

Final Report on the assessment of the Geographical BSE-Risk (GBR) of BELARUS - 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>

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 information available was suitable to carry out a qualitative assessment of the GBR. Reasonable worst-case assumptions have been used whenever the available information was not sufficient.

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 the United Kingdom 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, Lithuania, Romania, Slovenia and Switzerland.

2. EXTERNAL CHALLENGES

The Republic of Belarus became an independent country in mid 1991. Before, it was part of the Former Soviet Union. Therefore, the Eurostat and other export data for the Former Soviet Union are presented in order to indicate the overall context in that period.

2.1 Import of cattle from BSE-Risk¹ countries

Table 1 is shown in order to give an overview of the exports from EU Member States and other BSE risk countries to the territory of the Former Soviet Union for the period 1980 to 1991. The proportion of the exports (before 1991) remaining in the territory of Belarus is unknown.

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

Export of live cattle (n/year) to former <u>SOVIET UNION</u> From EU-Member States and Switzerland							
Period	CH	UK	DE	DK	FR	NL	All BSE-risk countries
Source	CH	UK	EU	EU	EU	EU	
1980			192	(1,589)		(1,002)	192
1981			660	(422)	2	(402)	662
1982			1,473	(1,552)	22	(781)	1,495
1983			1,416	(460)		(710)	1,416
1984		95	3,831	(2,647)		(500)	3,926
1985	38	120	4,980	1,436	18	1,000	3,964
1986	98	580	4,063	460			5,201
1987		216	4,893	1,372		493	6,974
1988	77	125*	5,300	2,800			8,302
1989		196*	7,222	3,971	1	2,600	13,990
1990			4,922	2,311		500	7,733
1991			5,834	3,042	5	10	8,891
Total	213	1,332	44,786	15,392	48	4,603	66,374

Table 1: Live Cattle exports to former Soviet Union from a number of the BSE risk countries. Values in brackets show imports outside the assumed BSE risk period. Sources: EU = Eurostat for former Soviet Union, UK = Export data from UK, CH= Export data from Switzerland. *Based on revised UK data.

Former Soviet Union (from 1980 – 1990)

- Eurostat does not provide a breakdown of exports to different parts of the former Soviet Union. According to Eurostat, 1,354 animals were exported from the United Kingdom to the Soviet Union between 1980 and 1991, whereas the United Kingdom export data states 1,332 exported animals. On the other hand between 1980 and 1991 the Soviet Union received significant numbers of animals (around 65,000 cattle) exported from other BSE risk countries than the United Kingdom, mainly from Germany, Denmark and the Netherlands, but also from Switzerland and France.
- It is understood that information on imports of cattle from BSE risk countries to the Belarus region of former Soviet Union before 1991 is difficult to obtain by the Belarus authorities because of the reasons already mentioned above. Nevertheless, the authorities of Belarus have provided some data on live cattle imports.
- Nevertheless, it has to be assumed that also part of the exports listed in table 1 from BSE risk countries to the former Soviet Union entered the Belarus part of the country.

Belarus (being part of the Soviet Union)

- The time period 1980 – 1991 shown in table 2 contains data on live animal imports into the territory of Belarus being part of the Soviet Union. These data have been provided by Belarus authorities in their CD.
- According to the country dossier, 101 cattle were imported from the United Kingdom between 1986 and 1990. The United Kingdom export statistics list exports of live cattle to the Soviet Union during the period 1984-1989, which makes it possible that some cattle imported to Belarus could be of United Kingdom origin.
- The culling reason is given for the United Kingdom cattle, and includes some cases where BSE could not have been excluded, e.g. “aggressive”, “spastic ... of hind

extremities” but their further fate is not given. It is therefore assumed that these cattle entered rendering after death.

- According to the CD 4,831 cattle have been imported from other BSE risk countries than the United Kingdom. They came from Germany (2,374), Poland (1,270), Denmark (959), the Netherlands (98), Switzerland (93), Japan (22) and Estonia (15). These data were provided for the 5-year period from 1986 – 1990 and have been equally distributed or attributed to one year.

Belarus (since 1991)

- Table 2 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 Belarus. 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 July 2000 as amended in 2002, an external challenge.
- It is not clear if there is a ban on the importation of animals from BSE risk countries (i.e. those with GBR III and IV) in Belarus.
- Eurostat indicates that 416 cattle were exported from BSE risk countries between 1992 and 1999. Countries of origin were the Netherlands (219), Germany (142) and Denmark (55).
- The CD states live animal imports (total 457) from Germany (159), the Czech Republic (120), the Netherlands (98), Denmark (37), Lithuania (36), France (5) and Japan (2) to Belarus, but does not provide any details.

