

FINAL REPORT  
ON THE ASSESSMENT  
OF THE  
GEOGRAPHICAL BSE RISK OF  
SLOVENIA  
MAY 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](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.

Following the confirmation of domestic BSE cases in this country, the GBR assessment is currently under revision.

## FULL REPORT

### 1. DATA

- The available information was suitable to prepare a qualitative GBR risk assessment.

#### Sources of data

Country Dossier consisting of:

- Answers to the questionnaire on geographical BSE risk assessment, received on 19 February 2001, including annexes.
- Meetings with Country experts on 22 February 2001, 24 April 2001 and 7 May 2001.
- Clarifications and comments on the draft report for the assessment of the Geographical BSE-risk for Slovenia received on 5 and 6 March 2001, including 5 annexes.
- Further comments on final draft received on 20 April 2001 and on 9 May 2001 and documents handed over during the 24 April and 7 May 2001 meetings.

Other sources:

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

### 2. EXTERNAL CHALLENGES

Slovenia has been independent since 26 June 1991. According to CD, full control of the external borders was established in 1992. Slovenia was recognised on 15 January 1992 by the European Community. For the purposes of this assessment as indicated by the country experts, Slovenia is considered as fully independent since 1992.

The "CD" data for the period prior to 1992 are based on the available information from Slovenia. Only these data are taken into account in the assessment. The Eurostat data for former Yugoslavia are however presented in order to indicate the overall context in that period.

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

Table 1 provides an overview of the import of live cattle into the Slovenian part of the former Yugoslavia and the current Slovenia as provided in the country

dossier (CD), and compare this with the exports to Slovenia from BSE-affected countries, as indicated in Eurostat and UK export statistics.

#### Former Yugoslavia (before 1992)

Eurostat does not provide a breakdown of exports to different parts of the former Yugoslavia but only global figures. According to Eurostat, no animals were exported from UK to Yugoslavia between 1980 and 1992 (this is confirmed by UK export figures). On the other hand between 1980 and 1992 Yugoslavia received significant numbers of animals exported from other BSE affected countries than UK, mainly from DE and from DK, IT, FR, SP and NL.

Some data were provided by the Slovenian authorities on imports of cattle from BSE affected countries to the Slovenian part of former Yugoslavia before the independence of Slovenia (see Table 1). However, it cannot be excluded that also part of other exports from BSE affected countries to former Yugoslavia entered the Slovenian part of the country, be it in contradiction to the official destination or due to internal trade in Yugoslavia. The country experts commented on this indicating that there was no free trade between the six states of the former Federation of Yugoslavia. All animal movements between Yugoslavian states were subjected to certification and payment of a veterinary fee (specific veterinary service and regulations for each state, but common customs services at external borders). Therefore, Slovenia considers that all cattle movements between Yugoslavian states were recorded and known.

As an indication for the order of magnitude of its share on the overall Yugoslavian imports, Slovenia indicated that its human as well as cattle population was about 10% of the respective Yugoslavian population. Also its territory represent about 10% of the entire territory of the former Yugoslavia. In consequence, Slovenia considers that its share on the Yugoslavian imports cannot possibly be higher than about 10%. The values provided are, on the other hand, much lower than this.

#### Slovenia (since 1992)

Between 1992 and 1996, imports into the Republic of Slovenia have been regulated on the basis of decisions on the veterinary conditions to be met by consignments prior to crossing the national border. As regards Great Britain, no decisions have been issued since 1992, and as regards France and Ireland, additional guarantees had been required in compliance with OIE standards.

Imports to the Republic of Slovenia of bovine animals have been banned from GB, IRE, FR, CH, PT, BE, NL, DK, SP, DE, IT when BSE has been detected in domestic animals:

- in 1996, from GB (it is assumed that it covered UK), IRE, FR, CH, PT;
- in 1998, from BE and NL;
- in 2000, from DK, SP and DE;
- in 2001, from IT.

Since May 1996, on the basis of Article 28 of the Veterinary Practice Act, imports of bovine animals have been banned for all animals not fulfilling the following conditions:

- animals must originate from establishments where in the past 6 years BSE has not been detected,
- animals have not been fed with meat-and-bone meal or proteins of animal origin, and
- they should be aged less than 30 months.

No imports of cattle from UK have been recorded by Slovenia since 1992. This is confirmed by UK and Eurostat export data.

According to the country dossier, a total of 4,875 animals were imported from non-UK BSE affected countries in the Slovenian part of former Yugoslavia (before 1992) and in Slovenia since 1992. The data for the Slovenian part of former Yugoslavia during the period 1980-1991 were prepared by the Slovenian Customs Administration on the basis of final destination declared at the time of import and on veterinary fee collection data.

