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Annex 30

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May 2016

REPORT OF THE FIFTEENTH MEETING OF THE OIE ANIMAL WELFARE WORKING GROUP

Paris (France), 30 May–1 June 2016

Welcome from Dr Monique Eloit, Director General of the OIE, introduction and priorities under the Strategic Plan Roadmap

The OIE Animal Welfare Working Group (the AWWG) met at the OIE Headquarters on 30 May–1 June 2016. Dr Abdul Rahman chaired the meeting.

Dr Monique Eloit, OIE Director General, and Dr Derek Belton, Head of the International Trade Department, welcomed members and participants to the AWWG meeting. Dr Eloit also congratulated returning members on their re-confirmation as members of the AWWG and welcomed Dr Maria Ferrara as a newly appointment.

Dr Eloit welcomed the unanimous adoption of the chapter on the welfare of working equids at the General Session. She also indicated that the key activity, in which the AWWG should focus, should be the next OIE Global Conference on Animal Welfare, which will be held in Guadalajara (Mexico) from 6 to 8 December 2016.

Dr Eloit also highlighted the upcoming priorities of her mandate and explained that the OIE is starting a revision of the mandates of the different OIE experts Groups, including the AWWG. This revision will be conducted under the framework of the working plan established as part of the 6th OIE Strategic Plan for 2016-2020.

Dr Andrea Gavinelli thanked Dr Eloit, and noted that one of the important aspects to be covered should also be the interaction of the different groups of experts of the OIE.

Professor David Fraser indicated with reference to the membership of the OIE expert Groups, that the ideal composition of an expert group should be a mixture of different expertise, in which various stakeholders can interact. Dr Peter Thornber agreed and highlighted that there is always a political component to animal welfare in particular that should be taken into account in the formation of these Groups.

The list of participants is attached as Annex I.

1. Adoption of the Agenda and administrative issues

Dr Rahman proposed the agenda for adoption.

Professor Fraser proposed to include a discussion point on the proposal to include a new Article on the Guiding principles for the use of outcome-based measurables in the Chapter 7.1 of the OIE *Terrestrial Animal Health Code (Terrestrial Code)*.

The adopted agenda is attached as Annex II.

2. AWWG 2015 Meeting Report, agreed Actions & Teleconferences

The AWWG noted the report of the previous meeting, as well as the minutes of the teleconferences held during the year.

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The approach taken to progress the agreed annual work programme, i.e. regular teleconferences and electronic exchange and regular review of a list of agreed actions, was noted and considered to be very effective.

The OIE Headquarters, through the AWWG Secretariat, will continue to be responsible for the programming of teleconferences and informal meetings, as well as ensuring that the work programme is kept up to date.

The AWWG agreed to conduct their next regular Teleconference on the 1st February 2017.

The Minutes of the AWWG Teleconferences are attached as Annex III.

3. OIE General Session 2016 Outcomes; AWWG Report and Resolution on Animal Welfare

The AWWG acknowledged the adoption of the Report of the AWWG and Resolution N° 28, Animal Welfare.

The AWWG noted the adoption by the General Assembly of the Chapter on the welfare of working equids.

Dr Leopoldo Stuardo informed the AWWG about the request of a Member Country for development of standards for the killing of reptiles. Dr Stuardo also advised the AWWG on other proposals from Member Countries to amend adopted OIE animal welfare chapters. In particular concerning the use of penetrating and non-penetrating captive bolts in Chapter 7.6, 'Killing of animals for disease control purposes', and Member Countries' comments on the newly adopted chapter on the welfare of working equids.

4. Review of Member Countries' comments

a) Report of the meetings of the OIE Terrestrial Animal Health Standards Commission (Sept 2015/Feb 2016)

The AWWG noted the reports of the Terrestrial Animal Health Standard Commission (Code Commission), in particular the question addressed to the AWWG concerning Chapters 7.6 and 7.5.

b) Chapter 7.12 on Welfare of Working Equids

The AWWG noted the adoption of the draft chapter during the 84th OIE General Session and congratulated the OIE on its work.

Dr Stuardo informed the AWWG that during the General Session some Member Countries requested consideration of proposed amendments to Chapter 7.12 following its adoption.

In response to a Member Country request to adjust the language of two sentences, in the 2nd and 4th paragraphs of Article 7.12.12., on appropriate workloads, the AWWG indicated that in general terms, where there is not a specific measure such as in this case, the interaction of the type and duration of working time, the guidance from the experts of the *ad hoc* Group should prevail. Nevertheless, the AWWG will consult with experts to inform their response to this request.

Dr Marosi Molomo congratulated the OIE on the achievement of the adoption of the chapter on the welfare of working equids and recalled the intention to continue work on the development of standards for other working animals, such as oxen, buffalos, camelids, elephants, etc.

c) Chapter 7.5. Slaughter of animals

The AWWG noted the adoption of modifications to Chapter 7.5 during the 84th OIE General Session notably the proposal to remove the diagrams on correct mechanical stunning positions and to relocate these to the OIE website.

Dr Gavinelli indicated that if this information were to be posted on the OIE website, there should be an explanatory text to inform Member Countries that this is no longer part of the *Terrestrial Code*.

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Dr Stuardo informed the AWWG of the useful information and proposals received from a Member Country concerning stunning of animals in general at the February 2016 Code Commission meeting. The AWWG considered that a more extensive review is needed to address the proposals put forward. The AWWG noted that Chapter 7.5 was among the first to be developed by the OIE, and recommended that, in accordance with the resources available, a face to face *ad hoc* group be convened to review this chapter (if possible in conjunction with Chapter 7.6.).

The AWWG also noted that OIE Headquarters had received a scientific discussion paper on carbon dioxide stunning of pigs from the International Coalition for Animal Welfare (ICFAW) seeking a review of this issue.

- WBS stunning methods for birds

The AWWG noted that the Code Commission endorsed the modifications it proposed to point 3 of Article 7.5.7 at their June 2015 meeting, and that the proposed revision had been circulated for Member Countries' comments.

d) Chapter 7.6. Killing of animals for disease control purposes

In response to a Member Country's suggestion to include the use of fire foam as a method of killing animals for disease control purposes the AWWG recommended the OIE to convene an *ad hoc* group to consider and develop recommendations for this approach (perhaps as an electronic rather than face to face meeting).

Mr Kevin Lovell prepared the Terms of Reference (ToR) for this Group on mass killing of poultry, taking into consideration the welfare implications, the scale of the operation and regional considerations.

The ToR for the proposed *ad hoc* group is attached as Annex IV.

Dr Stuardo informed the AWWG of the comment from one Member Country during the last General Session, in relation to the use of the penetrating and non-penetrating captive bolts in some specific species and categories of animals.

The AWWG recommended OIE also convene an *ad hoc* group to consider and make recommendations on this subject (again perhaps as an electronic group). Dr Ferrara, offered to prepare the Terms of Reference for this Group, taking into consideration both the welfare and animal health implications of these methods.

The ToR for the proposed *ad hoc* group is attached as Annex V.

e) Chapter 7.11. Animal Welfare and Dairy Cattle Production System

The AWWG noted the modifications to this chapter adopted during the 84th General Session.

Dr Stuardo commented about the intervention from a Member Country asking for a minor adjustment to the text to clarify the intent of the recommendation in Article 7.11.6.5., in the section titled Flooring, bedding, resting surfaces and outdoor areas. The AWWG carefully considered the comment and proposed new text for consideration by the Code Commission.

Dr Stuardo informed the group of a Member Country's comment during the General Session suggesting that the terms "morbidity rate" and "mortality rate" be replaced with "morbidity" and "mortality" in Articles 7.11.6. and 7.11.7. respectively.

The AWWG agreed that "mortality" and "morbidity" are the correct terms to use and recommended that OIE Headquarters conduct an editorial review of the existing chapters to ensure consistent correct use of these terms, in line with the Glossary of the *Terrestrial Code*.

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The proposed revised text of Article 7.11.6.5. is attached as Annex VI.

f) Chapter 7.10. Animal Welfare and Broiler Chicken Production Systems

The AWWG noted the modification to this Chapter adopted during the 84th General Session.

g) Chapter 3.2. Evaluation of Veterinary Services

The AWWG noted the modification to this chapter adopted during the 84th General Session.

h) Glossary

The AWWG noted the modification adopted during the 84th General Session, notably the inclusion of reptiles in the definition of “animal”.

4. Report of the OIE *ad hoc* Group on Animal Welfare and Pig Production Systems

Dr Stuardo informed the AWWG that the *ad hoc* Group on Animal Welfare and Pig Production Systems met at the OIE Headquarters on 22–24 March 2016. Dr Stuardo indicated that the *ad hoc* Group discussed the structure of the new chapter and agreed to make a common chapter to cover all pig production systems and indicate differences for specific systems as necessary. In addition, he mentioned that the *ad hoc* Group agreed to use outcome-based criteria or measurables as the indicators for animal welfare throughout the chapter.

From a preliminary review of the draft text, Professor Fraser suggested that more detail in the text on recommendations for individual housing could be useful. He also noted that specific management skills are needed for effective welfare management in-group housing systems. The AWWG will address these points when they complete their more detailed review of the chapter.

The report of the *ad hoc* Group meeting, including the Draft Chapter text and the comments from the AWWG are attached as Annex VII and VIII respectively.

5. Fourth OIE Global Conference on Animal Welfare, Guadalajara, Mexico (December 2016)

Dr Stuardo updated the AWWG on the preparatory work for the next OIE Global Conference on Animal Welfare in Guadalajara (Mexico) from the 6th to 8th December 2016.

In relation to the scientific program, the Group discussed the importance of putting the Chairs of the different sessions in contact with the speakers in their sessions, in order to have a better interaction during the discussion after their presentations.

Dr Stuardo advised that the programme was almost finalised and there were only a few speakers yet to be confirmed. He also advised that the Conference website would be operational the beginning of July 2016.

The group discussed the concept of “one welfare” and how this should be developed in the first two plenary sessions of the Conference, in particular.

Professor Fraser suggested that the “one welfare” concept should be taken as a framework, and he also proposed to develop this during his presentation at the conference.

6. Joint session with Collaborating Centres

The joint meeting with the four OIE AWCC was held via Webex. Participants included the AWWG Members, Dr Lida Anestidou, representing the OIE AWCC of the Americas Region on Laboratory Animal Welfare and Science, Dr Kate Littin, representing the OIE AWCC of the Asia, Far East and Oceania Region on Animal Welfare Science and Bioethical Analysis, and Drs Paolo Dalla Villa, Barbara Alessandrini and Fabrizio De Massis from the OIE AWCC for the European Region on Veterinary Training, Epidemiology, Food Safety and Animal Welfare. Dr Francisco Galindo from Mexico, representing the OIE AWCC of the Americas Region on Animal Welfare and Livestock Production Systems, could not connect due technical problems.

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The OIE AWCC updated the AWWG on their activities and they identified several opportunities to collaborate through the Network of AWCC proposed last year. These include a teaching workshop on laboratory animal care and twinning projects, which were detailed in their annual reports. The annual activity Reports 2015/2016, sent by the AWCC as part of their responsibilities, are available at the OIE website: <http://www.oie.int/en/our-scientific-expertise/collaborating-centres/annual-reports/>.

Professor Fraser suggested that the OIE reconsider the rule that only one Animal Welfare Collaborating Centre (AWCC) per Region for a specific topic should exist. Professor Fraser emphasised that important animal welfare expertise is excluded from the current Collaborating Centre network because of this rule.

7. Global Animal Welfare Strategy

Dr Stuardo noted that the Global Animal Welfare Strategy will be discussed at the OIE Conference in Guadalajara. Its adoption needs to follow the formal OIE pathway for adoption of official documents by the World Assembly of Delegates. Professor Fraser proposed a minor modification of the draft text in the introductory part, which was accepted by the AWWG.

The proposed document is presented in Annex IX.

8. Update on the ISO/TC 34/WG 16 on Animal Welfare

Dr Jacques Servi re informed the meeting that the ISO Technical Specification, Animal welfare management –General Requirements and Guidance for Organisations in the Food Supply Chain, was submitted for voting this year. He indicated that the result was largely positive and the next step will be a meeting of WG 16 to finalise the text before publication. This meeting could take place after the TC 34 plenary meeting in July 2016.

Dr Stuardo reminded the Group that while OIE supports this initiative, it can only be an observer in the process.

9. Implementing OIE animal welfare standards

a) RAWS and European Platform for Animal Welfare update

Dr Stuardo updated the AWWG on the activities of the different Regional Animal Welfare Strategies (RAWS) and the AW Platform for Europe. He highlighted the successful activities conducted by the AW Platform for Europe thanks to various Member Country and NGO donors and the active participation of the Sub Regional Representation in Brussels. Dr Stuardo also noted that these activities could be replicated in the other OIE Regions and possible synergies that could be obtained by regions conducting joint activities.

Dr Aidaros informed the AWWG about the adoption of the Middle East Animal Welfare Action Plan 2016- 2019 during the recent 84th General Session. The Action Plan is based on the Regional Animal Welfare Strategy 2014-19 endorsed by the OIE Regional Commission for the Middle East at the 82nd OIE General Session.

Dr Aidaros also indicated that the overall objective of the Action Plan for 2016-2019 is to improve animal welfare in the Middle East Region; while the strategic objective is to empower Veterinary Services to take actions in Animal Welfare in compliance with OIE standards. The priority areas of the Action Plan cover four topics:

- Transport of animals by sea (Chapter 7.2.);
- Transport of animals by land (Chapter 7.3.);
- Stray dog population control (Chapter 7.7.); and
- Slaughter of animals (Chapter 7.5.).

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The Action plan also includes the creation of a ME RAWS Coordination Group, and a Secretariat at the OIE regional representation for the Middle East.

Dr Stuardo informed the AWWG that the RAWS activities in the Asia, Far East and Oceania region have been in a standstill situation awaiting the start-up of their newly appointed Advisory Committee.

Dr Molomo informed the AWWG about the technical meeting on Animal Welfare held in December 2015 in collaboration with OIE, FAO, World Animal Protection, Donkey Sanctuary, Brooke Hospital for Animals, and African Network for Animal Welfare (ANAW). This meeting was a preparatory meeting for the consultative workshop organised by AU-IBAR in collaboration with the OIE and other stakeholders, which was held in December 2015.

Dr Molomo indicated, using the outputs of these meetings, the next OIE Regional conference in Namibia in February 2017 could be the place to discuss the formal steps needed to develop an African Region RAWS, which could be eventually presented during the 85th General Session in May 2017.

