

REPORT
ON THE ASSESSMENT
OF THE
GEOGRAPHICAL BSE RISK OF
LITHUANIA

1. DATA

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

Sources of data:

Country dossier (CD) consisting of:

- Filled out questionnaire (31 October 2000), no annexes.
- Answer of the Lithuanian authorities to the draft assessment received on 19 January 2001.
- Comments on the draft final report by the Lithuanian authorities, received on 7 February 2001.

Other sources :

- EUROSTAT data on exports of "live bovine animals" and of "flour, meal and pellets of meat or offal, unfit for human consumption; greaves" from EU Member States, covering the period 1988 to 1999.
- UK-export data on "live bovine animals" (1980-1996) and on "Mammalian Flours, Meals and Pellets" (1980-2000). As it was illegal to export mammalian meat meal, bone meal and MBM from UK since 27/03/1996, exports indicated after that date may have included non-mammalian MBM.

2. EXTERNAL CHALLENGES

2.1 **Import of cattle from BSE affected countries**

According to the country dossier, Lithuania did not import cattle from the UK since 1980. This information is confirmed by the export statistics of the UK and the EUROSTAT export data.

According to the country dossier, 196 breeding cattle were imported from DK as well as 1,602 from DE in the period 1993-99. Two animals were imported from Germany in 2000.

According to EUROSTAT data, Germany and Denmark exported 10 breeding cattle each in 1993 and 1,693 and 205 breeding cattle respectively in the period 1994-99 to Lithuania.

Import of live cattle (n/year) into <u>LITHUANIA</u> from BSE-affected countries									
Period	UK			DE		DK		Non-UK	
Source:	CD	EU	UK	CD	EU	CD	EU	CD	EU
80-87:									
1988		No data			No data		No data		No data
1989									
1990									
1991									
1992									
1993					10		10		20
88-93:					10		10		20
1994					14		29		14
1995					76				76
1996					71				71
1997				741	744			741	744
1998				625	579		35	625	614
1999				236	209		141	236	350
94-99:				1,602	1,693	196	205	1,798	1,898

Table 1: Live Cattle imports. Shading indicates period of different risk that UK-exports carried the agent, 1988-1993 being the period of highest risk. Sources: CD = Country Dossier, EU = EUROSTAT, UK = Export data from UK.

2.2 Import of MBM or MBM-containing feedstuffs from BSE affected countries

According to the country dossier, Lithuania did not import any MBM from UK. It was explained that between 1980 and 1990 this was due to political reasons; from 1990 onwards this was due to sufficient domestic production.

EUROSTAT, however, registered an export of 144 tons of “flours, meals and pellets, unfit for human consumption; greaves” from the UK to Lithuania, in 1999. And according to the country dossier, in 1999 22 t of porcine blood meal were imported from UK.

Since 1992, in accordance with its Law on Veterinary Activities, Lithuania has banned imports of MBM, BM, MM, greaves or feedstuff from countries where BSE has occurred. However, EUROSTAT has registered significant exports of MBM from DK, BE and NL to Lithuania in the period 1994-99.

In the country dossier only MBM-imports from Denmark are recorded in one global figure for the period 1980 to 2000 but the figure is two times below the total of the exports from DK to Lithuania that were recorded in Eurostat. In addition Eurostat recorded for the period 1995-99, 385 tons of MBM exported from Germany, 430 from Ireland, 1,867 from Italy, 3,001 from Belgium and 504 from the Netherlands.

However, according to the country dossier, this difference between the EUROSTAT data and the national data may result from the fact that the

commodities were imported into the customs terminals in Lithuania and later re-exported to other countries, or were temporarily imported and later exported to other countries. No evidence thereof has been provided.

Identification and physical checks of consignments of imported goods of animal origin have been performed by the state border veterinary officer (veterinary certificate, quality certificate).

In the country dossier it is stated that the MBM-, MM- and BM-imports from DK were dedicated to use for cattle (20.6%), pig (39.6%), poultry (39%) and fish (0.8%) feed.

