Annex 51

EDITORIAL MODIFICATIONS THAT WILL BE INTRODUCED INTO THE 2017 EDITION OF THE *TERRESTRIAL CODE*

The following editorial modifications will be introduced into the 2017 edition of the Terrestrial Code Volume I and Volume II. The following tables identify the Chapter and relevant article. Deletions are shown in strikethrough and additions with double underline.

- Pathogenic agent to replace ‘pathogen, ‘aetiologic agent’, ‘pathogenic organism’, ‘pathogenic micro-organism’, ‘pathogenic bacteria’, ‘causative pathogen’, ‘causative agent’, ‘animal pathogen’, ‘bacterial pathogen’; ‘disease agent’.

- Slaughterhouse to be replaced by slaughterhouse/abattoir (this only applies to the English version);

- Herd/flock to be replaced by herd or flock;

- Ova to be replaced by oocytes;

- Embryos/oocytes the forward slash will be replaced by either ‘and’ or ‘or’

- The order of the terms ‘embryos’ and ‘oocytes’ will reversed to show oocytes before embryos.

Annex 51 (contd)

Chapter Title and Article	Editorial modification introduced
USER' S GUIDE (Volume I and II)	
A. Introduction	Point 4 The absence of chapters, articles or recommendations on particular ~~aetiological~~ pathogenic agents or commodities does not preclude the application of appropriate sanitary measures by the Veterinary Authorities, provided they are based on risk analyses conducted in accordance with the *Terrestrial Code*.
B. *Terrestrial Code* content	Point 4 The standards in Section 2 are designed to guide the importing country in conducting import risk analysis in the absence of OIE recommendations on particular ~~aetiological~~ pathogenic agents or commodities. Point 10 The standards in each of the chapters of Sections 8 to 15 are designed to prevent the ~~aetiological~~ pathogenic agents of OIE listed diseases, infections or infestations from being introduced into an importing country.
C. Specific issues	Point 1 Chapter 1.3. gives the current list. Diseases are divided into nine categories based on the host species of the ~~aetiological~~ pathogenic agents. Point 4 Chapter 6.5. is an example of a specific on-farm prevention and control plan for the non-listed food-borne pathogenic agent ~~pathogen~~ *Salmonella* in poultry.
GLOSSARY	
	ANIMAL HEALTH MANAGEMENT means a system designed to optimise the physical and behavioural health and welfare of *animals*. It includes the prevention, treatment and control of *diseases* and conditions affecting the individual *animal* and *herd* or *flock*, including the recording of illness, injuries, mortalities and medical treatments where appropriate. ***COLLECTION CENTRE*** means a facility approved by the *Veterinary Authority* for the collection of oocytes or embryos~~/ova~~ and used exclusively for donor animals which meet the conditions of the *Terrestrial Code*. ***EPIDEMIOLOGICAL UNIT*** means a group of *animals* with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogenic agent ~~pathogen~~. This may be because they share a common environment (e.g. *animals* in a pen), or because of common management practices. Usually, this is a *herd* or a *flock*. However, an *epidemiological unit* may also refer to groups such as *animals* belonging to residents of a village, or *animals* sharing a communal animal handling facility. The epidemiological relationship may differ from *disease* to *disease*, or even strain to strain of the pathogenic agent ~~pathogen.~~

	FREE COMPARTMENT means a *compartment* in which the absence of the animal pathogenic agent ~~pathogen~~ causing the *disease* under consideration has been demonstrated by all requirements specified in the *Terrestrial Code* for free status being met. ***INCUBATION PERIOD*** means the longest period which elapses between the introduction of the pathogenic agent ~~pathogen~~ into the *animal* and the occurrence of the first clinical signs of the *disease*. ***OFFICIAL CONTROL PROGRAMME*** means a programme which is approved, and managed or supervised by the *Veterinary Authority* of a Member Country for the purpose of controlling a *vector*, pathogenic agent ~~pathogen~~ or *disease* by specific measures applied throughout that Member Country, or within a *zone* or *compartment* of that Member Country. ***QUARANTINE STATION*** means an establishment under the control of the *Veterinary Authority* where *animals* are maintained in isolation with no direct or indirect contact with other *animals*, to ensure that there is no transmission of specified pathogenic agents ~~pathogen(s)~~ outside the establishment while the *animals* are undergoing observation for a specified length of time and, if appropriate, testing and treatment. ***STAMPING-OUT POLICY*** *a)* the *killing* of the *animals* which are affected and those suspected of being affected in the *herd* or *flock* and, where appropriate, those in other *herds* or *flocks* which have been exposed to *infection* by direct animal to animal contact, or by indirect contact with the causal pathogenic agent pathogen; *animals* should be killed in accordance with Chapter 7.6.;
CHAPTER 1.1. **NOTIFICATION OF DISEASES, INFECTIONS AND INFESTATIONS, AND PROVISION OF EPIDEMIOLOGICAL INFORMATION**	
Article 1.1.2.	Point 1 Member Countries shall make available to other Member Countries, through the OIE, whatever information is necessary to minimise the spread of important animal *diseases*, and their ~~aetiological~~ pathogenic agents, and to assist in achieving better worldwide control of these *diseases*. Point 3 An event is specific to a pathogenic agent ~~pathogen~~ and strain, when appropriate, and includes all related *outbreaks* reported from the time of the immediate *notification* through to the final report. Point 5 The detection of the ~~aetiological~~ pathogenic agent of a *listed disease* in an *animal* should be reported, even in the absence of clinical signs. Recognising that scientific knowledge concerning the relationship between *diseases* and their ~~aetiological~~ pathogenic agents is constantly developing and that the presence of a~~n aetiological~~ pathogenic agent does not necessarily imply the presence of a *disease*, Member Countries shall ensure, through their reports, that they comply with the spirit and intention of point 1 above.

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Article 1.1.3.	Point 1.d) a sudden and unexpected change in the distribution or increase in incidence or virulence of, or morbidity or mortality caused by, the ~~aetiological~~ pathogenic agent of a *listed disease*, *infection* or *infestation* present within a country, a *zone* or a *compartment*;
CHAPTER 1.4. **ANIMAL HEALTH SURVEILLANCE**	
Article 1.4.3.	Point 2.f) Different methodologies may be needed to accommodate different host species, pathogenic agents ~~pathogens~~, production systems and *surveillance* systems, and types and amounts of data and information available. Point 2.d) *Infection* in a country, *zone* or *compartment* usually clusters rather than being uniformly or randomly distributed through a population. Clustering may occur at a number of different levels (e.g. a cluster of infected *animals* within a *herd* or *flock*, a cluster of pens in a building, or a cluster of farms in a *compartment*).
Article 1.4.5. point 1	Point 1.d) Inspections of *animals* at *slaughterhouses/abattoirs* may provide valuable *surveillance* data. The sensitivity and specificity of *slaughterhouse/abattoir* inspection for detecting the presence of specified *diseases* should be pre-determined for the inspection system in place. The accuracy of the inspection system will be influenced by: i) the training, experience and number of the inspection staff; ii) the involvement of the *Competent Authority* in the supervision of ante-mortem and post-mortem inspections; iii) the quality of construction of the *slaughterhouse/abattoir*, speed of the slaughter chain, lighting quality, etc.; and staff morale and motivation for efficient performance. *Slaughterhouse/abattoir* inspections are likely to provide good coverage for particular age groups and geographical areas only. *Slaughterhouse/abattoir surveillance* data are subject to biases in relation to target populations (e.g. only *animals* of a particular class and age are likely to be slaughtered for human consumption in significant numbers). Such biases need to be recognised when analysing *surveillance* data. For traceback and analysis of spatial and *herd- or flock-level* coverage, there should be, if possible, an effective identification system that relates *animals* in the *slaughterhouse/abattoir* to their locality of origin. Point 1.e) Analysis of laboratory investigation records may provide useful *surveillance* information. The coverage of the system will be increased if analysis is able to incorporate records from national, accredited, university and private sector *laboratories*. Valid analysis of data from different *laboratories* depends on the existence of standardised diagnostic procedures and standardised methods for interpretation and data recording. As with slaughterhouse/*abattoir* inspections, there needs to be a mechanism to relate specimens to the farm of origin.

