507		29097
	other															36	959	1245	1922	4226	13483	7453		29324
Finland	CD																							0
	other																		276					276
France	CD																						424	424
	other																						344	344
Germany	CD																24	25	37	52	247	646		1031
	other																24	25	37	52	247	501		886
Ireland	CD																	430						430
	other																	430						430
Italy	CD																			870	997			1867
	other																			870	997			1867
Netherlands	CD																	386				118	72	576
	other																	386				118	32	536
Spain	CD																							0
	other																						1	1
UK	CD																					144	181	325
	other																					144	89	233
TOTALS																								
non UK	CD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	983	2817	2431	8035	16475	5649	0	36426
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	983	2817	2487	7166	14845	8331	0	36665
UK	CD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144	181	0	325
	other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144	89	0	233

**Table 2: MBM imports into Lithuania (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 (grey shaded) are taken into account for assessing the external challenge. Risk periods are defined according to the SSC opinion of 2000 as amended in 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:

No data were available for the period before 1991. In total Lithuania imported over the period 1991 to 2001 2,045 live cattle (CD) from BSE-risk countries, of which none (CD) came from the UK. Broken down to 5-years 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.

- MBM imports:

No data were available for the period before 1991. In total Lithuania imported over the period 1991 to 2001 36,751 tons of MBM (CD data) from BSE-risk countries, of which 325 tons (CD data) came from the UK. Broken down to 5-years periods the resulting external challenge is as given in table 3.

<b>External Challenge experienced by LITHUANIA</b>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
<b>Period</b>	<b>Overall Level</b>	<b>Cattle imports</b>	<b>MBM imports</b>	<b>Comment</b>
<b>1980 to 1990</b>	<b>Significant*</b>	<b>unknown</b>	<b>unknown</b>	Reasonable worst case assumption
<b>1991 to 1995</b>	<b>High</b>	<b>Negligible</b>	<b>High</b>	
<b>1996 to 2000</b>	<b>Very high</b>	<b>Very low</b>	<b>Very High</b>	

**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). \*Significant because it is assumed that some external challenge was experienced also before the independence of Lithuania.

On the basis of the available information, the overall assessment of the external challenge is as given in the table above.

Only few data were available for the period before 1991 and a reasonable worst case assumption was made that it is likely that the BSE-agent entered the country's territory already at that time.

### 3. STABILITY

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

##### Feeding

- The total production of compound feed in 2000 and 2001 was about 385,000 and 370,391 tons respectively.
- In 1999, 16,415 tons, in 2000 18,441 tons and in 2001 9,338 tons of ruminant feed have been produced.
- According to the CD, in Lithuania there have been 51 feedmills in 1999, 52 feedmills in 2000 and 49 in 2001. More than 20 multi-species feed mills existed until 2000.

No. of feedmills in	Ruminant, pig and/or poultry feed production	Ruminant feed production only	Pig feed production only	Poultry feed production only	Pet food production only	Other
1999	22	2	15	2	3	7
2000	21	2	18	3	3	5
2001	14	2	18	3	1	11

**Table 4:** Number and type of feedmills in Lithuania.

- According to the CD, there are no on-farm-mixers keeping cattle in Lithuania.

##### Use of MBM in cattle feed

- While the CD claims that Lithuania has never fed and does not presently feed mammalian MBM to bovines, it does not provide any evidence for this statement. The information that about 20% of the MBM imported from Denmark were destined for cattle even contradicts this claim.
- According to the CD, the daily ration for dairy cattle consists of hay/straw, silage and compound feed of plant origin.
- In view of the fact that a significant dairy cattle population exists that could potentially receive supplementary feed, and that it was legally possible until December 2000, it is assumed that feeding cattle with MBM did happen in Lithuania.

##### Feed bans

- According to the CD, since December 2000 the import of MBM and all kind of feedingstuffs, which contain MBM is prohibited.
- Since December 2000 it is prohibited by order of the Director of the State Food and Veterinary Service<sup>3</sup> to use animal proteins, with the exception of milk and milk products, for the production of feed for "all species of animals, poultry and fish".

<sup>3</sup> Order of the Director of the State Food and Veterinary Service n° 48 of 01/02/2001 on the epizootic monitoring of transmissible spongiform encephalopathies and the analysis and control of risk factors.

