

Report on
the Assessment of
the Geographical BSE-Risk
(GBR) of the
CZECH REPUBLIC
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:

- Information provided by the competent authority of the country (13 October 1998, 19 July 1999).
- Country dossier provided by the Slovak Republic (1 July 1999).
- Basic questionnaire for the assessment of the GBR of the Czech Republic including annexes (October 2000).
- Comments on the draft report and further information provided by the State Veterinary Administration of the Czech Republic (received on 28 February 2001).
- Weekly updates on animals tested for BSE (last received for the period 1/2/01 to 23/3/01).
- Further comments by the State Veterinary Administration of the Czech Republic received on 26 March.

Other sources:

- EUROSTAT Year Book on Candidate and South-East European countries 2000.
- EUROSTAT export data on "live bovine animals" and on "flour, meal and pellets of meat or offal, unfit for human consumption; greaves", covering the period 1988 to 1999.
- UK-export data on "live bovine animals", 1980-1998 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.
- IT-export data on MBM exports, 1990-2000, provided by National Institute of Statistics.

2. EXTERNAL CHALLENGES

The Czech Republic is independent since 1993.

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

Table 1 provides an overview of the import of live cattle into the Czech Republic, 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.

Period before 1993 (Czechoslovakia)

- In 1981, three young breeding bulls were imported from UK into Czechoslovakia. All three have been slaughtered in 1987 and entered the food chain.
- Between 1988-1992 Eurostat recorded 6,459 live cattle exported to Czechoslovakia from BSE-affected countries other than UK, mostly DE (4,910 animals) and FR (927) but also DK (430), NL (189) and BE (3). The country import statistic indicated only 2,858 animals in total,

claiming that these represent the part of all imported cattle that were imported to the Czech part of former Czechoslovakia. However, it is noted that if added to data on cattle imported into the Slovakian part of former Czechoslovakia that were provided in the Slovak dossier (877), the imports jointly acknowledged by these two countries (3,735) do not add up to the exports registered in the Eurostat export statistics (6,459).

Period since 1993 (Czech Republic)

- In 1993, 24 cattle were imported from the UK and another 2 animals in 1994, all for reproduction purposes. Since 1998, the animals imported from UK are not allowed to be slaughtered but are killed at the end of their productive life, the brain is tested for BSE and if negative the animals are disposed of in a rendering plant. This was the case for the two bulls imported in 1994 and two other animals imported in 1993. The other 22 UK animals imported in 1993 are still alive and regularly checked by the official veterinary services.
- Since 25 July 1994, import of bovine animals from UK and Switzerland is prohibited.
- According to Eurostat about 29,700 cattle were exported from BSE-affected countries other than the UK to the CZR between 1993 and 1999, mainly from DE and FR. The Czech import statistics indicate 25,700 animals for the same period.
- Cattle imported from FR were young breeding bulls (18-24 months) and pregnant heifers (20-26 months). The average age at slaughter of these cattle does not differ from the average age at slaughter of domestic cattle, i.e. around 4-5 years). The French authorities confirmed the BSE-free status of herds of origin and of the herds the animals had passed through until 1997. In 2000, the French authorities have confirmed this again, upon a renewed request by the Czech authorities. They also stated that the situation will be followed up properly.
- The State Veterinary Authority of the Czech Republic has carried out a detailed investigation on all bovine animals imported since January 1988. The related data are kept by the Czech-Moravian Association of Breeders and concern all animals imported for breeding. According to the Czech Republic dossier, all imported animals were under 2 years of age and were imported for breeding purposes.

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Import of live cattle (no./year) into <u>CZECH REPUBLIC</u> from BSE-affected countries																				
	Period	UK			CH	FR		BE/Lux		NL		DK		DE		IT		Non-UK		
	Source:	CD	EU	UK	CD	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	
Former Czechoslovakia	1980																			
	1981	3		3																
	1982																			
	1983																			
	1984																			
	1985																			
	1986																			
	1987																			
	80-87:	3		3	0	0		0		111		9							120	
	1988					0				10		10	0	329	0				0	349
1989					19	38			20		19	199	457	0				218	534	
1990					32						196	296	638	0				328	834	
1991					85	61			1		178	664	1,291	0				749	1,531	
1992					697	828		3	158		27	796	2,195	31				1,524	3,211	
88-92:					833	927		3	19	189	20	430	1,955	4,910	31			* 2,858	6,459	
Czech Republic	1993	24				1,540	1,531		9	485		75	577	989	0			2,117	3,089	
	1994	2				3,925	4,348			95		457	146	2,060	183	181		4,254	7,141	
	1995					5,783	5,518			165		2,478	3,396	3,503	35	44		9,214	11,708	
	1996					2,624	2,799			155		327	1,498	2,852	1	27		4,123	6,160	
	1997					133	127			90		14	755	1,002	5	7		893	1,240	
	1998					26	18			88			214	123	5			245	229	
	1999					11	4			7			148	133	5			164	144	
	93-99:	26			12	14,042	14,345			1,085		3,351	6,734	10,662	234	259		* # 25,700	29,711	
	2000					31	45			24		0	231	245	6	6				320
88-00:	26			12	14,906	15,317	11	12	1,396	1,298	3,345	3,781	8,920	15,817	271	265		28,861	36,490	