<table>
<tr><td>Article 1.4.6.</td><td>Point 1
– the ~~disease~~ pathogenic agents to which these provisions apply are likely to produce identifiable clinical signs in susceptible animals;
Point 5
[…] Therefore, demonstrating freedom from infection involves providing sufficient evidence to demonstrate (to a level of confidence acceptable to Member Countries) that infection with a specified pathogenic agent ~~pathogen~~, if present, is present in less than a specified proportion of the population.</td></tr>
<tr><td>Article 1.4.7.</td><td>Point 4
frequency distribution of herd or flock sizes or the sizes of other epidemiological units;</td></tr>
<tr><td colspan="2">CHAPTER 1.6.
PROCEDURES FOR SELF DECLARATION AND FOR OFFICIAL RECOGNITION BY THE OIE</td></tr>
<tr><td>Questionnaire on BSE
Article 1.6.5.
SECTION 1: RISK ASSESSMENT

SECTION 2: OTHER REQUIREMENTS

Section 3: SECTION 3: BSE SURVEILLANCE AND MONITORING SYSTEMS</td><td>Exposure assessment:
4) The origin of bovine carcasses, by-products and slaughterhouse/abattoir waste, the parameters of the rendering processes and the methods of cattle feed production
Question to be answered: How have bovine carcasses, by-products and slaughterhouse/abattoir waste been processed over the past eight years?
Point 1.b)
Documentation on the number and occupation of persons who have participated in the awareness programme (veterinarians, producers, workers at auctions, slaughterhouses/abattoirs, etc.).
Point 2.
- What guidance is given to veterinarians, producers, workers at auctions, slaughterhouses/abattoirs, etc. in terms of the criteria that would initiate the investigation of an animal as a BSE suspect? Have these criteria evolved?
<table><tr><th>Laboratory identification number</th><th>Age</th><th>Clinical signs</th><th>Point of detection (farm, market channels, slaughterhouse/abattoir)</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table></td></tr>
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Questionnaires on FMD Article 1.6.6 This article contains several questionnaires – the modifications will be introduced to each of the questionnaires	7.c) i) indicate the sampling and testing procedures to be used to identify and confirm presence of the ~~causative~~ pathogenic agent; 5.e) *Slaughterhouses/abattoirs* and markets or events associated with the congregation of FMD susceptible livestock (e.g. fairs, shows, competitions). Where are the major livestock marketing or collection centres? What are the patterns of livestock movement within the country? How are the animals transported and handled during these transactions? 3.e) Animal identification and movement control. Are susceptible animals identified (individually or at a group level)? Provide a description of the methods of animal identification, *herd* or *flock* registration and traceability […] 5.c) Livestock demographics and economics. What is the susceptible animal population by species and production systems? How many *herds*, *flocks*, etc. of each susceptible species are in the country? How are they distributed (e.g. *herd* or *flock* density, etc.)? Provide tables and maps as appropriate. 6.a) Coordination with neighbouring countries. Are there any relevant factors about the adjacent countries or *zones* that should be taken into account (e.g. size, distance from adjacent border to affected *herds*, *flocks* or animals)? Describe coordination, collaboration and information sharing activities with neighbouring countries.
Questionnaires on CBPP Article 1.6.7. This article contains several questionnaires – the modifications will be introduced to each of the questionnaires	7.c) i) indicate the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent; 5.b) *Slaughterhouses/abattoirs* and slaughter slabs~~, abattoirs~~. What are the criteria for raising a suspicion of CBPP lesion? What is the procedure to notify (by whom and to whom)? Provide a summary table indicating, for the past two years, the number of suspect cases, the number of samples tested for CBPP agent, species, type of sample, testing method(s) and results (including differential diagnosis). 5.d) For countries where a significant proportion of animals are not slaughtered in controlled *slaughterhouses/abattoirs*, what are the alternative surveillance measures applied to detect CBPP (e.g. active clinical surveillance programmes, laboratory follow-up). 5.f) *Slaughterhouses/abattoirs* and markets. Where are the major livestock marketing or collection centres? What are the patterns of livestock movement within the country? How are the animals transported and handled during these transactions?

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Questionnaires on AHS Article 1.6.8. This article contains several questionnaires – the modifications will be introduced to each of the questionnaires	8.b) iii) describe the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent; 7.b)ii) – genetic material (semen, ~~ova~~oocytes and embryos of the equine species),
Questionnaires on PPR Article 1.6.9. This article contains several questionnaires – the modifications will be introduced to each of the questionnaires	7.c) i) indicate the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent;
Questionnaire on CSF Article 1.6.10.	Point 7. f) i) indicate the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent; *Point 5. e) Slaughterhouses/abattoirs* and markets. Where are the major pig marketing or collection centres? What are the patterns of pig movement within the country or *zone*, and between *zone(s)* of the same or different status? How are the pigs sourced, transported and handled during these transactions? Is any *surveillance* carried out at *slaughterhouses/abattoirs*? Provide data on the number of pigs slaughtered and inspected during the past 12 months. Point 3.e) *Animal identification* and movement control. Are pigs identified (individually or at a group level)? Provide a description of the criteria and methods for *animal identification*, *herd* or *flock* registration and traceability for all sectors of pig production including free-ranging pig management systems […] Point 5.c) Domestic and *captive wild* pig populations and production. What is the pig population? Provide a description of the different production systems present in the country and *zone(s)* and production figures in each sector. How many *herds* or *flocks* are in the country and *zone(s)*? How are they distributed (e.g. *herd* or *flock* density, etc.)? Provide tables and maps as appropriate. Point 6.a) Coordination with neighbouring countries. Are there any relevant factors about the adjacent countries or *zones* that should be taken into account (e.g. size, distance from adjacent border to affected *herds, flocks* or *wild* and *feral* pig populations)? […]

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Questionnaire on FMD Article 1.6.11.	Point 7.c) ii) indicate the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent; Point 4.b) Describe how clinical *surveillance* is conducted, including which levels of the livestock production system are included in clinical *surveillance*, such as farms, markets, fairs, *slaughterhouses/abattoirs*, check points, etc […] Point 3.f) Provide a description of the methods of *animal identification* (at the individual or group level), *herd* or *flock* registration and traceability and how the movements of animals and products are assessed and controlled, including movement of infected animals to *slaughter* […] Point 4.d) Provide information on livestock demographics and economics, including the susceptible animal population by species and production systems in the country and the *zone*. Identify how many *herds*, *flocks*, etc. of each susceptible species are in the country and how they are distributed, such as *herd* or *flock* density, etc. Provide tables and maps as appropriate. Points 6.a) Coordination with neighbouring countries, trading partners and other countries within the same region. Identify relevant factors about the adjacent countries and *zones* that should be taken into account such as size, distance from adjacent borders to affected *herds, flocks* or animals, *surveillance* carried in adjacent countries […]
Questionnaire on PPR Article 1.6.12.	Point 4.b) Describe how clinical *surveillance* is conducted, including which levels of the livestock production system are included in clinical *surveillance*, such as farms, markets, fairs, *slaughterhouses/abattoirs*, check points, etc. […] Point 3.f) Provide a description of the methods of *animal identification* (at the individual or group level), *herd* or *flock* registration and traceability and how the movements of animals and products are assessed and controlled, including movement of infected animals to *slaughter* […] Point 4.d) Provide information on livestock demographics and economics, including the susceptible animal population by species and production systems in the country and the *zone*. Identify how many *herds*, *flocks*, etc. of each susceptible species are in the country and how they are distributed, such as *herd* or *flock* density, etc. Provide tables and maps as appropriate. Points 6.a) Coordination with neighbouring countries, trading partners and other countries within the same region. Identify relevant factors about the adjacent countries and *zones* that should be taken into account such as size, distance from adjacent borders to affected *herds, flocks* or animals, *surveillance* carried in adjacent countries […]

Questionnaire on CBPP Article 1.6.13.	Point 7.c) ii): indicate the sampling and testing procedures used to identify and confirm presence of the ~~causative~~ pathogenic agent;
CHAPTER 3.2. **EVALUATION OF VETERINARY SERVICES**	
Article 3.2.6.	Point 3.b) […] In countries where there is more than one diagnostic laboratory for a given pathogenic agent ~~pathogen~~, the designation of a National Reference Laboratory for that pathogenic agent ~~pathogen~~ may contribute to the quality of analysis performed by the diagnostic laboratories.
Article 3.2.8.	Point 2: […] Details should include enabling legislation, programme plans for epidemiological *surveillance* and animal disease emergency responses, quarantine arrangements for infected and exposed *animals*, *herds* or *flocks*, compensation provisions for animal owners affected by disease control measures […]
Article 3.2.14.	Point 7.b) i) animal health controls of the importation, use and biocontainment of organisms which are ~~aetiological~~ pathogenic agents of animal *diseases*, and of pathological material; Point 8.c) i) *Slaughterhouses/abattoirs* (indicate species of *animals*);
CHAPTER 4.4. **APPLICATION OF COMPARTMENTALISATION**	
Article 4.4.2.	A *compartment* may be established with respect of a specific *disease* or *diseases*. A *compartment* should be clearly defined, indicating the location of all its components including *establishments*, as well as related functional units (such as feed mills, *slaughterhouses/abattoir*, rendering plants, etc.) […]
Article 4.4.3.	Point 1.b)ii) *slaughterhouses/abattoir*, rendering plants or feed mills; Point 3. h) [..] Based on the outcome of the assessment, concrete and documented mitigation steps should be taken to reduce the likelihood of introduction of the ~~disease~~ pathogenic agent into the compartment.
CHAPTER 4.5. **GENERAL HYGIENE IN SEMEN COLLECTION AND PROCESSING CENTRES**	
Article 4.5.2.	Point 5: The entry of visitors should be strictly controlled. Personnel at a centre should be technically competent and observe high standards of personal hygiene to preclude the introduction of pathogenic agents ~~organisms~~. Protective clothing and footwear for use only on the centre should be provided.
Article 4.5.3.	Point 4: Personnel at the centre should be technically competent and observe high standards of personal hygiene to preclude the introduction of pathogenic agents ~~organisms~~.

