

Report on
the Assessment of
the Geographical BSE-Risk
(GBR) of
POLAND
MARCH 2001

NOTE TO THE READER

Independent experts have produced this report, applying an innovative methodology by a complex process to data that were voluntarily 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. This opinion is available at the following Internet address:

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

In order to understand the rationale of the report leading to its conclusions and the terminology used in the report, it is highly advisable to have read the opinion before reading the report. The opinion also provides an overview of the assessments for other countries.

FULL REPORT

1. DATA

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

Sources of data

Country dossier consisting of:

- Questionnaire for the assessment of the GBR of Poland (31 October 2000).
- Comments by the Polish authorities on the draft assessment of the GBR (15 January 2001).
- Comments by the Polish authorities on the draft final report (22 February 2001).

Other sources:

- EUROSTAT Statistical Yearbook on Candidate and South-East-European Countries 2000.
- EUROSTAT data on exports of "live bovine animals" and "flour, meal and pellets of meat or offal, unfit for human consumption; greaves", from EU Member States covering the period 1980 to 1999.
- UK-export data on "live bovine animals", 1980-96 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**

Table 2 provides an overview of the import of live cattle into Poland, as provided in the country dossier (CD) and compares this with the exports from BSE-affected countries, as indicated in Eurostat and UK export statistics.

- According to the country dossier, no imports of live cattle have taken place from UK since 1980, which is confirmed by Eurostat and UK export data.
- According to the country dossier, 285,730 live cattle (87% of it in 1993/94) have been imported between 1993 and 2000 from Estonia, France, Germany, Latvia, Lithuania, the Netherlands and Canada. The country's Authority (Table 1) provided a breakdown by year only.

Year	1993	1994	1995	1996
Total imports	120,620	126,959	12,000	1,032

Table 1: Total number of live cattle imported between 1993 and 1996 according to the country dossier. Most of these cattle that were imported for slaughter originated from Latvia, Estonia, Lithuania and Germany (New Länder).

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- Most of the cattle imported in 1993/94 were intended for immediate slaughter and fattening (between 12-18 months of age), only 8% were intended for breeding, although, for economic reasons, most of the breeding animals have been slaughtered young. Often the animals were slaughtered rather quickly after import (within 72 hours).
- Before 1988 and between 1994 - 1999 all imported cattle were for breeding.
 - according to the country dossier, 25,181 of the animals imported between 1994 - 1999 were still alive in February 2001 while, in the same period only 23,787 were imported for breeding and 261,943 for slaughter from EU-Member States. It is therefore concluded that some animals initially imported for immediate slaughter were kept long for other purposes.
- Eurostat provides a breakdown of the exports of live cattle to Poland by year and country of origin. Until 1988 these exports were small (737). Between 1988 and 1993 much higher figures were registered (88,980) and again less between 1994-1999 (22,593). According to Eurostat about 112,000 cattle were exported from BSE-affected countries to Poland during the last 20 years, the large majority between 1988 - 1993, mainly from Germany.
- Every importation of live animals into Poland requires individual import permission by the responsible Polish Authority.
- In 1987 the following statement relating to BSE was included in the required health certificates: “cattle coming from farms in which during the previous 5 years before dispatch no cases of BSE had been reported”.
- Since 1997 the import health certificates has to certify that the cattle originates
 - from herds where BSE was never present,
 - from holdings in which no animals were ever introduced from the United Kingdom, Ireland or Switzerland,
 - from herds where feeding animals with mammalian protein was prohibited,
 - for pedigree animals, from the third generation backward, there were no ancestors from United Kingdom, Ireland or Switzerland.
- It is indicated that imported cattle are under Veterinary Inspection surveillance and subject to mandatory BSE-test at the end of their productive live. All imported cattle will be incinerated. To exclude uncontrolled movement and slaughter the cattle will be permanently marked by freeze branding on the skin. It is not clear when this measure started, no indication on the number of animals already tested is given and it is not clear if animals are “eliminated from breeding” at the normal end of their production life or before.