Table 1: Live Cattle imports. Shading indicates period of different risk that UK-exports carried the BSE agent, 1988-1993 being the period of highest risk. Sources of data: CD= Country Dossier, EU = EUROSTAT (1988-1999), UK=UK-export statistic (1980-1996). The thick line indicates the division of Czechoslovakia into two countries. All imports are for breeding, except for 32 cattle from The Netherlands in 1997 and 23 from France in 1993 for slaughter.

* = Total different from total of column above as some CD country totals were not broken-down per year (DK and NL).

* and # = Rounded total figure as some CD country totals (BE, DK and NL) are not corresponding to the same periods. [* and #] do not modify the assessment as the country concerned (BE, DK, NL) did not export significant quantities of animals.

Country of origin	N° of imported cattle	N° cattle still alive on 15 January 2001
Austria	2,054	1,098
Belgium	11	5
Denmark	3,345	686
France	14,906	3,242*
Germany	10,920	2,154
Italy	271	131
Netherlands	1,396	368
UK (Scotland)	26	22
Switzerland	12	6
Total	32,941	7,712

Table 2: Breakdown of cattle imported from EU Member states and CH in the Czech Republic per country of origin. It shows that 23% of these animals were still alive on 15 January 2001.

* A specific Table on cattle imported from France and still alive on 31 December 2000 was also provided, broken-down per year of import. At the end of 2000, 31 of these cattle were 2 years old, 10 were 3 years, and all others were older.

Table 2 shows that most (77%) of the cattle imported from BSE affected countries are dead. If they did carry infectivity, this would have entered the Czech BSE/cattle system, mostly in the last 10 years.

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

Table 3 gives an overview about the MBM-imports into the Czech Republic, as provided in the country dossier and compares it with the Eurostat and UK-export statistics.

Period before 1993 (Czechoslovakia)

- According to Eurostat, 12,837 tons of MBM have been exported between 1980 and 1992 to Czechoslovakia (CSSR) from FR (7,850 t, 1988-92), DE (4,527 t; 1980-92) and BE (460 t; 91/92).

Period since 1993 (Czech Republic)

- Since 25 July 1994, import of MBM and heat-treated and non heat-treated products from meat of bovine animals from UK and Switzerland is prohibited. The 3,037 tons of feedingstuffs that have been imported from UK after that date were petfood and “titbits” for pet carnivores.
- Since 1995 the Czech import conditions “code IMH- 95/04 –TZBVR.2(EU)” require that all imported MBM has been pressure cooked ($133^{\circ}\text{C}/3^{\text{bar}}/20^{\text{min}}$). The competent authorities of the exporting country certified this. Consignments with not complying certificates were returned.
- Exports of MBM (2 tonnes) from UK after 1994 (see Table 3) are assessed as fully negligible.

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Import of MBM (tons/year) into <u>CZECH REPUBLIC</u> from BSE-affected countries																				
	Origin:	UK			CH	FR		BE/Lux		NL		DK		DE		IT		Non-UK		
	Source:	CD	EU	UK	CD	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU °	CD	EU	
Former Czechoslovakia	80-85:	<i>Not addressed #</i>																		
	1986																			
	1987																			
	1988						1,950													1,950
	1989						4,000													4,000
	1990																			
	86-90:						5,950													5,950
	1991						1,060		460						260					1,780
	1992						840								4,267					5,107
	91-92:						1,900		460						4,527					6,887
Czech Republic	1993						40				5			6,993					7,038	
	1994						140		13		12			8,362					8,527	
	1995		1.9	1.9					25		71			11,365					11,461	
	1996								7		25			12,025		94			12,151	
	1997						217		189		11	20		16,930		351			17,718	
	1998		0.5				920		90		326	28		26,225		894			28,483	
	1999						318				38			16,767		1,739			18,862	
	93-99:	0	2.4	1.9			1,635		324		488	48		98,667		3,078			104,240	
	2000						2,331				371			25,517		1,619			29,838	
	80-00:	0	2.4	1.9			* 25,853	11,816	* 535	784	* 1,218	859	* 121	48	105,141	128,711	3,154	4,697	* 136,022	146,915

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 of data: CD= Country Dossier, EU = EUROSTAT (1988-1999), UK=UK-export statistic (1980-1996). The thick line indicates the division of Czechoslovakia into two countries.