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

Former Soviet Union (from 1980 – 1990)

- The CD does not provide any data concerning MBM imports from BSE risk countries for this period. The Belarus authorities claim that all data on MBM imports have been transferred to Moscow.
- According to Eurostat and other data, however, no MBM was exported to the former Soviet Union from the United Kingdom or any other BSE risk country that provided so far export data.

Belarus (since 1991)

- There are no indications of exports from the United Kingdom to Belarus since 1991. According to the CD, MBM from “countries unsuccessful on BSE” has not been imported into the Republic of Belarus, due to economical reasons. It is not clear if there is any legislation supporting this.
- According to the CD, 19,600 tones of MBM were imported from Belgium, Denmark and Ireland, in the time period 1991 – 1995 but no annual breakdown was given. It

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 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 Republic	CD												24	24	24	24	24							120
																								0
Denmark	CD							191	192	192	192	192	28							9				996
	other																			55				55
Estonia	CD											15												15
																								0
France	CD													5										5
																								0
Germany	CD							474	475	475	475	475	12	11		35	15			86				2533
	other													11		35	15			81				142
Lithuania	CD																	36						36
																								0
Netherlands	CD							18	20	20	20	20		20	21				57					196
	other																	147			72			219
Poland	CD							254	254	254	254	254												1270
																								0
Switzerland	CD							18	18	19	19	19												93
																								0
Japan	CD											22		2										24
																								0
UK	CD		0				0	21	42	30	8													101
	other																							0
ALL TOTALS																								
non UK	CD	0	0	0	0	0	0	955	959	960	960	997	64	62	45	59	39	93	95	0	0	0	0	5288
	other	0	0	0	0	0	0	0	0	0	0	0	0	11	0	35	15	147	136	0	72	0	0	416
UK	CD	0	0	0	0	0	0	21	42	30	8	0	0	0	0	0	0	0	0	0	0	0	0	101
	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: Live cattle imports into Belarus (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 updated in 2002. Data before 1992 refer to Belarus being a part of the Soviet Union.

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																2500*							2500	
	other																	105	441				60		606
Denmark	CD																10100*							10100	
	other																1199	1241	2853	3514	4630	4217	1106		18760
Estonia	CD																								0
	other																60		93						153
Germany	CD																								0
	other																15	202	40	4					261
Ireland	CD																7000*								7000
	other																								
Netherlands	CD																								
	other																				80				80
UK	CD																								0
	other																								0
TOTALS																									
non UK	CD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19600	0	0	0	0	0	0	0	19600
	other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1274	1548	3427	3598	4630	4277	1106		19860
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 3: MBM imports into Belarus (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 updated in 2002.

* The CD indicates only the total amounts of MBM imports from BE, DK and NL for the entire period of 1980-2000. Those figures are registered in 1995.

is claimed that since 1996, no MBM has been imported anymore because MBM imports have been restricted. No legal basis or any other information on these restrictions has been provided.

- Eurostat and other data are more or less consistent with the country data, both with respect to countries of origin and the total amount (19,860 tons). According to Eurostat and other data, MBM was exported from Denmark (18,760), Belgium (606), Germany (261), Estonia (153) and the Netherlands (80). In contrast to the statement in the CD more than 18,500 tons of MBM have been imported since 1996.

2.3 Overall assessment of the external challenge

It has been noted that the external challenge faced by the former Soviet Union prior to 1992 was always significant. From 1980 to 1985 it was moderate and from 1986 to 1990/1991 it was high due to imports of live cattle from BSE risk countries. The proportion of these imports that remained in Belarus is given in the CD.

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 2002.

- Live cattle imports:

In total the country imported over the period 1991 to 2001, 457 (CD data) live cattle from BSE risk countries, of which none came from the UK. The resulting external challenge is as given in table 4.

- MBM imports:

In total the country imported over the period from 1991 to 2000, 19,600 tons of MBM (CD data) and in 2001 another 1,106 tons (Eurostat and other data) from BSE-risk countries, of which none came from the United Kingdom. The resulting external challenge is as given in table 4.