Import/export of live cattle (n/year) into/to POLAND from BSE-affected countries												
Period	UK			FR	BE/Lux	NL	DK	DE	IT	SP	Non-UK	
Source:	CD	EU	UK	EU	EU	EU	EU	EU	EU	EU	CD	EU
1980								115				115
1981												
1982												
1983												
1984												
1985							32	166				198
1986								196				196
1987					3		18	207				228
80-87:	0	0	0		3		50	684				737
1988				10			163	557		51		781
1989				22		67	97	374		46		606
1990				35				1,833				1,868
1991				* 47		357		68,103	4			68,511
1992				69		5,260	41	11,230				16,600
1993				41				573			# 120,620	614
88-93:	0	0	0	224		5,684	301	82,670	4	97		88,980
1994				181			45	213			# 129,959	439
1995				554		312	388	168			# 12,000	1,422
1996				* 1,598		970	637	961	87		# 1,032	4,253
1997				1,666		2,547	696	1,302				6,211
1998				* 564		2,670	265	1,550				5,049
1999				* 124		3,917	361	1,111	6			5,519
94-99:	0	0	0	4,687		10,116	2,392	5,305	93		261,943 s 23,787 **	22,593

Table 2: 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.

= The imports of live cattle include CD imports from the Netherlands, Germany, France, as well as from Estonia, Latvia, Lithuania, Canada, no individual breakdown per country is provided by the country dossier and only some annual totals, not adding up to the overall total provided by CD.

* = Eurostat data corrected as confirmed by the French authorities (Eurostat data recorded were slightly higher but would have not changed the assessment).

"s" = Slaughter animals <2 years at slaughter, imported for immediate slaughter and fattening; **: animals >2 years imported for breeding.

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

- Table 3 gives an overview about the MBM-imports into Poland, as provided in the country dossier and compares it with the Eurostat and UK-export statistics. Apparently the exports registered by Eurostat are of a comparable order of magnitude as the imports registered in the CD for those periods that are covered by both sources (except for NL but that would not change the assessment).
- An official import ban on imports of MBM, BM and MM from UK was imposed on 15th July 1998 but according to the CD no MBM was imported from UK for at least 15 years before that date. However, Eurostat and UK export data indicate a small export from UK to Poland in 1994/95.
- No information is available on the composition of the imported animal meals (species, type).
- It is stated that all imports were destined for pigs, poultry, fish and petfood and that no evidence for other uses exists. However, it is not clear how this exclusion of ruminants was verified and controlled.
- Feed concentrates and feedstuffs containing processed animal proteins must be accompanied (it is not clear since when this is the case) by a health certificate stating that the exporting country has official measures against BSE that are in accordance with the International Zoosanitary Code of OIE. According to the CD, these countries (it is not specified if it concerned all countries or only BSE affected countries) were obliged to exclude ruminant tissues from animal feed processing and to withdraw specified risk materials. Poland states that the importing risk was not considered as high, provided that EU Member States fully implement their national measures.

Import of MBM, MM, BM or greaves (t/year) into <u>POLAND</u> from BSE-affected countries																																				
Period	UK		SP		FR		BE		DE		IT		NL		DK		Non-UK																			
Source	EU	UK	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU °	CD	EU																		
80-85:	No data																																			
1986			No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	No data provided by the CD	3,502																	
1987																			12,869																12,889	
1988																																				15,625
1989																																				1,776
1990																																				25
86-90:																																				2,680
1991																																				20
1992																																				204
1993																																				204
91-93:																																				4,159
1994	55	55																		20																
1995	122	122																		204																
1996																				204																
1997																				204																
1998																				204																
1999																				204																
94-99:	176	176																		20																
Σ CD (96-00)			24**	0	17,366**	14,213	94,992**	87,289	771,901**	606,820	2,060**	1,741	18,744**	112,657	280,298**	239,469	1,185,385**	1,062,182		40,860																
Σ EU (86-99)	176	176		50	52,299		98,553		997,622		1,866		170,525		437,764					40,860																

Table 3: 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, UK = UK-Export statistics, Σ = Sum for indicated years.