Article 4.5.4.	Point 2 The laboratory personnel should be technically competent and observe high standards of personal hygiene to preclude the introduction of pathogenic agents ~~organisms~~ during semen evaluation, processing and storage.
CHAPTER 4.6. **COLLECTION AND PROCESSING OF BOVINE, SMALL RUMINANT AND PORCINE SEMEN**	
Article 4.6.1.	Point 1 maintain the health of animals on an *artificial insemination centre* at a level which permits the international distribution of semen with a negligible risk of infecting other animals or humans with pathogenic agents ~~pathogens~~ transmissible by semen
Article 4.6.2.	Point 1.d)i) come from an IBR/IPV free *herd* as defined in Article 11.10.3.; or
Article 4.6.7.	Point 1.d) Whenever milk, egg yolk or any other animal protein is used in preparing the semen diluent, the product should be free from pathogenic agents ~~of pathogens~~ or sterilised;
CHAPTER 4.7. **COLLECTION AND PROCESSING OF *IN VIVO* DERIVED EMBRYOS FROM LIVESTOCK AND EQUIDS**	
Article 4.7.1.	The purpose of official sanitary control of *in vivo* derived embryos intended for movement internationally is to ensure that specific pathogenic agents ~~organisms~~, which could be associated with embryos, are controlled and transmission of *infection* to recipient animals and progeny is avoided.
Article 4.7.4.	Point 1.b) The donor animals should not be situated in a *herd* or *flock* subject to veterinary restrictions for OIE *listed disease* or pathogenic agents ~~pathogens~~ for relevant species (see Chapter 1.2.), other than those that are in International Embryo Transfer Society (IETS) Category 1 for the species of embryos being collected (see Article 4.7.14.).
Article 4.7.5.	Point 1.c) the ~~pathogenic~~ characteristics of the specified ~~disease~~ pathogenic agents that are of concern to the *Veterinary Authority* of the *importing country*. Point 3. b) Testing of embryo-collection (flushing) fluids and non-viable embryos, or other samples such as blood, in a laboratory for presence of specified ~~disease~~ pathogenic agents.
Article 4.7.6.	Point 1 Any biological product of animal origin used in the media and solutions for collection, processing, washing or storage of embryos should be free ~~of~~ from pathogenic agents ~~micro-organisms~~.
Article 4.7.7.	Point 1 The testing of samples can be requested by an *importing country* to confirm the absence of pathogenic agents ~~organisms~~ that may be transmitted via *in vivo* derived embryos, or to help assess whether the degree of quality control of the collection team (with regard to adherence to procedures as described in the IETS Manual) is at an acceptable level. Samples may include:

	Point 2 When treatment of the viable embryos is modified to include additional washings with the enzyme trypsin (see point 2*c)* in Article 4.7.5.), the procedure should be carried out in accordance with the IETS Manual. Enzyme treatment is necessary only when pathogenic agents ~~pathogens~~ for which the IETS recommends this additional treatment (such as with trypsin) may be present […]
Article 4.7.10.	The *herd* or *flock* of origin should be free of clinical signs of swine vesicular disease and brucellosis.
Article 4.7.12.	South American camelid embryos recovered from the uterine cavity by the conventional non-surgical flushing technique at 6.5 to 7 days post-ovulation are almost invariably at the hatched blastocyst stage, and thus the zona pellucida has already been shed. Since the embryos do not enter the uterus and cannot be recovered before 6.5 to 7 days, it would be unrealistic to stipulate for these species that only zona pellucida-intact embryos can be used in *international trade*. The development of cryopreservation methods for storage of camelid embryos is still at an early stage, and also that pathogenic agent ~~pathogen~~ interaction studies with camelid embryos have not yet been carried out.
CHAPTER 4.8. **COLLECTION AND PROCESSING OF *IN VITRO* PRODUCED OOCYTES OR EMBRYOS~~/OOCYTES~~ FROM LIVESTOCK AND HORSES**	
Article 4.8.1.	Production of embryos *in vitro* involves the collection of oocytes from the ovaries of donors, *in vitro* maturation and fertilization of the oocytes, then *in vitro* culture to the morula/blastocyst stage at which they are ready for transfer into recipients. The purpose of official sanitary control of *in vitro* produced embryos intended for movement internationally is to ensure that specific pathogenic agents ~~organisms~~, which could be associated with such embryos, are controlled and transmission of *infection* to recipient animals and progeny is avoided. The conditions outlined in this chapter are also applicable where the movement of *in vitro* maturing (IVM) oocytes is intended.
Article 4.8.2.	**Conditions applicable to the embryo production team** The embryo production team is a group of competent technicians, including at least one *veterinarian*, to perform the collection and processing of ovaries~~/~~ or oocytes and the production and storage of *in vitro* produced embryos. The following conditions should apply:
Article 4.8.4. **Conditions applicable to donor animals**	[…] Batch collection involves the removal of ovaries from batches of donors slaughtered at a *slaughterhouse*/*abattoir* ~~(hereafter '*abattoir*')~~; these ovaries are then transported to the processing laboratory where the oocytes are recovered from the ovarian follicles by aspiration. Batch collection has the disadvantage that it is usually impractical to relate the ovaries which are transported to the laboratory to the donors which were slaughtered at the *slaughterhouse/abattoir*. Nevertheless, it is critical to ensure that only healthy tissues are obtained and that they are removed from the donors and transported to the laboratory in a hygienic manner. […] 4) In the case of oocyte recovery from batches of ovaries collected from an *abattoir*, the *slaughterhouse/abattoir* should be officially approved and under the supervision of a *veterinarian* whose responsibility is to ensure that ante-mortem and post-mortem inspections of potential donor animals are carried out, and to certify them to be free of clinical or pathological signs of the *diseases* listed in point 2.

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	5) Donor animals slaughtered at ~~a~~n *slaughterhouse/abattoir* should not have been designated for compulsory *slaughter* for a *notifiable disease* and should not be slaughtered at the same time as donors from which ovaries and other tissues will be removed. 6) *Batches* of ovaries and other tissues collected from ~~a~~n *slaughterhouse/abattoir* should not be transported to the processing laboratory before confirmation has been obtained that ante- and post-mortem inspection of donors has been satisfactorily completed.
Article 4.8.5.	**Optional tests and treatments** A supplementary approach for ensuring that *in vitro* produced embryos do not transmit *disease* is by testing various materials to confirm the absence of pathogenic agents ~~organisms~~ listed in point 2 of Article 4.8.4. Point 1 non-viable oocytes~~/~~ or embryos from any stage of the *in vitro* production line from batches intended for export; Second point 2 Any biological product of animal origin, including co-culture cells and media constituents, used in oocyte recovery, maturation, fertilisation, culture, washing and storage should be free of living pathogenic agents ~~pathogens~~. Media should be sterilised prior to use by approved methods in accordance with the IETS Manual[1] and handled in such a manner as to ensure that sterility is maintained. Antibiotics should be added to all fluids and media as recommended in the IETS Manual[1] Second point 3 All equipment used to recover, handle, culture, wash, freeze and store oocytes~~/~~ or embryos should be new or cleaned and sterilised prior to use as recommended in the IETS Manual[1].
Article 4.8.6.	Point 1.a) the disease situation in the *exporting country* ~~and/~~or *zone*; Point 1.c) the ~~pathogenic~~ characteristics of the specified ~~disease~~ pathogenic agents listed in point 2 of Article 4.8.4.; Point 3.a) post-collection surveillance of the donors and donor *herds* or *flocks* based on the recognised *incubation periods* of the *diseases* of concern to determine retrospectively the health status of the donors whilst the embryos are stored (in species where effective storage by cryopreservation is possible) in the *exporting country*. Post-collection surveillance of donors is not, of course, possible in the case of batch collection from a *slaughterhouse/abattoir*, although surveillance of the *herds* or *flocks* of origin may be possible;

	Point 1 the first phase comprises the risk potential for ovary~~/~~, oocyte~~/~~ or embryo contamination and depends on: Point 1.b) the health status of the *herds* or *flocks* and the donors from which the ovaries~~/~~, oocytes~~/~~ or embryos are collected; Point 3.b) testing of oocytes~~/~~ or embryos, co-culture cells, media and other samples (e.g. blood) (as referred to in Article 4.8.5.) in a laboratory for presence of ~~disease~~ pathogenic agents.
CHAPTER 4.9. **COLLECTION AND PROCESSING OF MICROMANIPULATED OOCYTES OR EMBRYOS~~/OOCYTES~~ FROM LIVESTOCK AND HORSES**	
Article 4.9.1.	**Introduction** Neither Chapter 4.7. which recommends official sanitary control measures for the international movement of *in vivo* derived embryos nor Chapter 4.8. which recommends measures for *in vitro* produced embryos~~/~~ or *in vitro* maturing oocytes covers embryos which have been subjected to biopsy, splitting, transgene injection, intracytoplasmic sperm injection (ICSI), nuclear transfer or other interventions which breach the integrity of the zona pellucida. Such oocytes or embryos~~/oocytes~~ are those referred to here as having been 'micromanipulated'. […] Removal of such material from the zona pellucida of immature oocytes can be difficult. However, to bring micromanipulated oocytes or embryos~~/oocytes~~ within the scope of the above mentioned chapters, the following conditions should apply.
Article 4.9.2.	Point 3 Donor animals should comply with the conditions laid down in Article 4.7.4. (*in vivo* derived embryos) or Article 4.8.4. (*in vitro* produced embryos), whichever is appropriate. Risk management and criteria for testing samples to ensure that embryos are free of from pathogenic agents ~~organisms~~ are laid down in Articles 4.7.5. and Article 4.7.7. and in Articles 4.8.5. and 4.8.6. respectively, and these should be followed. Point 4 All embryos to be micromanipulated should be washed in accordance with the protocols laid down in the IETS Manual[1] and they should be observed to have an intact zona pellucida before and after washing. Only embryos from the same donor, or, in the case of some *in vitro* produced embryos, embryos originating from the same batch of ovaries from a *slaughterhouse/abattoir* (see Chapter 4.8.), should be washed together at the same time. After washing, but before micromanipulation, the zona pellucida of each embryo should be examined over its entire surface area at not less than 50X magnification and certified to be intact and free of adherent material.