Import of live cattle (n/year) into SLOVENIA from BSE-affected countries																																
	Period	UK			FR		DK		IT		DE		NL		Non-UK																	
	Source:	CD	EU	UK	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU	CD	EU																
Slovenian part of former Yugoslavia	1980	No data available																														
	1981	No data available																														
	1982		No specific record Slovenia independent in 1992				No specific record Slovenia independent in 1992			No specific record Slovenia independent in 1992			No specific record Slovenia independent in 1992			No specific record Slovenia independent in 1992			No specific record Slovenia independent in 1992													
	1983																															
	1984																															
	1985											21											10									31
	1986																															
	1987																								517							517
	80-87:	0										21											10		517							548
	1988																															
	1989											40											78									118
	1990																						205		878							1,083
1991							31		2		647							680														
Slovenia	1992							29		66		4						99														
	1993									46	9	118	69					164	78													
	88-93:	0	0	0	40	* 0	60	* 0	397	* 9	1,647	* 69	0	* 0	2,144	* 78																
	1994				36	36			68	8	59	76						163	120													
	1995				175	175			96		120	131	453	402				844	708													
	1996											2							2													
	1997									2									2													
	1998										26	26		748				26	774													
	1999						292	301	4	6	361	279						657	586													
	2000						164	202	10	10	319	264						493	476													
	94-00:	0	0	0	211	211	456	503	178	26	885	778	453	1,150	2,183	2,668																
92-00:	0	0	0	211	211	485	503	290	35	1,007	847	453	1,150	2,446	2,746																	

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

\* = Eurostat data since 1992 only.

According to the CD, since 1980, out of 4,875 imported animals in total, 1,757 bovine animals imported from BSE affected countries were for breeding purposes (detailed data were provided by year and country of origin).

Detailed information was also provided on the fate of imported cattle. It was explained that two data bases are available at current, one dealing with movement of animals (including all imported animals recorded while entering quarantine) and the second one being a register of breeding animals (including most of the imported breeding animals). These two databases were used to trace the fate of imported cattle.

According to the CD, in 1990, 465 animals imported from DE (out of 878 in total that year) were slaughtered within 72 hours after import in some authorised slaughterhouses. The age of these animals at slaughter is not known.

Concerning cattle imports since 1992, the country authorities were able to provide detailed information. This information showed that since 1992, Slovenia imported 2,446 cattle from BSE-affected countries (DE, NL, DK, FR, IT) of which 1,455 were breeding animals and 991 were for immediate slaughter or fattening. These imports would have represented a moderate challenge. However, Slovenia was able to confirm that in May 2001 still 1,093 animals imported from BSE-affected countries were alive while up to 1,353 imported cattle could have been rendered. The age at death of the latter is not known but it is estimated that a significant fraction was imported for slaughter or fattening and hence rather young at slaughter.

It is also noted that according to the CD, in addition to the above mentioned imports, in total 4,031 animals were imported from Austria to Slovenia since 1983; and since 1982, 625,335 animals were imported into Slovenia from neighbouring Eastern countries, as follows:

- 303,609 from Hungary,
- 122,845 from the former Czechoslovakia,
- 59,653 from the Czech Republic,
- 12,401 from Slovakia,
- 87,458 from Poland,
- 38,629 from Croatia,
- and 740 from Romania.

It was indicated by the country experts that most of these animals were suckling calves imported at 2 to 3 months of age and slaughtered at 22 to 24 months of age (450 to 500 kg). However, these imports were not taken into account for this assessment.

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

Table 2 gives an overview of the MBM-imports into Yugoslavia and Slovenia as provided in the country dossier, and compare it with the Eurostat and UK-export statistics.

Former Yugoslavia (before 1992)

According to Eurostat, no MBM were exported from UK to Yugoslavia between 1980 and 1992 (this is confirmed by UK export figures).

Between 1980 and 1992, significant amounts of MBM were exported from BSE affected countries other than UK to Yugoslavia, mainly from IT and from FR, DE and NL.

Some data were provided by the Slovenian authorities on imports of MBM from BSE affected countries to the Slovenian part of former Yugoslavia before the independence of Slovenia (see Table 2 below). Only these data are taken into account in the assessment of the external challenge.

Slovenia (since 1992)

Between 1992 and 1996, the imports to the Republic of Slovenia had been regulated on the basis of decisions on the veterinary conditions to be met by consignments prior to crossing the national border. As regards Great Britain, no decisions have been issued since 1992, and as regards France and Ireland, additional guarantees had been required in compliance with OIE standards.

Imports to the Republic of Slovenia of consignments of "bovine meat and meat products" (in that context it is assumed that it includes MBM) from GB, IRE, FR, CH, PT, BE, NL, DK, SP, DE, IT when BSE has been detected in domestic animals:

- in 1996, from GB (it is assumed that it covered UK), IRE, FR, CH, PT;
- in 1998, from BE and NL;
- in 2000, from DK, SP and DE;
- in 2001, from IT.

