

BSE
Food Safety
Risk
Assessment
Report

Vanuatu

Last Update: October 2012

Risk Assessment Production Process Section

Food Standards Australia New Zealand

Executive summary

Food Standards Australia New Zealand (FSANZ) is the regulatory body responsible for conducting Bovine Spongiform Encephalopathy (BSE) food safety assessments of countries that seek to export beef or beef products to Australia. FSANZ analyses the information provided by applicant countries and assigns them a BSE risk status. The requirements detailed in the *Australian Questionnaire to Assess BSE Risk*¹ are based on those of the World Organisation for Animal Health (OIE) *Terrestrial Animal Health Code* (2009).² The Republic of Vanuatu (Vanuatu) was previously assessed by FSANZ in 2003 and made a submission in 2011 to be assessed under the current BSE policy.

The risk of the BSE agent being released into the Vanuatu cattle population through the import of meat and bone meal (MBM), live cattle, and/or beef and beef products is negligible. No cattle or MBM are imported into Vanuatu and stockfeed is only imported from Australia and New Zealand, both of which are negligible risk BSE countries. Fresh beef is not imported into Vanuatu. Imported processed beef products are sourced solely from negligible risk BSE countries and strict import permit, certification and inspection procedures are in place to ensure that biosecurity and food safety standards are met.

In Vanuatu, the risk that ruminant animal feed and human food chain systems are exposed to the BSE agent is negligible due to controls established and practised on feeding, slaughtering and rendering. Cattle that are unfit for human consumption are either buried or incinerated and do not enter rendering. The ruminant feed ban has been legislated since 2002. The single facility rendering for animal feed ensures that there is correct labelling of MBM and suppliers are strictly monitored through an inventory and MBM produced is only sold for non-ruminant use. Cattle in general are produced solely on pasture and the feeding of MBM to cattle is illegal and cost prohibitive in Vanuatu.

Well established ante-mortem and post-mortem inspection procedures at the slaughterhouse level in Vanuatu minimise the risk of the BSE agent entering the human food chain. It is a mandatory requirement for ante-mortem and post-mortem inspectors to hold a qualification approved by the Vanuatu Government. Proper segregation procedures ensure that cattle assessed as being unfit for human consumption (such as fallen stock, downer cattle and BSE clinical suspects) through ante-mortem inspection are disposed of and do not enter the human food chain. Measures are also in place to prevent cross-contamination between carcasses throughout the slaughtering process.

BSE has been a notifiable animal disease in Vanuatu since 2002. Good awareness of BSE and an understanding of the requirements to report suspected diseased animals exist amongst farmers in Vanuatu through targeted and ongoing animal health extension programs.

Sound record keeping on the origin, destination, quantity of meat and meat products and animals entering and leaving official establishments is maintained in Vanuatu, and a well-controlled manual identification and traceability system is in place. The system is capable of tracing back to farms of origin and identifying the distribution of products in a timely manner. Adequate food recall systems and contingency plans are in place in the event of a suspected BSE case.

BSE has never been reported in Vanuatu.

This assessment of the control measures and systems to manage the risk of BSE concludes that there is minimal likelihood that the BSE agent has or will become established in the

Vanuatu cattle population and enter the human food chain. Beef and beef products derived from the Vanuatu cattle population are therefore regarded as posing a negligible risk to human health. It is recommended that Vanuatu be assigned a **Category 1** status in relation to country BSE food safety risk.

List of Acronyms

AHL	(New Zealand) Animal Health Laboratories
BSE	Bovine Spongiform Encephalopathy
CNS	Central nervous system
DLQ	(Vanuatu) Department of Livestock and Quarantine
EC	European Commission
FSANZ	Food Standards Australia New Zealand
GBR	Geographic BSE Risk
MBM	Meat and bone meal
MPI	(New Zealand) Ministry of Primary Industries
OIE	Office International des Epizooties (World Organisation for Animal Health)
SOP	Standard Operating Procedure
SRM	Specified risk material

Table of Contents

EXECUTIVE SUMMARY	I
LIST OF ACRONYMS.....	III
INTRODUCTION.....	1
BSE HISTORY	1
POTENTIAL FOR RELEASE OF THE BSE AGENT THROUGH IMPORTED MATERIALS	2
1 IMPORTATION OF MBM	2
2 IMPORTATION OF LIVE CATTLE	4
3 IMPORTATION OF BEEF AND BEEF PRODUCTS	4
4 SUMMARY: POTENTIAL FOR RELEASE OF THE BSE AGENT THROUGH IMPORTED MATERIALS	6
EXPOSURE CONTROL.....	7
5 PRE-SLAUGHTER CONTROLS: RUMINANT FEED BAN	8
6 ANTE-MORTEM SLAUGHTER CONTROLS	10
7 POST-SLAUGHTER CONTROLS: POST-MORTEM INSPECTION, SRM REMOVAL, AND RENDERING PROCEDURES	11
8 SUMMARY: EXPOSURE CONTROL	12
BSE FOOD SAFETY CONTROLS.....	13
9 BEEF PRODUCTION SYSTEMS.....	13
10 TRACEABILITY SYSTEMS FOR BEEF AND BEEF PRODUCTS	13
11 RECALL SYSTEMS.....	14
12 CONTINGENCY PLAN FOR THE INVESTIGATION AND RESPONSE TO A SUSPECT BSE EVENT.....	14
13 SUMMARY: BSE FOOD SAFETY CONTROLS	14
BSE CONTROL PROGRAMS AND TECHNICAL INFRASTRUCTURE.....	16
14 BSE EDUCATION AND AWARENESS.....	16
15 DISEASE NOTIFICATION AND DIAGNOSES	16
16 CATTLE IDENTIFICATION AND TRACEABILITY	17
17 SUMMARY: BSE CONTROL PROGRAMS AND TECHNICAL INFRASTRUCTURE	19
BSE SURVEILLANCE.....	20
18 VANUATU BSE SURVEILLANCE PROGRAM.....	20
19 SUMMARY: BSE SURVEILLANCE	20
CONCLUSIONS AND BSE RISK CATEGORISATION	21
REFERENCES	22

Introduction

Food Standards Australia New Zealand (FSANZ) is the regulatory body responsible for assessing the BSE food safety risk of, and assigning a status to, countries that seek to export beef or beef products to Australia. Individual countries are responsible for submitting comprehensive data to FSANZ around their BSE risk and associated risk management and controls. FSANZ assesses the information and data submitted by the applicant country in accordance with requirements set out in the *Australian Questionnaire to Assess BSE Risk*¹. Legislation and standards underpinning BSE controls are also examined as part of the food safety assessment and these were provided as appendices to Vanuatu's response to the Australian Questionnaire.