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	Point 1 Prior to any micromanipulation which involves breaching the zona pellucida, all oocytes or embryos~~/oocytes~~ should be collected and processed in accordance with the sanitary conditions laid down in Chapter 4.7. (*in vivo* derived embryos), or produced in accordance with the sanitary conditions laid down in Chapter 4.8. (*in vitro* produced oocytes or embryos~~/oocytes~~). Point 2 Responsibility for the oocytes or embryos~~/oocytes~~ remains with the embryo collection team […] Point 5 If surrogate zonae are used, they should be from the same species and the oocytes or embryos~~/oocytes~~ from which they are obtained should be treated in the same manner as if they were *in vivo* derived or *in vitro* produced embryos intended for international movement
Article 4.9.3.	Point 1 Any product of animal origin, including co-culture cells and media constituents, used in the collection or production of oocytes, embryos~~, oocytes~~ or other cells, and in their micromanipulation, culture, washing and storage should be free ~~of~~ from pathogenic agents ~~micro-organisms~~ (including transmissible spongiform encephalopathy agents, sometimes called prions) […] Point 2 Equipment (e.g. microsurgical instruments which have direct contact with embryos) should either be of the single-use type (disposed of after each embryos/ or oocytes batch) or should be effectively sterilised between oocytes or embryos~~/oocytes~~ batch in accordance with recommendations in the IETS Manual[1].
Article 4.9.4.	**Optional tests and treatments** The *importing country* may request that tests be carried out on certain samples or that embryos be treated to ensure that specified pathogenic agents ~~organisms~~ are absent. Point 2 Treatments of embryos with the enzyme trypsin or other substances proven to inactivate or remove pathogenic agents ~~organisms~~ may be requested when pathogenic agents ~~pathogens~~ that are not removed by washing may be present. If used, such treatments should also be applied prior to any micromanipulation, and in accordance with the IETS Manual[1].

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CHAPTER 4.10. **COLLECTION AND PROCESSING OF LABORATORY RODENT AND RABBIT OOCYTES OR EMBRYOS~~/OVA~~**	
Article 4.10.1.	**Microbial status of laboratory animal colonies** Colonies of the various species and genotypes of laboratory animals are usually kept within specialised premises and their microbial status depends largely on the system whereby the colony was formed and is maintained. In this chapter the microbial status of colonies is considered to be of three main types: 'defined', 'conventional' and 'undefined'. Colonies of defined status are those where, at least initially, the animals are totally free of from pathogenic agents and non-pathogenic micro-organisms (i.e. gnotobiotic), although sometimes a cocktail of known, non-pathogenic micro-organisms has been given subsequently. In either case defined colonies are kept in highly controlled environments in barrier maintained rooms, with strict protocols in place to exclude all potential sources of unwanted microbiological contamination. Colonies of conventional status are those where the animals are kept in closed colonies but where known ('specific') pathogenic agent ~~pathogen~~ as well as non-pathogenic micro-organisms may exist. […] The purpose of official sanitary control of laboratory rodent and rabbit embryos intended for movement internationally is to ensure that specific pathogenic agents ~~micro-organisms~~, which could be associated with such embryos, are controlled and transmission of *infection* to recipient animals, progeny and colonies, is avoided […]
Article 4.10.2.	Point 4 Team personnel should be adequately trained in the techniques and principles of disease control and in the use of aseptic techniques in embryo handling. The zoonotic potential of specific pathogenic agents ~~pathogens~~ affecting the various laboratory animal species should be identified and understood so as to avoid contamination of colonies via human vectors, and vice versa. **Conditions applicable to the embryo collection team** The embryo collection team is a group of competent technicians including at least one experienced professional to perform the collection, processing and storage of oocytes or embryos~~/oocytes~~.
Article 4.10.4.	Point 1.c) the ~~pathogenic~~ characteristics of the specified ~~disease~~ pathogenic agents that are of concern to the *Veterinary Authority* of the *importing country*.
Article 4.10.6.	**Conditions applicable to donors from animal colonies of different microbial status** Sentinel animals in each donor colony of defined and conventional status should be subjected to routine microbial screening, preferably monthly, but at least quarterly. Testing for specific pathogenic agents ~~pathogens~~ depends on the animal species and may be influenced by geographical location. Recommendations regarding specific ~~microbial~~ pathogenic agents to be tested for in different laboratory animal species have been published elsewhere†.

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Article 4.10.6.	Point 1. d) The embryos should be recorded as coming from a germfree or microbiologically defined, barrier maintained colony, thus indicating that special risk management procedures (Article 4.10.4.) for ~~pathogen~~ the removal of pathogenic agents are not necessary. The need to quarantine the embryo recipients is a matter for the importing institute. Point 2. a) Colonies of conventional microbial status are usually closed and their health status is routinely monitored (Article 4.10.1.). The animals may have been exposed to various pathogens, resulting in *infection*, with positive antibody titres or even active clinical *disease*, but the pathogenic agents ~~pathogen(s)~~ of concern in each individual colony should be well known. Point 2. b) Reproductive tracts (uteri, oviducts ~~and/~~or ovaries) should be removed at a separate site and then taken into the embryo processing laboratory. These procedures should be performed by different technicians or, at the minimum, their protective clothing should be changed between locations. If animals should be handled in the laboratory, the tracts should be dissected out within a biological safety cabinet. This will help protect against the possible shedding of pathogenic agents ~~pathogens~~ into the laboratory itself. Point 2. c) Once the reproductive tracts have been removed, embryo recovery should be performed under aseptic conditions. Depending on which, if any, pathogenic agents ~~pathogens~~ are known to occur in the colony, embryos should be processed in accordance with the risk management procedures, including washing, as described in Article 4.10.4., and in the IETS Manual[2]. Point 2. d) Embryos derived from animals that have positive antibody titres or other evidence of specific pathogenic agents ~~pathogens~~ should only be transferred into a new colony via a quarantine system, using microbiologically defined recipient females […] Point 2. e) If the recipient institution does decide to quarantine the recipient dam and offspring until their health status is confirmed, the recipients should be tested post-weaning for pathogenic agents ~~pathogens~~ of concern, and introduction of offspring into the colony should only take place if the test results are satisfactory. Point 3. c) Post-mortem testing of the donor females for *diseases* or pathogenic agents ~~pathogens~~ of concern to the *importing country* may be appropriate after the embryos~~/~~ or oocytes have been collected. Alternatively if embryos are collected surgically an aliquot of flush fluid from each donor, or a pooled sample, should be tested for the presence of specific pathogenic agents ~~pathogens~~ of concern.

Article 4.10.8.	If embryos are to be produced by *in vitro* fertilisation of oocytes, it is advised that the washed sperm should be used so as to minimise the risk of possible ~~pathogen~~ exposure to pathogenic agents. If embryos are to undergo micromanipulation procedures that involve penetration of the zona pellucida, any required risk management steps (including washing) should be carried out first, as described in Chapter 4.9.
CHAPTER 4.11. **SOMATIC CELL NUCLEAR TRANSFER IN PRODUCTION LIVESTOCK AND HORSES**	
Article 4.11.5.	Point 1 Oocytes (obtained from the *slaughterhouse/abattoir*, recovered from trans-vaginal ultrasound-guided procedures or by laparotomy procedures) Ovaries which are collected at a~~n~~ *slaughterhouse/abattoir* should be collected, transported and processed in accordance with the recommendations laid down in Chapter 4.8. Following Point 1. Oocytes The laboratory or the producer should establish a detailed record of ovaries – their origin, health of the animal from which the ovaries are obtained, details of any systemic lesion on the animal and proper *herd* or *flock* data […]
Article 4.11.6.	Point 1 […] Producers and veterinarians become concerned when the rate of abortion exceeds 3–5% in a *herd* or *flock* […]
CHAPTER 4.12. **DISPOSAL OF DEAD ANIMALS**	
Article 4.12.1.	**Introduction** The mass disposal of dead *animals* associated with an animal *disease outbreak* is often subject to intense public and media scrutiny thereby obligating the *Veterinary Authority* of a Member Country to not only conduct disposal operations within acceptable scientific principles to destroy the ~~causative~~ pathogenic agent but also to address public and environmental concerns.
Article 4.12.4.	Point 1 Early detection of new *infections*, immediate *killing* of infected *animals* and rapid removal of the dead *animals* with inactivation of the ~~pathogen~~ pathogenic agent are important. Spread of the ~~pathogen~~ pathogenic agent from the dead *animals* and their surroundings should be blocked as soon and as effectively as possible. Point 3 The disposal procedure should be selected to result in inactivation of the ~~pathogen~~ pathogenic agent. Point 11 When disposing of dead *animals*, full attention should be given to preventing scavengers and vectors gaining access to dead *animals*, which might cause spread of the pathogenic agent ~~*disease*~~.