Since May 1996 the import of bovine products obtained from bovine animals aged over 30 months has been banned on the basis of Article 28 of the Veterinary Practice Act,

Slovenia recorded no imports of MBM from UK since 1992. It is confirmed by UK and Eurostat export data that no exports to Slovenia took place since 1992.

The country dossiers states that "from 1996, no MBM, MM BM, greaves and/or feedstuffs containing any of these have been imported to Slovenia from BE, DK, FR, IRE, NL, POR, CH".

Before that, some imports from BSE affected countries took place as follows:

- from IT, 4,666 tonnes in total between 1980 and 1996 (of which 4,372 tonnes before 1985),
- from DE, 89 tonnes in total between 1990 and 1996.

Import of MBM, MM, BM or greaves (t/year) into <b>SLOVENIA</b> from BSE-affected countries											
	Period	UK			IT		DE		DK	Non-UK	
	Source:	CD	EU	UK	CD	EU	CD	EU	EU	CD	EU
Slovenian part of former Yugoslavia	1980				1,100					1,100	
	1981				1,239					1,239	
	1982				1,405					1,405	
	1983				380					380	
	1984				248					248	
	1985										
	80-85:	0			4,372		0			4,372	
	1986										
	1987										
	1988										
	1989										
	1990				91		10			101	
	86-90:	0			91		10			101	
1991				60		75			135		
Slovenia	1992				25		3	0.2		28	0.2
	1993					6		0.5	23		30
	91-93:	0	0	0	85	6	78	1	23	163	30
	1994										
	1995				58	58				58	58
	1996				60	60	1			61	60
	1997										
	1998										
	1999						0	14			14
	94-99:	0	0	0	118	118	1	14	0	119	133

**Table 2:** MBM-imports. Shading indicates period of different risk that exports carried the agent, 1986-1990 being the period of highest risk for UK imports while 1994-1999 UK-exports are assumed to have been safer than exports from other BSE-affected countries. Sources: CD = Country Dossier of Slovenia, EU = Eurostat, UK = UK-Export statistics.

According to the CD, most of the MBM imports from Italy were fish meal as concurrently the Slovenian poultry production was increasing and fish meal was the type of animal meal used by this industry. The poultry production then strongly decreased in 1993 by a factor of 21% due to events in former Yugoslavia (closure of markets for this production). Slovenia mentioned that the national customs category included also fishmeal before being put in line with Eurostat since 1992. However, fishmeal exports should anyway appear in a different Eurostat category than the one used for this assessment.

Certificates relating to exports of fishmeal from Italy to Slovenia were provided, however they relate to exports in 1997, 1998 and 1999. This confirms that fishmeal imports are not presented in table 2 above under Eurostat data as no MBM imports from IT are recorded since 1997.

It was also indicated by the country experts that between 1982 and 1986, before the Slovenian rendering plant was building a second new production line (it opened in 1987), offals were exported by Slovenia to Italy, rendered in Italy

and the corresponding MBM (as certified by the Italian authorities) were imported back to Slovenia (no evidence thereof provided).

According to Eurostat, around 1,500 tonnes of MBM have been exported from Austria to Slovenia since 1995 (8,020 tonnes since 1980 according to the CD). According to the CD, these imports were blood meal (certificates were provided to support this). It is also noted that according to CD, a total of 677 tonnes of MBM were exported from Croatia to Slovenia since 1992. As these two countries are for the time being not considered as BSE affected, the corresponding figures are not taken into account in the assessment.

Between November 2000 and January 2001 (ban adopted on 30 November 2000, repealed in January), it was prohibited to import the following products:

- MBM, BM, MM, rendered fats obtained by the processing of animal waste and carcasses of all animal species;
- any feedingstuffs obtained by the processing of animal waste and carcasses of all animal species, and
- feedingstuff premixes and compound feedingstuffs containing any of the preceding components.

Since January 2001, the Republic of Slovenia has adopted a temporary Order (until 30 June 2001) on additional preventive measures in relation to TSE (Official Gazette 115/00). This order bans import and export of all processed animal proteins to feed all species of animals intended for the production of food (as well as placing on the market, trading in, and using thereof). This temporary total ban replaces and repeals the November 2000 ban.

In this context, processed animal proteins are defined as follows:

- bone meal; meat meal; meat-and-bone meal;
- blood meal; dried plasma and other blood products;
- hydrolysed proteins of animal origin;
- hoof meal and horn meal; feather meal and poultry offal meal;
- dry greaves from animal waste processing establishments;
- fish meal;
- dicalcium phosphate; gelatine;
- any other similar products which may possibly include animal proteins;
- any feedingstuffs obtained by the processing of animal waste and carcasses of any animal species;
- any feedingstuff premixes and compound feedingstuffs containing any of the components under preceding indents.

It is noted that there is a derogation for fish meal fed to non-ruminants.

### **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 is noted that the external challenge faced by Yugoslavia before 1992 was always at least high, between 1980 and 1987 (very high) mainly due to imports

of MBM and between 1988 and 1991 (high) due to the combined imports of live cattle and MBM from BSE-affected countries.