External Challenge experienced by BELARUS				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
Period	Overall Level	Cattle imports	MBM imports	Comment
1980 – 1985	Significant*	Moderate**	Negligible	
1986 – 1990		High**		
1991 - 2000	Very high	Negligible	Very High	
2001 –	High	Negligible	High	

Table 4: 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 2002). *Significant because it is assumed that some external challenge was experienced also before the independence of Belarus. **Based on data provided by Belarus.

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

3. STABILITY

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

Feeding

- According to the CD, in Belarus there have been 243 feedmills in operation from 1996 to 2001. More than 65 multi-species feed mills exist.

No. of feedmills in	Ruminant, pig and/or poultry feed production	Ruminant feed production only	Pig feed production only	Poultry feed production only	Poultry and pig feed production only
1980 – 1985	60	68	51	63	15
1986 – 1990	60	65	52	65	17
1991 – 1995	65	39	55	61	14
1996 – 2001	67	41	55	65	15

Table 5: Number and type of feedmills in Belarus.

Figures on the yearly production were not provided.

Price comparisons for different protein sources were provided. According to this, the price per ton of MBM was about 300 US\$ in the last 10 years. Sunflower expeller was less than half the price but the price for soybean extraction meal was very similar to the price for MBM (260 – 320 US\$) in the last 10 years.

Feed bans

- According to the CD, since 1990 ruminant MBM from BSE risk countries (“countries unsuccessful on BSE”?) has not been fed to cattle.
- A mammalian MBM to ruminant feedban is in force since February 2001. However, the legal text was not provided. It seems that the feeding of ruminant MBM to all farmed species is prohibited as well.
- The CD indicates that the use of MBM is for swine, poultry, and fish. There is no information on feed production. Since it cannot be excluded that cattle feed and other feed including MBM has been produced at the same premises, and since no results of feed controls have been provided it is assumed that the BSE-agent could have reached cattle.

Control of the feedban and cross-contamination

- According to the CD, in 2001, when controls were introduced, 1,099 samples have been analysed using a PCR technique. 15 samples turned out positive, e.g. the presence of animal DNA could be demonstrated.
- However, according to the knowledge of the EU scientists, this method is only designed to give a qualitative result and only works if the MBM has not been processed using too severe conditions.

Potential for cross-contamination and measures taken against

- The CD indicates that different measures are in use to avoid cross-contamination in feedmills and during transport such as flushing batches, separate production lines and dedicated transport vehicles.
- Taking into account the big number of feedmills producing feed for different species and the fact that the feeding of MBM to non-ruminants is still common practice, it is concluded that cross-contamination most probably happens.

Rendering

- No information is available for the period 1980 to 1990.
- According to the CD, since 1991 six rendering plants exist in Belarus. All these plants process raw material from different species. Together they process less than 5,000 tons of raw material per year. The total domestic production of MBM during the last 10 years was less than 5,000 tons per year.
- From the information in the CD, it is understood that animal waste is processed in batch processing systems at 133°C/3^{bar}/20^{min} conditions, but the date of implementation of these conditions is not clear. The raw material is said to include slaughterhouse waste, bovine brains and spinal cords as well as fallen stock. It is not clear how the process conditions are controlled and if the above-mentioned conditions apply to all plants and since when.
- For the time being it is assumed that rendering is performed at conditions that do not inactivate the BSE-agent and that all rendered material could include material carrying the agent.

SRM and fallen stock

There is no SRM ban in place. According to the CD, SRM and approximately 50 % of the fallen stock is rendered for feed production.

Conclusion on the ability to avoid recycling

In the light of the above-presented information it is assumed that the BSE-agent, should it have entered the territory of Belarus would have been recycled and amplified.

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

- According to the country dossier, the total cattle population of Belarus is currently 3,605,000 cattle of which more than 2,300,000 are dairy cattle. The dairy cow population is given with 1,245,300 cows. The yearly milk yield is said to be within the range of 1,000 – 5,000 kg/cow.
- All dairy cattle are kept in holdings keeping 100 – 500 cattle.
- No information is provided on the composition of the herds in terms of beef/dairy types.
- According to the CD, co-farming of cattle together with other species does not exist.

BSE surveillance

According to the CD, BSE is notifiable since March 2001.

BSE has to be notified at the time when it is confirmed at the laboratory. It is not clear how the legislation for notification is formulated and how this would be handled in the field.

The country dossier also indicates that BSE has been on the list of differential diagnoses since 1990. Since 2001, pathologic investigations for BSE have been carried out on all bovines showing neurological disorders. However, so far not a single BSE suspect was registered.