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Article 4.12.5.	Point 3 Availability of fuel; sufficient manual labour available; sites and availability of *disinfection* tents for personnel; storage and disposal of protective clothing; housing for personnel to minimise the spread of *infection*; facilities for entry and exit control; availability of electricity for night operations; personal facilities for personnel such as toilets, drinking water; availability of communication – mobile phone reception; protection (e.g. *vaccination*) of personnel; rendering capacity at rendering plants; arms and ammunition, additional cold storage and holding facilities at rendering plants and *slaughterhouses/abattoirs*.
Article 4.12.6.	**Recommended methods for the disposal of dead animals** The method(s) chosen should be based on local conditions and the required capacity and speed of outcome and on the conditions required for the inactivation of the ~~causative~~ pathogenic agent. Point 1 This is a closed system for mechanical and thermal treatment of animal tissues leading to stable, sterilized products, e.g. animal fat and dried animal protein. The technology exists in dedicated facilities. It produces an effective inactivation of all ~~pathogens~~ pathogenic agents with the exception of prions where infectivity is reduced. The availability of the capacity should be determined in advance. Point 2 In such a facility, whole dead *animals* or parts of *animals* can be completely burned and reduced to ash, often in conjunction with other substances (such as municipal waste, hazardous waste or hospital waste). Effective inactivation of ~~pathogens~~ pathogenic agents, including spores, occurs […] Point 4 This process fan-forces a mass of air through a manifold, thereby creating a turbulent environment in which incineration is accelerated up to six times for example in a burn-pit. The equipment can be mobile and, because it can be used on site, there is no requirement for transportation of the animal material. It also produces effective inactivation of ~~pathogens~~ pathogenic agents. Point 5 This open system of burning dead *animals* is a well-established procedure that can be conducted on site with no requirement for transportation of animal material. However, it takes an extended period of time and has no way of verifying ~~pathogen~~ inactivation of pathogenic agents, and there may be particulate dissemination from incomplete combustion. Further, because the process is open to view, there may be a lack of acceptance by the public. Point 6 Composting is a natural biological decomposition process that takes place in the presence of oxygen. In the first phase, the temperature of the compost pile increases, organic materials break down into relatively small compounds, soft tissue decomposes, and bones soften partially. In the second phase, the remaining materials, mainly bones, break down fully to a dark brown or black humus containing primarily non-pathogenic bacteria and plant nutrients. However, some viruses and spore forming bacteria, such as *Bacillus anthracis*, and other ~~pathogens~~ pathogenic agents such as *Mycobacterium tuberculosis* may survive.

Article 4.12.6.	Point 7 In this method, whole dead *animals* are buried and covered by soil. Burial is an established procedure which may be conducted on site. It may not inactivate all ~~pathogens~~ pathogenic agents. In some circumstances, dead *animals* may be disposed of by mounding whereby they are covered by a layer of soil above ground.
CHAPTER 5.1 **GENERAL OBLIGATIONS RELATED TO CERTIFICATION**	
Article 5.1.2.	Point 2 The *international veterinary certificate* should not include requirements for the exclusion of pathogenic agents or animal *diseases* which are present in the *importing country* and are not subject to any *official control programme*. The measures imposed on imports to manage the *risks* posed by a specific pathogenic agent or *disease* should not be more stringent than those applied as part of the *official control programme* operating within the *importing country*. Point 3 The *international veterinary certificate* should not include measures against pathogenic agents or *diseases* which are not OIE listed, unless the *importing country* has demonstrated through import *risk analysis*, carried out in accordance with Section 2., that the pathogenic agent or *disease* poses a significant *risk* to the *importing country*.
Article 5.1.4.	Point 2 If a *disease* condition appears in imported *commodities* within a time period after importation consistent with the recognised *incubation period* of the *disease*, the *Veterinary Authority* of the *exporting country* should be informed so as to enable an investigation to be made, since this may be the first available information on the occurrence of the *disease* in a previously free *herd* or *flock* […]
CHAPTER 5.2. **CERTIFICATION PROCEDURES**	
Article 5.2.1.	Certification of freedom from *diseases* based on purely clinical freedom and *herd* or *flock* history is of limited value. This is also true of *diseases* for which there is no specific diagnostic test, or the value of the test as a diagnostic aid is limited.
CHAPTER 5.5. **ANIMAL HEALTH MEASURES APPLICABLE UDRING TRANSIT FROM THE PLACE OF DEPARTURE IN THE EXPORTING COUNTRY TO THE PLACE OF ARRIVAL IN THE IMPORTING COUNTRY**	
Article 5.5.3.	Point 2 oocytes or embryos,
CHAPTER 5.7. **ANIMAL HEALTH MEASURES APPLICABLE ON ARRIVAL**	
Article 5.7.2.	Point 1.b) *oocytes or* embryos~~/ova~~,

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CHAPTER 5.8. **INTERNATIONAL TRANSFER AND LABORATORY CONTAINMENT OF ANIMAL PATHOGENIC AGENTS**	
Article 5.8.1.	To prevent the introduction and spread of animal *diseases* caused by ~~pathogens~~ pathogenic agents.
Article 5.8.2.	Point 1 The consequences of the introduction into a country of an infectious *disease* or an animal ~~pathogen~~ pathogenic agent or new strain of ~~animal pathogen~~ pathogenic agent from which it is currently free, are potentially very serious. Point 2 However, there is also the *risk* that *disease* may occur as a result of the accidental release of ~~animal pathogens~~ pathogenic agents from laboratories that are using them for various purposes such as research, diagnosis or the manufacture of vaccines. Such ~~pathogens~~ pathogenic agents may already occur in the country or they may have been imported deliberately or inadvertently. It is therefore necessary to have in place measures to prevent their accidental release. These measures may be applied either at national borders by prohibiting or controlling the importation of specified ~~pathogens~~ pathogenic agents or their carriers (see Article 5.8.4.) or within national boundaries by specifying the conditions under which laboratories must handle them. In practice, a combination of external and internal controls is likely to be applied depending on the risk to animal health posed by the ~~pathogen~~ pathogenic agent in question
Article 5.8.3.	**Classification of pathogenic agents** Pathogenic agents should be categorised in accordance with the risk they pose to both human and animal health. They are grouped into four risk categories. Detailed information is provided in the *Terrestrial Manual*.
Article 5.8.4.	**Importation of animal ~~pathogens~~ pathogenic agents** Point 1 The importation of any animal ~~pathogen~~ pathogenic agent, pathological material or organisms carrying the ~~pathogen~~ pathogenic agent should be permitted only under an import licence issued by the *Competent Authority*. The import licence should contain conditions appropriate to the *risk* posed by the ~~pathogen~~ pathogenic agent and, in relation to air transport, the appropriate standards of the International Air Transport Association concerning the packaging and transport of hazardous substances. The import licence for risk groups 2, 3 or 4 should only be granted to a laboratory that is licensed to handle the particular ~~pathogen~~ pathogenic agent as in Article 5.8.5. Point 2 When considering applications to import pathological material from other countries, the *Competent Authority* should have regard to the nature of the material, the *animal* from which it is derived, the susceptibility of that *animal* to various *diseases* and the animal health situation of the country of origin. It may be advisable to require that material is pretreated before import to minimise the risk of inadvertent introduction of a ~~pathogen~~ pathogenic agent.

Article 5.8.5.	**Laboratory containment of pathogenic agents ~~animal pathogens~~**
	Point 1 Guidance on the laboratory containment of ~~animal~~ pathogenic agents ~~pathogens~~ and on the import conditions applicable to them ~~animal pathogens~~ is found in Chapter 1.1.2. of the *Terrestrial Manual*. Additional guidance on human safety is also found in this chapter.
	Point 2 A laboratory should be allowed to possess and handle animal ~~pathogens~~ pathogenic agents in group 3 or 4 only if it can satisfy the *Competent Authority* that it can provide containment facilities appropriate to the group. However, depending on the particular circumstances of an individual country, the *Competent Authority* might decide that the possession and handling of certain ~~pathogens~~ pathogenic agents in group 2 should also be controlled. The *Competent Authority* should first inspect the facilities to ensure they are adequate and then issue a licence specifying all relevant conditions. There should also be a requirement for appropriate records to be kept and for the *Competent Authority* to be notified if it is suspected that a material being handled contains a ~~pathogen~~ pathogenic agent not covered by the licence. The *Competent Authority* should visit the laboratory periodically to ensure compliance with the licence conditions. It is important that *Competent Authority* staff carrying out the visit should not have any contact with species susceptible to the ~~pathogens~~ pathogenic agents being handled at the laboratory for a specified period after visiting the laboratory. The length of this period will depend on the ~~pathogen~~ pathogenic agent.
	Point 3. a) how the ~~pathogen~~ pathogenic agent is to be transported and the disposal of the packaging;
	Point 3. c) whether the ~~pathogen~~ pathogenic agent may be used *in vivo* (and if so whether in laboratory animals or other animals) and/or only *in vitro*;
	Point 3. d) how the ~~pathogen~~ pathogenic agent and any experimental animals should be disposed of when the work is completed;
	Point 3. e) limitations on contact by laboratory staff with species susceptible to the ~~pathogens~~ pathogenic agents being used;
	Point 3. f) conditions for the transfer of ~~pathogens~~ pathogenic agents to other laboratories;