* = Provided by the country dossier, for the period 1991 to 1999, imports from Belgium, Denmark, France and the Netherlands.

** = Provided by the country dossier, for the period 1996 to 2000, imports from BE, DE, DK, FR, IT, NL, SP.

° = Eurostat data as confirmed and corrected by the Danish authorities (same order of magnitude)

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.

The external challenge resulting from live cattle imports (see table 2) has been very low between 1980-87, and high since 1988.

The external challenge that resulted from MBM-imports (see table 3) was very high between 1987 and 90 and was extremely high since 1991.

External Challenge experienced by <u>POLAND</u>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
Period	Level	Cattle imports	MBM imports	Comment
1980-86	Very low	Very low	Negligible	No MBM exports registered by Eurostat
1987	Very High		Very high	
1988-90				
1991-99	Extremely high	High	Extremely high	

Table 4: External Challenge resulting from live cattle and/or MBM imports from the UK and other BSE-affected countries as provided in tables 2 and 3. The Challenge level is determined according to the SSC-opinion on the GBR of July 2000.

On the basis of the available information the overall assessment of the external challenge is as given in table 4. Since 1987 Poland was exposed to a very high and since 1991 to an extremely high external challenge, due to live cattle and in particular MBM-imports from BSE-affected countries other than the UK.

3. STABILITY

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

Feeding:

Until March 1997 feeding MBM to ruminants was not prohibited in Poland.

Since March 1997 a feed ban exists and the official veterinarians perform "controls on farms", and supervise rendering plants and feed mills "when they produce feeds with animal proteins". The legal basis for official control of proper implementation of the MBM ban to ruminants by feeding stuffs manufacturers was adopted in March 1999.

Currently the annual feed production is estimated to be around 4 million tonnes of which 450,000 tonnes are high-protein concentrates (“premixes”) which are used by individual farmers for preparation of their own mixes.

According to the country dossier, cattle are normally fed with grass, hay, grains, ground grain/corn, silage and straw. It is stated that there has never existed a tradition in Poland or a scientific recommendation to feed MBM to cattle and the production of MBM-containing feeding stuffs for cattle does not exist in the country. Sporadically fishmeal was used for mixes and concentrates for calf feed. Domestic MBM, MM and BM are claimed to be used for pigs and poultry only.

It is indicated that between 1972 - 1988, only binding recipes of feeding stuffs mixes for feeding of all animals (including ruminants), were prepared centrally by a Feeding stuffs Union, controlled by the Ministry of Foodstuff Industry and Purchasing, and used.

692 official controls of feed processing plants that process feed components of animal origin were carried out in 1990, and between 1995 - 2000. In 1997, the number of controls increased significantly above 100 per year.

In 1999 and 2000 a total of 26,699 samples were collected during official controls and examined. These samples correspond to 188,635 tonnes of final products, i.e. to less than 5% of the total domestic feed production of around 4 million tons. The analyses that were carried out correspond to a verification of the general composition but not to a control for MBM contamination or the identification of bovine protein (only “raw protein percentage” is listed among analytical parameters). No information was provided on the results of the controls.

It is assumed that feeding cattle with MBM, BM, MM or greaves was not generally the case but it occurred until 1997, when it was declared illegal. It is still possible because the control of the feed ban is ineffective.

Rendering:

A rendering industry is existing but no data on the annual production of MBM or the market outlets for this industry were provided.

All condemned material, slaughter by-products, animals dead during transportation or at lairage facilities are rendered together, as are bovine and other materials (swine offal).

Since 1950 batch-pressure-cooking is applied (Hartmann-type) operating with $133^{\circ}\text{C}/60\text{-}180^{\text{min}}/3^{\text{bar}}$. This rendering process would be suitable for reducing BSE-infectivity, if appropriately applied. However, control measures are apparently only introduced since 1997 but no automatic recording facilities are available. Therefore, the Polish authorities explained that no evidence of compliance with the standard process could be provided.