Potential for cross-contamination and measures taken against

- Due to the relatively high number of multi-species feedmills, producing feed for monogastric animals and for ruminants on the same production line and the traditional use of MBM in pig and poultry rations a potential for cross-contamination existed. Therefore, it is assumed that cross-contamination occurred.
- Since December 2000, it is mandatory in feed mills to keep records of acquired feed raw materials, the production of feed, storage and marketing of produced feed. Each batch must be identified.
- According to the CD, cleaning procedures in feed mills between manufacture of feed for different species are claimed to be obligatory.
- To avoid cross-contamination of imported MBM, an order of the State Food and Veterinary Service of July 2002 requests, that this MBM may only be delivered to licensed companies. Before they can ask for a license, companies have to provide storage facilities for the MBM. The feedingstuffs containing this MBM can only be sold to registered farms to ensure a safe use.

Control of feed bans and cross-contamination

- It is clearly stated in the CD that until the middle of 2000 there were neither measures nor controls in place to prevent cross-contamination of cattle feed with MBM.
- According to the CD, the Law on Feedingstuffs contains a detailed sampling programme covering sampling principles, sampling procedures and laboratory examination. The number of samples to be taken depends on the production size and risk factors. In June 2000, a technical regulation on feed sampling came into force.
- Since March 2002, a microscopic method for the detection of certain processed animal proteins was introduced at the National Veterinary Laboratory for the official examination of feed for MBM. The requirements as laid down in Commission Directive 98/88/EC are followed.
- According to the CD, in 2002, 94 samples of imported feedingstuffs have been investigated. No information was provided on the results.
- However, according to available information, no clear instructions for the control of the feed ban exist. Finished ruminant feed or concentrates are not tested for the presence of MBM, and neither is raw material or feedingstuffs. Feed containing MBM is not clearly labelled to contain MBM. Moreover, ruminant feed is not sampled on the farms to be checked for the absence of MBM.
- No information like the number and frequency of controls, sampling data, and details on the analytical method used (threshold below which a sample is defined as free of MBM) was provided on the current control of the feed ban. Information on the latest results is also missing.

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Order n° 297 of 16/10/2000 on the control of BSE. Order n° 280 on the control of ovine and caprine scrapie. Order n° 01-13-1415 issued on 12/12/2000 on the ban to add processed animal proteins to feedstuffs.

### **Rendering**

- According to the CD, rendering takes place under batch processes at 133°C, 3 bar for at least 20 minutes and “during rendering all the data are registered. Such data are available at the rendering plant.” No evidence for the proper application of the mentioned conditions is provided in the CD. It is also not clear from what date onwards these conditions are applied. Moreover, according to the CD, “in rendering plants the processing takes about 2 hours or longer, because of outdated equipment and technology, which do not meet the EU requirements”.
- According to the CD, the only rendering plant has been sold to a private company in 2002, which plans to build a new rendering plant in 2003. This plant will ensure the processing of animal waste according to the 133°C/3<sup>bar</sup>/20<sup>min</sup> standard.
- According to available information, in Lithuania, all bovine animal waste including SRM and fallen stock is collected and rendered in the only rendering plant under batch pressure standards. The processed MBM made of SRM is stored on site or in dedicated storage waiting for incineration. In 2002, when the incineration facility was completed, incineration of MBM and fat commenced.
- According to the CD, the production data for the rendering plant are:

year	raw material (t)	MBM produced (t)	fat produced (t)
2001	10,328	1,695	370
2002	13,655	2,090	443

**Table 5: production data of the rendering industry**

- All MBM is packed in plastic bags and stored awaiting incineration.
- According to the CD, the processing and the production in the rendering plant has been “always” controlled by official veterinary inspectors. The production processes are controlled according to the technical requirements and quality and safety standards provided by the “Order No. 279 on the control of BSE” of October 2000, adopted by the Director of the State Food and Veterinary Service. However, no information on the frequency and outcome of controls has been provided.
- The main market outlets for domestic MBM production was the domestic market in Lithuania itself and export to the Russian Federation. Nowadays, the fat is sold to the Russian Federation and the MBM is or will be incinerated.

### **SRM and fallen stock**

- According to the CD, there was no SRM-ban and SRM was included in the material rendered for feed production together with fallen stock until the end of 2000.
- Since March 2001, Order No. 106 (amending Order No. 48 of February 2001) requires the removal, staining, separation and storage of SRM. SRM is defined as consisting of the entire head excluding tongue, the spinal cord and vertebral column from all cattle over 12 months of age. From cattle of all ages the intestines from duodenum to rectum, including the mesenteric lymph nodes, spleen and thymus have to be removed.
- According to other available information, removal of SRM as laid down in Order No. 48 started in March 2001 and was fully enforced since May 2001. According to the instructions, SRM has to be removed at slaughterhouse level.