Dr Stuardo advised the AWWG that there were no new developments to report from the RAWS of the Americas.

b) Progress on toolbox for implementing slaughter welfare standards

The AWWG decided to focus on continuing development of the repository for references, where it is planned to list the relevant references of the animal welfare chapters.

c) Improved Animal Welfare Programme (IAWP)

Dr Stuardo updated the AWWG on this programme, in particular, the successful training sessions in eastern European countries and in Russian speaking countries conducted within the framework of the OIE European Platform of Animal Welfare for Europe. Dr Stuardo indicated that Dr's Rastislav Kolesar and Tomasz Grudnik continue to deliver this valuable training in the region.

d) OIE Animal Welfare website update

Dr Stuardo informed the AWWG about the new face of the animal welfare webpages on the OIE website done in collaboration with the OIE Communication Unit, and based on a proposal from Dr Sarah Kahn.

Dr Stuardo informed the AWWG that the International Trade Department will also add a specific indent at the animal welfare page where the information to be removed from Chapters 7.5 and 7.6 of the *Terrestrial Code* will be placed.

10. Other business

a) AW Chapters revision

The AWWG recommended an extensive review of several of the older chapter to remove inconsistencies and replace any outdated scientific information. The AWWG identified Chapters on 7.5., 7.6., 7.2. and 7.4 .as priority chapters for review.

The AWWG discussed on the need to include a new article in the Chapter 7.1 of the *Terrestrial Code*. This Article will support OIE Member Countries in the development of standards, in the use of outcome-based measurable and in implementing the OIE animal welfare chapters.

The proposed draft article on Guiding Principles for the use of Animal-based Measures is presented as Annexe X.

b) Slaughter of Reptiles

Dr Stuardo summarised the status of this topic, in particular the interventions of some Member Countries during the past 84th General Session. He recalled that this subject was first raised two years ago.

Mr Lovell indicated that as reptiles are generally dangerous species and cold blooded, they should be the subject of a separate chapter in the *Terrestrial Code*. He also suggested that the scope of the proposed chapter should be restricted to farmed reptiles, to avoid condoning in any way the capture and killing of endangered species.

The AWWG recommended the OIE convene an *ad hoc* group to develop a stand-alone chapter on killing methods for farmed reptiles for their skins and meat.

c) AW Future Chapters (Priorities)

The AWWG discussed the future priorities for development of standards, noting that a new chapter on laying hens and the killing methods for farmed reptiles for their skins and meat had been elevated on the previous work program list as new priorities.

Dr Gavinelli indicated that the animal welfare on sheep production systems for wool could be seen as a model in which Member Countries could be more involved in the development of OIE standards.

d) Animal Welfare Focal Point Seminars update

Dr Stuardo reported that two seminars for OIE Focal Points for Animal Welfare were conducted in 2015/16 in the Kaheti Region (Georgia) and in Amman (Jordan). Dr Stuardo indicated that both seminars received the excellent support from the local Veterinary Authorities, and the field visits were especially appreciated by the participants.

e) EU Platform on Animal Welfare

Dr Ferrara informed that at the beginning of 2016 the possibility of establishing an EU Platform for Animal Welfare was discussed with Ministers of all EU Member States at the Agricultural and Fisheries Council. Ministers broadly supported the efforts to establish such a platform, where the Commission intends to enhance dialogue on animal welfare. The Commission also held a first stakeholders' dialogue on animal welfare on 23 and 24 February with main stakeholders and Member States' experts. She also indicated that further preparatory work to possibly establish such a Platform on Animal Welfare is ongoing. The Platform would be a forum to exchange information, scientific knowledge and best practices between Member States and all relevant stakeholders. Moreover, such a forum would promote animal welfare standards internationally and improve the enforcement of existing legislation on animal welfare.

f) Information on other meetings

The AWWG shared information on the following relevant future meetings and activities that members of the Group will participate in:

- International One Welfare Conference, September 26-28, 2016, Winnipeg (A unique conference exploring the links between human and animal welfare, including human mental health)
- International Association of Human-Animal Interaction Organisations, July 10-13, 2016, Paris. (A conference that happens every 3 years and focuses on the use of service and assistance animals)
- Pig Veterinary Society, Nov 10-11, 2016, Edinburgh
- European Society of Laboratory Animal Veterinarians annual conference, Nov 15-18, 2016, Lyon.
- Symposium on Animal Welfare, January 12-13, 2017, Okinawa (Japan).

Annex 30 (contd)**11. Work programme 2016–2017**

Members reviewed and updated the current AWWG work programme through to June 2017. The updated work programme will be provided to the September 2016 meeting of the Code Commission.

12. Dates of next meeting

It was agreed that the next full meeting of the AWWG will be held on the 12–14 September 2017.

Before the official close of the meeting, Dr Rahman acknowledged the valuable contributions of Drs Belton and Gavinelli, during the course of development of various OIE animal welfare standards.

.../Annexes

Annex 30 (contd)Annex 1**MEETING OF THE OIE WORKING GROUP ON ANIMAL WELFARE****Paris, 30 May–1 June 2016****List of participants****MEMBERS OF THE OIE WORKING GROUP**

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[Annex 30](#) (contd)[Annex 2](#)

MEETING OF THE OIE ANIMAL WELFARE WORKING GROUP

Paris (France), 30 May–1 June 2016

Agenda

Introduction and priorities under Strategic Plan Roadmap / Dr Eloit

Administrative arrangements / Dr Belton

- ITEM 1. AWWG 2015 Meeting Report, agreed Actions & Teleconferences
- ITEM 2. OIE General Session 2016 Outcomes
 - a) General Session AWWG Report/ Resolution on Animal Welfare – Member Countries' comments
- ITEM 3. Review of Member Countries' comments:
 - a) Report of the meetings of the OIE Code Commission (Sept 2015/Feb 2016)
 - b) Draft Chapter 7.X. on Welfare of Working Equids
 - c) Chapter 7.5. Slaughter of animals
 - d) WBS stunning methods for birds
 - e) Chapter 7.6. Killing of animals for disease control purposes
 - f) Chapter 7.11. Animal Welfare and Dairy Cattle Production System
 - g) Chapter 7.10. Broiler Chicken Production Systems
 - h) Chapter 3.2. Evaluation of Veterinary Services
 - i) Glossary
- ITEM 4. Report of the OIE *ad hoc* Group on Animal Welfare and Pig Production Systems
- ITEM 5. Fourth OIE Global Conference on Animal Welfare, Guadalajara, Mexico (December 2016)
- ITEM 6. Joint session with Collaborating Centres
 - Review of Annual Reports from Collaborating Centres on AW
- ITEM 7. Global Animal Welfare Strategy
- ITEM 8. Update on the ISO/TC 34/WG 16 on Animal Welfare
- ITEM 9. Implementing OIE AW standards
 - a) RAWS and European Platform for Animal Welfare update
 - b) Progress on toolbox for implementing slaughter welfare standards
 - c) Improved Animal Welfare Programme (IAWP)
 - d) OIE website Animal Welfare update
 - e) Guiding principles for the use of outcome-based measurables

Annex 30 (contd)Annex 2 (contd)

ITEM 10. Other Business

- a) AW Chapters edition
- b) Slaughter of Reptiles
- c) AW Future Chapters (Priorities)
- d) Animal Welfare Focal Point Seminars update
- e) European Animal Welfare Platform (<https://www.theparliamentmagazine.eu/articles/eu-monitoring/ministers-call-eu-animal-welfare-platform>)
- f) Information on other meetings

ITEM 11. Proposed Work programme 2016-2017

Annex 30 (contd)Annex 3

MINUTES	
OIE ANIMAL WELFARE WORKING GROUP TELECONFERENCE	
OIE Global Conference on Animal Welfare – Guadalajara, Mexico, 6-8 December 2016	
Date:	Monday 31 August 2015
Time:	15:00 (Paris time)
Attendees:	Sira Abdul Rahman (Chair), Andrea Gavinelli, Hassan Aidaros, David Fraser, Peter Thornber, Luc Mirabito(IDF), Jacques Servièrè (IMS), Kevin Lovell (IEC), Leopoldo Stuardo. Due technical problems Marosi Molomo could not attend.

Unique Item Agenda: Open discussion for the preparation the next OIE Global Conference on Animal Welfare in 2016

Before starting the meeting Dr Stuardo introduced to the AWWG members Mr Kevin Lovell, recently appointed by IEC as their representative to replace of Dr Vincent Guyonet. Dr Stuardo indicated that the objective of the Teleconference, as it was decided in the last meeting of the AWWG, was to discuss the next OIE Global Conference on Animal Welfare on 2016. For this purpose three documents had been distributed before the Teleconference (Concept Note of the Kuala Lumpur Conference, the Programme and the Conference Recommendations).

Dr Rahman welcomed the participants and in particular Mr Lovell. Dr Rahman also indicated that the priority for the discussion should be centred on the objectives of the Conference.

Prof Fraser opined that the topics proposed and discussed at the AWWG meeting should be considered as the Objectives for the next Conference. He suggested that topic number four could be considered as the first Item of the programme and open for discussions, as it has a general character. Prof Fraser also proposed that a fifth point “to develop discussion between Delegates, Focal Points and other Stakeholders” should be included.

The four topics discussed at the AWWG 14 meeting were:

1. Improving animal welfare in developing countries.
2. Partnership for progress.
3. New technologies for capacity building.
4. One world, one health and one welfare.

The other Members of the Group agreed with the idea to use the four topics discussed during the AWWG meeting as the starting point to develop the Conference objectives.

After discussion, it was agreed that the Group will send their contributions to expand agreed objectives by Friday 11th September. Based on this information, the HQ will prepare a Concept Note draft for discussion by Friday 18th September. Dr Gavinelli suggested that the Concept note should be shorter than the one foreseen for the previous Conference and description of the objectives should promote debate and an innovative approach.

Dr Rahman suggested that members should also suggest a theme for the conference.

Dr Thornber indicated the importance of finding a title for the Conference, which could reflect the objectives of it and provide focus to session themes and discussions. In response to this proposal Prof Fraser indicated that the Topic number four also could be a good title for the Conference. The Group agreed to continue looking for a comprehensive overarching conference title.

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Mr Lovell, expressed his concern about topic number one, as the improvement of the standards should be at Global level and not just focused on developing countries. Prof Fraser indicated that the idea of this point was to highlight the different approaches to implementing the OIE standards, bearing in mind the importance of animal welfare to civil society. .

Dr Thornber reminded Members about the discussion at AWWG 15 on the draft Global Animal Welfare Strategy. It was hoped that the GAWS might be endorsed by 180 Members countries in time for its promotion at the Global Conference in Mexico in December 2016. The vision, goals and objectives in the GAWS might provide assistance in developing topics and speakers for the program. He also noted the importance of the Regional Animal Welfare Strategies (RAWS) in driving progress, and these RAWS should be an important part of the programme. The Group agree that these should be part of the programme

Mr Lovell asked for clarification on the ISO work and how this is related to the OIE standards. In particular because this aspect could be included in point two of the proposed objectives, Partnership for progress. Prof Fraser indicated that the original idea was to avoid the repetition and overlap of the private standards with the ones of the OIE. Therefore, The ISO Technical Specification could be seen as a tool to implement the OIE Standards.

No other suggestions were proposed or discussed at the Teleconference and Dr Rahman closed the meeting thanking all the Members for their participation.

The Teleconference concluded at 15:55 Paris time.

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MINUTES	
OIE ANIMAL WELFARE WORKING GROUP TELECONFERENCE	
Date:	Wednesday 20 January 2016
Time:	08:00 (Paris time)
Attendees:	Sira Abdul Rahman (Chair), Marosi Molomo, Andrea Gavinelli, Hassan Aidaros, David Fraser, Peter Thornber, Luc Mirabito, Jacques Servièrè, Kevin Lovell, Derek Belton, Leopoldo Stuardo

Agenda Item 1: Meeting Apologies, Objective, Duration, Agenda Review:

Dr Rahman welcomed participants and the draft agenda was confirmed.

Agenda Item 2: Update Work Programme

Dr Stuardo updated the Members on the Work Programme 2015/2016. He mentioned the activities of the *ad hoc* Groups during 2015, and that their reports will be shared with the Code Commission in their February meeting. Dr Stuardo also mentioned that Member Countries comments on the draft Chapters on the Welfare of working equids and some comments on existing Chapters would be analysed at the next Code Commission meeting. Finally Dr Stuardo reviewed the relevant points of the working programme, in particular the activities to be developed in the period 2015-2016, and noted that the update of the existing recommendations on gas stunning methods for poultry and pigs is still pending.

Dr Stuardo informed the meeting about the *ad hoc* Group on Slaughter of animals – Water bath Stunning (WBS) method for poultry, held in December 2015. He advised that the *ad hoc* Group had developed a draft text to be considered at the February Code Commission meeting and to be subsequently presented for Member Countries’.

Dr Gavinelli indicated that the new proposal focused more on the inclusion of indicators of effective stunning, rather than just the electrical parameters used, which from the European side is good progress.

Prof Fraser congratulated the Group for the excellent text developed, and proposed new wording of one part of the text, to simplify the explanation of the indicators of correct stunning. The revised text will be added to the proposal to be presented to the February Code Commission meeting.

Agenda Item 3: Update OIE Global Animal Welfare Strategy

Dr Stuardo informed that there were no new developments on the way that the OIE wanted to present the strategy to their Members. Dr Belton, indicated that the proposal is now to adopt a recommendation supporting the adoption of the strategy at the next OIE Global Conference on Animal Welfare.

Agenda Item 4: OIE Global Conference on Animal Welfare.

Dr Stuardo shared with the AWWG members, the final version of the Concept Note for the next OIE Conference on Animal Welfare to be held in Guadalajara, Mexico, the 6th to 8th December this year. Dr Stuardo informed the meeting that the deadline to prepare a draft programme for the Conference was April 4. Therefore, it was proposed that AWWG member’s put forward, proposals for speakers according to the topics that are considered into the Concept Note. A skeleton of the programme will be circulated after the teleconference to facilitate this task.

In relation to the query of Prof Fraser in relation to possible poster submissions Dr Stuardo confirmed that there will be a poster session during the Conference. Prof Fraser proposed that the topics of the posters could be aligned with the themes to be discussed in the Working Groups during the Conference.

Annex 30 (contd)Annex 3 (contd)

The detail of the key deadlines in preparing for the Conference will be circulated to AWWG members.

The AWWG agreed to include in the agenda of the next regular meeting in June an item to discuss the communication tools to be used before and during the Conference to ensure as much public engagement as possible. It was agreed to invite the OIE Communication Unit to this part of the meeting in June.

Agenda Item 5: Facilitating implementation of OIE AW Standards activities

Dr Stuardo informed members that there has been no progress in relation to this project. Nevertheless, he noted that there is increasing demand from Member Countries to develop a place on the OIE website where people can find the scientific references which informed the standards, and also where some of the current *Terrestrial Code* content could be relocated, such as the mechanical stunning method figures.