* = Data provided by the CD in GBR questionnaire (correspond to the period 1980-1999), while the CD totals for DE and IT were provided later explicitly for the period 1980-2000

° = Eurostat data as confirmed and slightly modified by Italian authorities (same order of magnitude).

"Not addressed" because different country and absence of complete data for the corresponding period.

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- Between 1993 and 1999, according to Eurostat and the country's import data, slightly more than 104,000 tonnes of MBM were exported from non-UK BSE affected countries to the Czech Republic, mostly from Germany and to a much lesser extent from FR and other countries. The country did not provide a breakdown of the imports by year and therefore the distribution indicated by the Eurostat data is assumed to be correct.
- The Czech Republic has also imported around 300,000 tonnes of probably MBM-containing feedingstuffs from BSE affected countries, mainly from DE, IT, FR, UK, NL, DK but also from BE, CH and IRL. All of it was used for non-ruminant feedstuffs (pigs, poultry, fish and petfood). These imports are not taken into account in this assessment.
- In 2000, the Czech Republic has imported 5,698 tonnes of MBM from Austria (not presented in Table 3, nor assessed).

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 challenge resulting from live cattle imports has been moderate between 1988 and 1992 due to cattle imported from UK and from DE, FR, DK, IT and NL into Czechoslovakia. Since 1993 the external challenge is high due to imports into the Czech Republic of cattle from DE, FR, DK, IT, NL, and CH.

Between 1986 and 1992 a high external challenge resulted from imports into Czechoslovakia of MBM from non-UK BSE affected countries and also the Czech Republic (in 1993 and for the period 1994-at current) experienced a very high external challenge due to MBM imports, mainly from DE, FR, IT, NL, BE and DK.

External Challenge experienced by the CZECH REPUBLIC					
<i>External challenge</i>			<i>Reason for this external challenge</i>		
	Period	Level	Cattle imports	MBM imports	Comment
Former Czechoslovakia	1980-85	<i>Not addressed</i> *	<i>Not addressed</i> *	<i>Not addressed</i> *	Mainly due to MBM-imports from non-UK BSE-affected countries
	1986-87			High	
	1988-92	High	Moderate		
Czech Republic	1993-99	Very high	High	Very high	

Table 4: Summarising table on the overall external challenge in the Czech Republic.

* "Not addressed" because incomplete data for the corresponding period.

On the basis of the available information the overall assessment of the external challenge is as given in table 4 above. It is assumed that the Czech Republic was exposed to a very high external challenge since 1993 and a high external challenge was also experienced by Czechoslovakia between 1988 and 1992, mainly due to MBM-imports.

3. STABILITY

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

Feeding:

In the former Czechoslovak Socialist Republic -CSSR- (-1993)

A commission for prescription of feedingstuffs balanced during 1980-1992 sources of feeding raw materials with needs of planned agricultural production. Because of the financial disadvantage, animal proteins were not included into compound feed for ruminants. These raw materials were only included in pig and poultry feed. The composition of compound feedingstuffs prescriptions that was issued by the Ministry of Agriculture was binding for all producers of compound feeds and it was not allowed to modify them. No information on feed controls during the period 1980-1992 is provided.

A feed ban, prohibiting feeding of ruminant and mink MBM to ruminants, was established on 4/6/1991 on the basis of an Order of the Director General of the State Veterinary Service of the CSSR. According to the dossier of the Slovak Republic this ban was issued by the State Veterinary Administration of the Czech Republic and it was valid only in the current Czech Republic part of the country. This tends to indicate that this ban might not have been enforced nor complied with throughout Czechoslovakia between 1991 and 1993.