External challenge due to Cattle imports:

On the basis of the information provided by the Slovenian authorities, it appears that the Slovenian part of former Yugoslavia has met a very low external challenge by imports of live cattle from BSE affected countries before 1988, and a low external challenge between 1989 and 1991. This assessment is exclusively based on the figures provided by Slovenia and does not apply the 10% threshold mentioned by the country itself (see chapter 2.1. above).

Since 1992 the cattle imports into Slovenia represent a low external challenge only (and not a moderate) on the basis of available data on imported cattle still alive in May 2001 (1,093 animals out of 2,446 animals imported from BSE affected countries since 1992). It can be assumed that at least a part of the remaining 1,353 cattle were imported for slaughter or fattening and therefore rather young (20-24 months) at slaughter.

As it also appears that some (not demonstrated for all imported non-breeding animals) animals were slaughtered within 72 hours after import, the external challenge due to imports of live cattle might have been even lower than currently assumed as a reasonable worst case scenario.

External challenge due to MBM-imports:

Between 1980 and '85 the Slovenian part of Yugoslavia has, according to the country dossier, imported high amounts of MBM from IT (around 4,400 tonnes in total). It is assessed as moderate external challenge only (and not high) as it corresponds, according to the CD, mainly to imports of MBM from Italy in 1980-82. Since 1986 lower amounts of MBM were imported from DE and IT to the territory of Slovenia.

Before 1986 the MBM imports therefore represented a moderate external challenge and a low one between 1987-1991.

After the independence of Slovenia (1992) the MBM imports remained small and represented only a low external challenge.

<b>External Challenge experienced by SLOVENIA</b>				
<i>External challenge</i>		<i>Reason for this external challenge</i>		
<b>Period</b>	<b>Level</b>	<b>Cattle imports</b>	<b>MBM imports</b>	<b>Comment</b>
<b>1980-1985</b>	<b>Moderate</b>	Very low	Moderate	Slovenian part of former Yugoslavia
<b>1986-87</b>	<b>Low</b>		Low	
<b>1986-1991</b>				
<b>1992-2000</b>	<b>Low</b>	Low	Low	Slovenia independent in 1992

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

The Slovenian part of Yugoslavia has met a moderate external challenge before 1986 due to imports of MBM from IT, a low external challenge due to cattle imports between 1986 and 1991, and a low external challenge since 1992 due to imports of cattle from DE, DK, FR, IT and NL.

In addition (for information, not assessed), since the 80's, approximately 590,000 cattle were imported from neighbouring countries already assessed as having a GBR level III. Most of it as suckling calves for fattening and slaughter at 20-24 months.

### **3. STABILITY**

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

##### **Feeding**

An official feed ban was adopted on 17<sup>th</sup> May 1996 through an Order banning the use of MBM in the nutrition of ruminant animals (Official Gazette of SR 27/96 and 68/96). It was later amended (29 November 1996) in order to prohibit the use of mammalian tissues in the nutrition of ruminant animals.

Feed controls were carried out but insufficient to confirm full efficiency of the feed ban.

According to the CD, farming systems in Republic of Slovenia were and are still very extensive therefore feeding of meat-and-bone meal to ruminants was never common practice. It was however practised in intensive milk producing farming systems (approx. 3% of cattle are in large farms, see "Cattle population structure" below) from beginning of 90's till the ban in 1996. Slovenia mentioned that in the period 1993-1995, MBM was used for the production of feedingstuffs mixtures for calves and dairy cows. It was included on average at a rate of 3% in calf starters feed (feed formula and figures on MBM use per feed plant were provided).

Since January 2001, the Republic of Slovenia has adopted a temporary Order (until 30 June 2001) on additional preventive measures in relation to TSE (Official Gazette 115/00). This order is banning the use of processed animal proteins (fish meal and feather meals included) to feed all species of animals intended for the production of food, as well as placing on the market, trade in, and import and export thereof. There is derogation for fishmeal. It may be fed to non-ruminants. This temporary total ban replaces and repeals the MBM-to-ruminants ban of 6/5/96.

It is concluded that animal proteins could have been voluntarily fed to cattle between 1980 and 1996. The country confirms this for the period 1993-1995 but regards it less likely for the period before 1993. Since 1996 it has been forbidden to feed ruminants (including cattle) with MBM (including RMBM) and some, not fully convincing controls were established. Since January 2001,

feeding of MBM to cattle is highly unlikely, subject to confirmation of the efficiency of the total feed ban..

### **Rendering**

Bovine material including SRM, fallen stock and other waste material are and were rendered in the only establishment producing meat-and-bone meal.

The national MBM production was below 10,000 tonnes before 1987 (varying between 4,800 t in 1981 to 9,400 tonnes in 1986) and is around 12,000 tonnes at current (12,400 tonnes in 1987, peaking at 17,200 in 1990). The production increased in 1987 as the rendering plant has been running a second production line since June 1987.