Dr Thornber again supported these ideas and mentioned that the toolbox that the AWWG has been working on could be used as a starting point.

Dr Stuardo informed the AWWG members about the project to conduct a Train the Trainers session for Russian speaking countries. This event that is under the activities of the OIE Platform on animal welfare for Europe is still to be confirmed.

Agenda Item 6: Private Standards Update: ISO

Dr Stuardo informed the group that a physical meeting of the ISO TC34/WG 16 was held at the OIE at the beginning of December 2015.

Mr Mirabito advised that a final draft of the proposed ISO technical specification was prepared after extensive work by the drafting group, and that it is expected to proceed to a ballot for adoption the Draft in July.

Dr Thornber informed members about the new Livestock Global Assurance Program (LGAP) which has been developed in Australia and which is now open for public consultation. LGAP is the product of an ongoing research and development initiative of the Australian livestock export industry, funded by Meat & Livestock Australia, LiveCorp and the Australian Government Department of Agriculture.

Mr Lovell noted that this initiative could take into consideration the work done in the preparation of the ISO animal welfare technical specification.

Agenda Item 7: AW Focal Point Seminars updates

Dr Stuardo informed Members that only one AW Focal point training seminar is planned for 2016. This will be held in the Middle East in April 2016. Dr Stuardo also informed the group about the two successful Seminars conducted during 2015 in Santa Cruz Bolivia and in the Kakheti Region in Georgia. In particular he noted that the inclusion of field visits which facilitated discussion around common problems (for example animal welfare standard implementation at the slaughterhouse), were well received by the participants.

Agenda Item 8: RAWS and EU Platform updates

Dr Stuardo informed members about the RAWS Coordination meetings planned for this year. He highlighted that the AFEO RAWS CG meeting to be held in Malaysia will continue discussion on how the RAWS secretariat of this Region will function in the future.

Dr Aidaros noted that the OIE Middle East region is expected to develop a RAWS implementation plan during the next animal welfare focal point seminar for adoption during the 84th OIE General Session.

Dr Molomo thanked the OIE for supporting her participation at the first Continental Consultative Stakeholders Conference on Animal Welfare, which took place at the African Union Interafrican Bureau for Animal resources (AU-IBAR) in Nairobi, Kenya from 30th November to 1st December 2015. She also mention about the importance of conducting an Animal Welfare Focal Point training session in the region, to facilitate the developing the development of an African RAWS.

Annex 30 (contd)

Annex 3 (contd)

Agenda Item 9: Killing methods for reptiles in the skin trade

Dr Stuardo informed the group that at their last regular meeting, the Working Group on Wildlife (WGW) discussed the development of a new standard to cover the slaughter of reptiles. The WGW discussed two ways to deal with this issue. The first is to develop a completely new chapter to be included in the *Terrestrial Code*, and the second is to add provisions for reptiles to the existing Chapter 7.5.

Dr Belton indicated that reptiles are now specifically included in the scope of OIEs work in the new Strategic Plan 2015-2020. He also noted that there is still a discussion to be concluded as to how the definition of 'animal' in the *Terrestrial Code* should be amended to include reptiles.

It was agreed that this topic will be included in the agenda of the next regular meeting of the AWWG to develop a recommendation to the OIE.

Agenda Item 10: Other Business

Dr Stuardo informed about the request of the NZ-AU Collaborating Centre on Animal Welfare Science and Bioethical Analysis, for change the name to "David Bayvel". This request was accepted by the OIE, therefore it will appear under the new name after the update of the Collaborating Centres list.

Dr Gavinelli informed the Members on the restructure of DG SANTE, and advised that from the 1st of February he will be no longer be the head of the Animal Welfare Unit. He has been appointed as Head of the Control and Disease Eradication Unit. He noted that the EC is not thinking to do any change in the short term in relation to his membership in the AWWG.

Mr Mirabito suggested it would be timely to review Article 7.1.4 of the Code (General principles for the welfare of animals in livestock production systems) and it was agreed to discuss how this review may be undertaken at the June meeting.

Dr Rahman and Dr Thornber informed the meeting that Dr Thornber has taken over from Dr Rahman as President of the Commonwealth Veterinary Association, and that they intend to discussions on how the CVA could facilitate or assist development of an OIE RAWS for Africa.

The meeting ended at 09:45, Paris time.

Annex 30 (contd)Annex 4

OIE AD HOC GROUP ON ANIMAL WELFARE AND MASS DEPOPULATION SYSTEMS OF POULTRY FOR DISEASE CONTROL PURPOSES

Background

Animal welfare was first identified as a priority in the OIE Strategic Plan 2001-2005. OIE Member Countries mandated the organisation to take the lead internationally on animal welfare and, as the international reference organisation for animal health, to elaborate recommendations and guidelines covering animal welfare practices, reaffirming that animal health is a key component of animal welfare.

The standards setting procedure of the OIE

The OIE develops standards through the work of expert *ad hoc* Groups that are convened to develop draft texts for the OIE *Terrestrial Animal Health Code* (*Terrestrial Code*). The draft texts are normally reviewed by the OIE Animal Welfare Working Group (AWWG), which provides recommendations to the OIE Terrestrial Animal Health Standards Commission (The Code Commission). Following review by the Code Commission, draft texts are sent to OIE Member Countries for comment. After two rounds of comments, a draft text may be proposed for adoption in the *Terrestrial Code*, in accordance with the democratic and transparent standard setting procedures of the OIE, at the World Assembly of Delegates which is held each year in May. Reports of *ad hoc* Groups on animal welfare are normally released to the public as annexes to reports of the Code Commission. The Code Commission meets in February and September every year and its reports (in English, French and Spanish) are placed on the OIE Internet site after the meetings (normally in March and October).

Animal Welfare and livestock production systems

In May 2005, the OIE World Assembly of Delegates endorsed the proposals of the AWWG for the animal welfare priorities for 2005/2006. Among those priorities was the development of animal welfare guidelines for terrestrial animal production systems.

Draft Terms of Reference

Taking into account:

- The background history of the OIE regarding animal welfare and production systems;
- The existing animal welfare and animal health standards in the *Terrestrial Animal Health Code* (*Terrestrial Code*), in particularly the Chapter 7.1, Article 7.1.2 on the “Guiding Principles for animal welfare”;
- The proposal by a Member Country at the 2016 General Session of the OIE for the inclusion of foam as an approved depopulation method for disease control purposes.

The *ad hoc* group is asked to elaborate draft animal welfare standards for rapid (term to be defined by the *ad hoc* group) mass depopulation systems of poultry for improved disease control purposes, including, but not limited to, the use of foam, whether singly or in combination with other techniques, for eventual inclusion in the *Terrestrial Code*. These standards should cover, inter alia:

- appropriate definitions and scope;
- criteria for determining when mass depopulation methods are applicable, acknowledging that existing methods permitted in terms of Chapter 7.6, where practical and able to depopulate in a shorter time than the mass depopulation methods to be reviewed, may be considered preferable;
- application and appropriate use by species, quantity and age of flock to be depopulated;

Annex 30 (contd)Annex 4 (contd)

- considerations of housing types, climatic conditions and environmental conditions that may impact on the choice of depopulation methods;
- resource considerations for successful use of these techniques;
- types of containment facilities of poultry on farm prior to, during, and after the application of the approved mass depopulation method;
- emergency management plans which would allow for the use of mass depopulation methods;
- general management practices, including systems to guarantee prior formal approval and veterinary supervision during use of the technique;
- personnel training and operator safety as they relate to the methods used and the potential zoonotic impacts;
- criteria to evaluate the zoonotic risk of the disease to be managed by mass depopulation methods and to weigh up the zoonotic risk, animal health risk and animal welfare risk as one matrix in determining the suitability of these mass depopulation methods, and specifically, criteria for determining the success of these mass depopulation methods, in terms of:
 - the time to depopulate,
 - the effectiveness and efficiency of the mass depopulation method on the control and elimination of the disease,
 - the welfare outcomes, and,
 - developing criteria to evaluate and rank the techniques available in all five OIE regions, taking climatic and other factors into account;
- criteria to measure and to mitigate the impact of any possible negative welfare outcomes of these methods;
- criteria to rank the suitability of commercially available products and formulations, and which criteria are sufficiently flexible to allow for future products and formulations to be assessed by the appropriate authority in each member country;
- criteria for safe removal and biosecure disposal of depopulated birds if the techniques to be used have environmental concerns over and above those normally associated with the disposal of disease contaminated, or potentially contaminated, biological material.

These standards must:

- be based on science (scientific references must be provided);
- harmonised in their structure with the rest of the *Terrestrial Code*, including the other animal welfare and production systems chapters;
- use criteria that address the outcome at the animal level (animal-based).

In developing these standards, the ad hoc Group should review relevant resource materials, including extracts from the *Terrestrial Code*, reports from AWWG and other *ad hoc* group meetings and examples of existing practices from all five OIE Regions. A draft document is expected after the first meeting and will be submitted to the AWWG, the Code Commission and OIE Member Countries, for comments, to be addressed by the *ad hoc* Group in a second meeting.

Annex 30 (contd)Annex 5

**OIE AD HOC GROUP ON ANIMAL WELFARE AND THE USE OF PENETRATING (PCB) AND
NON-PENETRATING CAPTIVE (NPCB) BOLTS
FOR KILLING FOR DISEASE CONTROL PURPOSES**

Background

Animal welfare was first identified as a priority in the OIE Strategic Plan 2001-2005. OIE Member Countries mandated the organisation to take the lead internationally on animal welfare and, as the international reference organisation for animal health, to elaborate recommendations and guidelines covering animal welfare practices, reaffirming that animal health is a key component of animal welfare.

The standards setting procedure of the OIE

The OIE develops standards through the work of expert *ad hoc* Groups that are convened to develop draft texts for the OIE *Terrestrial Animal Health Code* (*Terrestrial Code*). The draft texts are normally reviewed by the OIE Animal Welfare Working Group (AWWG), which provides recommendations to the OIE Terrestrial Animal Health Standards Commission (The Code Commission). Following review by the Code Commission, draft texts are sent to OIE Member Countries for comment. After two rounds of comments, a draft text may be proposed for adoption in the *Terrestrial Code*, in accordance with the democratic and transparent standard setting procedures of the OIE, at the World Assembly of Delegates which is held each year in May. Reports of *ad hoc* Groups on animal welfare are normally released to the public as annexes to reports of the Code Commission. The Code Commission meets in February and September every year and its reports (in English, French and Spanish) are placed on the OIE Internet site after the meetings (normally in March and October).

Animal Welfare and killing of animals for disease control purposes

In May 2005, the OIE World Assembly of Delegates adopted the first standards on the Killing of animals for disease control purposes, and endorsed the proposals of the AWWG for the animal welfare priorities for 2005/2006.

The standards on the killing of animals for disease control purposes have been updated over the years, in line with new international scientific developments, and revisions adopted by the OIE World Assembly of Delegates.

The last amendments to Chapter 7.6 were adopted by the General Assembly in May 2016. However, at the 2016 OIE General Session a Member Country submitted to the OIE Animal Welfare Working Group specific comments on the use of penetrative and non-penetrative captive bolts, in particular with reference to the ages in which such methods should not be recommended because of possible inefficient stunning and consequent animal welfare risks.

The OIE Animal Welfare Working Group considered it appropriate to convene an electronic *ad hoc* group to revise the table summarising the killing methods in Article 7.6.5 and the Articles 7.6.7 and 7.6.8., as regard penetrative and non-penetrative captive bolts for the killing of animals for disease control purposes.

Draft Terms of Reference

Taking into account:

- The background history of the OIE regarding animal welfare and the killing of animals for disease control purposes;
- The existing animal welfare and animal health standards in the *Terrestrial Animal Health Code* (*Terrestrial Code*), in particularly the Chapter 7.6, Articles 7.6.5, 7.6.7 and 7.6.8., in relation to the use of penetrative and non-penetrative captive bolt for killing for disease control purposes;

Annex 30 (contd)Annex 5 (contd)

- The proposal submitted by Member Country at the OIE General Session of the OIE on Chapter 7.6 in relation to the age categories for which penetrative and non-penetrative captive bolt for killing for disease control purposes should or should not be recommended;
- The latest scientific developments in this field, the existing legislations and guidelines including the 2013 AVMA Guidelines for Euthanasia;
- The recommendations of the OIE Animal Welfare Working Group at its fourteen meeting to convene a specific *ad hoc* group to review the comments from a Member Country and propose scientific-based amendments of the above-mentioned Articles of Chapter 7.6.

The *ad hoc* group is asked to review the animal welfare standards of Chapter 7.6 in relation to the use of penetrative and non-penetrative captive bolt, following the proposal submitted by a Member Country. The revised standards to be proposed by the *ad hoc* group should include, inter alia:

- appropriate criteria to determine when PCB and NPCB for killing of animals for disease control purposes should be used, depending on the species of the animals concerned and the age, taking into account the animal health and welfare implications as well as human security;
- the recommended age range and species for the use of the above-mentioned two methods, taking into account the animal health and welfare implications as well as human security;
- appropriate criteria to determine the effectiveness and efficiency of these methods, and their welfare outcomes;
- the advantages and disadvantages of such methods, as well as the requirements for their effective use.

These revised standards must:

- be based on science (scientific references must be provided)
- harmonised in their structure with the rest of the *Terrestrial Code*, including the other animal welfare and production systems chapters
- use criteria that address the outcome at the animal level (animal-based)

In revising these standards, the *ad hoc* Group should review relevant resource materials, including extracts from the *Terrestrial Code*, reports from AWWG and other *ad hoc* group meetings and examples of existing practices from all five OIE Regions, specific comments submitted by OIE Member Countries. A draft document is expected after the first meeting and will be submitted to the AWWG, the Code Commission and OIE Member Countries, for comments, to be addressed by the *ad hoc* Group in a second meeting.

[Annex 30](#) (contd)[Annex 6](#)

CHAPTER 7.11.

**ANIMAL WELFARE AND DAIRY CATTLE
PRODUCTION SYSTEMS**

[Article 7.11.1.]

[Article 7.11.2.]

[Article 7.11.3.]

[Article 7.11.4.]

[Article 7.11.5.]

Article 7.11.6.

Recommendations on system design and management including physical environment

- 1.
- 2.
- 3.
- 4.
5. Flooring, bedding, resting surfaces and outdoor areas

In all production systems cattle need a well-drained and comfortable place to rest. All cattle in a group should have sufficient space to lie down and rest at the same time.

Particular attention should be given to the provisions for areas used for calving. The environment in such areas (e.g. floors, bedding, temperature, calving pen and hygiene) should be appropriate to ensure the welfare of calving cows and new born calves.