Year	Total, of which:	for cattle	for pigs	for poultry
1980	5,227,731	1,667,806	2,639,605	893,927
1985	4,999,386	1,826,109	2,271,502	867,481
1990	5,205,508	1,661,109	2,512,564	993,517
1991-1999 *	4,200,000	420,000	2,310,000	1,260,000

Table 5: Annual production of compound feedingstuffs in the Czech Republic for the period 80-99 (yearly breakdown was provided between 1980 and 1990) **in tonnes.** * = *Approx. annual average for the period 91-99, on the basis of information provided by the Association of the Czech-Moravian Manufacturers of Feedingstuffs, no breakdown per year provided by CD. Note: It was not indicated if for the period before 1993 these data correspond only to the Czech part of the former Czechoslovakia or to the whole country of that time.*

Detailed figures were provided on the level of production of feedingstuffs (Table 5) but the total number of feed mills/feedingstuffs manufacturers was not given. However, the data demonstrate that important quantities of cattle compound feed were (32% of total production of feedingstuffs in 1980, 36% in 1985) and are still (10% of total production since 1991) produced. No indication was provided on the composition of the different feedingstuffs.

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In the Czech Republic (1993-):

- Feed formulas decided centrally in the former Czechoslovakia, that did not contain animal protein for cattle feed, continued to be mandatory in the CZR.
- The 1991 ban was extended on 30/9/1996 by the Central Animal Disease Commission of the CZR to forbid feeding animal proteins and processed products thereof to ruminants (MMBM ban).
- Following EU Directive 97/47/EC, a national Decree (256/1997) came into force on 15/10/97 that set a list of prohibited raw materials for animal feed.
- These national regulations do not cover fish meals and poultry meals. However, as there were no separate production of poultry meal in the country, the MMBM ban to ruminants concerned all types of MBM.

According to the country dossier, proteins of animal origin were never included in compound feedingstuffs for cattle but cattle receive feed of plant origin (roughage, cereals, oil plants, vegetables, oil cakes, dried feed of plant origin, by-products of malting, starch and sugar industries, vitamins, minerals and additives). Prices of imported MBM, domestic MBM and soya were given in the CD to demonstrate that it was not profitable to intentionally use imported MBM.

It is also mentioned that the domestic dual-purpose breed “Czech spotted cattle” is “not able to react either adequately or effectively by increasing of milk or meat yield to the addition of animal proteins” and therefore has never been fed any MBM.

- Feed controls are said to be carried out since 1991, but evidence thereof is provided only since 1996 (see cross contamination below).

It was concluded that feeding cattle with MBM, BM, MM or greaves occurred before 1991 and was still possible until 1996 and thereafter.

Rendering:

Bovine raw materials (including bovine brains, spinal cords and fallen stock) as well as other materials (pigs, sheep, goats, poultry and other animal species, cadavers and waste from the agri-food industry processing raw materials of animal origin) have always been rendered for feed production in Czechoslovakia and are still rendered in the Czech Republic.

- Since 1962, legislation (Decree n° 154/1961) provided that condemned material of animal origin had to be processed for 30 minutes at a temperature of 130-140°C, at a pressure of 3 bars.
- The plant operator had to keep records of this. The high-risk cattle material was always processed at a rendering plant together with the animal waste originating from other animal species in Czechoslovakia.
- On 30/09/1996 the measures as laid down in Commission Decision 96/449/EC were adopted (parameters of temperature, time, pressure and particle size at

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rendering) as a national “emergency measure” of the Central Animal Disease Commission of the Czech Republic.

- On 22/04/1997 emergency veterinary measures qualifying the high-risk material and the risk material with respect to BSE and the way of treatment thereof at rendering plants were issued. These measures require the introduction of the HACCP system in all plants processing waste of animal origin from 30/04/97. Since this date the system is controlled periodically.
 - Records of checks on processing of animal wastes (from slaughterhouses and of fallen stock) in rendering plants are kept by the district veterinary administrations.
 - Frequency of checking is said to be “once per 3 months till 1997 and increased to once per month since 1997”.
 - ELISA tests are used to verify the sufficiency of heat treatment of MBM.
- Certain parts of animal bovine waste (meat and certain organs), having the character of low risk raw material according to Council Directive 90/667/EEC is used for manufacturing of feedingstuffs intended for pet carnivores.

The different methods used by the Czech Republic for the treatment of low risk materials (as defined by EU Council Directive 90/667/EC) are as follows:

- boiling to reach a core temperature of 70/75°C for at least 20 minutes;
- drying to reach a core temperature of 70/75°C for at least 20 minutes;
- freezing of ground poultry low risk material (-18°C);
- mixing with cereals and drying at 240°C, for at least 15 minutes;
- canned at 121°C for 90/150 minutes;
- manufacturing of “non glued bone meal” (derived from bones fit for human consumption). Bones treated at 133°C/3^{bars}/3^{hours}, dried for 6 hours at 100°C, cooled, ground and packaged.

Some low risk materials are not processed according to the EU standard. They are destined for pet food only.