Import of MBM, MM, BM or greaves (t/year) into <u>LITHUANIA</u> from BSE-affected countries												
Period	UK			DE	IRE	IT	BE	NL	DK		Non-UK	
	CD	EU	UK	EU	EU	EU	EU	EU	CD	EU	CD	EU
1980												
1981												
1982												
1983												
1984												
1985												
80-85												
1986												
1987												
1988												
1989												
1990												
86-90												
1991												
1992												
1993												
91-93												
1994										36		36
1995				24						959		983
1996				25	430		731	386		1,245		2,817
1997				37			252			2,142		2,431
1998				52		870	2,018			5,095		8,035
1999		144		247		997		118		15,113		16,475
94-99:		144		385	430	1,867	3,001	504		24,590		30,777
1980-2000									12,920		12,920	

Table 2: MBM-imports. Shading indicates period of different risk that exports carried the agent, 1986-1990 being the period of highest risk for UK imports while 1994-1999 UK-exports are assumed to have been safer than exports from other BSE-affected countries. Sources: CD = Country Dossier, EU = Eurostat (no data available from 1980 to 1988), UK = UK-Export statistics.

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.

It appears that the external challenge resulting from imports of live cattle has been negligible from 1980-93 and low thereafter (due to low imports of live cattle from non-UK BSE-affected countries: Germany and Denmark).

No imports of MBM were recorded until 1993, but from 1994 onwards they posed a very high external challenge.

External Challenge experienced by <u>LITHUANIA</u>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
Period	Level	Cattle imports	MBM imports	Comment
1980-93	Negligible	Negligible	Negligible	No data available.
1994-99	Very high	Low	Very high	Due to increasing MBM-imports from BSE-affected countries other than UK

Table 3: External Challenge resulting from live cattle and/or MBM imports from the UK and other BSE-affected countries. The Challenge level is determined according to the SSC-opinion on the GBR of July 2000.

On the basis of the available information, the assessment of the overall external challenge is as given in the table above. Until 1994, the overall external challenge experienced by Lithuania was most probably negligible. Since 1994, however, MBM imports posed a very high external challenge, to which the low challenge from live cattle imports contributed.

3. STABILITY

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

Feeding:

An official feed ban exists in Lithuania. Since 12/12/2000 it is prohibited by order of the Director of the State Food and Veterinary Service¹ to use animal proteins,

¹ 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.

with the exception of milk and milk products, for the production of feedstuffs for cattle. Accordingly, it is mandatory in feed mills to keep records of acquired feedstuff components, their manufacture, storage and marketing of final products. Each batch must be identified. Moreover, it is prohibited to feed feedstuffs containing animal proteins to cattle, sheep and goats.

While the country dossier indicates that Lithuania has never and does not feed mammalian MBM to bovines, it does not provide evidence or explanations for this statement. The information that about 20% of the MBM imported from DK were destined for cattle even contradicts it. Feed controls are not carried out.

In the country dossier the composition of the feedstuffs for dairy cattle is provided as consisting of hay/straw, silage and combined fodder of plant origin, containing 1-% premix. It is not specified whether "premix" contains MBM.

The main users of composite feed or feed additives are big animal farms. In the country there are 5 poultry farms each of them keeping 1-5 million poultry, 25 pig farms with more than 5,000 pigs, 289 cattle farms with more than 100 heads of cattle.

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 12/12/2000, it is assumed that feeding cattle with MBM, BM, MM or greaves did happen in Lithuania.

Rendering:

A rendering industry exists in Lithuania.

All bovine raw material, including bovine brain, spinal cord and fallen stock is rendered as well as "all other animals, died stock, wastes of meat processing plants etc."

Rendering takes place under batch processes at 133°C, 3^{bar} for at least 2 hours and "during rendering all the data are registered. Such data are available at the rendering plants." No evidence for the proper application of the mentioned conditions is provided in the dossier. It is also not clear from what date onwards these conditions are applied. It is also mentioned that the processing and the production 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 16 October 2000, adopted by Director of the State Food and Veterinary Service of State.

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.

According to the country dossier, "in rendering plants the processing takes about 2 hours or longer, because of outdated equipment and technology, which do not meet the EU requirements".

The main market outlets for domestic MBM production was the domestic market in Lithuania itself and export to Russia.

The rendering process currently applied would, if appropriately implemented and controlled, reduce incoming BSE-infectivity but, according to the country dossier, the equipment is not up to standards and the regulatory basis is dated October 2000 only. There is no evidence of the enforcement of these newly existing regulations and of controls carried out which could support the conclusion that rendering could effectively reduce BSE-infectivity.

SRM and fallen stock:

There is no SRM-ban and SRM were normally included in the material rendered for feed production together with fallen stock and all other animals, dead stock and wastes of meat processing plants or from pasture are rendered.