In housed systems calving areas should be thoroughly cleaned and provided with fresh bedding between each calving. Group pens for calving should be managed based on the principle 'all in - all out'. The group calving pen should be thoroughly cleaned and provided with fresh bedding between each animal group. The time interval between first and last calving of cows kept in the same group calving pen should be minimised.

Outdoor calving pens and fields should be selected to provide the cow with a clean and comfortable environment.

Floor management in housed production systems can have a significant impact on cattle welfare. Areas that compromise welfare and are not suitable for resting (e.g. places with excessive faecal accumulation, or wet bedding) should not be included in the determination of the area available for cattle to lie down.

Slopes of the pens should allow water to drain away from feed troughs and not pool the pens.

Flooring, bedding, resting surfaces and outdoor yards should be cleaned as conditions warrant, to ensure good hygiene, comfort and minimise risk of diseases and injuries.

In pasture systems, stock should be rotated between fields to ensure good hygiene and minimise risk of diseases and injuries.

Annex 30 (contd)Annex 6 (contd)

Bedding should be provided to all animals housed on concrete. In straw, sand or other bedding systems such as rubber mats, crumbled-rubber-filled mattresses and waterbeds, the bedding should be suitable (e.g. hygienic, non-toxic) and maintained to provide cattle with a clean, dry and comfortable place ~~in~~ on which to lie.

The design of a standing, or cubicle, or free stall, should be such that the animals can stand and lie comfortably on a solid surface (e.g. length, width and height should be appropriate for the size of the largest animal). There should be sufficient room for the animal to rest and to rise adopting normal postures, to move its head freely as it stands up, and to groom itself without difficulty. Where housing design provides individual spaces ~~are provided~~ for cows to rest, there should be at least one space per cow.

Alleys and gates should be designed and operated to allow free movement of cattle. Floors should be designed to minimise slipping and falling, promote foot health, and reduce the risk of claw injuries.

If a housing system includes areas of slatted floor, cattle, including replacement stock, should have access to a solid lying area. The slat and gap widths should be appropriate to the hoof size of the cattle to prevent injuries.

If cattle have to be tethered whether indoors or outdoors, they should, as a minimum, be able to lie down, stand up, maintain normal body posture and groom themselves unimpeded. Cows kept in tie stall housing should be allowed sufficient untethered exercise to prevent welfare problems. When tethered outdoors they should be able to walk. *Animal handlers* should be aware of the higher risks of welfare problems where cattle are tethered.

Where breeding bulls are in housing systems, care should be taken to ensure that they have sight of other cattle with sufficient space for resting and exercise. If used for natural mating, the floor should not be slatted or slippery.

Outcome-based measurables: morbidity rates, especially lameness and injuries (e.g. hock and knee injuries and skin lesions), behaviour (e.g. altered locomotion and posture, altered lying time, grooming and not using the intended lying areas), changes in weight and body condition, physical appearance (e.g. hair loss, cleanliness score), growth rate.

— Text deleted.

[Annex 30](#) (contd)[Annex 7](#)

Original: English

March 2016

REPORT OF THE OIE *AD HOC* GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

The OIE *ad hoc* Group on Animal Welfare and Pig Production Systems (the *ad hoc* Group) met at the OIE Headquarters on 22–24 March 2016.

The members of the *ad hoc* Group and other participants at the meeting are listed at [Annex I](#). The adopted agenda is at [Annex II](#).

Dr Derek Belton, Head of the Trade Department of the OIE, welcomed all members and thanked them for their agreement to work with the OIE on this topic. Dr Belton commented to the *ad hoc* Group that the development by the OIE of animal welfare standards relevant to livestock production systems is a key component of the OIE's animal welfare programme. Dr Belton emphasised that this topic is of great interest to OIE Member Countries and many organisations that are associated with the OIE.

Dr Belton reminded members that in developing their recommendations the diverse conditions relevant to all 180 OIE Members should be taken into account. Dr Belton explained the procedure of adoption of OIE standards. The report of the meeting will be submitted to the OIE Animal Welfare Working Group (AWWG) for comments and will be presented to the Terrestrial Animal Health Standards Commission (Code Commission). The full report of the Code Commission (including the report of the *ad hoc* Group on Pig Production Systems) will then be submitted to OIE Members for comments. Dr Leopoldo Stuardo stressed that OIE standards should be flexible, not prescriptive, and they should be science-based and outcome focused. It is important to list relevant scientific references in the report as science is the unique common denominator for OIE Members. Dr Belton confirmed that the development of OIE standards is normally based on a two-year cycle and indicated that the OIE would probably reconvene the *ad hoc* Group at the beginning 2017 to review Member Countries' and Code Commission comments on the Group's report.

1. Introduction

After the formal presentation of each of the member of the Group and from the OIE staff, Dr Stuardo informed that Professor Wang Lixian sent his apologies for absence from the meeting due to administrative problems. Dr Stuardo confirmed that he will continue to be a member of the Group and that OIE will send him the report and the draft chapter for comments.

Dr Birte Broberg, Chair of the *ad hoc* Group, thanked the OIE for the opportunity to work on this very important topic for the pig industry, and noted the need for relevant international guidelines on this subject.

2. Confirmation of the Terms of Reference (ToR) and discussion of working documents and other relevant documents provided

Dr Stuardo indicated that the proposed terms of reference were based on the model prepared by the AWWG and the *ad hoc* Group on Animal Welfare and Livestock Production Systems, which have been used to guide the development of all of adopted animal welfare in livestock production systems chapters.

Dr Broberg indicated that the ToR is broad and give the necessary flexibility to develop the proposed new chapter. The Group agreed to use the proposed ToR to develop the requested chapter.

The terms of reference for the *ad hoc* Group are presented in [Annex III](#).

Annex 30 (contd)Annex 7 (contd)

Dr Broberg noted that the Group has received a significant number of documents from the members of the Group and from the OIE Headquarters, including one from the International Coalition for Animal Welfare (ICFAW), sent to the OIE by Dr Peter Thornber, member of the AWWG representing World Animal Protection.

The Group agreed that there is useful information in most of the documents, but different realities should be taken into account when developing the recommendations.

The discussion paper on the development of animal welfare guidelines for production systems (terrestrial animals), the Recommendations to the OIE in Developing Guidelines on Animal Welfare in Livestock Production Systems and other relevant documents presented during the meeting are provided in Annex IV, V and VI respectively.

3. Development of the draft new standard

Dr Bierte Broberg noted at the beginning of the discussion that the various pig production systems used around the world have different unique specificities. In this respect, the group discussed how to structure the new chapter and decided to make a common chapter for all production systems and indicate the differences for specific systems as necessary.

The *ad hoc* Group agreed that outcome-based criteria or measurables may give a better indication of animal welfare than input design criteria because they reflect the complex interaction of multiple design inputs. Documents submitted by the members of the *ad hoc* Group were discussed.

When the Group discussed the recommendations on common procedures conducted in pig production systems, they agreed there are a range of practices that should be considered beyond the current topical issue of tail docking.

A draft new chapter for the *Terrestrial Animal Health Code (Terrestrial Code)* was developed during the meeting and can be found in Annex VII.

The draft new chapter is structured along the following lines:

- a) definition of pig production systems, management and environmental enrichment;
- b) scope of the recommendations;
- c) description of existing pig production systems;
- d) identification and brief description of relevant 'outcome-based criteria or measurables';
- e) recommendations for measures applied to pigs;
- f) references.

The Group agreed that the trend away from the use of gestation crates and toward management of pregnant sows in groups should be taken into account in the on-going development of animal welfare recommendations for pig production systems.

4. Review and finalise the report of the meeting

The *ad hoc* Group agreed to complete their meeting report and draft standard by April 2016 for submission to the June AWWG meeting.

5. Next meeting

It was agreed that the next meeting will take place after receipt of comments on the report of the September 2016 Code Commission meeting, most probably in March 2017.

.../Annexes

[Annex 30](#) (contd)[Annex 7](#) (contd)[Appendix I](#)**OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS****Paris, 22–24 March 2016****List of participants****MEMBERS OF THE AD HOC GROUP**

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Annex 30 (contd)

Annex 7 (contd)

Appendix II

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

Adopted agenda

1. Welcome and introduction – Dr Derek Belton
 2. Introduction of members – Background and representation
 3. Confirmation of Terms of Reference and comments from the Chair of the *ad hoc* Group
 4. Discussion of working documents and other relevant documents provided by the members of the *ad hoc* Group
 5. Development standards
 6. Review and finalise report of meeting
-

Annex 30 (contd)

Annex 7 (contd)

Appendix III

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

Background and Terms of Reference

Animal welfare was first identified as a priority in the OIE Strategic Plan 2001-2005. OIE Member Countries mandated the organisation to take the lead internationally on animal welfare and, as the international reference organisation for animal health, to elaborate recommendations and guidelines covering animal welfare practices, reaffirming that animal health is a key component of animal welfare.

The standards setting procedure of the OIE

The OIE develops standards through the work of expert *ad hoc* Groups that are convened to develop draft texts for the OIE *Terrestrial Animal Health Code* (*Terrestrial Code*). The draft texts are normally reviewed by the OIE Animal Welfare Working Group (AWWG), which provides recommendations to the OIE Terrestrial Animal Health Standards Commission (The Code Commission). Following review by the Code Commission, draft texts are sent to OIE Member Countries for comment. After two rounds of comments, a draft text may be proposed for adoption in the *Terrestrial Code*, in accordance with the democratic and transparent standard setting procedures of the OIE, at the World Assembly of Delegates which is held each year in May. Reports of *ad hoc* Groups on animal welfare are normally released to the public as Appendixes to reports of the Code Commission. The Code Commission meets in February and September every year and its reports (in English, French and Spanish) are placed on the OIE Internet site after the meetings (normally in March and October).

Animal Welfare and livestock production systems

In May 2005, the OIE World Assembly of Delegates endorsed the proposals of the AWWG for the animal welfare priorities for 2005/2006. Among those priorities was the development of animal welfare guidelines for terrestrial animal production systems.

In April 2008, the OIE *ad hoc* group on animal welfare and livestock production systems proposed that the OIE develops guidelines based on species, with specific production sectors to be considered separately. The OIE was requested to focus on commercial scale production and particularly on products traded internationally. It was also suggested that the guidelines for a particular species should address all currently used production systems (e.g. extensive, intensive and mixed) and management procedures, in order to cover all practices used in the 180 Member Countries.

In 2009, and based on the priorities raised by the *ad hoc* group on animal welfare and livestock production systems, the OIE started a process to draft standards on animal welfare on animal production systems. At this moment, three OIE standards on animal production systems have been adopted; broiler chickens, beef cattle and dairy cattle.

As a consequence on the discussion during the adoption of the above mentioned standards, notably in relation to the inclusion of specific animal welfare measurables, it was agreed to develop some general principles for animal welfare and livestock production systems. These general principles were adopted in May 2012, as a new Article 7.1.4 “General principles for the welfare of animals in livestock production systems, of Chapter 7.1 of the *Terrestrial Code*.”

Annex 30 (contd)

Annex 7 (contd)

Appendix III (contd)

Terms of Reference

Taking into account:

- The background history of the OIE regarding animal welfare and production systems;
- The discussion paper on the “Development of animal welfare guidelines for production systems”, written by the AWWG in 2006;
- The recommendations of the OIE *ad hoc* group on animal welfare and livestock production in 2008, and
- The existing animal welfare and animal health standards in the *Terrestrial Code*, in particularly the Chapter 7.1, Article 7.1.2 on the “Guiding Principles for animal welfare” and Article 7.1.4 on the “General Principles for the welfare of animals in livestock production” (http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm).
- The *ad hoc* Group is asked to elaborate draft animal welfare standards for pig production systems, (intensive, extensive and semi intensive) for eventual inclusion in the *Terrestrial Code*. These standards should cover, inter alia:
 - appropriate definitions and scope;
 - housing;
 - feeding and watering of the animals;
 - environmental considerations;
 - management of endemic diseases;
 - prevention of major infectious diseases (biosecurity) and planning for managing disease outbreaks (including emerging diseases);
 - emergency management plans (e.g., disease outbreak, failure of electrical systems, fire, etc.);
 - handling facilities (on farm only – transport and slaughter are covered elsewhere in the *Terrestrial Code*);
 - management practices (e.g. castration, tail docking, teeth trimming, and nose ringing);
 - breeding;
 - farrowing;
 - personnel training;
 - protection from predators.

These standards must:

- be based on science (scientific references must be provided)
- harmonised in their structure with the rest of the *Terrestrial Code*, including the other animal welfare and production systems chapters
- use criteria that address the outcome at the animal level (animal-based)

In developing these standards, the *ad hoc* Group should review relevant resource materials, including extracts from the *Terrestrial Code*, reports from AWWG and other *ad hoc* group meetings and examples of existing practices from all five OIE Regions. A draft document is expected after the first meeting and will be submitted to the AWWG, the Code Commission and OIE Member Countries, for comments, to be addressed by the *ad hoc* Group in a second meeting.

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Appendix IV

Discussion paper on the development of animal welfare guidelines for production systems (terrestrial animals)

(Developed by the OIE Animal Welfare Working Group, 2006)

Background

The OIE International Committee in May 2005 endorsed the proposals of the Animal Welfare Working Group for priorities for 2005/2006. Among those priorities was the development of animal welfare guidelines for terrestrial animal production systems.

The development of global OIE animal welfare guidelines for production systems will be challenging for a number of reasons. Worldwide, animals are raised under extremely diverse conditions ranging from intensive systems with animals kept permanently indoors, to extensive systems with little or no housing. These different systems involve very different animal welfare challenges. There are also large differences from country to country in the level of priority accorded to the welfare of food animals.

Nonetheless, because of the close link between animal welfare and animal health, guidelines designed to improve animal welfare will often lead to better animal health, productivity and food safety. Especially in cases where these relationships can be clearly demonstrated, animal welfare guidelines may be broadly acceptable to Member Countries.

This discussion paper sets out some of the key issues that need to be considered in developing animal welfare guidelines for production systems, and suggests next steps in this area.

Animal-based and resource-based criteria

Animal welfare guidelines may include (1) animal-based criteria and (2) resource-based criteria of animal welfare. Resource-based criteria (also called design criteria or input criteria) indicate the resources that should be provided. These often specify space allowances and dimensions, ambient temperature range, humidity, condition of the litter, air quality, availability of feed and water, frequency of inspection, and biosecurity and sanitation measures. Animal-based criteria (also called performance criteria or output criteria) are described/specified in terms of the animals' state. They often include such elements as survival rate, incidence of disease and injury, body condition scoring, the ability of animals to behave in certain ways, and the reaction of animals to their handlers.