It is concluded that, apparently, the Czech Republic has continuously rendered all high-risk bovine raw material (including SRM) and fallen stock for feed production since 1962 (CSSR) at process conditions in line with the 133°C/20^{min}/3^{bar} standard. No information on the level of compliance with these measures is provided, in particular with regard to the time before controls were strengthened in 1997.

SRM and fallen stock

There is no SRM-ban. During the last 20 years SRM and fallen stock were included into the raw material entering rendering. However, SRM derived from animals fit for human consumption are condemned and processed in high risk rendering plants at 133°C/3^{bar}/20^{min}.

Since 1/1/2000 SRM are legally defined and the way of handling them in rendering plants (133°C/20^{min}/3^{bar}, particle size max. 50mm) has been specified (Decree N° 286/1999), but they are not excluded from rendering for feed.

On the basis of a decision of the “Crisis Staff” of the Czech Ministry of Agriculture, it is foreseen that separate collection of SRM (in accordance with EU Commission

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Decision 2000/418/EC as amended by Decision 2001/2/EC) and separate processing of dead animals (in accordance with EU Commission Decision 2001/25/EC) will begin in March 2001.

Cross-contamination:

Provisions of the Feed ban Act of Sept. 1996 require that manufacturers and carriers of feedingstuffs handle their products in a way that avoids “affection of their quality by any influence”. In addition cleaning programmes of production plants are carried out: “To avoid cross-contamination, the manufacturer is obliged by legislation in force to clean the machinery, mills and production lines when switching to another feedingstuffs production. Flushing with large amounts of grain mixtures of vegetable origin is carried out for cleaning. The flushing batch is afterwards only used for monogastric animals feeding”.

On the basis of the available information, it appears that specialisation (by species of destination) of individual compound feedingstuffs manufacturing plants was generally the case before privatisation in early 90's, became less systematic with privatisation and was developed again with “modernisation” and quality awareness (apparently since the late 90's). It is mentioned that the State Veterinary Services and the Central Institute for Supervising and Testing in Agriculture try to achieve the establishment off specialised manufacturing plants for compound feedingstuffs intended for ruminants. It is concluded that this is not yet the case.

According to the Czech Authorities, transport means are intended for transporting feedingstuff for only one species of farm animals. In addition, cleaning programmes for transport means are carried out.

Labelling of non-ruminant feed is done to avoid cross feeding.

Feed controls are carried out since 1996 as follows:

- Control on cross-contamination is performed at random as well as on targeted particular inspection of manufacturers by the State Veterinary Services and by the Central Institute for Supervising and Testing in Agriculture in order to verify whether MBM was added to feedingstuffs intended for ruminants. These controls consist of:
 - administrative checks (on formulae, raw material input and on labelling);
 - “organoleptic examination” since 1996 (colour, structure, odour of compound) performed according to CZ standards (CSN 467013) described as a “subjective” method by the CD;
 - since 1999, microscopic examination (of cellular structures) on the basis of requirements of Decree N°194/1996, described as a “specific” method for the detection of MBM by the CD;
 - ELISA tests (based on reactivity of porcine muscle to heat treatment);
 - the PCR method is also mentioned for the detection of components of bovine origin in compound feeding stuffs (detection limit 0.1% / specificity 100% according to CD).
- Since 1996, 1,363 samples were taken for “organoleptic” examination, 70 samples were tested by ELISA in 1999, and 199 samples were tested by microscopic

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examination in 1999 and 2000. No positive sample was found. But the definition of a positive sample is not clear.

Co-farming of ruminant and non-ruminant species was more frequent in the 60's and back-yard farming has declined since then. Because of specialised state co-operative farms, cattle farming and farming of other animals has always been concentrated since 1970. This separation was kept after privatisation in the 90's. The only exceptions mentioned are sporadic fattening of pigs for private slaughtering along with cattle raising.

It is concluded that cross-contamination of cattle feed with MBM is monitored since 1996 and that analytical controls are carried out since 1999.

However the number of feed mills is not known, therefore this favourable assessment might have to be corrected depending on the ratio [samples examined / number of plants inspected per year]. The wish of official control services to specialise and separate compound cattle feedingstuffs manufacturers will fully strengthen measures to avoid cross contamination.