SRM and fallen stock

There is no SRM-ban and SRM were normally included into the raw material entering rendering.

Approximately 1% of carcasses of dead animals (fallen stock) are rendered while the rest is buried or put into the feed chain for fur animal farms. However no evidence of that figure is given.

Cross-contamination:

All feed-mills prepare feeding stuffs for all animal species using the same production lines. It is also stated in the dossier that before a new batch of raw materials is to be processed, the lines have to be cleaned and disinfected.

A separation, apparently only in time, of ruminant and non-ruminant feed production was introduced by a regulation of 13 July 1939 and an instruction of the Ministry of Agriculture to strengthen its enforcement was issued in 1980. A new regulation dated 24 April 1997 reaffirmed this obligation of separation.

A separation of transport systems for different feeds as well as labelling of feed is apparently implemented since 1939 and controlled since 1980. No evidence is provided of this nor is it explained how its functions.

According to the country dossier the efficiency of these measures is controlled at feed mills and during transport but results thereof are not provided. The Polish authorities declare that "methods for identifying MBM in feed are not used" (see also the information on feed controls under the chapter "feeding").

Conclusion on the ability to avoid recycling

In light of the above-given information it has to be assumed that the BSE agent, should it have entered the territory of Poland 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

In 1999 out of 6 million cattle there were 3,3 million cows, and about 3.6 million cattle are over 2 years old. Detailed data on cattle population structure are not collected.

Almost all farms in Poland are multi-species farms. Most of them have one-cattle, one or some-pigs, and few poultry. Some larger cattle herds exist.

Between 1991 and 1998 the average annual milk yield increased from 3,083 to 3,491 litres / cow, indicating some changes in genetics and probably feeding practices.

Surveillance and culling

Notification of BSE is compulsory since April 1997 but awareness and training measures are in place since 1988. On the basis of the available information the efficiency of these measures cannot be assessed.

Compensation for BSE cases and animals condemned in that context would be available as for any other disease because since 1927 cattle condemned in the framework of a general animal disease eradication or prevention are compensated. The compensation would cover the full value of the animal.

In 1997, lab-personnel was trained in Weybridge, UK and histopathology is used to verify BSE-suspects (after eliminating differential diagnostics e.g. rabies or listeriosis). Confirmation would be performed in Weybridge.

A total of 459 cattle (imported/domestic) with CNS symptoms are tested for BSE, between 1996 and 2000. The veterinary information on the investigation form is limited to nervous signs that appeared. All the examined cattle have been confirmed as bacterial infections.

Year	1996	1997	1998	1999	2000	2001 (until 15 Jan.)
N° Examined	30	45	233	39	100	105

Table 5: Number of brains of cattle annually examined for BSE.

In the framework of a recently introduced active surveillance (Prionics test), 3% of normally slaughtered cattle over 30 months are tested; in 2001, by 15 January, there were 105 tested cattle. None were positive. Until 30/03/01 no update on testing results was provided. No information is given on active surveillance (or planned surveillance) of fallen stock, emergency slaughters and CNS animals.

The number of cattle brains annually examined is lower than the OIE-requirements (about 360 cattle brains to be annually tested for BSE).

It is concluded that until 1997 BSE surveillance was very insufficient. Since 1997 a passive surveillance is in place but it does not fulfil the OIE requirements.

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:

Feeding MBM to cattle was legally possible until March 1997 and is likely to have occurred, even if it was uncommon practice. The efficiency of the feed-ban cannot be assessed, as feed controls were apparently not carried out. Feeding is therefore assessed as "**not OK**" before and after the ban.

Rendering:

Rendering is and was common practice in Poland. Material includes ruminant material, including SRM, condemned material, and a limited proportion of fallen stock. The rendering processes used were adequate for reducing BSE-infectivity since a long time. As no evidence is provided on checks, rendering is assessed as "reasonably OK" throughout the reference period.