Resource-based criteria are widely used in animal welfare assurance programmes because they are often easier to evaluate and score than animal-based criteria. However, they have important limitations:

- Resource-based criteria are generally derived from research carried out with specific species/breeds and production systems, and they may not be applicable to other breeds and other production systems. For example, a space allowance that minimises crowding-related problems in light hybrid hens in battery cages may not apply to other breeds or to other housing systems.
- The welfare of animals is strongly influenced by the skill and attitude of animal handlers, and it is difficult to develop and implement resource-based criteria to describe these elements.
- Resource-based criteria are often created in response to well researched problems such as over-crowding and air quality, and they may not apply to new or emerging problems such as new diseases or genetic modifications of the animals.

Perhaps because of these limitations, research shows that animal production units that conform to the same resource-based criteria may still have widely varying animal welfare outcomes.

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Animal-based criteria are not as widely used in existing animal welfare standards but they should, in principle, be applicable to any production system. In fact animal-based criteria may provide a better measure of the animal welfare outcomes because they reflect the influence of variables (e.g. experience and attitude of handlers, presence of emerging diseases) that may be missed by resource-based criteria. However, many animal welfare concerns are difficult to address using animal-based criteria. Examples include the capacity of the ventilation system to prevent extreme temperatures, the use of pain mitigation for surgical procedures, and the implementation of appropriate biosecurity measures.

A reasonable approach, therefore, would be for the OIE to incorporate animal-based criteria in its guidelines where feasible and to supplement these with resource-based criteria where there is a good scientific basis for doing so. Thus, for example, animal welfare guidelines for chickens might specify certain levels of survival and freedom from disease and injury (animal-based criteria) and would also recommend requirements for ambient temperature, humidity, air quality and litter quality (resource-based criteria) for birds that are kept indoors.

Clarifying the objectives of animal welfare guidelines

Animal welfare guidelines are generally designed to achieve one or more of three objectives:

- 1) to protect the basic health and normal functioning of animals, for example by preventing and alleviating disease, injury, malnutrition and similar harm;
- 2) to protect the psychological well-being of animals, for example by preventing and alleviating pain, fear, distress and discomfort;
- 3) to provide living conditions that are considered to be 'natural' for the species, for example by providing a social and physical environment where animals can perform key elements of their natural behaviour.

The three objectives overlap. For example, preventing injury is important for psychological well-being, and preventing pain and fear can be important for normal functioning. However, the overlap is not perfect. For example, environments that limit the spread of disease do not necessarily allow natural behaviour and vice versa.

The three objectives are based on somewhat different bodies of scientific research. The research relevant to objective 1 includes studies of survival rate, incidence of disease and injury, body condition scoring, and productivity measures. The research relevant to objective 2 includes studies of pain, fear and distress in animals, studies of ways to alleviate such states, and studies that determine the animals' own preferences and aversions. Research relevant to objective 3 includes studies of the normal (and abnormal) behaviour of animals, how these are influenced by the social and physical environment, and the strength of the animals' motivation to carry out elements of their natural behaviour.

In the past, confusion has sometimes occurred because different standards, which are all claimed to address animal welfare, have involved very different requirements. Often such differences arise because the different standards address different objectives and rely on different bodies of research. In order to avoid confusion, it is important that recommendations be clear as to the welfare objectives they are intended to address.

Standards based on objective 1, because they reinforce basic health and functioning of animals, tend to be the most aligned with the traditional objectives of animal producers and veterinarians. The cost/benefit ratio is often favourable because implementation often leads to measurable improvements in productivity (e.g. improved survival or reduced mortality due to stress and disease). Hence, these standards are likely to be the most acceptable to animal producers and in cultures where concern for the welfare of animals is relatively low. However, in cultures where the public is actively interested in and concerned about animal welfare, standards based on objective 1 are likely to be viewed as minimum standards that promote productivity rather than animal welfare per se.

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Standards based on objective 2 (alleviating pain and distress, etc.) vary in their ease of implementation and their economic implications. Some (such as handling animals in ways that do not cause distress) should be relatively easy to implement, involve little or no cost, and may produce measurable economic benefit. Others (such as requiring anaesthesia for minor surgery) may be difficult and costly to implement. The level of acceptance by producers will likely vary accordingly. In countries which accord a high priority to animals welfare, standards based on objective 2 tend to be strongly supported by the concerned public who generally see the alleviation of pain and distress as a key element of animal welfare.

Standards based on objective 3 (providing more 'natural' living conditions) can have widely varying implications. Some requirements, such as providing more natural social grouping of animals, can be achieved in confinement production systems with only small cost implications. Others may require substantial redesign of animal environments and incur higher land and labour costs. Such standards may, however, allow producers using alternative production systems to market products to consumers who support such standards.

In proposing OIE guidelines on animal production systems, one approach would be to focus principally on objective 1 because of the clear linkage with animal health and traditional veterinary priorities of this objective, and to propose the adoption of guidelines based on objectives 2 and 3 where this is feasible and appropriate. If this approach is used, however, it should be made clear that the guidelines are intended as basic guidelines designed mainly to promote the health and functioning of animals as health is the one of the key components of welfare. In cultures that place a high priority on animal welfare, the development and implementation of guidelines that more closely address animal welfare objectives 2 and 3 would be appropriate to meet societal expectations.

Clarifying the underlying science

In the past, the development of animal welfare guidelines for production systems has sometimes been hampered by a lack of clarity over the scientific literature. In some cases organizations have attempted to create guidelines without a clear review or understanding of the science. In other cases, scientific reviews are available but these lead to conflicting conclusions. Guidelines that lack a clear and transparent link to science are often criticised as reflecting the subjective views or self-interest of those (animal producers, regulators or animal welfare organizations) that produce them.

In general, then, a good first step in developing animal welfare guidelines for a given production system is to ensure that a competent review of the relevant science is in place and widely accepted. If there is no such review, or if there are significant conflicts among existing reviews, then a new review may need to be created before beginning to develop a guideline.

Recommended next steps

Given the number of strategic decisions involved in the development of guidelines for terrestrial animal production systems, the Working Group on Animal Welfare recommends that the OIE proceed as follows.

Appoint an *ad hoc* group to consider the issues presented in this paper and prepare a Guidance Document on the development of animal welfare guidelines for terrestrial animal production systems. The *ad hoc* group should, at a minimum, consider and report on the following:

- the various objectives of animal welfare guidelines, how these relate to animal health, and the role that the objectives should play in OIE guidelines;
- the advantages and disadvantages of animal-based versus design-based criteria, with examples and recommendations on how these different criteria should be addressed in developing OIE guidelines;
- the role of science in animal welfare guidelines, with recommendations on how the OIE should proceed to ensure that guidelines are clearly and transparently based on relevant science;

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- a proposed strategy, including whether to approach the development of guidelines based on species (e.g. *Gallus gallus*) or production systems (e.g. caged layers);
- recommendations on the composition of expert groups including the appropriate scientific expertise, regulatory experience and regional and cultural representation;
- priorities for development of guidelines (species, production systems).

This Guidance Document should be submitted to the Animal Welfare Working Group and, if endorsed, submitted to the OIE Code Commission and possible distribution to OIE Delegates.

With the Guidance Document in place and endorsed by the International Committee, the OIE could proceed by appointing one or more *ad hoc* groups to work on particular animal species or production systems. Such groups should begin with the creation of a comprehensive review of the literature where this is needed.

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Appendix V

Recommendations to the OIE in Developing Guidelines on Animal Welfare in Livestock Production Systems

Objectives of animal welfare guidelines

In keeping with the OIE mandate, the key objective of the OIE's animal welfare guidelines is to assure and support the essential linkage between animal health and animal welfare. In the context of this paper, animal health refers not only to freedom from diseases listed by the OIE but also to freedom from other diseases (e.g. mastitis, lameness), injuries and other conditions (e.g. malnutrition) that significantly affect the biological functioning.

In this respect, considerations relating to affective states and animal behaviour may be relevant insofar as the scientific evidence shows that they are related to animal health.

Maintaining freedom from OIE listed diseases is an important element of animal welfare and the guidelines should provide for the implementation of appropriate biosecurity measures to exclude these diseases. The guidelines should also be cross referenced to appropriate chapters in the *Terrestrial Code* that deal with the surveillance, reporting, control and eradication of listed diseases.

Existing OIE standards

Review of relevant existing OIE standards contributing to the objective described above will be made.

Animal-based versus design-based criteria

Animal-based criteria (also called performance or output criteria) are described in terms of the animal's state. They include such elements as survival rate, incidence of disease and injury and body condition scoring. Many problems are multifactorial and it is therefore difficult to provide specifications (resource-based criteria) for all contributing factors. The most practical solution is to monitor animal-based criteria to ascertain if animal welfare problems are occurring.

Resource-based criteria (also called design criteria, input criteria and engineering criteria) indicate the resources that should be provided. These specify such elements as space allowances and dimensions, ambient temperature range, humidity and condition of the litter. Resource-based criteria are usually based on specific research with a particular species in a particular production system. For example, heat stress is well studied in cattle. Resource-based criteria to prevent thermal stress would include specifying acceptable temperature and humidity range and rates of ventilation. However, the precise recommendations would have to be tailored for the genotype, reproductive state and history of the individual animal. Animal-based criteria such as respiratory rate and rectal temperature as measures of thermal stress, on the other hand, would be applicable across animal and genotype.

Consider the example of tail-biting in fattening pigs. Investigating the incidence and severity of tail biting is best accomplished by monitoring lesions, either by examining the pigs during the fattening period or by monitoring at the abattoir. However, correcting the problem will likely require modifying resources, for example the design of housing, stocking density, provision of material for rooting, air quality, nutrition, general hygiene and the provision of veterinary attention.

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List of advantages and disadvantages of animal-based and resource-based criteria

Animal-based criteria: advantages

- Provide information on the actual state of the animal, regardless of the number of variables affecting that state
- Can be used in a range of production systems, species, genotypes, etc.
- Can be quantitative or semi-quantitative (objective interpretation is possible)
- Can be used to get an appreciation of the impact of animal handling
- Post mortem monitoring may be less costly and is not stressful to the animal.

Animal-based criteria: disadvantages

- May be costly to implement and stressful to the animal if based on direct intervention with individual live animals
- Can be difficult to interpret behaviour (e.g. response to chronic pain or stress)
- Range of 'normal' values and acceptable variation from normal may be difficult to establish
- Quantification may be technically difficult and require specialized training
- Identify the problem but do not indicate what corrective measures are appropriate.

Resource-based criteria: advantages

- Can be easier and less costly to implement and interpret as to whether the value is within the established tolerance
- Required corrective action is evident
- Easier to calculate the cost of modifying these criteria
- Can be quantitative or semi-quantitative (objective interpretation is possible)
- Can be used in a preventative mode (e.g. biosecurity measures).

Resource-based criteria: disadvantages

- Difficult to develop and implement criteria relating to handling of animals
- Criteria may not be generally applicable (they are developed on the basis of research in particular species, breeds and production systems)
- May not be available in regard to new problems (as are mainly based on research to address known problems)
- Provide only partial information on the impact on animal welfare (as many variables contribute)
- May not be well validated with respect to the overall impact on animal welfare.

The criteria for use by the OIE must be devised in a manner that provides for them to be adapted and used in a wide range of environments and circumstances, in order to be widely applicable to OIE Members.

In keeping with the OIE's proposed definition of animal welfare, the OIE guidelines should focus on animal-based criteria. Animal-based criteria should be supplemented with resource-based criteria where these criteria are well validated scientifically as these provide some practical advantages.

The incorporation of resource-based criteria is more likely to be useful when dealing with livestock production systems and livestock that are very similar, regardless of the country/region of production.

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The role of science in animal welfare guidelines

The guidelines should be based on scientific information and, to the extent that is possible, on peer-reviewed literature. However, there is a major shortage of scientific studies and publications on animal welfare from some regions, including Africa, Asia, Latin America and the Middle East, with the majority of scientific information reflecting work in the European Union, North America and Australia/New Zealand.

OIE should support the conduct of studies to generate information relevant to other regions.

Informed judgement of veterinarians and other relevant professionals is also a valid input to the development of OIE guidelines. This may be particularly relevant in addressing guidelines for livestock production systems where there is a shortage of published scientific studies.

The OIE should make clear the source and basis of its guidelines, whether this relates to professional judgement or published studies.

The OIE should undertake a review of published scientific information on:

- 1) based and resource-based criteria relevant to each guideline proposed for development (e.g. beef cattle and broiler chickens); and
- 2) relationship of affective states (e.g. chronic fear) and animal behaviour (e.g. nesting) to animal health.

The results of these reviews should be provided to OIE Delegates and animal welfare focal points to improve the transparency of the OIE guidelines' scientific basis.

When establishing national animal welfare policies, societal value judgements may play a large part. While science can provide useful information, ethical and social considerations may be more influential. The OIE should avoid making recommendations based on value judgements that lack a scientific basis.

Recommended strategy for the OIE

The development of guidelines based on species or sector

It is proposed that the OIE develop guidelines based on species, with specific production sectors to be considered separately as set out below. The OIE should focus on commercial scale production and particularly of products traded internationally. The guidelines for a particular species should address all currently used production systems (e.g. extensive, intensive and mixed) and management procedures (e.g. beak trimming, dehorning). The establishment of guidelines on a species by species basis is appropriate in view of the adoption of animal-based welfare criteria. Regardless of the production system, it is possible to establish animal health and welfare principles that are generally relevant to individuals of the same species.

Appropriate criteria for establishing the priority species/sectors include:

- Products that are extensively traded internationally
- Products that are internationally traded and the subject of actual or proposed animal welfare standards, measures or restrictions (government or private)
- Availability of relevant scientific information
- Likely positive impact on animal welfare of introducing standards
- Input from OIE Members and Regions regarding issues and concerns
- Relevance of one guideline for others (e.g. the OIE guideline on chickens could be used as a model to develop guidelines on ducks and turkeys).

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Appendix VI

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

List of Documents

- 1) Welfare Quality® assessment protocol for pigs (sows and piglets, growing and finishing pigs)
 - 2) Recommendations for the on farm welfare of pigs. Submission to the OIE by the International Coalition for Animal Welfare (ICFAW).
 - 3) Criteria or measurables for the welfare of pigs. Working document prepared by Rebecca Hibbard. Intern at the OIE International Trade Department.
 - 4) Commission Staff Working Document on best practices with a view to the prevention of routine tail-docking and the provision of enrichment materials to pigs.
 - 5) Commission Recommendation (EU) 2016/336 of 8 March 2016 on the application of Council Directive 2008/120/EC laying down minimum standards for the protection of pigs as regards measures to reduce the need for tail-docking.
 - 6) Scientific Opinion concerning a Multifactorial approach on the use of animal and non-animal-based measures to assess the welfare of pigs. EFSA Panel on Animal Health and Welfare (AHAW).
 - 7) Scientific Opinion on the use of animal-based measures to assess welfare in pigs. EFSA Panel on Animal Health and Welfare (AHAW).
 - 8) Animal Welfare (Pigs). Code of Welfare 2010. A code of welfare issued under the Animal Welfare Act 1999. New Zealand.
 - 9) Canadian code of practice for the care and handling of pigs, 2014. National Farm Animal Care Council (NFACC). Canada.
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Appendix VII

DRAFT CHAPTER 7.X.
**ANIMAL WELFARE AND
PIG PRODUCTION SYSTEMS**

Article 7.X.1.