Conclusion on the ability to avoid recycling

In light of the above-discussed information it has to be assumed that the BSE agent, should it have entered the Czech Republic territory would have been recycled and potentially 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 Czechoslovakia data concerning agriculture were kept separately as there were two ministries of agriculture (Czech and Slovakian). The recorded cattle population was as follows:

Year	Czech Republic		Slovak Republic	
	Cattle	Cows	Cattle	Cows
1990	3,360,000	1,195,000	1,563,000	549,000
1991	2,950,000	1,036,000	1,396,000	501,000
1992	2,512,000	932,000	1,182,000	429,000

Table 6: Cattle population in Czechoslovakia (90-92) according to the Czech Statistical office and the Slovak Statistical office (provided by CZ country dossier)

Year	Czech Republic	
	Cattle	Cows
1994	2,030,000	768,000
1995	1,989,000	751,000
1996	1,866,000	702,000
1997	1,701,000	647,000
1998	1,657,000	642,000

Table 7: Cattle population (94-98) for the Czech Republic (Eurostat Statistical YearBook 2000)

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It is concluded that these two sets of figures are consistent and show approximately (calculation with different sources of information) that the total Czech cattle population has dropped by 51% between 1990 and 1998, when the total cow population was reduced by 42% during the same period.

According to the CD, the trend in the cattle population that was observed between 1990 and 1994 results from the development of the economic situation (mainly changes of subsidies, imports, and milk price). It is regarded as permanent and continuing. Increase of productivity in beef and dairy sectors are considered by the country as marginal factors.

The cattle population in the Czech Republic consists mainly of dairy cattle (85 % of cattle over 24 months are female) which are slaughtered at the age of 5 years. Only 0.2 % consists of breeding males which are slaughtered at the age of 8 years. Male and female cattle intended for meat production is slaughtered at 18 months.

The average age at slaughter for breeding bulls is between 49-56 months, for breeding cows between 46-50 months. Fattening bovines are normally killed at the age of 18 months.

Period	Total >24 months	Male >24 months		Female >24 months	
		Meat	Breeding	Meat	Breeding
1980-1984	1,527,321	65,321	1,000	181,000	1,280,000
1985-1989	1,473,287	57,287	1,000	175,000	1,240,000
1990-1994	972,844	33,207	647	109,261	829,729
1995-1999	817,223	21,038	1,583	93,851	700,751
Actual	723,016	21,119	1,531	85,579	614,787

Table 8: Cattle population structure in Czech Republic (provided by CZ answer to GBR questionnaire).

Surveillance and culling

Since 15/5/1991, notification of BSE is compulsory and full compensation covers the market value of confirmed cases, suspect cases, and culled “at risk” animals. The “Crisis Centre” of the Ministry of Agriculture has prepared contingency plans in case BSE would be identified.

A BSE-suspect is defined as cattle showing neural clinical signs pathognomonic for this disease and/or with non-successful treatment lasting more than 14 days. A suspect animal should always be notified. BSE-suspects are examined for BSE by histology, introduced since June 1991.

Since September 1996, training measures on BSE are implemented.

- Laboratory staff has been trained since 1991 both in the Veterinary Research Institute and the University of Veterinary and Pharmaceutical Sciences in Brno and in Weybridge (UK).
- Participation of experts from the University of Veterinary and Pharmaceutical Sciences, the Veterinary Research Institute and experts from abroad training was

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provided to staff of district veterinary administrations, private veterinarians, farmers, staff at slaughterhouses and rendering plants.

- Papers are distributed both at professional as at public level, information was distributed via the media.
- At district level professional information concerning symptomatology and notification of suspect cases was provided.
- Four professional workshops were organised in January and February 2001 at the University of Veterinary and Pharmaceutical Sciences in Brno.
- Joint training programs for private veterinarians were also discussed with the National Chamber of Veterinarians in order to develop passive surveillance.
- The State Veterinary Administration organised three meetings of the senior Veterinary Officers in February 2001 and two meetings with District Veterinary Directors, focused on active surveillance procedures (see below).

It is concluded that training has started in 1991 and was particularly strengthened in 2001.

In 1997, a national reference laboratory for animal spongiform encephalopathies was established in Prague. Two laboratories are authorised to carry out BSE examinations: the laboratory of the State Veterinary Institute in Prague and the laboratory of the State Veterinary Institute in Jihlava.

The system of monitoring and notification of all BSE suspect cases was intensified in 2000. In October 2000, experts from both laboratories of the Czech Republic were trained in the Western blot technique. In addition, material and technical equipment for this purpose were purchased in Switzerland.