The national use of domestic MBM varied between 285 t in 1980 and 571 t in 1992. It is around 5,000 tonnes at current (1,200 tonnes in 1993, peaking at 5,200 tonnes in 1999). On the basis of available information, it is concluded that Slovenia was and is a net exporter of MBM.

At current, the rendering plant runs three different productions:

- tallow for animal feed (special line);
- MBM (two pressure cooking lines; the second line started in 1987);
- fat for technical use as by-product of MBM production, not used for feed.

According to the CD, the plant is operating in compliance with the requirements of EU legislation. Since 1982 (Regulations of December 1981), slaughterhouse waste and dead animal carcasses have been processed at the temperature of 133 °C for a period of 20 minutes, at the pressure of 3 bar, and particle size less than 50 mm. This process was chosen because of its proven capacity to sterilise Anthrax agent. This was necessary due to constant exposure of the cattle population to Anthrax in the country (convincing detailed information on anthrax epidemiological data of the country were provided).

A permanent official veterinary supervision is undertaken in the plant concerned since May 1981 (legal basis of 21/04/81 provided). Thermographs were checked daily by supervising official veterinarians (copies of records of controls and corrective actions were provided) and computerised heat treatment parameters checks are in place since 1997 (prints of records were provided).

In 1997, the rendering plant was approved for export and certified by the Slovenian veterinary services as being in full compliance with Directive 90/667/EEC. The plant has also obtained a Quality Assurance Certificate certifying that its operations are carried out in compliance with ISO 14001:1996 standard.

It is noted that in addition to the only “mixed species” rendering plant of the country, two major poultry companies have their own integrated rendering facilities processing poultry only (no input of raw material from other source than their own).

Since January 2001 all MBM produced are bought by the state and stored under strict official supervision. However, it was explained that the market for this plant already broke down in November 2000 when EU took its decision to ban MBM for all farm animals. Research is currently carried out to develop the most appropriate incineration facilities to destroy that stock. Incineration is expected to start in June 2001.

It is concluded that rendering in Slovenia was throughout the reference period carried out at 133°C/20min/3bar. The correct application is reliable because of the Anthrax problematic and evidence for controls was provided. Since January 2001 all produced MBM is destined for incineration.

### **SRM and fallen stock**

There was no SRM ban until November 2000 and also fallen stock was rendered for feed.

Fallen stock is collected on farms, examined in 9 local necropsy plants (collection centres) and only sent to the rendering plant after determination of cause of death (the fallen stock collection and examination are free of charge for the farmers).

Since 30 November 2000 (Order 4604/00), an SRM ban has been in place. It covered among other species concerned by this Order, bovines tissues (the entire head excluding the tongue, the entire spinal cord, the spleen, the thymus, the intestines from the duodenum to the rectum, and visible lymphoid tissue), which must be collected at slaughterhouses in separate containers and identified by the indelible "SRM" markings, clearly visible on each side of the container. The contents collected each day shall be stained with a dye (Methylene Blue) so as to be clearly distinguishable from other animal waste in order to avoid their use in human food chain.

Since January 2001, all SRM, fallen stock, and animal waste is collected, transported to the single rendering plant in Slovenia, and processed for incineration. The corresponding MBM is stored under official supervision (see "Rendering" above). The use of MBM is fully banned in Slovenia since that date.

### **Cross-contamination**

Cross-contamination in feed-mills: There are 18 feed mills in the country, of which 4 are larger. Among the 4 large feed mills, 2 are integrated exclusive poultry feed producers, one is producing feed mainly for pigs and one is a mixed species feed plant. The latter is using 2 production lines, one is dedicated to ruminant feed production since 1996, and the second line is used for all type of feed production. Two feed mills only produced vitamins and additives with no animal proteins during the reference period.

In total the feed production was 482,000 t of feed and 5,000 t of vitamin-mineral additives in 1998. 16% of the national production is used for cattle.

Detailed information was provided on production of each feed plant. These data show that 5 plants out of 14 used some MBM for cattle feed production until 1996 at the latest for one of them.

Provisions of Art. 43 of the Veterinary Practice Act put feedingstuffs, feed mills and storage facilities under the supervision of official veterinarians. Since 1996, on average around 120 investigations are carried out each year on animal feed (119 in 1997, 124 in 2000) as to the content of mammalian tissues, all results being negative (the definition of a positive was specified as “any trace of bone tissue of mammalian or poultry origin”). Detailed documentation was provided on controls carried out by each regional veterinary office in the major feed mills. It is noted that more controls are carried out each year on microbiological quality of feed (839 in total in 1997).

In 1988 a suspicion that fish meal imported from Italy were fraudulently contaminated with blood meal or feather meal was raised. 6 samples out of 14 were confirmed as fraudulent by microscopic examination.