Definitions

'Pig production systems' are defined as all commercial systems in which the purpose of the operation includes some or all of the breeding, rearing and management of pigs intended for production of *meat*.

For the purpose of this chapter, 'management' is defined at the farm management level and at the *animal handler* level. At the level of farm management, human resources management practices including selection and training, and animal management practices, such as best practice in housing and husbandry and implementation of welfare protocol and audits, all impact on *animal welfare*.

At the *animal handler* level this requires a range of well-developed husbandry skills and knowledge to care for animals.

For the purpose of this chapter, 'environmental enrichment' means increasing the complexity (e.g. foraging opportunities, social housing) of the animal's environment to foster the expression of normal behaviour and reduce the expression of abnormal behaviour and provide cognitive stimulation. The endpoint of enrichment should be to improve the biological functioning of the animal (Newberry, 1995).

Article 7.X.2.

Scope

This chapter addresses the welfare aspects of pig production systems. However, *captive wild* pigs are not considered.

Article 7.X.3.

Commercial pig production systems

Commercial pig production systems include:

1. Indoors

These are systems in which pigs are kept indoors, and are fully dependent on humans to provide for basic animal needs such as food and water. The type of housing depends on the environment, climatic conditions and management system. The animals may be kept in groups or individually.

2. Outdoors

These are systems in which pigs live outdoors with shelter or shade, have some autonomy over access to shelter or shade, and may be fully dependent on humans to provide for basic animal needs such as food and water. They are typically confined in paddocks according to their production stage.

3. Combination systems

These are systems in which pigs are managed in any combination of indoor and outdoor production systems, depending on weather or production stage.

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Article 7.X.4.

Criteria (or measurables) for the welfare of pigs

The following outcome-based criteria, specifically animal-based criteria, can be useful indicators of *animal welfare*. The use of these indicators and their appropriate thresholds should be adapted to the different situations in which pigs are managed. Consideration should also be given to the design of the systems. These criteria can be considered as a tool to monitor the efficiency of design and management, given that both of these can affect *animal welfare*.

1. Behaviour

Certain behaviours could indicate an *animal welfare* problem. These include changes of feed and water intake, altered locomotory behaviour and posture, altered lying time, altered respiratory rate and panting, coughing, shivering and huddling, increased agonistic behaviours and stereotypic, apathetic or other abnormal behaviours (e.g. tail biting).

Stereotypy is defined as a sequence of invariant motor acts, which provide no obvious gain or purpose for the animal. Some stereotypies commonly observed in pigs include sham chewing, tongue rolling, teeth grinding, bar biting and floor licking.

2. Morbidity rates

Infectious and metabolic diseases, lameness, peri-partum and post-procedural complications, injury and other forms of morbidity, above recognised thresholds, may be direct or indirect indicators of the *animal welfare* status of the whole *herd*. Understanding the aetiology of the disease or syndrome is important for detecting potential *animal welfare* problems. Mastitis and metritis, leg and hoof, and reproductive diseases are also particularly important animal health problems for pigs. Scoring systems, such as for body condition, lameness and injuries, provide additional information.

Both clinical examination and pathology should be utilised as indicators of disease, injuries and other problems that may compromise *animal welfare*.

3. Mortality and culling rates

Mortality and culling rates affect the length of productive life and, like morbidity rates, may be direct or indirect indicators of the *animal welfare* status. Depending on the production system, estimates of mortality and culling rates can be obtained by analysing the causes of *death* and culling and their temporal and spatial patterns of occurrence. Mortality and culling rates, and their causes, when known, should be recorded regularly, e.g. daily, and used for monitoring e.g. monthly, annually.

Necropsy is useful in establishing the cause of *death*.

4. Changes in body weight and body condition

In growing animals, body weight changes outside the expected growth rate, especially excessive sudden loss, are indicators of poor *animal welfare* and health.

In mature animals, body condition outside an acceptable range may be an indicator of compromised *animal welfare*, health and reproductive efficiency.

5. Reproductive efficiency

Reproductive efficiency can be an indicator of *animal welfare* and health status. Future performance of sows or gilts can be affected by under- or over-nutrition at different stages of rearing. Poor reproductive performance, compared with the targets expected for a particular breed or hybrid, can indicate *animal welfare* problems.

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Examples may include:

- low conception rates,
- high abortion rates,
- metritis and mastitis,
- low litter size,
- low numbers born alive,
- high numbers of stillborns or mummies.

6. Physical appearance

Physical appearance may be an indicator of *animal welfare* and health. Attributes of physical appearance that may indicate compromised welfare include:

- presence of ectoparasites,
- abnormal texture or hair loss,
- excessive soiling with faeces in indoor systems,
- swellings, injuries or lesions,
- discharges (e.g. from nose or eyes),
- feet and leg abnormalities,
- abnormal posture (e.g. rounded back, head low),
- emaciation or dehydration.

7. Handling response

Improper handling can result in fear and distress in pigs. Fear of humans may be an indicator of poor *animal welfare* and health. Indicators include:

- evidence of poor human-animal relationship, such as disturbed behaviour when being moved or when *animal handlers* enter a pen,
- animals slipping or falling during handling,
- injuries sustained during handling, such as bruising, lacerations and fractured legs,
- animals vocalising abnormally or excessively during restraint and handling.

8. Lameness

Pigs are susceptible to a variety of infectious and non-infectious musculoskeletal disorders. These disorders may lead to lameness and to gait abnormalities. Pigs that are lame or have gait abnormalities may have difficulty reaching food and water and may experience pain. Musculoskeletal problems have many causes, including genetic, nutrition, sanitation, floor quality, and other environmental and management factors. There are several gait scoring systems available.

9. Complications from common procedures

Some procedures such as surgical castration, tail docking, teeth clipping or grinding, tusk trimming, identification, nose ringing and hoof care are commonly performed in pigs to facilitate management, to meet market requirements and improve human safety and *animal welfare*.

However, if these procedures are not performed properly, *animal welfare* and health can be compromised.

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Indicators of such problems include:

- post-procedure *infection* and swelling,
- post-procedure lameness,
- behaviour indicating pain, fear and distress,
- morbidity, mortality and culling rates,
- reduced feed and water intake,
- post procedure body condition and weight loss.

Article 7.X.5.

Recommendations

Ensuring good welfare of pigs is contingent on several management factors, including system design, environmental management, and animal management practices which include responsible husbandry and provision of appropriate care. Serious problems can arise in any system if one or more of these elements are lacking.

Articles 7.X.6. to 7.X.26. provide recommendations for measures applied to pigs.

Each recommendation includes a list of relevant outcome-based measurables derived from Article 7.X.4.

This does not exclude other criteria being used where or when appropriate.

Article 7.X.6.

Housing

When new facilities are planned or existing facilities are modified, professional advice on design in regards to welfare and health of animals should be sought.

Housing systems and their components should be designed, constructed and regularly inspected and maintained in a manner that reduces the risk of injury, disease or stress for pigs. Facilities should to allow for the safe, efficient and humane management and movement of pigs.

There should be a separate area where sick and injured animals can be treated and monitored. When a separated space is provided, this should accommodate all the needs of the animal e.g. recumbent or lame animals or animals with severe wounds may require additional bedding or an alternative floor surface.

Pigs should not be tethered as part of their normal housing systems.

Good outcomes in the welfare and health of animals can be achieved in a range of housing systems. The design and management of the system are critical for achieving that.

Pigs are social animals and prefer living in groups, therefore housing systems where pregnant sows and gilts can be kept in groups are recommended.

Outcome-based criteria (or measurables): physical appearance (injuries), behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.7.

Personnel training

Pigs should be cared for by a sufficient number of personnel, who collectively possess the ability, knowledge and competence necessary to maintain the welfare and health of the animals.

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All people responsible for pigs should be competent through formal training or practical experience in accordance with their responsibilities. This includes understanding of and skill in animal handling, nutrition, reproductive management techniques, behaviour, *biosecurity*, signs of disease, and indicators of poor *animal welfare* such as stress, pain and discomfort, and their alleviation.

Outcome-based criteria (or measurables): handling response, physical appearance, behaviour, changes in body weight, body condition, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.8.

Handling and inspection

Pigs should be inspected at least once a day when fully dependent on humans to provide for basic needs such as food and water and to identify welfare and health problems.

Some animals should be inspected more frequently, for example, farrowing sows, new born piglets, newly weaned pigs and newly-mixed gilts and sows.

Pigs identified as sick or injured should be given appropriate treatment at the first available opportunity by competent *animal handlers*. If *animal handlers* are unable to provide appropriate treatment, the services of a *veterinarian* should be sought.

Recommendations on the handling of pigs are also found in Chapter 7.3. In particular handling aids that may cause pain and distress (e.g. electric goads) should be used only in extreme circumstances and provided that the animal can move freely. The use of electric prods should be avoided (see also point 3 of Article 7.3.8.), and in any case should not be used in sensitive areas including the udder, face, eyes, nose or ano-genital region.

Exposure of pigs to sudden movement or changes in visual contrasts should be minimised where possible to prevent stress and fear reactions. Pigs should not be handled aggressively (e.g. kicked, walked on top of, held or pulled by one front leg, ears or tail). Pigs that become distressed during handling should be attended to immediately.

Pigs should be restrained only for as long as necessary and only appropriate, well-maintained restraint devices should be used.

Outcome-based criteria (or measurables): physical appearance, behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.9.

Painful procedures

Some procedures such as surgical castration, tail docking, teeth clipping or grinding, tusk trimming, identification, and nose ringing are commonly performed in pigs. These procedures should only be performed to facilitate management, to meet market requirements and improve human safety and *animal welfare*.

These procedures have the potential to cause pain and thus should be performed in such a way as to minimise any pain and distress to the animal.

Options for enhancing *animal welfare* in relation to these procedures include the internationally recognised 'three Rs' which involves replacement (entire or immunocastrated males vs. castrated males), reduction (tail docking and teeth clipping only when necessary) and refinement (providing analgesia or anaesthesia).

Outcome-based criteria (or measurables): complications from common procedures, morbidity rates, mortality and culling rates, abnormal behaviour, physical appearance and changes in weight and body condition.

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Article 7.X.10.

Feeding and watering of animals

The amount of feed and nutrients pigs require in any management system is affected by factors such as climate, the nutritional composition and quality of the diet, the age, gender, size and physiological state of the pigs (e.g. pregnancy, lactation), and their state of health, growth rate, previous feeding levels and level of activity and exercise.

All pigs should receive adequate quantities of feed and nutrients each day to enable each pig to:

- maintain good health;
- meet its physiological demands; and
- avoid metabolic and nutritional disorders.

Feed and water should be provided in such a way as to prevent undue competition and injury.

Pigs should be fed a diet with sufficient fibrous feedstuffs in order to reduce as much as possible the occurrence of gastric ulcers (Hedde *et al.*, 1985).

All pigs should have access to an adequate supply of palatable water at a temperature that does not inhibit drinking and that meets their physiological requirements and is free from contaminants hazardous to pig health (Patience, 2013).

Outcome-based criteria (or measurables): changes in body weight and body condition, agonistic behaviour at feeding and watering places and abnormal behaviour such as tail biting, mortality and culling rates, and morbidity rates (gastric ulcers).

Article 7.X.11.

Environmental enrichment

Animals should be provided with an environment that provides complexity and cognitive stimulation (e.g. foraging opportunities, social housing) to foster normal behaviour, reduce abnormal behaviour and improve biological function.

Pigs should be provided with multiple forms of enrichment that aim to improve the welfare of the animals through the enhancement of their physical and social environments, such as:

- sufficient quantity of suitable materials to enable pigs to fulfil their innate needs to look for feed (edible materials), bite (chewable materials), root (investigable materials) and manipulate (manipulable materials) (Bracke *et al.*, 2006);
- social enrichment which involves either keeping pigs in groups or individually with visual, olfactory and auditory contact with other pigs;
- positive human contact (such as pats, rubs and talking).

Outcome-based criteria (or measurables): physical appearance (injuries), behaviour (stereotypies, tail biting), changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.12.

Prevention of abnormal behaviour

In pig production there are a number of abnormal behaviours that can be prevented or minimised with management procedures.

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Many of these problems are multifactorial and minimising their occurrence requires an examination of the whole environment and of several management factors. However some recommendations to reduce their occurrence include:

- 1) Oral stereotypies (e.g. bar biting, sham chewing, excessive drinking) in adult pigs can be minimised by providing environmental enrichment and increasing feeding time and satiety by increasing fibre content in the diet or foraging roughage (Robert *et al.*, 1997; Bergeron *et al.*, 2000).
- 2) Tail biting may be reduced by providing an adequate enrichment material and an adequate diet (avoiding deficiencies of sodium or essential amino-acids), and avoiding high stocking densities and competition for feed and water (Walker and Bilkei, 2005). Other factors to consider include animal characteristics (breed, genetics, gender) and social environment (*herd* size, mixing animals) (Schroder-Petersen and Simonsen, 2001; EFSA, 2007; Taylor *et al.*, 2010).
- 3) Belly nosing and ear sucking may be reduced by increasing the weaning age, and providing feed to piglets prior to weaning to avoid the abrupt change of feed (Marchant-Forde, 2009; Sybesma, 1981; Worobec, 1999).
- 4) Vulva biting may be reduced by minimising competition in accessing the feeding area (Bench *et al.*, 2013; Leeb *et al.*, 2001; Rizvi *et al.*, 1998).

Outcome-based criteria (or measurable): physical appearance (injuries), behaviour (abnormal behaviour), morbidity rates, mortality and culling rates, reproductive efficiency and changes in body weight and body condition.

Article 7.X.13.

Space allowance

Space allowance should be managed taking into account different areas for lying, standing and feeding. Crowding should not adversely affect normal behaviour of pigs and durations of time spent lying.

Insufficient and inadequate space allowance may increase stress, the occurrence of injuries and have an adverse effect on growth rate, feed efficiency, reproduction and behaviour such as locomotion, resting, feeding and drinking, agonistic and abnormal behaviour (Gonyou *et al.*, 2006; Ekkel, 2003; Turner, 2000).