SRM-removal: There is no SRM ban. Therefore SRM removal was "not OK" throughout the reference period.

Other stability factors: Cross contamination is likely and BSE surveillance is insufficient, at least until very recently. The efficiency of the active surveillance that just started cannot be assessed. The "other stability-factors" therefore reduced the stability throughout the reference period.

Stability of the BSE/cattle system in <u>POLAND</u> over time					
Stability		Reasons			
Period	Level	Feeding	Rendering	SRM	Other
1980- 1999 and at current	Very unstable	Not OK	Reasonably OK	Not OK	

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 is concluded that the country's BSE/cattle system was and is very unstable, i.e. it would recycle and amplify incoming BSE-infectivity rather fast.

4. CONCLUSION ON THE RESULTING RISKS

4.1 Interaction of stability and challenges

The conclusion on the stability of the Polish BSE/cattle system over time and on the external challenges is summarised in Table 7 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.

Since 1987, the BSE/cattle system of Poland was exposed to a very high and since 1991 to an extremely high external challenge while being very unstable.

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 at an age of 4-6 years when prematurely 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 (imported at 20-24 months) that could have been infected prior to import. In the case of Poland that could have happened since the late 80s, due to cattle imports from DE and DK and later on also from FR and NL.

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 Poland it is most likely that some of the imported MBM reached domestic cattle, be it by exceptional voluntary feeding or via cross-contamination. An internal challenge could therefore have been initiated by the MBM-imports from FR in the late 80s and later on also by imports from DE, DK, NL and BE.

In view of the above-described reflection the registered external challenges most likely led to an internal challenge in Poland from the late 80s onwards. This internal challenge met the very unstable system:

If infected cattle were slaughtered, their SRM and offal would have been rendered for feed production. While the rendering process should reasonably have reduced the amount of infectivity (if appropriately applied by a factor of at least 1000), sterilisation cannot be assumed. The MBM therefore would still carry some infectivity. It would then be used for the preparation of non-ruminant feed but a part could end-up in cattle feed. By this mechanism one infected cattle could lead to several new infections. In other words, the internal challenge would continuously grow.

The continuing external challenges supported this development, making the existence of an internal challenge increasingly likely.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN <u>POLAND</u>			
Stability		External Challenge	Internal challenge
Period	Level	Level	
1980-1986	Very Unstable	Very low	Unlikely but cannot be excluded
1987-1990		Very high	Likely present and growing
1991- at current		Extremely 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.

4.2 Risk that BSE infectivity entered processing

A risk that BSE infectivity entered processing existed in Poland since the late 80s or early 90s when the earliest import of potentially infected breeding cattle were slaughtered. It became higher about 5 years after the first imports of potentially contaminated MBM (1987), i.e. around 1992. In line with the increasing MBM imports this risk increased over time. It was further enhanced by the growing internal challenge that resulted from the very unstable system.

4.3 Risk that BSE infectivity was recycled and propagated

Given that a processing risk may have existed since the late 80s/early 90s, at the latest since around 1992, and that the system was (and is) very unstable, it is very likely that the BSE-agent was recycled and propagated.

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 stability remains as low as it is, the probability of cattle to be (pre-clinically or clinically) infected with the BSE-agent will increase, even if no further external challenge would occur.

5.3 Recommendations for influencing the future GBR

- Improving the stability of the system, in particular by ensuring that no MBM is fed to cattle but also by excluding SRM from entering the feed cycle, would help reducing the GBR over time. A good control of the rendering industry, ensuring that appropriate rendering conditions are applied, would support this.
- Improved surveillance, e.g. due to improved passive and active surveillance, i.e. sampling of asymptomatic at-risk cattle populations, such as adult cattle in fallen stock and emergency slaughter, by means of rapid screening, would allow monitoring the efficiency of the stability enhancing measures. If combined with an appropriate culling scheme it could also reduce the risk of propagating the disease, should cases be found.