Surveillance, actions and results:

- In 1996, it was decided that “breeding cattle imported from UK and Switzerland should be supervised under strengthened veterinary regime and be destroyed and safely disposed of after farming exploitation.” At current, all animals imported from abroad are under intensive official veterinary supervision (movements subject to certification) and are examined regularly because they are regarded to represent a higher risk with respect to BSE than cattle of the domestic Czech breed.
- Between 1996 and 2001, 95 asymptotic imported animals have been examined with no BSE-case diagnosed. All cattle from UK and Switzerland are tested while animals from other BSE affected countries are tested in accordance with the standard monitoring scheme used for domestic cattle.
- Since 1997, according to the CD, active surveillance has been set up, non-suspect, domestic cattle have been examined for BSE. None of them was found to be BSE-positive. However, before 1999 the number of domestic animals examined is well below the number required by OIE (± 70 per year / see Table 9 below).
- All cattle older than 36 months showing clinical signs of neural diseases as well as animals examined for rabies with negative results were examined for BSE. In total since 1993, 20 domestic BSE suspects have occurred in Czech Republic, of which 5 were over 24 months and 15 over 36 months of age. None was found positive;

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metabolic disorders and encephalitis purulenta abscedens were the most common differential diagnoses.

Year:	1993	1994	1995	1996	1997	1998	1999	2000
N°	1	1	0	1	7	58	71	202
Imported animals	/	/	/	4 from UK, 88 from other BSE affected countries (+ 3 younger than 24 months)				

Table 9: Number of brains of cattle older than 24 months annually examined for BSE before 2001

- Since February 2001, within the active surveillance programme developed in accordance with EU Commission Decision 2000/764/EC, rapid tests are introduced. A budget of 8 million CZK is allocated to the active surveillance program for 2001. At current, the method used by the two Czech approved laboratories is Prionics (Western-Blot). The group targeted for testing is defined as follows:
 - all animals showing clinical signs of CNS and emergency slaughter or dead animals over 30 months old (2,500 tests expected).
 - all animals (dead, emergency slaughtered, or normally slaughtered at the end of their production life) imported from BSE affected countries must be examined for BSE in a laboratory (2,500 tests expected).
 - Additional examinations on the request of meat plants, retailers, farmers, etc.

Between 1/2/01 and 23/03/01, a total of 3,428 tests have been carried out, none were positive.

Category of cattle	CZ origin		Imported		Totals		
	< 30m	> 30m	< 30m	> 30m	< 30m	> 30m	all
Suspects	0	0	0	0	0	0	0
Fallen stock	12	106	1	30	13	136	149
Emergency slaughtered	25	278	3	70	28	348	376
“Normally” Slaughtered	2,051	749	0	103	2,051	852	2,903
Totals	2,088	1,133	4	203	2,092	1,336	3,428
	3,221		207		3,428		

Table10: BSE Western-Blot tests carried out between 1/2/01 and 23/03/01

More “normally slaughtered” animals of less than 30 months are tested than animals over 30 months old because, upon request of the industry (breeders, food processing plants, manufactures, etc.) tests are carried out of these relatively young cattle to re-establish the public confidence in their products. The companies concerned pay the corresponding tests.

It is concluded that targeted passive BSE surveillance was non-existent before 1997 and not sufficient (numbers well below OIE requirements until 1998) before 2001. The active surveillance program that is running since February 2001 has not yet yielded statistically significant numbers of tests, also because a relative high fraction of the tested animals is rather young.

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 SRMs) 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.

Stability of the BSE/cattle system in <u>CZECH REPUBLIC</u> over time						
			Reasons			
Former Czechoslovakia	Period	Stability level	Feeding	Rendering	SRM-removal	Other
	1980-1992	Very Unstable	Not OK	Reasonably OK	Not OK	
Czech Republic	1993-1995	Very Unstable	Not OK	Reasonably OK	Not OK	
	1996	Unstable	Reasonably OK			
	1997-2000	Neutrally stable		OK		
	At current					↑

Table 11: Overall stability of the BSE/cattle system in Czech Republic over time. "Other" refers to the impact on the stability of other factors than the three main stability factors. Until 1999 surveillance was not good enough to enhance the stability, and cross-contamination was not sufficiently controlled, hence the other factors reduce stability ().

Feeding: The efficiency of the RMBM-ban of 1991, when Czechoslovakia was still existing, cannot be fully judged. With the reinforcement of 1996 controls were introduced and voluntary feeding of MBM is regarded unlikely since 1996, while cross-contamination was still not excluded. Accordingly feeding is assessed as "not OK" until 1996 and "reasonably OK" since then.

Rendering of high risk material was apparently carried out since long under appropriate conditions but no evidence of controls is provided before 1997. Since 1997 controls are apparently in place. Some "low risk" materials are not rendered according to standard but they are destined for pet food only. Therefore rendering is assessed as "reasonably OK" between 1980 and 1997 and "OK" thereafter.