In general, data requirements in the Australian Questionnaire are based on those of *Chapter 11.6 – Bovine Spongiform Encephalopathy* of the *OIE Terrestrial Animal Health Code* (2009)². The Australian Questionnaire also seeks additional information on animal traceability and identification, and animal slaughtering and processing systems.

On 27 June 2011, FSANZ received a submission from the Republic of Vanuatu (Vanuatu) for country BSE status categorisation. The submission consisted of Vanuatu's responses to the Australian Questionnaire, and Vanuatu's responses to the *Provision of Information Needed for the Food Safety Risk Assessment of Beef and Beef Offal Imported to Japan*. The latter was prepared for the Japanese Food Safety Commission in July 2007.

The following report describes the BSE food safety risk assessment conducted by FSANZ to determine the risk that the BSE agent is present in beef and beef products imported from Vanuatu.

BSE History

BSE has not been reported in Vanuatu. Previous risk assessments undertaken by FSANZ and the European Commission⁵ (EC) have shown there to be a negligible risk of BSE occurring in the Vanuatu cattle population. FSANZ previously assessed Vanuatu's BSE risk in 2003 and concluded the country to be of 'negligible' risk. In 2002, the EC classified Vanuatu's Geographical BSE Risk (GBR) level as 'I', also indicating that it is highly unlikely that domestic cattle were (clinically or pre-clinically) infected with the BSE-agent.

Potential for release of the BSE agent through imported materials

The importation of specific commodities is a possible avenue through which the BSE agent can be released into a country's cattle population. Commodities that could potentially introduce BSE, if contaminated, include: meat and bone meal (MBM), live cattle, and a range of products of bovine origin.

Section 1.1 of the Australian Questionnaire requests information on annual volumes of MBM that have been imported into Vanuatu during the last eight years. Vanuatu is required, if applicable, to provide evidence that rendering parameters practiced by the domestic rendering industry of the country of origin of MBM are sufficient to inactivate the BSE agent should it be potentially present.

Section 1.2 of the Australian Questionnaire requests information on live cattle that have been imported into Vanuatu during the last seven years. Evidence of the country of origin of the cattle must be supplied, as well as the BSE risk status of the exporting countries. Section 1.3 of the Australian Questionnaire requests data concerning the origin and annual volumes of beef and beef products that have been imported into Vanuatu during the last eight years.

This chapter assesses the potential for release of the BSE agent through imported MBM, greaves, stockfeed, live cattle, beef and beef products, and other commodities of cattle origin into Vanuatu. It identifies the relevant legislation, certification arrangements, and other control measures for their effectiveness and adequacy in preventing the release of the BSE agent through imported goods into Vanuatu.

1 Importation of MBM

1.1 Overview

Importation of protein derived from ruminants for use as animal feed or as an ingredient of animal feed poses a potential food safety risk because processed animal protein of ruminant origin was the primary source of BSE infectivity through which cattle have been exposed to the BSE agent in the past.

MBM or greaves have not been imported into Vanuatu during the last eight years. A proportion of imported stockfeed, manufactured in New Zealand and Australia, can contain some ruminant-derived ingredients.

1.2 Legislation

Legislation that controls the importation of MBM, greaves and stock feeds in Vanuatu are: (1) the *Animal Importation and Quarantine Act*, and (2) the *Animal Importation and Quarantine Regulations*.⁹

Under these two pieces of legislation, the importation of MBM, greaves, or stockfeed containing proteins derived from ruminants is subject to:

- An import permit issued by the Principal Veterinary Officer of Vanuatu;
- Declaration on arrival in Vanuatu;
- Provision of all documents specified under the conditions of the import permit;

- On board inspection by a veterinary officer; and
- A range of quarantine measures designed to prevent the introduction of infectious animal diseases including BSE into Vanuatu from imported animal products.

1.3 Details of MBM imports

1.3.1 Countries of origin

No MBM is imported into Vanuatu. Only stockfeed manufactured in Australia and New Zealand have been imported into Vanuatu during the last eight years.

1.3.2 Types of materials, species composition and uses

Stockfeed imported from Australia and New Zealand that contains restricted animal materials is labelled according to the relevant Australian and New Zealand regulations and is not permitted to be fed to ruminants in Vanuatu. The stockfeed is used for feeding pigs and poultry.

Some of the stockfeed imported from New Zealand and Australia contains restricted animal-derived protein. It is highly unlikely that this feed would contain the BSE agent as New Zealand and Australia have a negligible BSE risk status. It is also highly unlikely that such feeds would have been fed to cattle in Vanuatu. Vanuatu has an effective ruminant feed ban in place. Moreover, feeding supplements to cattle, other than one farmer using silage and copra meal, are not practiced in Vanuatu due to its traditional way of cattle production where cattle are fed exclusively on pasture.

1.3.3 Certification and clearance

According to the *Animal Importation and Quarantine Act* and the *Animal Importation and Quarantine Regulations*, any person or business entity intending to import MBM or stockfeed that contains proteins of ruminant origin into Vanuatu must:

- Apply for an import permit under a prescribed form;
- Obtain a provisional import permit issued by the Principal Veterinary Officer of Vanuatu who must be satisfied that the intended import is unlikely to be harmful to the public or animal's health or the detriment of livestock production in Vanuatu;
- Meet the conditions described in the provisional import permit; and
- Be subject to import inspection including testing and be in compliance with quarantine measures imposed by Vanuatu quarantine and veterinary officers.

1.3.4 Rendering process used in source country

Stockfeed imported from Australia and New Zealand may contain restricted animal material.

Rendering plants in Australia operate under the *Australian Standard for Hygienic Rendering of Animal Products*⁶ and are required to have validated heat processes that destroy specific microbiological organisms, but not all processes would significantly reduce BSE infectivity. Animal derived ingredients in stockfeed that have been imported from New Zealand have been heat-treated which, according to the *Code of Practice for Rendering*⁷ issued by the New Zealand Ministry for Primary Industries (MPI), involves subjecting the raw material to a temperature of at least 90°C for at least 10 minutes.⁸ The purpose of this is to eliminate vegetative cells of pathogenic microorganisms (such as *Listeria spp.* and *Salmonella spp.*), but not the BSE agent.

Although the above heat processes do not meet the OIE minimum rendering specifications to remove BSE infectivity (133°C at 3 bars for 20 minutes), the raw materials have only been sourced from either New Zealand or Australia where the BSE risk is negligible.