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CHAPTER 5.9. **QUARANTINE MEASURES APPLICABLE TO NON-HUMAN PRIMATES**	
Article 5.9.1.	~~The present~~ This chapter defines the standards to be followed in the case of a non-human primate being imported directly from a country within the natural range of the animal species concerned, and where only limited health guarantees can be given, or in cases where Article 6.11.2., last paragraph, applies.
CHAPTER 5.10. **MODEL VETERINARY CERTIFICATES FOR INTERNATIONAL TRADE IN LIVE AIMALS, HATCHING EGGS AND PRODUCTS OF ANIMAL ORIGIN**	
Article 5.10.1.	Point 2, box I.5. Name of the country from which the animals, hatching eggs, oocytes, embryos, semen~~, ova~~ or brood combs are being exported. For products, name the country(ies) where the finished products were produced, manufactured or packed. Point 2, box I.9. For oocytes and embryos ~~and ova~~: the name, address and official approval number of the collection team (not the premises of storage). Point 2, box I.17. For animals, hatching eggs and animal products (semen, oocytes, ~~ova,~~ embryos) Point 2, box I.19. Total number of boxes, cages or stalls in which the animals or hatching eggs are being transported. Total number of cryogenic containers for semen, oocytes~~ova~~, embryos. Total number of packages for products. Point 2, box I.24. For oocytes, embryos~~, ova~~ and semen: Species (Scientific name); Identification mark in accordance with the International Embryo Transfer Society (IETS) or the International Committee for Animal Recording (ICAR); Collection date; Approval number of the centre/team; Identification of the donor animal; Quantity. If required, Breed. For products of animal origin: Species (Scientific name); Nature of commodity; Treatment type; approval number of establishment(s) (e.g. slaughterhouse/abattoir; cutting plant; processing plant; cold store); Lot identification/date code; Quantity; Number of packages; Net weight.
Article 5.10.3.	**Model veterinary certificate for international trade in oocytes, embryos~~, ova~~ and semen** Part II: Zoosanitary information The undersigned Official Veterinarian certifies that the oocytes, embryos~~, ova~~ and semen described above satisfy(ies) the following requirements:

CHAPTER 6.1. **THE ROLE OF THE VETERINARY SERVICES IN FOOD SAFETY**	
Article 6.1.2.	The role of the *Veterinary Services* has traditionally extended from the farm to the *slaughterhouse/abattoir*, where *veterinarians* have a dual responsibility […]
Article 6.1.3.	Point 5 *Slaughterhouse/abattoir* inspection of live *animals* (ante-mortem) and their carcasses (post-mortem) plays a key role in both the *surveillance* network for animal *diseases* and *zoonoses* and ensuring the safety and suitability of *meat* and by-products for their intended uses […]
CHAPTER 6.2. **CONTROL OF BIOLOGICAL HAZARDS OF ANIMAL HEALTH AND PUBLIC HEALTH IMPORTANCE THROUGH ANTE-AND POST-MORTEM MEAT INSPECTION**	
Article 6.2.3.	The Codex Alimentarius Code of Hygienic Practice for Meat (CHPM) constitutes the primary international standard for *meat* hygiene and incorporates a *risk*-based approach to application of *sanitary measures* throughout the *meat* production chain. Ante-mortem inspection is described as a primary component of *meat* hygiene before *slaughter*, and post-mortem inspection is described as a primary component of process control in post-slaughter *meat* hygiene. The CHPM specifically recognises the dual objectives that *slaughterhouse/abattoir* inspection activities deliver in terms of animal and public health.
Article 6.2.5.	Microbiological, serological or other testing at single-animal and *herd* or flock level as part of ante- and post-mortem inspection should be used to support *surveillance*, as well as *risk assessment* of prioritised food-borne *hazards* […]
CHAPTER 6.3. **THE CONTROL OF HAZARDS OF ANIMAL HEALTH AND PUBLIC HEALTH IMPORTANCE IN ANIMAL FEED**	
Article 6.3.4.	Point 11.a) Biological hazards that may occur in feed and feed ingredients include pathogenic agents such as bacteria, viruses, prions, fungi, parasites and poisonous plants.
CHAPTER 6.5. **PREVENTION, DETECTION AND CONTROL OF SALMONELLA IN POULTRY**	
Article 6.5.4.	Point 4.b)ii) One or more times if there is a culling policy in place or if eggs are diverted to processing for the inactivation of the pathogenic agent. The minimal frequency should be determined by the *Veterinary Services*. Point 4.c)iii) When sampling occurs on farms, *flocks* should be sampled as late as possible before the first birds are transported to the *slaughterhouse/abattoir*. In order to allow for the implementation of control measures during processing, this should be done at a time that ensures the results are available before *slaughter*.

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Article 6.5.5.	Point 5 […] *Vaccination* against *S.* Enteritidis can cause cross-reactions in *Salmonella* Pullorum/*S.* Gallinarum serological tests and needs to be considered when implementing measures for these pathogenic agents.
CHAPTER 6.7. **HARMONISATION OF NATIONAL ANTIMICROBIAL RESISTANCE SURVEILLANCE AND MONITORING PROGRAMMES**	
Article 6.7.3.	Point 6. a) Animal ~~bacterial~~ pathogenic agents relevant to the country's priorities Monitoring of antimicrobial resistance in animal pathogenic agents is important […] Information on the occurrence of antimicrobial resistance in animal pathogenic agents is in general derived from routine clinical material sent to veterinary diagnostic *laboratories*. These samples, often derived from severe or recurrent clinical *cases* including therapy failure, may provide biased information. Point 6. b) iii) Other emerging ~~bacterial~~ pathogenic agents Other emerging ~~bacterial~~ pathogenic agents such as methicillin-resistant *Staphylococcus aureus* (MRSA), *Listeria monocytogenes* or others which are pathogenic to humans, may be included in resistance surveillance and monitoring programmes. Point 5 […] Sampling of carcasses at the *slaughterhouse/abattoir* provides information on *slaughter* practices, *slaughter* hygiene and the level of microbiological contamination and cross-contamination of *meat*. Further sampling of the product at retail sales level may provide additional information on the overall microbiological contamination from *slaughter* to the consumer. […]

<table>
<tr><td>Article 6.7.3.</td><td>Point 6. b) i) Salmonella
Salmonella should be sampled from animal feed, food-producing animals and animal derived food products. For the purpose of consistency and harmonisation, samples should be preferably taken at the slaughterhouse/abattoir.
Table 2: Examples of sampling sources, sample types and monitoring output
<table><tr><th>Source</th><th>Type</th><th>Output</th><th>Additional information required or additional stratification</th></tr><tr><td>Slaughterhouse/Abattoir</td><td>Faeces</td><td>Prevalence of resistant bacteria originating from animals at slaughter.</td><td></td></tr></table>Point 6.c)
[…]
These bacteria are commonly used in surveillance and monitoring programmes as indicators, providing information on the potential reservoir of antimicrobial resistance genes, which may be transferred to pathogenic bacteria. It is considered that these bacteria should be isolated from healthy animals, preferably at the slaughterhouse/abattoir, and be monitored for antimicrobial resistance.</td></tr>
<tr><td colspan="2">CHAPTER 6.9.
RESPONSIBLE AND PRUDENT USE OF ANTIMICROBIAL AGENTS IN VETERINARY MEDICINE</td></tr>
<tr><td>Article 6.9.3.</td><td>Point 4. a)
the concentration of either active antimicrobial agents or metabolites in the gut of the animal (where the majority of potential foodborne pathogenic agents reside) at the defined dosage level;

Point 4. d)
the intrinsic and pre-existing, baseline level of resistance in the pathogenic agents of human health concern in both animals and humans.

Point 8. b)
Specific surveillance to assess the impact of the use of a specific antimicrobial agent may be implemented after the granting of marketing authorisation. The surveillance programme should evaluate not only resistance in target animal pathogenic agents, but also in foodborne pathogenic agents, and commensals if relevant and possible. This will also contribute to general epidemiological surveillance of antimicrobial resistance.</td></tr>
</table>

Annex 51 (contd)

Article 6.9.6.	Point 2.a) iii) pharmacodynamics including the activity towards the pathogenic agents involved; Point 2.a) vi) the epidemiological history of the rearing unit, particularly in relation to the antimicrobial resistance profiles of the pathogenic agents involved.
Article 6.9.7.	Point 2).d) isolate sick *animals*, when appropriate, to avoid the transfer of pathogenic agents; dispose of dead or dying *animals* promptly under conditions approved by the relevant authorities;
CHAPTER 6.10. **RISK ANALYSIS FOR ANTIMICROBIAL RESISTANCE ARISING FROM THE USE OF ANTIMICROBIAL AGENTS IN ANIMALS**	
Article 6.10.1.	Point 4 […] The conditions under which the *hazard* might produce adverse consequences include any scenarios through which humans or *animals* could become exposed to an antimicrobial resistant pathogenic agent, fall ill and then be treated with an *antimicrobial agent* that is no longer effective.
Article 6.10.2.	Point 3 - prevalence of pathogenic agents that are likely to develop resistance in an animal species; - prevalence of commensal bacteria which are able to transfer resistance to human pathogenic agents; Point 5 - prevalence of resistance in human bacterial pathogenic agents under consideration. Point 6 - occurrence of antimicrobial resistance in target pathogenic agents observed in humans; Point 7 b) […] Effective control of animal *diseases* can have the dual benefits of reducing *risks* to human health associated with both the bacterial pathogenic agent under consideration and antimicrobial resistance.
CHAPTER 6.11. **ZOONOSES TRANSMISSIBLE FROM NON-HUMAN PRIMATES**	
Article 6.11.1.	**Introduction** […] Public health and safety, *animal welfare* and pathogenic agent introduction to wild populations are the primary issues of concern in the importation and keeping of non-human primates […] The likelihood of carrying zoonotic pathogenic agents is related to the taxonomic position and the region of origin of the species concerned […]