“Active” surveillance is targeted on older than 30 months of age since 2001

- The following groups/numbers of cattle have to be tested:
 - Animals slaughtered for human consumption: 0,01 % of healthy slaughtered cattle older than 30 months of age have to be tested. In 2001, 160 and in 2002, 163 such cattle have been tested all with negative results.
- The method used for BSE examination is pathological histology.
- The CD also states that 10 animals showing nervous disorders were tested.

The surveillance is not regarded as sufficient to detect low prevalence BSE. The number of samples tested in 2001 does even not meet OIE requirements for BSE surveillance and is, in the light of results of the larger scale BSE testing in EU, insufficient.

Awareness training is in place, but it is not clear since when. The CD states that the training is directed towards experts, selectionists and workers of the processing industry and that questions regarding diagnostics and current measures to handle BSE are dealt with. Information about BSE is also given within the veterinary curriculum and at “technical schools”.

Compensation for animals culled in the context of BSE-eradication or diagnosis is not mentioned in the CD.

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

There is no information on the existence of a feed ban before February 2001 and the information on feeding is not substantiated. Therefore, feeding is considered “**not OK**” since 1980 until 2000.

Although the analytical method used since 2001 to control the mammalian MBM to ruminants feed ban, introduced in 2001 is species sensitive, this method seems not to be fully suitable to control cross-contamination if the MBM used for feed production has been processed using adequate processing parameters. Feeding is therefore “**reasonably OK**” since 2001.

Rendering

The information provided on rendering is unclear and it is assumed that high-risk material is processed under suboptimal conditions. Rendering is therefore “**not OK**” throughout the reference period.

SRM-removal

SRM is not removed and is entering the feed chain after processing, as does fallen stock. Therefore, SRM removal is considered “**not OK**” throughout the reference period.

BSE surveillance

BSE surveillance is not adequate to detect low level of clinical BSE incidence.

Stability of the BSE/cattle system in <u>BELARUS</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM removal	BSE surveillance
1980 -2000	Extremely unstable	Not OK	Not OK	Not OK	↓
2001 -	Very unstable	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 was concluded that the country's BSE/cattle system was extremely unstable throughout the whole period 1992 to 2001.

Note: This assessment is largely based on assumptions that had to be made due to incomplete information.

4. CONCLUSION ON THE RESULTING RISKS

4.1 Interaction of stability and challenges

In conclusion, the stability of the Belarus BSE/cattle system in the past and 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 THE RUSSIAN FEDERATION			
Period	Stability	External Challenge	Internal challenge
1980 – 1990	no data	Significant*	Likely to be present and growing
1991 – 2000	Extremely unstable	Very high	
2001 -	Very unstable	High	

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 Belarus.

Before 1991, the former Soviet Union faced a significant external challenge. The stability of the system cannot be assessed, as no data are available. However, it is reasonable to assume that the system was similar to the one, which has to be assumed for Belarus in 1991, i.e. extremely unstable.

An external challenge resulting from cattle imports 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.

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 view of the above-described reflection, the registered external challenges could have led to an internal challenge in Belarus already from the early 90s onwards due to MBM imports. However, taking into account that the BSE/cattle system of former Soviet Union was exposed to a high external challenge from 1980-1991 it has to be assumed that an internal challenge in the territory of Belarus emerged already in the mid 80s due to cattle imports in the early 80s. This internal challenge met the extremely unstable system and could have been propagated and amplified.

4.2 Risk that BSE infectivity entered processing

- The BSE-agent may have reached the territory of Belarus before its independence in 1991. Therefore, a processing risk might have existed since the 80s. It was probably increased after 1991 when high amounts of MBM were imported from BSE risk countries. A significant risk that BSE infectivity entered processing therefore exists since some years, at the latest since the middle of the nineties, when domestic cattle exposed to contaminated imported MBM in the beginning of the nineties, 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 Belarus. It became much higher since the middle of the nineties 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 very 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.
- Any further external challenge will increase the risk that, over time, a BSE epidemic develops in the country.
- Even if further external challenges can be avoided, the GBR of Belarus would remain as it is now as long as the system remains extremely unstable

5.3 Recommendations for influencing the future GBR

- The stability of the system should be enhanced wherever possible. Feeding of any MBM to cattle should be avoided.
- Passive (i.e. reliable notification and examination of animals showing clinical signs compatible with BSE) and active surveillance (i.e. sampling of asymptomatic at-risk cattle populations, all adult fallen stock and emergency slaughter, by means of rapid screening testing) would allow monitoring the efficiency of the stability enhancing measures.