1. Group housing

Floor space may interact with a number of factors such as temperature, humidity, floor type and feeding systems (Marchant-Forde, 2009; Verdon, 2015). All pigs should be able to rest simultaneously, and each animal lie down, stand up and move freely. Sufficient space should be provided to enable animals to have access to feed, water, to separate lying and elimination areas and to avoid aggressive animals.

If abnormal behaviour is seen, corrective measures should be taken, such as increasing space allowance and providing barriers where possible.

In outdoor systems where pigs have autonomy over diet selection, stocking density should be matched to the available feed supply.

Outcome-based criteria (or measurables): reduction or variation in body weight and body condition, increasing agonistic and abnormal behaviour such as tail biting, injuries, morbidity, mortality and culling rates, and physical appearance (e.g. presence of faeces on the skin).

2. Individual pens

Pigs must be provided with sufficient space so that they can stand up, turn around and lie comfortably in a natural position, and that provides for separation of dunging, lying and eating areas.

Outcome-based criteria (or measurables): increasing abnormal behaviour (stereotypies), morbidity, mortality and culling rates, and physical appearance (e.g. presence of faeces on the skin, injuries).

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3. Stalls (crates)

Stalls must be sized appropriately to allow pigs to:

- be able to stand up in their natural stance without contact with either side of the stall,
- stand up without touching the top bars,
- stand in a stall without simultaneously touching both ends of the stall,
- lie comfortably on their sides without disturbing neighbouring pigs.

Outcome-based criteria (or measurables): physical appearance (e.g. injuries), increasing abnormal behaviour (stereotypies), reproductive efficiency, lameness and morbidity, mortality and culling rates (e.g. piglets).

Article 7.X.14.

Flooring, bedding, resting surfaces

In all production systems pigs need a well-drained and comfortable place to rest.

Floor management in indoor production systems can have a significant impact on pig welfare (Temple *et al.*, 2012; Newton *et al.*, 1980). Flooring, bedding, resting surfaces and outdoor yards should be cleaned as conditions warrant, to ensure good hygiene, comfort and minimise risk of diseases and injuries. Areas with excessive faecal accumulation are not suitable for resting.

Floors should be designed to minimise slipping and falling, promote foot health, and reduce the risk of claw injuries.

If a housing system includes areas of slatted floor, the slat and gap widths should be appropriate to the claw size of the pigs to prevent injuries.

Slopes of the pens should allow water to drain and not pool in the pens.

In outdoor systems, pigs should be rotated between paddocks to ensure good hygiene and minimise risk of diseases.

If bedding is provided it should be suitable (e.g. hygienic, non-toxic) and maintained to provide pigs with a clean, dry and comfortable place on which to lie.

Outcome-based criteria (or measurables): physical appearance (e.g. injuries, presence of faeces on the skin, bursitis), lameness and morbidity rates (e.g. respiratory disorders, reproductive tract infections).

Article 7.X.15.

Air quality

Good air quality and ventilation are important for the welfare and health of pigs and reduce the risk of respiratory discomfort and diseases. Dust, micro-organisms and noxious gases, including ammonia, hydrogen sulphide, and methane, can be problematic in indoor systems due to decomposing animal waste (Drummond *et al.*, 1980).

Air quality is influenced strongly by management and building design in housed systems. Air composition is influenced by stocking density, the size of the pigs, flooring, bedding, waste management, building design and ventilation system (Ni *et al.*, 1999).

Proper ventilation is important for effective heat dissipation in pigs and to prevent the build-up of effluent gases (e.g. ammonia and hydrogen sulphide), including those from manure and dust in the housing unit. The ammonia level in enclosed housing should not exceed 25 ppm. A useful indicator is that if air quality is unpleasant for humans it is also likely to be a problem for pigs.

Outcome-based criteria (or measurables): morbidity, mortality and culling rates, behaviour (especially respiratory rate or coughing), reductions in weight and body condition.

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Annex 7 (contd)

Appendix VII (contd)

Article 7.X.16.

Thermal environment

Although pigs can adapt to different thermal environments particularly if appropriate breeds are used for the anticipated conditions, sudden fluctuations in temperature can cause heat or cold stress.

1. Heat stress

Heat stress is a serious problem in pig production. It can cause significant reductions in weight gain and fertility, or sudden death (Werremann and Bazer, 1985).

The risk of heat stress for pigs is influenced by environmental factors including air temperature, relative humidity, wind speed, stocking density, shade and wallow availability in outdoor systems, animal factors including breed, age and body condition (Heitman and Hughes, 1949; Quiniou and Noblet, 1999).

Animal handlers should be aware of the risk that heat stress poses to pigs and of the thresholds in relation to heat and humidity that may require action. If the risk of heat stress reaches too high levels the *animal handlers* should institute an emergency action plan that gives priority to access to additional water and could include provision of shade and wallows in outdoor systems, fans, reduction of stocking density and provision of cooling systems as appropriate for the local conditions.

Outcome-based criteria (or measurables): behaviour (feed and water intake, respiratory rate, panting, agonistic behaviour), physical appearance (presence of faeces on the skin), morbidity, mortality and culling rates, and reproductive efficiency.

2. Cold stress

Protection from cold should be provided when these conditions are likely to create a serious risk to the welfare of pigs, particularly in neonates and young pigs and others that are physiologically compromised (e.g. ill animals). This can be provided by extra bedding, heat mats or lamps and natural or man-made shelters in outdoor systems (Blecha and Kelley, 1981).

Outcome-based criteria (or measurables): morbidity, mortality and culling rates, physical appearance (long hair, piloerection), behaviour (especially abnormal postures, shivering and huddling) and changes in body weight and body condition.

Article 7.X.17.

Noise

Pigs are adaptable to different levels and types of noise. However, exposure of pigs to sudden or loud noises should be minimised where possible to prevent stress and fear reactions. Ventilation fans, feeding machinery or other indoor or outdoor equipment should be constructed, placed, operated and maintained in such a way that they cause the least possible amount of noise (Algers and Jensen, 1991).

Outcome-based criteria (or measurables): behaviour (e.g. fleeing and vocalisation), physical appearance (e.g. injuries), reproductive efficiency, changes in body weight and body condition.

Article 7.X.18.

Lighting

Indoor systems should have light levels sufficient to allow all pigs to see one another, to investigate their surroundings visually and to show other normal behaviour patterns and to be seen clearly by staff to allow adequate inspection of the pigs. The lighting regime shall be such as to prevent health and behavioural problems. It should follow a 24-hour rhythm and include sufficient uninterrupted dark and light periods, preferably no less than 6 hours for both.

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A minimum of 40 lux of lighting is recommended for a minimum of 6 hours per day (Martelli *et al.*, 2005; Taylor *et al.*, 2006).

Artificial light sources should be located so as not to cause discomfort to the pigs.

Outcome-based criteria (or measurable): behaviour (locomotive behaviour), morbidity rates, reproductive efficiency, physical appearance (injuries) and changes in body weight and body condition.

Article 7.X.19.

Farrowing and lactation

Sows and gilts need time to adjust to their farrowing accommodation before farrowing. Nesting material should be provided where possible some days before farrowing (Yun *et al.*, 2014). Sows should be observed frequently around their expected farrowing times. As some sows and gilts need assistance during farrowing, there should be sufficient space and competent staff.

Outcome-based criteria (or measurables): mortality and culling rates (piglets), morbidity rates (metritis and mastitis), behaviour (stereotypies), reproductive efficiency, physical appearance (injuries).

Article 7.X.20.

Weaning

Weaning can be a stressful time for sows and piglets and good management is required. Problems associated with weaning are generally related to the piglet's size and physiological maturity. Early weaning systems require good management and nutrition of the piglets.

An average weaning age of three weeks or older is recommended (Worobec *et al.*, 1999).

Regardless of age, low weight piglets require additional care and can benefit from being kept in small groups in specialised pens until they are able to be moved to the common nursery area.

Newly weaned pigs are susceptible to disease challenges, so adherence to high-level hygiene protocols is important. The area that piglets are weaned into should be clean and dry.

All newly weaned pigs should be monitored during the first two weeks after weaning for any signs of ill-health.

Outcome-based criteria (or measurable): mortality and culling rates (piglets), morbidity rates (respiratory disease, diarrhoea), behaviour (belly nosing and ear sucking), physical appearance (injuries) and changes in body weight and body condition.

Article 7.X.21.

Mixing

Mixing of unfamiliar pigs can result in fighting to establish a dominance hierarchy, and therefore mixing should be minimised as much as possible (Moore *et al.*, 1994; Fabrega *et al.*, 2013). When mixing, strategies to reduce aggression and injuries should be implemented and animals should be supervised.

Measures to prevent excessive fighting and injuries can include (Arey and Edwards, 1998):

- providing additional space and a non-slippery floor,
- feeding before mixing,
- feed on the floor in the mixing area,
- provision of straw in the mixing area,

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- providing opportunities to escape and to hide from other pigs, such as visual barriers,
- mix previously familiarised animals whenever possible,
- young animals should be mixed as soon after weaning as possible,
- avoid adding one or small number of animals to a large established group.

Outcome-based criteria (or measurables): mortality, morbidity and culling rates, behaviour (agonistic), physical appearance (injuries), changes in body weight and body condition and reproductive efficiency.

Article 7.X.22.

Genetic selection

Welfare and health considerations should balance any decisions on productivity and growth rate when choosing a breed or hybrid for a particular location or production system.

Selective breeding can improve the welfare of pigs for example by selection to improve maternal behaviour, piglet viability, temperament and resistance to stress and disease and to reduce tail biting and aggressive behaviour (Turner *et al.*, 2006).

Outcome-based criteria (or measurable): physical appearance, behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness, and morbidity, mortality and culling rates.

Article 7.X.23.

Protection from predators

In outdoor and combination systems pigs should be protected from predators.

Outcome-based criteria (or measurable): morbidity, mortality and culling rates, behaviour, and physical appearance (injuries).

Article 7.X.24.

Biosecurity and animal health1. Biosecurity and disease prevention

Biosecurity plans should be designed, implemented and maintained, commensurate with the best possible *herd* health status, available resources and infrastructure, and current disease risk and, for *listed diseases* in accordance with relevant recommendations in the *Terrestrial Code*.

These *biosecurity plans* should address the control of the major sources and pathways for spread of pathogen agents:

- pigs, including introductions to the *herd*,
- young animals coming from different sources,
- other domestic animals, *wildlife*, and pests,
- people, including sanitation practices,
- equipment, tools and facilities,
- *vehicles*,
- air,
- water supply, feed and bedding,
- manure, waste and disposal of dead animals,
- semen.

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Outcome-based criteria (or measurables): morbidity, mortality and culling rates, reproductive efficiency, changes in weight and body condition, physical appearance (signs of disease).

a) Animal health management

Animal health management should optimise the physical and behavioural health and welfare of the pig herd. It includes the prevention, treatment and control of diseases and conditions affecting the herd (in particular respiratory, reproductive and enteric diseases).

There should be an effective programme for the prevention and treatment of diseases and conditions, formulated in consultation with a *veterinarian*, when appropriate. This programme should include the recording of production data (e.g. number of sows, piglets per sow per year, feed conversion, and body weight at weaning), morbidity, mortality and culling rate and medical treatments. It should be kept up to date by the *animal handler*. Regular monitoring of records aids management and quickly reveals problem areas for intervention.

For parasitic burdens (e.g. endoparasites, ectoparasites and protozoa), a programme should be implemented to monitor, control and treat, as appropriate.

Lameness can be a problem in pigs. *Animal handlers* should monitor the state of feet and legs and take measures to prevent lameness and maintain foot and leg health.

Those responsible for the care of pigs should be aware of early specific signs of disease or distress, such as coughing, abortion, diarrhoea, changes in locomotory behaviour or apathetic behaviour, and non-specific signs such as reduced feed and water intake, changes in weight and body condition, changes in behaviour or abnormal physical appearance.

Pigs at higher risk will require more frequent inspection by *animal handlers*. If *animal handlers* suspect the presence of a disease or are not able to correct the causes of disease or distress, they should seek advice from those having training and experience, such as *veterinarians* or other qualified advisers, as appropriate.

Non-ambulatory pigs should not be transported or moved unless absolutely necessary for treatment or diagnosis. Such movements should be done carefully using methods that avoid dragging the animal or lifting it in a way that might exacerbate injuries.

Animal handlers should also be competent in assessing fitness to transport, as described in Chapter 7.3.

In case of disease or injury, when treatment has failed or recovery is unlikely (e.g. pigs that are unable to stand up, unaided or refuse to eat or drink), the animal should be humanely killed as soon as possible in accordance with Chapter 7.6.

Outcome-based criteria (or measurable): morbidity, mortality and culling rates, reproductive efficiency, behaviour (apathetic behaviour), lameness, physical appearance (injuries) and changes in body weight and body condition.

b) Emergency plans for disease outbreaks

Emergency plans should cover the management of the farm in the event of an emergency disease outbreak, consistent with national programmes and recommendations of *Veterinary Services* as appropriate.

Article 7.X.25.

Emergency plans

Where the failure of power, water and feed supply systems could compromise *animal welfare*, pig producers should have contingency plans to cover the failure of these systems. These plans may include the provision of fail-safe alarms to detect malfunctions, back-up generators, contact information for key service providers, ability to store water on farm, access to water cartage services, adequate on-farm storage of feed and an alternative feed supply.

[Annex 30](#) (contd)

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[Appendix VII](#) (contd)

Preventive measures for emergencies should be input-based rather than outcome-based. Contingency plans should be documented and communicated to all responsible parties. Alarms and back-up systems should be checked regularly.

Article 7.X.26.

Disaster management

Plans should be in place to minimise and mitigate the effect of disasters (e.g. earthquake, fire, flooding, blizzard and hurricane). Such plans may include evacuation procedures, identifying high ground, maintaining emergency feed and water stores, destocking and humane *killing* when necessary.

Humane *killing* procedures for sick or injured pigs should be part of the disaster management plan.

Reference to emergency plans can also be found in Article 7.X.25.

Article 7.X.27.

Euthanasia (Humane killing)

Allowing a sick or injured animal to linger unnecessarily is unacceptable. Therefore, for sick and injured pigs a prompt diagnosis should be made to determine whether the animal should be treated or humanely killed.

The decision to kill an animal humanely and the procedure itself should be undertaken by a competent person.

Reasons for humane *killing* may include:

- severe emaciation, weak pigs that are non-ambulatory or at risk of becoming non-ambulatory,
- non-ambulatory pigs that will not stand up, refuse to eat or drink, have not responded to therapy,
- rapid deterioration of a medical condition for which therapies have been unsuccessful,
- severe, debilitating pain,
- compound fracture,
- spinal injury,
- central nervous system disease,
- multiple joint *infections* with chronic weight loss,
- piglets that are premature and unlikely to survive, or have a debilitating congenital defect, and
- as part of disaster management response.