- According to the CD, rendering of SRM, fallen stock and other animal waste is carried out at the rendering plant, which is under permanent official veterinary control. Rendering takes place under batch processes at 133°C, 3 bar pressure for at least 20 min. Rendered SRM is incinerated.
- There are official controls at State, district and county level. However, according to available information, controls seem to be insufficient and the system in place for the removal and disposal of SRM is not in line with the requirements described above and can not ensure that all SRM including fallen stock (cattle of all ages) is safely disposed of.

### **Conclusion on the ability to avoid recycling**

- In light of the above discussed information, it is assumed that the BSE-agent, should it have entered the territory of Lithuania, would have been recycled and amplified.
- This is based on the assumption that the pressure-cooking batch process has not been fully effective and that feeding of MBM to cattle happened as long as it was legally possible, at least due to cross-contamination. At the same time, SRM and fallen stock were rendered for feed until the end of 2000
- Since the total feed ban the risk of recycling should be significantly reduced.

### **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**

- Until 1994, the total cattle population of Lithuania counted about 2 to 2.5 million cattle. After 1994 this figure dropped to less than 1 million cattle, of which more than 50% are 24 month or older. Dairy cows reach normally an age of 6-7 years at slaughter.
- The number of cows declined from 738,000 in the early 90s to 438,000 in 2000. The total number of cattle older than 24 months was 558,876 in early 2002.
- The number of cattle slaughtered decreased from 305,910 cattle in 1995 to 241,879 cattle in 2001.
- Beef cattle farming only started in 1994 from small numbers of imported beef cattle.
- Around 54 % of the cattle holdings in Lithuania in 2001 keep less than 5 cattle (447,831 cattle in total) and around 13% of the farms had more than 151 cattle (109,591 cattle in total).
- The average annual milk yield is 4,084 litre per cow in large farms and 4,650 litres in (smaller) private cattle farms.
- According to the CD, there is no "exact information" available on co-farming of cattle and non-ruminants (pigs and poultry).
- Five large poultry farms exist in the country, keeping between 1-5 million poultry each. 25 pig farms keep more than 5,000 pigs each and 289 cattle farms keep more than 100 cattle each.

### BSE surveillance

- According to the CD, BSE-notification is compulsory in Lithuania since February 2001.
- The official definition of BSE suspects is in line with EU legislation.
- Awareness measures and training started in 1996: some laboratory staff has been trained on BSE diagnostic methods since 1996.
- Obviously, there are many legal texts covering BSE surveillance in Lithuania, which sometimes cover the same topics while other texts are transposed but not in force. Therefore, the current measures for BSE surveillance are not clear.

### Passive surveillance

- According to the CD, since June 2001, all bovine animals over 20 months of age that die or are slaughtered showing nervous symptoms have to be sampled.
- According to the CD, 43 and 80 BSE suspect cattle have been tested in 2000 and 2001 respectively. None of them was found to be BSE positive.

### Active surveillance

- In July 2001, Lithuania has introduced a rapid BSE post mortem test (ENFER) for BSE testing of healthy slaughtered cattle. All other samples have been tested using histopathology and the rapid post mortem test.
- According to the CD, an active surveillance programme is in place since July 2001. In 2001, 19,302 samples have been tested:
  - 18,798 healthy slaughtered cattle over 30 months of age,
  - 29 emergency and sick slaughtered cattle over 24 months,
  - 267 fallen stock over 24 months and
  - 208 risk group cattle.
- The sampling programme for 2002 intended to include about 100,000 cattle, of which:
  - 2,250 fallen stock over 24 months of age
  - all emergency slaughtered bovines over 24 months of age
  - all risk group bovines over 24 months of age (animals imported from BSE risk countries, their progeny and cattle that may have consumed MBM contaminated feed)
  - all bovine animals over 30 months of age slaughtered for human consumption.
- Until 1 January 2003, 11,206 samples have been tested:
  - 9,572 healthy bovines over 30 months of age,
  - no emergency and sick slaughter over 24 months,
  - 1,305 fallen stock over 24 months and
  - 329 risk group cattle.All results have been negative.

- It is evident that the number of fallen stock tested is very low, especially if the total number of fallen stock per year (approximately 8,000) is taken into account. The same holds true for emergency and for sick slaughtered cattle over 24 months of age.
- On the basis of the available information it is concluded that the existing active surveillance system could not ensure BSE detection if present on a low level.