SRM and fallen stock are rendered for feed production. As regulations defining proper handling of SRM are in place since 2000 only, SRM removal is "not OK" for the time being. However, it is noted that a SRM ban is foreseen which could upgrade this stability factor to "OK".

Other stability factors: Cross contamination is reducing the efficiency of the feed-ban at least until 1999 and BSE surveillance is found to be inefficient before 1997 and not sufficient until 2001. The other stability factors therefore reduce the stability until 1999/2000.

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On the basis of the available information it has to be concluded that the country's BSE/cattle system was very unstable until 1995. It became unstable in 1996 and is neutrally stable since 1997. Once the SRM ban is appropriately implemented the system will become stable.

4. CONCLUSION ON THE RESULTING RISKS

4.1 Interaction of stability and challenges

The conclusion on the stability of the Czech Republic system and external challenges the system had to cope with over time are summarised in the table below. From the interaction of "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 the external challenge that occurred.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN CZECH REPUBLIC				
	Stability		External Challenge	Internal challenge
	Period	Level	Level	
Former Czechoslovakia	1980-87	Very Unstable	<i>Not addressed *</i>	<i>Not addressed *</i>
	1988-92		High	Likely present and growing
Czech Republic	1993-95	Very Unstable	Very high	Likely present and growing
	1996	Unstable		
	1997 - At current	Neutrally stable		

Table 12: Internal challenge resulting from the interaction of stability and external challenge over time. * "Not addressed" because incomplete data.

When the high external challenge that occurred between 1988-92 in Czechoslovakia met the very unstable system an internal challenge became likely. This would have been recycled and amplified by the system that, also after the end of the CSSR, remained very unstable until 1995, and unstable until end 1996. The resulting increase of the internal challenge was further supported by the continuously very high external challenge experienced by the Czech Republic, resulting from both live cattle and MBM imports from BSE-affected countries.

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

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slaughtered at an age too young to harbour large amounts of BSE-infectivity or to show signs, even if infected prior to import. Breeding cattle, however, would normally live for 10 years or more. Only animals having problems would be slaughtered younger. If being at an age of 4-6 years when slaughtered, they could approach the end of the BSE-incubation period and harbour, while being pre-clinical, as much infectivity as a clinical BSE-case. Hence the date when cattle imports could have led to an internal challenge is about 3 years after the import of breeding cattle that could have been infected prior to import. In the case of the Czech Republic this could have happened in the early 90s. Special measures taken to avoid processing of imported cattle into feed could reduce the risk of this happening but were only taken recently.

Imports of contaminated MBM, MM, BM or Greaves would lead to an internal challenge in the same year of import, if fed to cattle. Contaminated MBM could have been imported in the late 80s (88/89) into the CSSR. This would have led to an internal challenge shortly after import, most likely in both parts of the Czechoslovakia, the Czech and the Slovak territory.

4.2 Risk that BSE infectivity entered processing

Given the fact that the potentially BSE-incubating cattle were imported since 1988, a risk that BSE infectivity entered processing first existed about 3 years after the import of breeding cattle that were potentially infected, i.e. from 1991 onwards. At that time some animals might have been prematurely slaughtered on the Czech territory because of productivity loss, unclear diseases etc. Being about 5 years old they could have been approaching the end of the incubation time.

If cattle were exposed to infective imported feed stuff of MBM, infected domestic cattle approaching the end of the incubation period could have reached processing about 4-6 years after the critical imports, i.e. from 1993 onwards.

Given the instability of the system before 1997 and the continuing imports, this risk grew over time.

4.3 Risk that BSE infectivity was recycled and propagated

Given that the BSE-agent could have reached processing in the early 90s, and that the system was very unstable, a risk that BSE infectivity was recycled and amplified exists since then. Given the instability of the system, this risk grew over time. The measures taken since 1996 reduced the increase of the risk to some extent but will only reduce it once the system is stable.

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 of the system is not further improved, the probability of cattle to be (pre-clinically or clinically) infected with the BSE-agent will remain as it is as long as no further external challenge occurs.
- Any further external challenge will increase the GBR.
- The recent measures that are likely to improve the stability in the near future will over time reduce the GBR.

5.3 Recommendations for influencing the future GBR

- All measures that improve the stability of the system would contribute to a reduction, over time, of the GBR. Of particular importance is excluding SRM from the feed chain, better feed controls and better verification of rendering. The planned SRM ban and the envisaged separation of the production of feed for non-ruminants and for ruminants will strengthen the system.
- The recent improvements of surveillance that result from introducing other methods for the BSE examination of cattle brains than histopathology and a better passive surveillance will provide, together with the already started active surveillance, a better basis for assessing the GBR and the efficiency of control measures.