2 Importation of live cattle

2.1 Overview

Importation of live cattle represents a potential BSE food safety risk if imported cattle are sourced from countries where adequate control programs to minimise the risk of BSE exposure have not been put in place. Vanuatu has not imported live cattle during the last seven years.

2.2 Legislation

Legislation applicable to the control of importation of live cattle into Vanuatu is the *Animal Importation and Quarantine Act* and the *Animal Importation and Quarantine Regulations*.⁹

Under these provisions, the importation of live cattle into Vanuatu is subject to:

- Application for and being granted a provisional import permit issued by the Minister with the specific authority;
- A declaration on arrival in Vanuatu;
- Provision of all documents specified under the conditions of the provisional import permit;
- On board inspection by a Vanuatu veterinary officer; and
- Compliance with a range of quarantine measures designed to prevent the introduction of infectious animal diseases, including BSE, into Vanuatu from imported live cattle.

2.3 Details of live cattle imports

Vanuatu has not imported live cattle since 1982 when 20 cattle were imported from Australia. Although there is legislation that allows importation, the current policy dictates that live cattle imports are not permitted.

3 Importation of beef and beef products

3.1 Overview

There has been no commercial importation of fresh beef into Vanuatu during the last seven years.

Manufactured beef products such as smallgoods and canned beef products have been imported into Vanuatu on a small scale from Australia, New Zealand and New Caledonia only.

3.2 Legislation

The *Animal Importation and Quarantine Act* and the *Animal Importation and Quarantine Regulations*⁹ are the applicable legislative instruments that control the importation of beef

and beef products into Vanuatu.

Beef and beef products are regarded as “animal products” under the above legislation and as such are subject to the same requirements prescribed for the importation of MBM.

To prevent the introduction of the BSE agent into Vanuatu, the Vanuatu Government amended the *Animal Importation and Quarantine Regulations* in 2002 through a Statutory Order (statutory order 47 of 2002). The amendment has been written into clause 34 of Vanuatu’s *Animal Importation and Quarantine Regulations*. The amendment prescribes that any imported beef and beef products must:

- Come from animals born and kept in a country free from BSE;
- Be fit for human consumption after processing at an abattoir; and
- Be labelled with a warning that it must not be fed to cattle, sheep, goat or other ruminants.

The importation into Vanuatu of fully manufactured foods that are hermetically sealed and not requiring refrigeration for permanent storage was historically exempted from the requirement for an import permit. The 2002 amendment (Statutory Order 47 of 2002) removed fully manufactured foods containing bovine products from this general exemption. This change further demonstrates the vigilance given to the prevention of the introduction of the BSE by the Government of Vanuatu.

In addition, the Vanuatu Government issued a statutory order in 2001 (statutory order No 53) under the *Food Control Act* (Act 21 of 1993) that banned the importation of any beef or beef products from Europe.

3.3 Type of imported beef or beef products

Fresh beef has not historically been imported into Vanuatu due to a strong domestic industry. Processed beef products such as smallgoods containing beef and canned beef products have only been imported from Australia, New Zealand and New Caledonia during the last seven years. The country of origins and the quantity of beef products imported into Vanuatu from 2004 to 2010 are listed in Table 2.

Table 2, Quantity (tonnes) and country of origin of processed beef products imported into Vanuatu between 2004 and 2010

Year	Country of Origin (Australia)	Country of Origin (New Caledonia)	Country of Origin (New Zealand)	Total
2004	36	12	14	62
2005	64	18	17	99
2006	53	14	9	76
2007	39	13	7	59
2008	38	11	3	52
2009	25	10	5	40
2010	39	19	7	65

Australia and New Zealand are countries with negligible BSE risk and as such, products from these countries are unlikely to present a BSE risk. New Caledonia is a country with a GBR Level I status as assessed by the Scientific Steering Committee of the European Union in 2003¹⁰, indicating that it is highly unlikely that domestic cattle are clinically or pre-clinically infected with the BSE agent.

4 Summary: potential for release of the BSE agent through imported materials

Based on the information provided and the assessment of the relevant legislation in operation in Vanuatu, it is concluded that the risk of the BSE agent being released into the Vanuatu cattle population through imports of MBM, stockfeed, live cattle, or beef and beef products is negligible due to the following reasons:

- 1) Appropriate legislation and strict import control procedures are in place to prevent the release of the BSE agent into Vanuatu through imported products of animal origin;
- 2) MBM has not been imported into Vanuatu in the last 8 years;
- 3) Live cattle have not been imported into Vanuatu since 1982;
- 4) Fresh (chilled or frozen) beef has not been imported into Vanuatu in the recent past;
- 5) Processed beef products are only imported from negligible BSE risk countries; and
- 6) Stockfeed is only imported from negligible BSE risk countries.

Exposure control

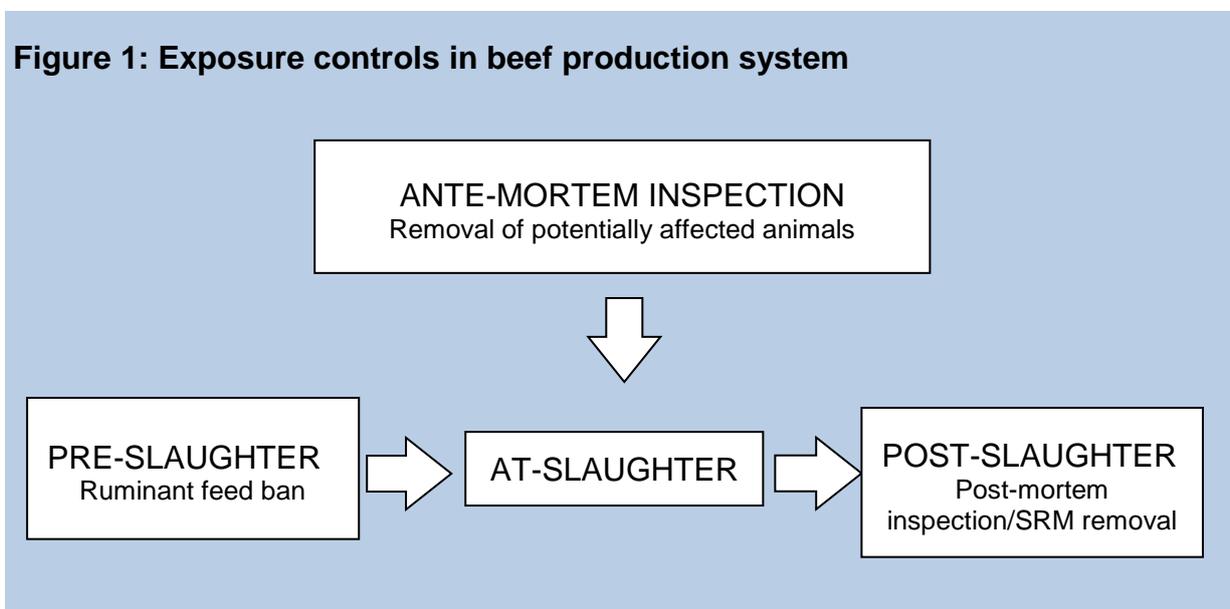
The exposure of cattle to BSE infectivity can be prevented by not feeding cattle MBM containing ruminant proteins. Depending on the BSE status of a country (such as whether a case of BSE has occurred and/or risk factors for BSE exist), prevention of human or cattle exposure to the BSE infectivity is achieved through controls in three key areas across the beef production system:

- **Pre-slaughter** controls which prevent the feeding of ruminant protein to ruminants;
- **At slaughter** controls which ensure potentially BSE-affected animals are removed from the food and feed production systems through appropriate animal management practices and inspection procedures; and
- **Post-slaughter** controls which ensure specified risk materials (SRMs) for BSE are removed and do not enter the food and feed production systems.

Scientific evidence published since the BSE epidemic, first identified in the United Kingdom in 1986, has established that ruminant feed ban regulations and procedures to prevent cross-contamination of cattle feed and ingredients used for cattle feed production from ruminant proteins are critical control measures that have prevented the recycling and amplification of the BSE.¹¹⁻¹⁴ Measures to prevent non-ambulatory (downer) cattle from entering the animal feed and human food chain also contributed to the decline in the number of BSE cases worldwide. For countries where BSE has occurred or BSE risk factors exist, controls should also be extended to exclude SRMs from being used in either human food or animal feed.

Controls designed to prevent beef and beef products from exposure to the BSE agent throughout the beef production chain are summarised in *Figure 1*.

Figure 1: Exposure controls in beef production system



This chapter describes the control measures practiced in Vanuatu that prevent the contamination and recycling of the BSE agent in cattle feed and assure that food containing beef for human consumption is free of BSE.

5 Pre-slaughter controls: ruminant feed ban

5.1 Overview

Under the Australian Questionnaire, countries must demonstrate that a ruminant feed ban has been effectively implemented. More specifically, evidence is required to support that ruminant-derived MBM has not been fed to cattle for the last 8 years.

5.2 Legislation

Legislation issued by the Government of Vanuatu applicable to the ruminant feed ban that prevents the introduction and the spread of BSE in Vanuatu are:

- The *Animal Importation and Quarantine Regulations*;
- The *Meat Industry (Approved Establishments) Regulations*; and
- The *Animal Disease (Control) (Stock Feeds) Regulation*.⁹

Clause 34 of the *Animal Importation and Quarantine Regulations* specifies that meat and meat products derived from ruminants must be labelled with a warning that it “must not be fed to cattle, sheep, goats or other ruminants”. This requirement applies to meat and meat products of ruminant origin imported into Vanuatu.

Clause 6A of the *Meat Industry (Approved Establishments) Regulations* states that ‘all MBM produced must be labelled with the statement of “Not to be fed to cattle, sheep, goats or other ruminants”’. This requirement applies to MBM produced domestically.

The *Animal Disease (Control) (Stock Feeds) Regulation* declares a formal ban on feeding any stockfeed containing proteins of ruminant origin to cattle, sheep, goats or any other ruminants in Vanuatu.

5.3 Use of bovine materials in animal feedstuffs

Bovine materials are not used to feed cattle in Vanuatu. A marketing angle used by the Vanuatu beef industry is the production of grass fed and organic beef and there is no culture of using intensive production methods in Vanuatu.

As early as 1992, cattle farmers in Vanuatu were aware of the ruminant feed ban. At that time, farmers were notified of the BSE risk and any feeding of animal products to ruminants was administratively banned by the Government. A legislated feed ban was implemented in 2002. Written implementation materials were produced and distributed through field-based education activities.

5.4 Measures to prevent cross-contamination of ruminant and non-ruminant protein

Cattle in Vanuatu are produced exclusively from grazing on pasture and are not fed with any animal-based processed feeds. There is no feedlot operating in Vanuatu. There is no commercial stockfeed production in Vanuatu. The potential for cross-contamination of ruminant feeds with ruminant protein from non-ruminant feeds, therefore, does not exist in Vanuatu.

It is unlikely that cattle would be exposed to animal based stockfeed for pig and poultry production for the following reasons:

- Cattle are traditionally produced exclusively by grazing on pasture;
- Mixed species farming is not generally practiced in Vanuatu;
- Cattle are grazed in areas well separated and fenced from pig and poultry farms;
- There is good awareness of the regulations around not permitting animal based feeds to be fed to ruminants; and
- The high cost of manufactured stockfeed means that feeding manufactured stockfeed containing animal proteins to cattle is prohibitive for Vanuatu cattle farmers.

5.4.1 *Ruminant Protein Control Programs*

Ruminant protein generated through domestic animals in Vanuatu is controlled by Clause 6A of the *Meat Industry (Approved Establishments) Regulations (Order 12 of 1994 and Order 48 of 2002)* which specifies that:

- All MBM must be produced, processed, packaged and stored in a manner as not to pose a contamination threat to edible products;
- All MBM produced must be clearly labelled with the statement “Not to be fed to cattle, sheep, goats or other ruminants”; and
- The licensee (of the rendering plant producing MBM) must keep an inventory by weight of MBM produced and sold, including the name and address of the customer.

Approximately 100 to 200 tonnes of MBM are produced domestically each year in Vanuatu by a single abattoir. This MBM is supplied only in 50 kg bags that are appropriately labelled and used by pig and poultry producers as part of the feeding regime and by horticulturalists as a fertiliser. Controls around the production and sale of the MBM are strict and an official inventory is maintained and verified. Poultry and pig farms are required to maintain records of MBM bought and that it be housed in a secure site.

5.5 **Evaluation of the ruminant feed ban**

5.5.1 *General surveillance*

The Department of Livestock and Quarantine (DLQ) conducts animal disease surveillance annually. This annual surveillance program applies also to the ruminant feed ban.

Livestock and veterinary staff of the DLQ undertake regular visits to cattle, pig and poultry production establishments under the surveillance program. Information provided to FSANZ indicated that no breach of feeding prohibited material to ruminants has occurred.

5.5.2 *Surveillance conducted on rendering plants*

Vanuatu has only two rendering establishments located within the two commercial abattoirs. These two rendering operations are frequently inspected and audited by the Vanuatu Government to ensure their compliance against the rendering requirements specified in clause 6a of the *Meat Industry (Approved Establishments) Regulations*.