However, the SRM-Decision of the Commission (2000/428/EC) is said to be enforced. As of 1/3/2001 the entire head (including the brain, dura mater, pituitary gland, eyes, trigeminal ganglia and tonsils, excluding tongue) will be removed and as of 1/5/2001 the spinal cord or vertebral column (including cervical vertebrae and coccyx) will be removed of all cattle over 12 months of age. From cattle of all ages the thymus, spleen and intestines from duodenum to rectum, including the mesentery and mesenteric lymph nodes, will be removed. All SRM will be stained by dye, separately stored, rendered at $133^{\circ}\text{C}/20^{\text{min}}/3^{\text{bar}}$ and destroyed.

Cross-contamination:

It is clearly stated in the country dossier that there were neither measures nor controls in place to prevent cross-contamination of cattle feed with MBM.

Since 12/12/2000 prevention and control measures are implemented:

- an import ban of animal proteins from countries where BSE has been recorded,
- a prohibition to use animal proteins except milk or milk products in cattle feedstuffs and to feed it to cattle, and
- cleaning procedures in feed mills between manufacture of feedstuffs for different species.

It is therefore assumed that cross-contamination occurred and reduced the stability of the system up until now. The recent measures, however, if properly implemented, monitored and controlled, could in future reduce the potential of cross-contamination of cattle feed with MBM.

Conclusion on the ability to avoid recycling

In light of the above-discussed information, it is assessed 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 was not 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.

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

The total cattle population of Lithuania counted about 2 to 2.5 million heads. After 1994 this dropped to less than 1 million heads, of which more than 50% are 24 months or older. The available information shows that a significant sub-population of cows exists, used for milk production and breeding. These cows reach normally an age of 6-7 years at slaughter, when the cows were slaughtered because of decreasing milk yield. No information on the husbandry system for these cows is provided but it can be assumed that they receive at least for certain periods supplementary feed.

Beef cattle farming only started since 1994 from small numbers of imported beef cattle. These animals are not included in Table 4, below but in table 5.

Period	N° in million (average age at slaughter in months)			Over 24 months old	
	Total; all ages (40 months)	Total; female (60 months)	Male	Female	
			Breeding (34 months)	Meat (60 months)	Dairy/ breeding (72- 84 months)
1980-1984	2.1	0.87	0.08		0.87
1985-1989	2.48	0.87	0.088		0.87
1990-1994	2	0.79	0.07		0.79
1995-1999	1.04	0.58	0.036		0.58
Current	0.87	0.46	0.03	0.0003	0.46

Table 4: Key data on the cattle population in Lithuania

Year	Number of cattle (x 10 ⁶)	Number of cows (x 10 ³)
1980-1984	2.3	871.2
1985-1989	2.49	867.4
1990-1994	2.01	787.5
1995-1999	1.04	582.3
2000	0.898	494.3

Table 5: Number of cattle and cows over time (CD)

The data presented in Tables 4 and 5 show a dramatic drop of both the total cattle population and the cow population since 1994. This drop is explained by the radical changes in the whole agriculture sector. The majority of large agriculture state-holdings have been privatized, this lead to an increase of small private animal farms and a considerable decrease of the cattle population in the country.

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 country dossier, there is no "exact information" available on co-farming of cattle and non-ruminants (pigs and poultry).

Surveillance and culling

BSE-notification is compulsory in Lithuania since 01 February 2001.

The definition of BSE suspects is satisfactory: BSE shall "be suspected in bovine animals aged over 20 months displaying behavioral or neurological signs where the disease cannot be ruled out either on the basis of response treatment or following laboratory examination".

Partial compensation apparently existed (Rural Support Fund) and the 2001 program foresees full compensation.

Awareness / training measures and training of lab-personnel are in place since 1996 when 2 laboratory veterinarians were trained in Russia (Vladimir) during an OIE seminar on TSE diagnostics. In 1998, 1 laboratory veterinarian was trained on TSE diagnostic in Weybridge. In November 2000, 250 official veterinarians were trained in TSE risk analysis in Lithuania. The authorities submitted a programme of additional training measures to be implemented in the course of 2001.

No BSE-examinations have been carried out before 2000, and in 2000 only 38 cattle have been investigated, 20 over 24 months and 18 over 36 months old. All were negative for BSE and positive for rabies.

In the 2001 "programme for TSE monitoring and analysis and control of risk", a surveillance program is described. The tests that will be performed are histopathology (from February 2001 onwards), immunohistochemistry (from May 2001 onwards) and rapid tests (Prionics and Bio-Rad, from July 2001 onwards).