<table>
<tr><td>Article 6.11.1.</td><td>Most pathogenic agents referred to in this chapter are not included in the OIE List, and there is, consequently, no requirement to report them on a regular basis within the OIE animal disease reporting system. However, the requirement to report exceptional epidemiological events remains in effect.
Standards for diagnostic tests for some pathogenic agents are described in the Terrestrial Manual.</td></tr>
<tr><td>Article 6.11.2.</td><td>General recommendations
[…] For reasons of public health, animal welfare and pathogenic agent introduction to wild populations, Veterinary Authorities of importing countries should not authorise the import of non-human primates for the purpose of being kept as pets.</td></tr>
<tr><td>Article 6.11.4.</td><td>Point 2) d)
<table><tr><th>Disease/agent</th><th>Animal groups</th><th>Schedule</th><th>Methods</th></tr><tr><td>Other bacterial pathogenic agents (Salmonella, Shigella and Yersinia and others as appropriate)</td><td>All species</td><td>Daily test for 3 days after arrival, and at least one or two more tests at intervals of 2 to 4 weeks.</td><td>Faecal culture. The fresh faeces or rectal swabs should be cultured immediately or be placed immediately in the appropriate transportation medium.</td></tr></table></td></tr>
<tr><td>Article 6.11.5.</td><td>Point 3.c)
<table><tr><th>Disease/agent</th><th>Animal groups</th><th>Schedule</th><th>Methods</th></tr><tr><td>Bacterial pathogenic agents (Salmonella, Shigella and Yersinia and others as appropriate)</td><td>All species</td><td>Daily test for 3 days after arrival.</td><td>Faecal culture. (See further comments in the Table of Article 6.11.4.)</td></tr></table></td></tr>
<tr><td>Article 6.11.6.</td><td>Point 2) d)
<table><tr><th>Disease/agent</th><th>Animal groups</th><th>Schedule</th><th>Methods</th></tr><tr><td>Other bacterial pathogenic agents (Salmonella, Shigella and Yersinia and others as appropriate)</td><td>All species</td><td>Daily test for 3 days after arrival, and another test at least one week later.</td><td>Faecal culture. (See further comments in the Table of Article 6.11.4.)</td></tr></table></td></tr>
</table>

Annex 51 (contd)

CHAPTER 7.3. **TRANSPORT OF ANIMALS BY LAND**	
Article 7.3.10.	Point 3. b) increased shedding of pathogenic agents and increased susceptibility to infection related to stress and impaired defences against disease, including immunosuppression; Point 3. c) exposure of animals to pathogenic agents which may contaminate *vehicles*, *resting points*, *markets*, etc. Point 1. d) For details regarding the *unloading* of animals at a *slaughterhouse/abattoir*, see Chapter 7.5. Point 4. c) Establishments like livestock markets, slaughterhouses/abattoirs, resting sites, railway stations, etc. where animals are unloaded should be provided with appropriate areas for the cleaning and disinfection of vehicles.
CHAPTER 7.5. **SLAUGHTER OF ANIMALS**	
Article 7.5.1.	Point 1 […] These recommendations apply to the *slaughter* in *slaughterhouses/abattoirs* of the following domestic animals: cattle, buffalo, bison, sheep, goats, camelids, deer, horses, pigs, ratites, rabbits and *poultry*. Other animals, wherever they have been reared, and all animals slaughtered outside *slaughterhouses/abattoirs* should be managed to ensure that their *transport*, *lairage*, *restraint* and *slaughter* is carried out without causing undue stress to the animals; the principles underpinning these recommendations apply also to these animals. Point 2 […] The management of the *slaughterhouse/abattoir* and the *Veterinary Services* should ensure that *slaughterhouse/abattoir* staff are competent and carry out their tasks in accordance with the principles of *animal welfare*. Point 3 […] Animals which are likely to harm each other in a group situation should not be mixed at *slaughterhouses/abattoirs*. […] Although most domestic animals have a highly sensitive sense of smell, they react in different ways to the smells of *slaughterhouses/abattoirs*. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Article 7.5.2.	Point 1 Each *slaughterhouse/abattoir* should have a dedicated plan for *animal welfare* […] Point 1.g) Performance standards should be established to evaluate the use of such instruments. Numerical scoring may be used to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling at a point in the *slaughterhouse/abattoir* […]
Article 7.5.3.	Point 1 The *lairage* should be designed and constructed to hold an appropriate number of animals in relation to the throughput rate of the *slaughterhouse/abattoir* without compromising the welfare of the animals. Point 2.b) In red meat *slaughterhouses/abattoirs*, pens, passageways and races should be arranged in such a way as to permit inspection of animals at any time, and to permit the removal of sick or injured animals when considered to be appropriate, for which separate appropriate accommodation should be provided. Point 2.c) Each animal should have room to stand up and lie down and, when confined in a pen, to turn around, except where the animal is reasonably restrained for safety reasons (e.g. fractious bulls). Fractious animals should be slaughtered as soon as possible after arrival at the *slaughterhouse/abattoir* to avoid welfare problems […] Point 2.h) In *slaughterhouses/abattoirs* with high throughput, there should be a waiting pen […]
Article 7.5.5.	**Management of foetuses during slaughter of pregnant animals** Under normal circumstances, pregnant animals that would be in the final 10% of their gestation period at the planned time of *unloading* at the *slaughterhouse/abattoir* should be neither transported nor slaughtered […]
Article 7.5.7.	Point 1 The competence of the operators, and the appropriateness, and effectiveness of the method used for *stunning* and the maintenance of the equipment are the responsibility of the management of the *slaughterhouse/abattoir*, and should be checked regularly by a *Competent Authority.* Point 5 From the point of view of *animal welfare*, animals which are stunned with a reversible method should be bled without delay. Maximum stun-stick interval depends on the parameters of the *stunning* method applied, the species concerned and the bleeding method used (full cut or chest stick when possible). As a consequence, depending on those factors, the *slaughterhouse/abattoir* operator should set up a maximum stun-stick interval that ensures that no animals recover consciousness during bleeding. In any case the following time limits should be applied.

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CHAPTER 7.9. **ANIMAL WELFARE AND BEEF CATTLE PRODUCTION SYSTEMS**	
Article 7.9.5.	Point 1.a) *Biosecurity* means a set of measures designed to maintain a *herd* at a particular health status and to prevent the entry or spread of ~~infectious~~ pathogenic agents. […]These *biosecurity plans* should address the control of the major sources and pathways for spread of pathogenic agents:
CHAPTER 7.10. **ANIMAL WELFARE AND BROILER CHICKEN PRODUCTION SYSTEMS**	
Article 7.10.4.	Point 1. a) […] These programmes should address the control of the major routes for transmission of *diseases* and pathogenic agents ~~transmission~~ […] Point 2. i) […] Management of outdoor areas is important in partially housed and completely outdoors production systems. Land and pasture management measures should be taken to reduce the risk of broilers being infected by pathogenic agents or infested by parasites. This might include limiting the stocking density or using several pieces of land consecutively in rotation.
CHAPTER 7.11. **ANIMAL WELFARE AND DAIRY CATTLE PRODUCTION SYSTEMS**	
Article 7.11.7.	Point 1.a) These *biosecurity plans* should address the control of the major sources and pathways for spread of pathogenic agents:
CHAPTER 8.2. **INFECTION WITH AUJESZKY'S DISEASE VIRUS**	
Article 8.2.7.	Point 1.c) the introduction of pigs, semen ~~and~~ ,oocytes or embryos ~~or ova~~ into the *establishment* is carried out in accordance with the import conditions for these *commodities* contained in the relevant articles of the present chapter;
CHAPTER 8.3. **INFECTION WITH BLUETONGUE VIRUS**	
Article 8.3.14.	[…] The purpose of *surveillance* is the detection of transmission of BTV in a country or *zone* and not determination of the status of an individual animal, *herds* or *flocks*. *Surveillance* deals with the evidence of *infection* with BTV in the presence or absence of clinical signs.