Since then only 2 to 3 samples were examined each year. The monitoring program was later increased to 10 samples each year due to BSE in the rest of Europe (year of increase not specified). In 2001, 11 samples have already been investigated on the basis of Directive 98/88/EC (laying down instructions on microscopic identification of components of animal origin). None were positive since the 1988 investigation.

Cross-contamination during transport: The share of bulk feeding in total feedingstuffs circulation was over 75% in 1998, the remainder being sold in bags.

Cross-feeding: Slovenia indicated that pig rearing (total pig population around 600,000 animals) was mostly intensive and carried out in 8 large farms (40,000 to 50,000 pigs each). No intensive farm carries out co-farming. “Back yard farms” would have cattle and pigs but pigs are fed with left over and swill and according to CD, no MBM is used by household farms or was likely to have been used.

It is concluded that cross contamination was occurring before 1996 (at least at the feed production stage) in addition to the voluntary inclusion that is confirmed between 1993 and 1995. While voluntary inclusion is assumed to have stopped after the 1996 feed ban, cross-contamination cannot be excluded in view of small numbers of controls carried out, until 2001. It is not any more an issue since January 2001 as long as the stored MBM are under strict official supervision.

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

On the basis of the available information, it is concluded that should BSE have entered the Slovenian system it would have been recycled and amplified until 1996. Thereafter, recycling became somewhat less likely but could still not be

excluded. Since 30 November 2000 until January 2001 SRM and fallen stock were excluded from rendering. Since January 2001 all MBM is excluded from any feed for farm animals. All domestically produced MBM is bought by the government and stored for subsequent incineration. Therefore recycling of the BSE agent is not any more possible.

### 3.2 Overall appreciation of the ability to identify BSE-cases and to eliminate animals at risk of being infected before they are processed

#### Cattle population structure

The cattle population of the Slovenian part of former Yugoslavia (about 500,000 heads) corresponded approximately to 10% of the cattle population of former Yugoslavia. Also at current Slovenia has a cattle population of around 500,000 animals, of which about 200,000 are dairy cattle.

It is estimated by the Slovenian authorities that the population of bovine animals aged over 30 months includes 200,000 animals, while approximately 60,000 are over 60 months.

<b>Total number of bovine animals, of which:</b>	<b>499,786</b>
Young bovine animals (up to 1 year)	138,865
Young bovine animals (aged 1 to 2 years)	
– pure bred breeding heifers	45,287
– heifers for fattening	12,739
– bulls, oxen	70,697
Bovine animals aged over 2 years	
– pure bred breeding heifers (pregnant)	18,934
– dairy cows	141,883
– other cows	54,515
– pure bred breeding bulls	1,140
Other bovine animals aged over 2 years	15,726

**Table 4:** Population of bovine animals in the Republic of Slovenia in 2000  
(Source: Statistical Office of the Republic of Slovenia, 2000)

For the cattle population over 24 months also another detailed breakdown was provided:

Period		Total (all ages)	Over 24 months old						
			Male			Female			
			Meat	Breeding	Work	Meat	Dairy	Breeding	Work
2000	N°	499,000	5,000	25	880	10,000	196,398	18,934	0
	Age*		24 / 26 m	6 y		28 m		7 / 8 y	

**Table 5:** Cattle population structure (age\*: average age at slaughter)

Two third of the dairy cattle population is reared in mountainous areas. In 2000, more than 70% of family farms had less than 10 cattle and more than 20% of cattle were in family farms of more than 50 heads. One third of dairy cattle is in farms of 20 to 30 cows. 3% of cattle are in large industrial farms.

At current, the average milk yield is 4,323 litres/dairy cow per year. In 1996, this varied between 2,800 litres/cow per year in small size family farms (around 124,000 dairy cows in total) and 6,300 litres/cow per year in large industrial farms (around 6,300 dairy cows in total).

### **Surveillance and culling**

BSE has been notifiable since 1995. It is mentioned that BSE was part of differential diagnosis procedures of CNS notifiable diseases (rabies and listeriosis) since 1992. While a rabies-positive brain is not further analysed, a listeriosis-positive one will be systematically checked for BSE.

Rules on the classification of contagious animal diseases, the determination of the method and procedure of notification and the determination of laboratory tests and methods were adopted in 1996 (Official Gazette of SR 34/96, 54/96).

According to the CD, compensation at market value has been in place since 1992 (Initial Act on contagious diseases). The legal basis specific to BSE was adopted in 1996 as instructions on the measures for the detection, prevention and eradication of the BSE, adopted by the Republic of Slovenia in 1996 (Official Gazette of SR 71/96) stipulate, *inter alia*, that the cost of diagnostic investigations, compensations for the animals, items and raw materials, and the eradication programme would be reimbursed from the national budget.

BSE confirmation criteria (by histopathology examination) are described in detail in the country dossier and are assessed as being in accordance with international references. It is indicated that if a sample were identified as positive or inconclusive, it would be addressed to Weybridge (UK) or to another reference laboratory for confirmation.