### 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

Feeding MBM to cattle was legally possible until December 2000 and probably happened, even if it was/is uncommon practice for cattle for economic reasons. As long as effective enforcement of the recent feed ban and measures against cross contamination is not confirmed, it can still not be excluded. In the light of the available information feeding is assessed “**not OK**” until 2000 and “**reasonably OK**” since 2001.

#### Rendering

Rendering is and was common practice in Lithuania. Raw material included ruminant material, including SRM and fallen stock at least until the end of 2000. The processes currently used could be adequate for reducing BSE-infectivity but in view of lack of evidence of their correct application it is assessed that rendering is and was “**not OK**” throughout the whole reference period.

#### SRM-removal

There was no SRM ban until March 2001 and the recently introduced measures are not appropriately implemented, monitored and controlled. Therefore, SRM removal was regarded as “**not OK**” before 2001 and “**reasonably OK**” since then.

#### BSE surveillance

The surveillance system in place before 2001 was inefficient and therefore reduced the stability of the system. The active surveillance system introduced in 2001 so far cannot improve the stability of the system.

Stability of the BSE/cattle system in <u>LITHUANIA</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM removal	BSE surveillance
1980 – 2000	Extremely unstable	Not OK	Not OK	Not OK	↓
2001 - 2002	Unstable	Reasonably OK		Reasonably OK	→

**Table 6:** 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 and is extremely unstable. Incoming BSE-infectivity would have been recycled and quickly amplified.

#### 4. CONCLUSION ON THE RESULTING RISKS

##### 4.1 Interaction of stability and challenges

In conclusion, the stability of the Lithuanian 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.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN LITHUANIA			
Period	Stability	External Challenge	Internal challenge
1980 to 1990	Extremely unstable	Significant*	Likely to be present and growing
1991 to 1995		High	
1996 to 2000		Very high	
2001 to 2002	Unstable	no data	

**Table 7: 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. \*Significant because it is assumed that some external challenge was experienced also before the independence of Lithuania.**

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 Lithuania it has to be taken into account that the BSE/cattle system of the former Soviet Union (and therefore also the territory of Lithuania) was exposed to a significant external challenge from 1980-1990. Therefore, cattle imports into the territory of Lithuania could have led to an internal challenge from the second half of the 1980s onwards due to cattle imports in the early 80s.

On the other hand imports of contaminated MBM 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 Lithuania this implies, on the basis of CD data and Eurostat and other data, that imports of potentially contaminated MBM from Denmark and Germany could have led to an internal challenge from 1995 onwards.

In view of the above-described considerations the combination of significant external challenges with an extremely unstable system makes the occurrence of an internal challenge likely since 1995 but probably already earlier, as cattle imports to the territory of Lithuania could have led to an internal challenge already from the second half of the 1980s onwards. This internal challenge met an extremely unstable system and was recycled and amplified, also due to high amounts of imports of potentially contaminated MBM, and growing over time. The continuing external challenges supported this development.

#### **4.2 Risk that BSE infectivity entered processing**

- The BSE-agent may have reached the territory of Lithuania before its independence in 1991. If that happened, a processing risk might have existed since the 80s. It was probably increased after 1995 when non-negligible numbers of live cattle and in particular MBM were imported from BSE risk countries. A significant risk that BSE infectivity entered processing therefore exists since some years, at the latest since 2000, when domestic cattle exposed to contaminated imported MBM around 1995, could have entered processing while approaching the end of the incubation period.

#### **4.3 Risk that BSE infectivity was recycled and propagated**

- A risk that BSE infectivity was recycled and amplified first existed when potentially infected cattle were processed, i.e. potentially before the independence of Lithuania. It became much higher since 2000 at the latest, when the processing risk occurred.

### **5. CONCLUSION ON THE GEOGRAPHICAL BSE-RISK**

#### **5.1 The current GBR as function of the past stability and challenge**

- The current geographical BSE-risk (GBR) level is *III*, i.e. *it is likely but not confirmed* that domestic cattle are (clinically or pre-clinically) infected with the BSE-agent.

#### **5.2 The expected development of the GBR as a function of the past and present stability and challenge**

- As long as the system remains unstable, the probability of cattle to be (pre-clinically or clinically) infected with the BSE-agent will further increase, even if no additional external challenges occur.

#### **5.3 Recommendations for influencing the future GBR**

- Improving the stability of the system would make it less vulnerable to external challenges and could lead, over time, to a reduction of the GBR. Efficient controls for the exclusion of SRM and fallen stock from entering the feed cycle and implementing efficient feed ban controls would be particularly efficient.
- A better active surveillance would allow monitoring the development of the GBR and to verify the efficiency of future stability enhancing measures.