Rendering operations at the two abattoirs are subject to regular visual inspection by meat inspection and veterinary staff as often as weekly and at least monthly. Formal audits are conducted at least three times per year.

6 Ante-mortem slaughter controls

6.1 Overview

Older cattle which are non-ambulatory (downer cattle) and/or showing signs of neurological disease consistent with an established BSE case definition present the highest risk of infection with the BSE agent. Such animals should be targeted and prevented from entering the animal feed and human food chain.

The two Vanuatu abattoirs have established standard operating procedures (SOPs) for the management of animals in the yards, during slaughter and dressing, and for meat processing. These SOPs are verified, monitored and audited by the DLQ to prevent cattle suspected of BSE from entering the human food chain or the animal feed chain.

6.2 Legislation

The following two pieces of legislation are applicable to the prevention of cattle suspected of BSE from entering the human food chain and the animal feed chain:

- The *Animal Disease (Control) (Miscellaneous Provisions) Regulation* – Clause 2 prescribes BSE as a notifiable disease; and
- *Meat Industry (Approved Establishments) Regulations* – Clause 7 prescribes requirements in relation to slaughter of sick animals. Clause 33 of the same legislation prescribes procedures for ante-mortem inspection.⁹

6.3 Ante-mortem procedures

Ante-mortem inspection procedures that must be followed in Vanuatu are prescribed under Clause 33 of the *Meat Industry (Approved Establishments) Regulations*.

6.4 Slaughtering methods

Comprehensive standards exist as part of the legislation on the slaughter of cattle and associated post-mortem procedures and inspections. These standards are described under clause 23 of the *Meat Industry (Approved Establishments) Regulations*.

In Vanuatu, all cattle are slaughtered by stunning using a captive bolt pistol followed by transection of the carotid arteries and thoracic stick.

6.5 Handling of suspect diseased cattle

Cattle at ante-mortem inspection showing the following signs are not allowed to be slaughtered according to subclause 33(6) of the *Meat Industry (Approved Establishments) Regulations*:

- Cattle with signs of a disease which is communicable to humans and animals;
- Cattle in a condition such as to indicate that a disease which is communicable to humans and animals may occur;
- Cattle that show signs of any other disease or disorder which is likely to make their meat unfit for human consumption; and
- Cattle that have had substances with pharmacological effects administered to them or have consumed any other substances which may cause their meat to become harmful to human health.

All fallen bovine stock, emergency slaughter cattle or cattle condemned at ante-mortem are excluded from processing for human consumption in Vanuatu. Such cattle are not rendered but disposed of by burial and/or burning.

7 Post-slaughter controls: post-mortem inspection, SRM removal, and rendering procedures

7.1 Overview

The two abattoirs operating in Vanuatu have operating procedures in place to exclude SRMs from entering the human food chain. The SRMs include the entire head (minus tongue and cheeks), tonsils, vertebral column, spinal cord and distal ileum. These SRMs are either incinerated or buried or rendered by the abattoirs after removing them during the slaughtering process. At the VAL abattoir, rendered SRMs are incorporated into MBM which is sold to farmers as feed supplements for pig, poultry and prawn farming. Only the Val abattoir is currently permitted to export beef to Australia.

There is no mechanical recovery of bovine meat in Vanuatu.

7.2 Legislation

Legislation applicable to the post-mortem inspection and rendering procedures are detailed in the *Meat Industry (Approved Establishments) Regulations*.⁹

Clause 6 A of the *Meat Industry (Approved Establishments) Regulations* prescribes relevant requirements for the operation of a rendering plant.

Clause 36 of the same legislation prescribes comprehensive requirements for post-mortem inspection.

Although not specified in legislation, the removal of SRMs during the slaughter of cattle is a part of the SOPs of the two abattoirs operating in Vanuatu and these processes are subject to ongoing verification.

7.3 Post-mortem procedures

According to the *Meat Industry (Approved Establishments) Regulations*, post-mortem inspection for all cattle slaughtered in an approved slaughterhouse in Vanuatu is conducted by an official veterinarian through an arrangement made by the Principal Veterinary Officer of the Government of Vanuatu.

Post-mortem inspection is conducted in accordance with the procedures prescribed under Clause 36 (Post-mortem health inspection) of the *Meat Industry (Approved Establishments) Regulations*. The procedures ensure every part of the animal slaughtered in an approved abattoir is inspected in a timely and appropriate manner.

7.4 Rendering processes

SRMs are rendered in one abattoir to produce tallow that is used as fuel to generate electricity. The remaining greaves are ground to produce MBM. MBM is stored in bags labelled in accordance with the ruminant feed ban and sold under inventory control to farmers as feed supplements for pig, poultry and prawn farming.

At the second abattoir only fat and spinal cord is rendered. The tallow generated from the rendering process is used as a fuel for the boiler. The remaining greaves together with the entire head (minus cheek meat and tongue), vertebral column and the entire intestines are buried at a site away from the abattoir.

Rendering processes in Vanuatu typically use the batch process methodology. The rendering conditions of the abattoir that produces MBM operates at temperatures higher than 150 degrees Celsius and a pressure of more than 7 bars for a period of more than 30 minutes. These conditions are monitored and recorded during the operation. The temperatures referred here are the core temperatures of the rendered material during the rendering process.

7.5 Compliance with legislation

7.5.1 Rendering facilities

The two rendering facilities are formally audited by the DLQ three times a year, and monitored more frequently by visual inspections. The rendering processes of both abattoirs have generally been compliant with the legislative requirements during the last eight years.

7.5.2 Third party audit of meat processing plants

External audits of the meat processing plants are conducted by the DLQ. Internal audits of individual system controls are conducted according to a schedule ranging from monthly to half yearly. There are no regular third party audits of the meat processing plants in Vanuatu.

8 Summary: exposure control

Vanuatu has a well-structured ruminant feed ban that effectively prevents cattle in Vanuatu from exposure to the BSE agent. Key evidence supporting this conclusion includes:

- 1) Cattle in Vanuatu are generally raised exclusively through grazing on pasture;
- 2) Appropriate legislation has been put in place to prohibit stock feed containing protein of ruminant origin from being fed to ruminants;
- 3) Vanuatu does not have any commercial feed mills. Because of this, cross contamination between stock feeds containing ruminant protein and those containing non-ruminant protein is unlikely to occur in Vanuatu;
- 4) Australian and New Zealand stockfeed containing animal protein is imported in 20-25 kg bags; cross-contamination is therefore highly unlikely and storage conditions ensure that cattle do not have access to these feed bags;
- 5) Fallen bovine stock, emergency slaughter, or cattle condemned at ante-mortem inspection are excluded from processing for human consumption. These cattle are not rendered but disposed of by burial or incineration; and
- 6) The rendering parameters used by the two rendering facilities in Vanuatu meet and exceed the internationally accepted benchmark of 133°C / 20 min / 3 bar.