Lithuania has the intention to carry out BSE tests on

- all cattle over 20 months that died,
- are suspected of infection with BSE,
- are ill or have clinical signs of neurological disorders,
- belong to the groups of higher risk (imported from other countries or fed intensively on feedingstuffs containing processed animal proteins)
(2,250 annually),
- as well as on all animals older than 30 months slaughtered for human consumption
(80.000 annually).

On the basis of the available information it is concluded that the existing surveillance could not ensure BSE detection. If the monitoring programme will be

properly enforced as described, both passive and active surveillance will be carried out and the surveillance will undergo major improvements, making the detection of clinical BSE cases much more likely, should they exist.

3.3 Overall assessment of the stability

For the overall assessment of the stability the impact of the three main stability factors and of the additional stability factors, mainly cross-contamination and surveillance plus culling, has to be estimated. Again the guidance provided by the SSC in its opinion on the GBR of July 2000 are applied.

Feeding MBM to cattle was legally possible until 12/12/2000 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 is not confirmed, it can still not be excluded. In the light of the available information feeding is assessed “**not OK**” throughout the reference period.

Rendering is and was common practice in Lithuania. Material included ruminant material, including SRM and fallen stock. The processes used could be adequate for reducing BSE-infectivity but in view of the outdated equipment and without evidence of their correct application it is assessed that rendering is and was “**not OK**”.

SRM-removal: There was no SRM ban until 01/02/01 and fallen stock is still allowed to be rendered for feed. Therefore SRM removal was and is “**not OK**”.

Other stability factors: The lack of preventive measures against cross-contamination and the inefficient BSE-surveillance reduced the stability of the system until very recently.

Note: The recently introduced measures are likely to improve each of these stability factors, if appropriately implemented, monitored and controlled.

Stability of the BSE/cattle system in <u>LITHUANIA</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM	Other
1980-99	Extremely unstable	Not OK	Not OK	Not OK	
At current					

Table 6: Stability resulting from the interaction of the three main stability factors and the other stability factors. 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

The conclusion on the stability of the BSE/cattle system of Lithuania over time and on the external challenges the system had to cope 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 that had to be met by the system, in addition to external challenges that occurred.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN LITHUANIA			
Stability		External Challenge	Internal challenge
Period	Level	Level	
1980-93	Extremely unstable	Negligible	Unlikely to be present
1994-99		Very high	Likely to be present; growing
At current			

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.

Apparently, the extremely unstable BSE/cattle system of Lithuania did not experience an external challenge until 1993. Since 1994, however, it was exposed to a very high external challenge, mainly resulting from imports of potentially contaminated MBM from BSE-affected countries.

This external challenge made it increasingly likely that an internal challenge appeared since 1994/95, because the feeding system in Lithuania did not actively prevent feeding of (imported or domestic) MBM to cattle, it is therefore likely that cattle had access to imported cattle at least due to cross contamination.

The internal challenge that emerged met the extremely unstable system and was (and will be) recycled and amplified. It therefore increased over time. The continuing external challenges supported this process, making it today likely that an internal challenge is present.

The planned additional measures (MBM feed ban, SRM ban, proper rendering, improved surveillance), once fully implemented, will lead, over time, to a decreased internal challenge.

4.2 Risk that BSE infectivity entered processing

The BSE-agent was probably imported since 1994 via MBM imports from non-UK BSE affected countries into the country. A low risk also exists that the cattle imports from DE and DK that started in 1993 could have included incubating animals. A risk that BSE infectivity entered processing therefore could have existed some years after imported potentially contaminated MBM reached

domestic cattle or when imported cattle were processed, i.e. in the second half of the 90s.

4.3 Risk that BSE infectivity was recycled and propagated

In view of the extremely unstable system, a risk that BSE infectivity was recycled and amplified exists since infected cattle could have been processed into feed, i.e. since the second half of the 90s. It continues to exist until the stability of the system is significantly improved.

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.

Note: The planned improved surveillance, if correctly implemented, should be able to reveal BSE cases and to confirm this assessment.

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 extremely 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 would occur.

Pending the efficacy of the planned measures it can be assumed that the GBR will thereafter decrease over time.

5.3 Recommendations for influencing the future GBR

The measures foreseen to be taken since December 2000 and during 2001 have the potential to efficiently reduce the GBR, if fully and correctly implemented and controlled. Complementing them with a clear culling strategy in case of BSE-confirmation will raise their overall efficacy.