#### **Training:**

According to the country dossier, awareness training has been in place since 1990 via professional publications. Since 1995, by law, in Slovenia, animal owners must undergo training session on contagious diseases. 117 sessions were carried out between 1995 and 1999.

The two laboratory persons carrying out the investigations for BSE have been trained in Great Britain (CVL Weybridge, in 1992 and in 1997) and in Switzerland (in 2000) with the manufacturers of rapid tests for the investigations of diseases.

#### **Surveillance:**

Since 1996 all bovine brains (domestic or imported) have been examined by specific BSE histopathology (method described in details) when CNS were recorded, as part as routine necropsy depending on lesions found or in monitoring programs in which animal over 20 months were randomly selected. Until 2000 a total of 296 brains of domestic bovines showing central nervous symptoms or examined on routine necropsy were tested in Slovenia. All results were negative for BSE.

The official monitoring and investigations for BSE, in addition to the routine investigations of animals showing clinical signs, were established in the Republic of Slovenia in 1996, on the animals aged over 36 months that were selected at random prior to slaughter.

Since January 2001, the Republic of Slovenia has adopted an Order on the additional preventive measures in relation to TSE (Official Gazette 115/00) establishing a new system of monitoring the BSE.

The new system of monitoring is laying down that all the slaughtered, fallen and emergency slaughtered bovine animals aged over 30 months shall be investigated, as well as all other bovine animals which show any clinical signs of CNS diseases. In January 2001, the classical histopathological tests were still carried out, but as of 1 February 2001, the diagnostics began to be carried out on the basis of the rapid post mortem tests (Prionics tests).

#### Results:

Results of routine necropsy and random surveillance of non-BSE suspect animals (active surveillance, since 1995) were provided, in total 655 animals have been examined since 1990. It is noted that among differential diagnosis recorded within that surveillance, a high proportion of results is classified as "*Insignificant or no lesions*":

- 147 of 183 routine necropsy on domestic non-BSE suspects, that is 80%;
- 451 of 472 animals monitored in slaughterhouses (95%, which would be more or less expected for this category of animals fit for human consumption), and
- 54 out of 113 domestic BSE suspects brains examined, that is 48%.

A specific differential diagnostic was indicated for all other brains examined.

It is concluded that these results are consistent, and in line with BSE-affected countries' experience in this field. All results were negative on BSE.

No specific data on examination of animals imported from BSE affected countries were provided but Slovenia explained that all cattle with CNS symptoms have been examined since 1996 and that the surveillance program was addressing all animals (domestic and imported).

Active surveillance by rapid tests (Prionics): from 1 January 2001 to 30 April 2001, a total of 8,914 bovine animals were investigated (of which 2,371 in April 2001). None were positive.

Up to 18 April (no detailed breakdown was provided for the tests carried out after this date), 5,570 of tested cattle were over 60 months old and 2,013 were between 30 and 60 months (in total 7,583 over 30 months). Up to 28 February, 2,948 of the then tested cattle were slaughtered animals, tested in accordance with the surveillance programme, 464 were fallen stock or emergency slaughtered animals, of which one was showing clinical signs of central nervous disease.

These data show that with 5,570 out of a total population of 60,000 a high proportion (9.28%) of animals over 60 months was already tested on 18/4/01. This indicates that the prevalence of BSE in the population of cattle over 60

months can only be very low. Assuming that these cattle were the most endangered due to the known inclusion of MBM in calf starters between 1993 and 1995 this is a reassuring result. It can, however, still not guarantee absence of BSE from the cattle herd in Slovenia.

It is concluded that some passive surveillance has been carried out since 1992. In 1996 it was amended by an active surveillance programme, targeted to “at risk” cattle population. The BSE surveillance was significantly strengthened in January 2001 with the introduction of rapid testing of old cattle in slaughter and fallen stock.

### 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, SRM) and of additional stability factors, mainly cross-contamination and surveillance, has to be estimated. The guidance provided by the SSC in its opinion on the GBR of July 2000 is applied.

**Feeding:** The first feed ban was introduced in May 1996 but with insufficient controls. Therefore feeding was “not OK” before 1996 and has been “reasonably OK” since 1997. As the total feed ban has been enforced since January 2001, feeding is “OK” since January 2001.

**Rendering:** Rendering is not assessed before 1992 (insufficient information available on the situation in former Yugoslavia). The heat treatment used since 1992 is known to reduce BSE infectivity. It was convincingly applied because of the high Anthrax prevalence in the country, requiring these severe rendering conditions. It is therefore assessed as “OK” since 1992.

**SRM-removal:** There was no SRM ban before 30 November 2000 and SRM and fallen stock was rendered. Therefore SRM-removal is assessed as “not OK” throughout the reference period, including, as no information is provided on control procedures, even the period 30 November 2000 to January 2001. Since January 2001, SRM and fallen stock is again rendered but all MBM is bound for incineration.