BSE food safety controls

The Australian Questionnaire requires countries to have in place effective controls during the slaughtering process so that food for human consumption is prevented from becoming contaminated with materials that may be BSE-infected. It also requires a country to demonstrate effective and timely systems for the accurate identification, traceability and recall of meat and meat products in the event of a BSE related food safety issue. The following chapters address these requirements within Vanuatu.

9 Beef production systems

Beef production in Vanuatu is a closed system such that Vanuatu beef is produced exclusively from cattle born, raised, slaughtered and processed domestically. New genetic material is only introduced through limited use of imported semen for artificial insemination.

9.1 Hygiene practices for the minimisation of cross-contamination

The removal of SRM such as central nervous system (CNS) tissue from the food supply is not a requirement in Vanuatu for access to international beef markets as the country is considered to pose a negligible BSE risk. However, it is done as a standard operating practice within its abattoirs. General hygiene requirements are specified as part of the SOPs by the two commercial abattoirs to minimise the risk of contamination with BSE infectious material if a BSE-positive animal was introduced into the processing environment. These include:

- The sterilisation of potentially contaminated equipment;
- Carcasses that have passed post-mortem examination not being permitted to come into contact with those that have failed inspection; and
- Detailed procedures to identify, control, manage, eliminate, or minimise risk factors.

10 Traceability systems for beef and beef products

In the event of a BSE case, traceability systems should demonstrate that they can achieve timely and effective identification, tracing and recall of beef and beef products derived from all BSE affected animals. The system should be able to identify and trace beef and beef products from the point of retail sale back to the point of manufacturing and (where applicable) to the point of slaughter. The system should integrate with cattle identification and traceability measures such that the origin of contaminated beef or beef products can be traced back to any animals of interest if required.

10.1 Legislation

The requirements prescribed under Clause 8 of the *Vanuatu Meat industry Act*⁹ contribute to the operation of an effective traceability system in Vanuatu for beef or beef products in the event that a BSE case occurs. This legislation requires the operator of any approved establishment (including slaughterhouse, export cutting plant, export cold store, butchery) to keep records of:

- The number, species and sex of the animals entering and leaving the establishment;
- Species of meat and meat products entering and leaving the establishments; and

- Origin, destination, quantity and weight and date of animals, meat and meat products entering and leaving the establishments.

The same legislation charges the Principal Veterinary Officer of Vanuatu with a responsibility of ensuring the compliance by the operator of any approved establishment with the above record keeping requirements.

Any operator, who makes false entry into the record book or fails on any day to enter the required information in the record book, can be fined or be imprisoned.

Cattle submitted to abattoirs are penned based on the supplier and identified sequentially at slaughter line by supplier with an identification number and stock class. At the abattoirs, cattle are aged based on dentition and their weight and stock class are verified and recorded by government meat inspectors. Each carcass that comes out of the slaughter line is labelled with age, weight and stock class. Deboning, packaging and load-out records are cross referenced with the label attached at the end of the slaughter line.

10.2 Details of the export product tracking system

Vanuatu has a manual traceability system in place for exported beef and beef products. The system is coupled with careful record keeping by farmers and abattoirs and can satisfactorily trace both back to farms of origin and forward to identify exported product that is likely to be affected in a BSE event if required. Carcasses are sold on a full-set basis and a whole carcass goes into a container. This process coupled with the livestock movement orders and processing plant identification controls, facilitates effective and rapid forward and back traceability.

11 Recall systems

11.1 Legislation

Although the Vanuatu submission provided no information about the recall systems in the country, information obtained during the in-country inspection from 28 May to 1 June 2012 indicated that Vanuatu has had a national Food Recall Protocol in operation since 2002. The protocol provides the minimum level of action required by Vanuatu Government authorities and food business in carrying out food recalls. From an export perspective, the Vanuatu legislation requires recording and traceability of exported product.

12 Contingency plan for the investigation and response to a suspect BSE event

Vanuatu has written protocols and guidelines in place for animal disease emergencies and events that include investigations and responses to a BSE case.

13 Summary: BSE food safety controls

Vanuatu has legislation and rigorous industry practices in place to ensure that beef and beef products produced for human consumption are free from potential BSE contamination. High levels of hygienic practices are employed at the abattoir level for beef and beef products destined for export markets, and SRMs are removed and buried or rendered.

Record keeping on the origin, destination, quantity of meat and meat products and animals entering and leaving official establishments (slaughterhouse, export cutting plant, export cold store, butchery) is required by legislation, and a well-controlled manual identification and traceability system is in place. The system is capable of tracing back to farms of origin and identifying the distribution of products in a timely manner. Adequate food recall systems and contingency plans are in place in the event of a suspected BSE case.

BSE Control Programs and Technical Infrastructure

The following chapters address the adequacy of control programs that support Vanuatu's capability to effectively identify, notify, and diagnose cattle that are suspect of an infection by the BSE agent. It examines Vanuatu's systems on the notification of BSE suspects, disease investigation, laboratory diagnosis of BSE, and BSE awareness education programs. These chapters also assess Vanuatu's cattle identification and traceability system which serves to underpin any BSE case investigation.

14 BSE Education and Awareness

In Vanuatu, specific awareness activities around BSE have been conducted by the DLQ for field staff and cattle farmers (commercial and small cattle holders) since 1992. Awareness training has included training of veterinary staff and farmers on the signs of BSE through the use of written material and videos. Ongoing animal health awareness programs have been conducted by the DLQ for small cattle holders. The programs describe signs of BSE in cattle and other production animals. The awareness activities include the need for commercial farms and small cattle holders to report any disease signs that may require examination by DLQ veterinary or field staff. There are adequate incentives in place for farmers to report unusual clinical signs that may be suggestive of BSE.

15 Disease notification and diagnoses

15.1 Overview

The awareness activities described above include education of farmers and meat workers involved in the handling of cattle to increase their awareness of the need to report cattle with nervous symptoms, downer cattle, or those with gait abnormalities. Since 2002 there have been only very limited clinical cases reported to the DLQ by farmers. These cases related to lame, downer or dead cattle. All the reported cases have been investigated by the DLQ and none of the reports have been found to be BSE suspects.