Article 8.3.16.	Point 1 Clinical *surveillance* aims to detect clinical signs of bluetongue at the ~~*flock or*~~ *herd* or *flock* level, particularly during a newly introduced *infection*. In sheep and occasionally goats, clinical signs may include oedema, hyperaemia of mucosal membranes, coronitis and cyanotic tongue. Point 2 […]Serological *surveillance* in a free *zone* should target those areas that are at highest risk of transmission of BTV, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of bluetongue, either random or targeted sampling is suitable to select *herds*, *flocks* or animals for testing.
Chapter 8.4. **HERD FREE FROM INFECTION WITH *BRUCELLA* IN PIGS**	
Article 8.4.12.	Point 1.e) for at least the past three years, there has been no evidence of *infection* with *Brucella* in other *herds* ~~*or flocks*~~ of the same *establishment*, or measures have been implemented to prevent any transmission of *infection* with *Brucella* from these other *herds* ~~*or flocks*~~.
CHAPTER 8.8. **INFECTION WITH FOOT AND MOUTH DISEASE VIRUS**	
Article 8.8.40.	Point 5 […] The *surveillance* design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following-up positives to determine with a high level of confidence, whether or not they are indicative of *infection* or transmission. This should involve supplementary tests and follow-up investigation to collect diagnostic material from the original *epidemiological unit* and *herds* or *flocks* which may be epidemiologically linked to it.
Article 8.8.42.	Point 1 […] All *herds* or *flocks* with at least one *laboratory* confirmed reactor should be investigated. The investigation should examine all evidence, which may include the results of virological tests and of any further serological tests that might confirm or refute the hypothesis that the positive results to the serological tests employed in the initial survey were due to FMDV transmission. This investigation should document the status for each positive *herd* or *flock*. Epidemiological investigation should be continued concurrently. Clustering of seropositive results within *herds* or *flocks* or within a region should be investigated as it may reflect any of a series of events, including the demographics of the population sampled, vaccinal exposure or the presence of *infection* or transmission. As clustering may signal *infection* or transmission, the investigation of all instances should be incorporated in the survey design.

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CHAPTER 8.15. **INFECTION WITH RINDERPEST VIRUS**	
Article 8.15.5.	Point 4 […] Emergency *vaccination* is acceptable only with live-attenuated tissue culture rinderpest vaccine, produced in accordance with the *Terrestrial Manual*. Vaccinated *animals* should always be clearly identified at a *herd*, *flock* or individual level.
Article 8.15.7.	Point 3 robust control measures consisting of stamping out *herds* or *flocks* containing infected *animals*, and any vaccinated *animals*, combined with sanitary procedures including movement controls were rapidly implemented and were successful in eliminating the RPV;
CHAPTER 8.16. **INFECTION WITH *TRICHINELLA* SPP.**	
Article 8.16.3.	Point 2.b) visits by approved auditors have been made periodically to verify compliance with good management practices described in point 1; the frequency of inspections should be *risk*-based, taking into account historical information, *slaughterhouse/abattoir* monitoring results, knowledge of established farm management practices and the presence of susceptible *wildlife*;
Article 8.16.5.	Point 3 the absence of *Trichinella infection* in the *compartment* has been demonstrated by a *surveillance* programme which takes into account current and historical information, and *slaughterhouse/abattoir* monitoring results, as appropriate, in accordance with Chapter 1.4.;
CHAPTER 8.18. **WEST NILE FEVER**	
Article 8.18.3.	Point 2.b) semen, oocyte or embryo ~~or ova~~;
Article 8.18.4.	Point 4.b) semen, oocyte or embryo ~~or ova~~;
CHAPTER 11.4. **BOVINE SPONGIFORM ENCEPHALOPATHY**	
Article 11.4.2.	Point 1.b)ii) the use of ruminant carcasses (including from fallen stock), by-products and *slaughterhouse/abattoir* waste, the parameters of the rendering processes and the methods of animal feed manufacture;

Article 11.4.23.	Point 2.c) the origin and use of ruminant carcasses (including fallen stock), by-products and *slaughterhouse/abattoir* waste, the parameters of the rendering processes and the methods of animal feed manufacture;
CHAPTER 11.5. **BOVINE TUBERCULOSIS**	
Article 11.5.8.	**Recommendations for the importation of oocytes or embryos~~/ova~~ of cattle, water buffaloes and wood bisons** Point 2 the oocytes or embryos~~/ova~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.
CHAPTER 11.6. **BOVINE TUBERCULOSIS IN FARMED CERVIDAE**	
Article 11.6.8.	**Recommendations for the importation of oocytes or embryos~~/ova~~ of farmed cervidae** Point 2 the oocytes or embryos~~/ova~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.
CHAPTER 11.7. **INFECTION WITH *MYCOPLASMA MYCOIDES* SUBSP. *MYCOIDES* SC (CONTAGIOUS BOVINE PLEUROPNEUMONIA)**	
Article 11.7.8.	Point 3 are transported directly to the *slaughterhouse/abattoir* in sealed *vehicles.*
Article 11.7.15.	Point 3 Systematic pathological *surveillance* for CBPP is the most effective approach and should be conducted at *slaughterhouses/abattoirs* and other *slaughter* facilities. Suspect pathological findings should be confirmed by agent identification. Training courses for *slaughter* personnel and *meat* inspectors are recommended.
CHAPTER 11.8. **ENZOOTIC BOVINE LEUKOSIS**	
Article 11.8.2.	Point 2.c) all imported bovine semen and oocytes or embryos~~/ova~~ fulfil the requirements referred to in Article 11.8.6. and in Article 11.8.7., respectively.
Article 11.8.3.	Point 1.b) all bovine semen, oocytes and embryos~~/ova~~ introduced into the *compartment* after the first test have fulfilled the conditions referred to in Article 11.8.6. and in Article 11.8.7., respectively;

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Article 11.8.4.	Point 1.d) all bovine semen, oocytes and embryos~~/ova~~ introduced into the *herd* after the first test have fulfilled the conditions referred to in Article 11.8.6. and in Article 11.8.7., respectively.
Article 11.8.7.	**Recommendations for the importation of bovine oocytes or embryos~~/ova~~** *Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the oocytes or embryos~~/ova~~ have been collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant
CHAPTER 11.9. **HAEMORRHAGIC SEPTICAEMIA**	
Article 11.9.7.	Point 3 were examined for the presence of the ~~causative organism~~ pathogenic agent in the naso-pharynx in accordance with the procedures described in the *Terrestrial Manual*, on four occasions, at weekly intervals during the last month in quarantine with negative results; and
CHAPTER 11.10. **INFECTIOUS BOVINE RHINOTRACHEITIS/INFECTIOUS PUSTULAR VULVOVAGINITIS**	
Article 11.10.2.	Point 2.c) all imported bovine semen oocytes and embryos~~/ova~~ fulfil the requirements referred to in Articles 11.10.6. or 11.10.7., and in Article 11.10.8., respectively.
Article 11.10.3.	Point 1.d) all bovine semen oocytes and embryos~~/ova~~ introduced into the *herd* after the first tests referred to in point *a)* or point *b)* as relevant have fulfilled the conditions provided in Articles 11.10.6. or 11.10.7. and in Article 11.10.8., respectively.
Article 11.10.3.	Point 2 *Animals* introduced into the *herd* should satisfy the conditions provided in point 1*c)* above, and semen, oocytes and embryos~~/ova~~ used in the *herd* should satisfy the conditions provided in Articles 11.10.6. or 11.10.7. and in Article 11.10.8., respectively.
Article 11.10.8.	**Recommendations for the importation of oocytes or embryos~~/ova~~** *Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the oocytes or embryos~~/ova~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.

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CHAPTER 12.11. **VENEZUELAN EQUINE ENCEPHALOMYELITIS**	
Article 12.11.3.	*Veterinary Authorities* of VEE free countries may prohibit importation or transit through their territory, from countries considered infected with VEE, of domestic and *wild* equines, and may prohibit the importation into their territory, from countries considered infected with VEE, of semen, oocytes and embryos~~/ova~~ of domestic and *wild* equines.
CHAPTER 14.3. **CONTAGIOUS CAPRINE PLEUROPNEUMONIA**	
Article 14.3.4.	*Veterinary Authorities* of CCPP free countries may prohibit importation or transit through their territory, from countries considered infected with CCPP, of domestic and *wild* goats, and may prohibit importation into their territory, from countries considered infected with CCPP, of semen of domestic and *wild* goats and of oocytes or embryos~~/ova~~ of domestic goats.
Article 14.3.11.	Point 2 the collection fluids and/or degenerated and unfertilised oocytes~~ova~~ were subjected to a validated culture or PCR test for CCPP with negative results;
CHAPTER 14.4. **INFECTION WITH *CHLAMYDOPHILA ABORTUS* (ENZOOTIC ABORTION OF EWES, OVINE CHLAMYDIOSIS)**	
Article 14.4.3.	**Sheep or goat flocks ~~or goat herds~~ free from EAE infection** To qualify as free from EAE *infection*, a sheep or goat *flock* ~~or goat *herd*~~ shall satisfy the following requirements: Point 5 no sheep or goat has been added to the *flock* ~~or *herd*~~ since 30 days prior to the *flock* or *herd* test referred to in point 3 above unless: Point 5.a) either the additions were isolated from other members of the *flock* ~~or *herd*~~ in the *establishment* of origin for a minimum period of 30 days and then were subjected to a diagnostic test for EAE with negative results, before entry into the new *flock* ~~or *herd*~~; or
CHPATER 14.7. **INFECTION WITH PESTE DES PETITS RUMINANTS VIRUS**	
Article 14.7.19.	Point 1.a) originates from ~~*herds* or~~ *flocks* which were not subjected to any restrictions due to PPR at the time of *milk* collection;