Stability of the BSE/cattle system in <b>SLOVENIA</b> over time						
Stability			Reasons			
Country	Period	Level	Feeding	Rendering	SRM-removal	Other
Former Yugoslavia	1980-1991	Not addressed *	Not addressed *	Not addressed *	Not OK	
Slovenia	1992-1996	Neutrally stable	Not OK	OK	Not OK	
	1997-2000		Reasonably OK			→
	At current	Stable	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. \* **Not addressed** as insufficient data were available on stability factors for former Yugoslavia

**Other stability factors:** Cross contamination was no issue before 3/1996 and could still occur after that first feed ban. A good passive and some active BSE surveillance started in the early 90s. In January 2001 it complemented by an active rapid testing programme, focussing on cattle over 30 months of age in slaughter, emergency slaughter and fallen stock. The other stability factors are therefore assessed as decreasing the stability of the system to some extent until 1996, having a neutral influence thereafter, and to enhance stability since January 2001.

On the basis of the available information it has to be concluded that the country's BSE/cattle system was neutrally unstable between 1992 and 2000, and is stable since January 2001.

#### 4. Conclusion on the resulting risks

##### 4.1 Interaction of stability and challenges

The conclusions on the stability of the Slovenian BSE/cattle system over time and on the external challenges 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.

It is noted that the Slovenian part of Yugoslavia faced a moderate external challenge due to imports of MBM from IT before 1986, and a low external challenge for the period 1986-1991 due cattle and MBM imports from BSE affected countries during that period.

However, the stability of the system is not known before 1992, as insufficient data were available to assess the stability of former Yugoslavia before the independence of Slovenia. Therefore the interaction of stability and external challenge is only addressed after 1992.

INTERACTION OF STABILITY AND EXTERNAL CHALLENGE IN SLOVENIA				
Stability		External Challenge		Internal challenge
Country	Period	Level	Level	
Former Yugoslavia	1980-1985	<i>Not addressed *</i>	Moderate	<i>Not addressed *</i>
	1986-1987		Low	
	1988-1991			
Slovenia	1992-1996	Neutrally stable	Low	Unlikely to be present but cannot be excluded
	1997-2000			
	At current	Stable		

**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. \* *Not addressed* as insufficient data were available on stability factors for former Yugoslavia

Since 1992, while the system was neutrally stable until 2000, and stable since 2001, Slovenia faced a continuous low external challenge mainly due to imports of live cattle from BSE affected countries. Should indeed infected cattle have been imported since 1992, they could have been slaughtered relatively young, if imported young for fattening. They also might have been already older at slaughter if imported for immediate slaughter at higher age, or, if imported as breeding animals and being slaughtered several years after import, they would also have been rather old. In any case they would have ended-up in a rendering process able to significantly reduce BSE-infectivity. Since 1997 also the feeding was reasonably OK, indicating that the risk that MBM reached domestic cattle was somewhat reduced. Accordingly the likelihood of an internal challenge to emerge was always low but couldn't be excluded. If this happened, the neutrally stable system would have kept it at the level at which it would have been introduced.

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

BSE could theoretically have entered the country as early as in the 80's due to imports of MBM from Italy, or in the late 80's due to imports of cattle from DE to the Slovenian part of former Yugoslavia. This implies that a risk that cattle could have been processed while incubating BSE could have emerged in the late 80s or, if the early MBM imports did not initiate domestic cases, in the early 90s. However, as the information on the period before 1992 is not sufficient to judge the stability of the system, this risk is not taken into account in the current assessment.

Since 1992, when Slovenia became independent, about 1,300 cattle that were imported from BSE-affected countries other than the UK were possibly rendered, posing a certain risk that BSE-infectivity was processed. The small MBM imports, representing also a low external challenge, added to this risk, because it cannot be excluded that they reached domestic cattle.

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

If (imported) BSE incubating animals were processed, they ended-up in a rendering process that is known to significantly reduce BSE-infectivity, albeit not to guarantee inactivation. It therefore cannot be excluded that the agent could have been present in the produced feeds. However, after 3/1996 this could only have reached domestic cattle via cross-contamination. All in all it is therefore regarded to be unlikely but not excluded that the BSE agent could have been recycled in Slovenia. It would not have been amplified. Since the complete feed ban in 1/2001, recycling is unlikely to occur.

## **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 *II*, *i.e. it is unlikely but not excluded* 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**

The recent measures (SRM ban, total feed ban, strengthening of surveillance) are likely to significantly improve the stability. Subject to confirmation of their appropriate implementation, the BSE/cattle system of the country might become optimally stable as the recycling cycle would be broken. This will reduce the GBR, at least at the rate at which the cattle born before the first feed ban and later on before the total feed ban leave the system..

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

It is essential that the recently taken stability enhancing measures are correctly applied and controlled.

Ensuring that the imported cattle that are still alive cannot by any means enter the feed chain is important and will reduce the future external challenge.