Vanuatu does not have an analytical laboratory for BSE diagnosis. Between 2002 and 2005, 101 brain stem samples collected from routine slaughter in Vanuatu were frozen and sent to the New Zealand National Animal Health Laboratory (AHL) for histological examination and prion western blot analysis. These samples were negative for BSE.

15.2 Legislation

The *Animal Disease (Control) (Miscellaneous Provisions) Regulations*⁹, approved by the Government of Vanuatu in 2002 (Order 14 of 2000), declared BSE as a notifiable disease.

Clause 13 of the *Animal Disease (Control) Act* prescribes notification and reporting obligations of any suspected or diagnosed occurrence of BSE.

15.3 Diagnostic tests

The DLQ have an animal health manual which describes field investigation procedures, farm visit procedures, animal health records, and procedures for taking samples. Only on rare occasions, pathology samples have been taken in a disease investigation. Such samples have been subsequently sent to the New Zealand AHL for analysis. According to the submission, none of these samples have resulted from a BSE suspect case.

15.4 Laboratory assurances and auditing

Vanuatu does not have its own laboratory for BSE diagnosis. Samples collected for BSE laboratory diagnosis in the past have been frozen and sent to the New Zealand AHL for analysis. The New Zealand AHL is an ISO 17025¹⁵ accredited facility, audited by the International Accreditation New Zealand^a.

15.5 Penalties and reporting incentives

Notification of any BSE suspect case has been compulsory since October 2002 when the Government of Vanuatu included BSE as a notifiable animal disease.

Clause 18 of the *Animal Disease (Control) Act* prescribes penalties for a person who is aware but fails to notify the Principal Veterinary Officer of a suspected or diagnosed occurrence of BSE by the most immediate means available. The maximum penalty is VT 1 million or imprisonment for up to 3 years.

There is a provision in the same legislation for payment of compensation for animals slaughtered for investigation of suspected diseases such as BSE (clause 12 of the *Animal Disease (Control) Act*). The Minister responsible for animal disease control will specify the amount of compensation.

To encourage the notification of animal disease incidents including BSE, the Government of Vanuatu conducts field visits, free of charge, to small holder farms that encourage farmers to report cattle with signs of disease and maintain awareness of animal health issues.

16 Cattle identification and traceability

16.1 Overview

Cattle traceability systems should enable effective and efficient identification, tracing and recall of beef and beef products from all BSE affected animals in the event that BSE has occurred. The system should be able to identify and trace beef and beef products from the point of retail sale back to the point of manufacturing and, where applicable, to the point of slaughter. The system should integrate with cattle identification and traceability measures such that the origin of contaminated beef or beef products can be traced back to any animals of interest if required. The system should ensure effective and timely identification, tracing and removal of beef and beef products (suspected to be BSE-infected) from markets and the distribution chain.

16.2 Legislation

Other than the power assigned to veterinary officers who may mark, brand, tattoo, dye, or attach or implant any means of identification to any animal for the purpose of carrying out the provisions of the *Animal Disease (Control) Act*⁹, there is no legislation requiring cattle in Vanuatu to be identified. In practice however, most cattle in Vanuatu are identified through an ear tag or brand and it is mandatory to have identification prior to slaughter.

The requirements prescribed under Clause 8 of the *Vanuatu Meat Industry Act* contribute to the identification and traceability of cattle in Vanuatu. This legislation requires the operator of any approved establishment including slaughterhouse, export cutting plant, export cold store, butchery, to keep records of:

^a <http://www.biosecurity.govt.nz/pests/animals/ahl> accessed 22 March 2012.

- The number, species and sex of the animals entering and leaving the establishment;
- Species of meat and meat products entering and leaving the establishments; and
- Origin, destination, quantity and weight and date of animals, meat and meat products entering and leaving the establishments.

The same legislation charges the Principal Veterinary Officer of Vanuatu with a responsibility of ensuring the compliance with the above record keeping requirements by the operator of any approved establishment.

Any operator, who makes false entry into the record book or fails on any day to enter the required information in the record book, will be fined up to a maximum of VT 1 million or imprisonment of 3 years.

16.3 Current identification systems for cattle

Vanuatu (DLQ) relies on the cattle identification methods utilised by cattle farmers and the animal identification systems employed at both abattoirs for any potential trace back investigation.

Components of the cattle identification system are:

- On farm – on a voluntary basis, commercial cattle farmers in Vanuatu use either fire branding and/or ear tags to identify their cattle; and
- At abattoirs – cattle submitted to abattoirs are penned based on the supplier and identified sequentially at slaughter line by supplier with an identification number and stock class. At the abattoirs, cattle are aged based on dentition and their weight and stock class are verified and recorded by government meat inspectors. Each carcass that comes out of the slaughter line is labelled with age, weight and stock class.

The combination of the manual cattle identification used by farmers, carcass identification used by abattoirs, and the records kept by the operators of approved establishments on the origin, destination, weight of animal, and meat entering and leaving the approved establishments, enables an effective traceability system in Vanuatu. When required, the system can achieve timely and effective trace back of any BSE case to the level of the farm.

Vanuatu has only a small number of cattle slaughtered each day (maximum 90 cattle / day at each of the two abattoirs). This contributes to Vanuatu's ability to effectively trace back utilising manual forms of identification, in case of a BSE event when required.

16.4 Movement orders

In Vanuatu, it is compulsory to apply for and submit a movement order when intending to transport animals. The documentation must be approved and supplied to the DLQ and will document the amount and nature of the animals, the property details, the health status and the destination of the animals. These orders are required to be presented to the authorities prior to the slaughter of animals and contribute to tracing of cattle within Vanuatu.

17 Summary: BSE control programs and technical infrastructure

BSE has been a notifiable animal disease in Vanuatu since 2002. Good awareness of BSE and an understanding of the requirements to report suspected diseased animals exist amongst farmers in Vanuatu as a result of targeted and ongoing education initiatives, undertaken by DLQ officials. Procedures are in place for the collection of laboratory samples in the event that a BSE case is suspected and utilise the New Zealand AHL for diagnostic services.

A manual system of cattle identification and traceability is in operation in Vanuatu and is capable of effectively identifying and tracing diseased animals back to their farm of origin for investigation purposes when required.

BSE Surveillance

Section 3 of the Australian Questionnaire requires Vanuatu to provide evidence of the number of BSE-related samples collected for each cattle subpopulation, with data stratified by year and age group. Such data are then used to derive required BSE surveillance points according to Chapter 11.5 of the OIE's *Terrestrial Animal Health Code*. The extent and quality of the surveillance for BSE within the cattle population of Vanuatu, contributes to determination of the BSE risk status of Vanuatu.

18 Vanuatu BSE surveillance program

Surveillance for BSE in Vanuatu started in 2002 and has involved both passive and active surveillance programs.

An active surveillance program based on random sampling of brain stems of cattle greater than seven years of age at the time of slaughter was undertaken between 2002 and 2005. Cull cows from a sole dairy farm which ceased to operate in 2005 were also specifically targeted during this active surveillance. The program collected 2, 20, 60 and 19 samples in 2002, 2003, 2004 and 2005 respectively. By the end of 2005, the program collected a total of 101 samples.

Collected samples were tested at the New Zealand AHL laboratory with the Prion Western Blot method. None of the 101 samples tested positive for the BSE agent.

Passive surveillance for BSE is ongoing in Vanuatu. There have been no clinical BSE suspect cases found as a result of passive surveillance.

19 Summary: BSE surveillance

Vanuatu has an ongoing passive BSE surveillance program and undertook an active surveillance program for BSE between 2002 and 2005.

The active BSE surveillance collected a total of 101 brain stem samples from routine slaughtered cattle aged at least seven years of age. None of the samples tested positive for BSE.

Conclusions and BSE risk categorisation

Vanuatu has sound biosecurity and food safety controls in place to prevent the introduction of the BSE agent to the indigenous cattle population through the importation of live cattle, MBM, and beef and beef products. At the domestic level, well regulated ante-mortem and post-mortem inspection procedures are practised at slaughter establishments to ensure that suspect diseased cattle do not enter the human food system or animal feed chains, and to ensure that beef and beef products produced from domestic cattle are safe and fit for human consumption. These procedures are mandated by appropriate legislative instruments and are enforced and audited for compliance by the Vanuatu Government. An effective ruminant feed ban and labelling requirements exist to ensure that ruminants are not fed or exposed to ruminant-derived proteinaceous materials.

BSE has been a notifiable animal disease in Vanuatu since 2002. Good awareness of BSE and an understanding of the requirements to report suspected diseased animals exist amongst veterinary officials and cattle farmers in Vanuatu as a result of targeted and ongoing animal health extension programs.

Sound record keeping on the origin, destination, quantity of beef and beef products and cattle entering and leaving official establishments is maintained, and a well-controlled manual identification and traceability system for cattle is in place. The system is capable of tracing back to farms of origin where the cattle were reared and identifying the distribution of beef or beef products in a timely manner when required. Carcasses are generally sold on a full-set basis thereby facilitating rapid forward traceability. Adequate food recall systems and contingency plans are in place in the event of a suspected BSE case.

Vanuatu has a passive surveillance system for BSE and has undertaken active surveillance programs in the past and there have been no cases of BSE reported. Although the country does not specifically meet the OIE requirements for the degree of targeted/active surveillance, a number of factors reduce the need for satisfying the OIE requirements. These factors are: a lack of any external release factors; a negligible risk of recycling the BSE agent within the feed system; no significant dairy industry; and slaughtering of cattle almost exclusively at less than six years of age.

This assessment concludes that beef and beef products exported from Vanuatu pose a negligible risk to human health. It is therefore recommended that Vanuatu is assigned a **Category 1** status in relation to country BSE food safety risk status. This category indicates that there is a minimal likelihood that the BSE agent has or will become established in the Vanuatu cattle population and enter the human food chain.

References

- (1) Food Standards Australia New Zealand (2010) *Australian Questionnaire to Assess BSE Risk*.
- (2) Office International des Epizooties (2011) *OIE Terrestrial Animal Health Code - Chapter 11.5. - Bovine spongiform encephalopathy*, available at: http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.11.5.htm, accessed 06 July 2012.
- (3) Joint Ministerial Media Release (2009) *Australia refines its food safety rules for imported beef and beef products*, available at: [http://www.health.gov.au/internet/ministers/publishing.nsf/Content/60BAF3D388A17A46CA25765500193099/\\$File/nr179.pdf](http://www.health.gov.au/internet/ministers/publishing.nsf/Content/60BAF3D388A17A46CA25765500193099/$File/nr179.pdf), accessed 13 June 2012.
- (4) Food Standards Australia New Zealand (2010) *Bovine Spongiform Encephalopathy (BSE): Requirements for the Importation of Beef and Beef Products for Human Consumption – Effective 1 March 2010*, available at: <http://www.foodstandards.gov.au/consumerinformation/bovinespongiformencephalopathybse/bovinespongiformence4751.cfm>, accessed 13 June 2012.
- (5) EC Scientific Steering Committee (2002) *Opinion of the Scientific Steering Committee on the geographic risk of bovine spongiform encephalopathy (GBR) in Vanuatu*, http://www.ec.europa.eu/food/fs/sc/ssc/out277b_en.pdf, accessed 13 June 2012.
- (6) Primary Industry Ministerial Council and Primary Industries Standing Committee (2007) *Australian standard for the hygienic rendering of animal products*, 2nd edition (AS5008:2007), CSIRO Publishing, ISBN 9780643092730.
- (7) Ministry of Primary Industries (New Zealand Food Safety Authority) (2009) *Code of Practice: Rendering*.
- (8) Food Standards Australia New Zealand (2011) *BSE Food Safety Risk Assessment Report on New Zealand*, available at: http://www.foodstandards.gov.au/_srcfiles/BSE%20Food%20Safety%20Risk%20Assessment%20Report%20-%20New%20Zealand.pdf, accessed 16 January 2012.
- (9) Pacific Islands Legal Information Institute (2012) *Laws of the Republic of Vanuatu, Consolidated Edition 2006*, available at: http://www.paclii.org/vu/indices/legis/consol_act2006/Consolidation2006_Table_of_Statutory_Orders.html, accessed 14 June 2012.
- (10) EC Scientific Steering Committee (2003) *Final report on the assessment of the Geographic BSE-Risk of New Caledonia*, available at: http://www.ec.europa.eu/food/fs/sc/ssc/out314_en.pdf, accessed 13 June 2012.
- (11) Ducrot C, Arnold M, de KA, Heim D, Calavas D (2008) *Review on the epidemiology and dynamics of BSE epidemics*. *Vet Res* 39(4):15.
- (12) Hoernlimann B, Riesner D, Kretzschmar H (2006) Prions in Humans and Animals..
- (13) Heim D, Mumford E (2005) *The future of BSE from the global perspective*. *Meat Science* 70(3):555-62.
- (14) Mumford EL, Kihm U (2006) *Integrated risk reduction along the food chain*. *Annals*

New York Academy of Sciences 1081:147-52.

- (15) ISO 17025 (2005) *General requirements for the competence of testing and calibration laboratories*, available at http://www.iso.org/iso/catalogue_detail?csnumber=39883, accessed 22 March 2012.