For a description of acceptable methods for humane *killing* of pigs see Chapter 7.6.

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Annex 7 (contd)

Appendix VII (contd)

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Annex 30 (contd)

Annex 8

**Comments by the Animal Welfare Working Group (AWWG) on draft chapter 7.X.
“Animal Welfare and Pig Production Systems”**

The AWWG congratulates the *ad hoc* group for excellent work on this draft chapter and offers the following suggestions.

1. The text contains a great deal of good advice, but as with previous OIE standards for production systems, there are relatively few actual criteria that would allow an assessment of whether or not an operation complies with the standard. The draft chapter does contain several such criteria including (1) that ammonia in the air should not exceed 25 ppm, (2) the various performance requirements for the size of stalls, (3) the requirements listed for biosecurity plans, and (4) the requirement that all pigs have room to rest simultaneously. In many sections, however, guidance is so general that there are no criteria that could be used to determine compliance. The AWWG realizes that creating specific criteria is often impossible, but encourages the *ad hoc* group to include such criteria wherever the science and professional experience would allow.
 2. In addition to listing animal-based measures, it would be useful, wherever possible, to have values that should trigger corrective action, for example if the rate of neonatal mortality rises above a certain value, or if more than a certain percentage of sows show signs of lameness. This would provide value to the list of animal-based measures which, in their current form, provide little or no guidance on what levels are fully acceptable, what levels are unacceptable, and what levels should trigger corrective action.
 3. The most contentious issue will be the use of individual stalls for pregnant sows. The current text recommends moving toward group housing, but the AWWG would like to suggest a few sentences to flesh out this idea, perhaps noting (1) that there is a strong movement toward group housing in many countries, and (2) that group housing requires a different set of management skills to prevent aggression, bullying and uneven food distribution. The text might then recommend that because of the widespread shift to group housing, countries should take steps now to facilitate a successful move toward group housing by supporting the research and training that will allow the change to be positive for animal welfare.
 4. Finally, in article X.7, the *ad hoc* group might consider clarifying the references to “prods” and “goads”. The text seems to say that electric *goads* “should be used only in extreme circumstances” and later that the use of electric *prods* “should be avoided”. The mixture of advice, and the reference to both “goads” and “prods”, might create confusion.
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Annex 30 (contd)Annex 9

World Organisation for Animal Health (OIE) Global Animal Welfare Strategy

[Draft of June 2016]

Introduction

Animal welfare is closely linked to animal health, the health and well-being of people, the sustainability of socio-economic and ecological systems.

Animal welfare is a shared responsibility between governments, communities, the people who own, care for and use animals, animal welfare organisations, educational institutions, veterinarians and scientists. Mutual recognition and constructive engagement among parties are necessary to achieve sustained improvements to animal welfare.

As an international organisation with a 90-year history and 180 member countries, the OIE has a long-established role in setting global standards for animal health, in dissemination of information, in helping countries to develop state veterinary services, and in fostering international cooperation. Since 2001 these and other activities have enabled the OIE to make a unique global leadership contribution to advancing animal welfare, at the request of its member countries.

The OIE Global Animal Welfare Strategy has been created to provide continuing direction and coordination of the organisation's actions in this important field.

Vision

The OIE Global Animal Welfare Strategy was created with the following vision:

A world where the welfare of animals is respected, promoted and advanced, in ways that complement the pursuit of animal health, human well-being, socio-economic development and environmental sustainability.

Elements

The OIE Global Animal Welfare Strategy is based on the following four elements:

- Development of animal welfare standards
- Capacity building and education
- Communication with governments, organizations and the public
- Implementation of animal welfare standards and policies

1. *Development of animal welfare standards*

The OIE develops global animal welfare standards that are drafted by international experts based on relevant scientific research and practical experience, and reviewed by member countries and key international stakeholders to ensure global applicability. Wherever possible, standards are based on achieving good animal welfare outcomes rather than prescribing design criteria.

The OIE cooperates with relevant specialist organizations in setting mutually recognized standards.

2. *Capacity building and education*

- The OIE helps member countries to strengthen their state veterinary services to ensure capacity to implement animal welfare standards.
- It conducts training activities for country delegates and National Animal Welfare Focal points.
- It develops and disseminates materials for animal welfare training and capacity building directed at all those who care for animals.
- It supports the inclusion of animal welfare in curricula for veterinarians, veterinary para-professionals and students of animal agriculture.

Annex 30 (contd)Annex 9 (contd)3. *Communication with governments, organizations and the public*

- The OIE develops communication programmes to provide accurate, accessible and timely information on animal welfare to governments, the agri-food sector, veterinarians and other professionals including farmers.
- It communicates with governments, non-governmental organizations and the private sector to foster awareness of the OIE animal welfare standards.
- It makes information available to the general public to improve awareness of animal welfare issues and developments.

4. *Implementation of animal welfare standards and policies*

- The OIE supports member countries in policy development and governance related to animal welfare through advice, policy research and policy analysis.
- It makes recommendations to member countries on the inclusion of animal welfare in national legislation and on implementing animal welfare standards.
- It works with relevant international organizations to ensure that private or commercial animal welfare standards are consistent with OIE standards.

Methods1. *Animal Welfare Working Group*

The Animal Welfare Working Group (AWWG) of the OIE is appointed by the Director General and typically consists of a member from each OIE region together with a member from the global animal welfare movement and the global animal-source food sector. Members are chosen to provide a wide range of scientific and practical expertise on animal welfare together with regional perspectives.

The AWWG:

- recommends priorities for additional standards, educational programmes, and other activities;
- provides overall guidance on the content of standards, publications, conferences and other activities related to animal welfare;
- recommends when draft standards are ready for consideration by member countries;
- helps to identify sources of expertise for *ad hoc* groups, educational programmes and other activities;
- reviews the performance of the Regional Animal Welfare Strategies and Collaborating Centres;
- identifies new scientific knowledge relevant to OIE activities and seeks independent scientific advice as necessary;
- reviews and updates this Global Strategy as needed.

2. *Ad hoc Groups*

Tasks requiring specialised expertise, especially the drafting of standards, are typically undertaken by *ad hoc* Groups assembled for the specific purposes. *ad hoc* Groups related to animal welfare are appointed by the Director General with advice from the AWWG.

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Annex 9 (contd)

3. *Collaborating Centres*

The OIE has designated a small number of Collaborating Centres on Animal Welfare which provide specific services and expertise to the Animal Welfare Working Group, OIE Headquarters, Regional Commissions and member countries. Collaborating Centres normally provide expertise on one or more designated topics such as certain types of animals (e.g., laboratory animals), specific activities (e.g., transport, slaughter) or other topics (e.g., animal welfare education).

4. *National Animal Welfare Focal Points*

The OIE, with the support of its member countries, has established National Animal Welfare Focal Points. These individuals, working through the official delegate of their country and according to agreed terms of reference:

- communicate with in-country animal welfare experts,
- communicate with the country's Competent Authority(ies) for animal welfare,
- communicate with relevant national non-governmental organisations,
- receive and share relevant information with the OIE, with stakeholders in own their countries and OIE region, and with other National Animal Welfare Focal Points,
- conduct in-country consultation on animal welfare issues and texts, and
- facilitate the implementation of animal welfare standards and training.

They may also have roles relating to their Regional Animal Welfare Strategy.

5. *Regional Animal Welfare Strategies*

The OIE, with the support of its Regional Commissions, is developing Regional Animal Welfare Strategies. These are intended to further and apply this Global Strategy within the context of their specific region. They:

- promote understanding and awareness of animal welfare in the region through communication, education and training;
 - guide member countries in implementing animal welfare standards, and harmonise implementation across the region;
 - provide a forum for developing animal welfare policies and activities appropriate to the Region;
 - facilitate cooperation among member countries and other organisations in promoting animal welfare in the region;
 - facilitate the inclusion of animal welfare in veterinary and animal science curricula in the region;
 - ensure that new knowledge and developments in animal welfare are broadly communicated in the region;
 - identify possible research and development needs and priorities.
-

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DRAFT

Article 7.1.5

Guiding principles for the use of animal-based measures (Proposed revision, 2016)

Because the OIE animal welfare standards are designed to apply to animal production and handling around the world, they emphasize good outcomes for the animals rather than identical features of the animals' environment and management. Outcomes are generally assessed by *animal-based measures* such as low mortality rate, low prevalence of injuries, ability to move freely, positive human-animal relationship, and a low incidence of aggression and stereotyped behaviour.

1. The general principles listed in Article 7.1.4 identify key aspects of animal welfare that should be included in animal welfare standards. For each principle, the most relevant measures, ideally animal-based measures, should be identified in the standard. Because many poor welfare outcomes (high mortality, high prevalence of lameness) are of multifactorial origin, a given animal-based measure may reflect more than one principle.
2. In some cases, the selection of animal-based measures will depend on the farming system. For example, assessing the human-animal relationship may require different measures in extensive outdoor systems compared to indoor systems. Therefore, for a same principle, end-users of the standard should select the most appropriate animal-based measure(s) for their farming system or conditions, from among those listed in the standard.
3. In order to be meaningful, standards should, wherever possible, give explicit targets or thresholds that should be met. For example, standards might specify that no more than 5% of animals should be lame, or that no animals should have a body condition score less than 2.
4. Such target values should be based on science where available, combined with the experience of experts. Internationally applicable targets are preferable, but realistic targets for many animal-based measures will vary depending on local conditions and production systems. For example, the rate of lameness or neo-natal mortality that is achievable in one system or climate may be unachievable in another. Therefore, end-users of standards will often need to adopt target values suited to local production systems based on data from bench-marking and similar studies. In such cases the OIE standard essentially serves as a framework which end-users need to adapt to local conditions by setting appropriate target values. To guide end-users of the standard, managers should be encouraged to collect data that can be used to set locally relevant target values and provide end-users with feed-back.
5. In addition to animal-based measures, many animal welfare standards also include *resource-based measures* such as space allowance, air quality, and non-slip flooring, and *management-based measures* such as frequency of feeding, use of pain management, and prohibition of tail-docking. In cases where a welfare outcome is clearly linked to a resource such as inadequate space, or to a management procedure such as pain mitigation, then OIE standards may use resource-based or management-based requirements on the basis of science combined with professional experience.



Organisation
Mondiale
de la Santé
Animale

World
Organisation
for Animal
Health

Organización
Mundial
de Sanidad
Animal

Annex 31

Original: English
March 2016

REPORT OF THE OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

The OIE *ad hoc* Group on Animal Welfare and Pig Production Systems (the *ad hoc* Group) met at the OIE Headquarters on 22–24 March 2016.

The members of the *ad hoc* Group and other participants at the meeting are listed at Annex I. The adopted agenda is at Annex II.

Dr Derek Belton, Head of the Trade Department of the OIE, welcomed all members and thanked them for their agreement to work with the OIE on this topic. Dr Belton commented to the *ad hoc* Group that the development by the OIE of animal welfare standards relevant to livestock production systems is a key component of the OIE's animal welfare programme. Dr Belton emphasised that this topic is of great interest to OIE Member Countries and many organisations that are associated with the OIE.

Dr Belton reminded members that in developing their recommendations the diverse conditions relevant to all 180 OIE Members should be taken into account. Dr Belton explained the procedure of adoption of OIE standards. The report of the meeting will be submitted to the OIE Animal Welfare Working Group (AWWG) for comments and will be presented to the Terrestrial Animal Health Standards Commission (Code Commission). The full report of the Code Commission (including the report of the *ad hoc* Group on Pig Production Systems) will then be submitted to OIE Members for comments. Dr Leopoldo Stuardo stressed that OIE standards should be flexible, not prescriptive, and they should be science-based and outcome focused. It is important to list relevant scientific references in the report as science is the unique common denominator for OIE Members. Dr Belton confirmed that the development of OIE standards is normally based on a two-year cycle and indicated that the OIE would probably reconvene the *ad hoc* Group at the beginning 2017 to review Member Countries' and Code Commission comments on the Group's report.

1. Introduction

After the formal presentation of each of the member of the Group and from the OIE staff, Dr Stuardo informed that Professor Wang Lixian sent his apologies for absence from the meeting due to administrative problems. Dr Stuardo confirmed that he will continue to be a member of the Group and that OIE will send him the report and the draft chapter for comments.

Dr Birte Broberg, Chair of the *ad hoc* Group, thanked the OIE for the opportunity to work on this very important topic for the pig industry, and noted the need for relevant international guidelines on this subject.

2. Confirmation of the Terms of Reference (ToR) and discussion of working documents and other relevant documents provided

Dr Stuardo indicated that the proposed terms of reference were based on the model prepared by the AWWG and the *ad hoc* Group on Animal Welfare and Livestock Production Systems, which have been used to guide the development of all of adopted animal welfare in livestock production systems chapters.

Dr Broberg indicated that the ToR is broad and give the necessary flexibility to develop the proposed new chapter. The Group agreed to use the proposed ToR to develop the requested chapter.

The terms of reference for the *ad hoc* Group are presented in Annex III.

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Dr Broberg noted that the Group has received a significant number of documents from the members of the Group and from the OIE Headquarters, including one from the International Coalition for Animal Welfare (ICFAW), sent to the OIE by Dr Peter Thornber, member of the AWWG representing World Animal Protection.

The Group agreed that there is useful information in most of the documents, but different realities should be taken into account when developing the recommendations.

The discussion paper on the development of animal welfare guidelines for production systems (terrestrial animals), the Recommendations to the OIE in Developing Guidelines on Animal Welfare in Livestock Production Systems and other relevant documents presented during the meeting are provided in Annexes IV, V and VI respectively.

3. Development of the draft new standard

Dr Bierte Broberg noted at the beginning of the discussion that the various pig production systems used around the world have different unique specificities. In this respect, the group discussed how to structure the new chapter and decided to make a common chapter for all production systems and indicate the differences for specific systems as necessary.

The *ad hoc* Group agreed that outcome-based criteria or measurables may give a better indication of animal welfare than input design criteria because they reflect the complex interaction of multiple design inputs. Documents submitted by the members of the *ad hoc* Group were discussed.

When the Group discussed the recommendations on common procedures conducted in pig production systems, they agreed there are a range of practices that should be considered beyond the current topical issue of tail docking.

A draft new chapter for the *Terrestrial Animal Health Code (Terrestrial Code)* was developed during the meeting and can be found in Annex VII.

The draft new chapter is structured along the following lines:

- a) definition of pig production systems, management and environmental enrichment;
- b) scope of the recommendations;
- c) description of existing pig production systems;
- d) identification and brief description of relevant 'outcome-based criteria or measurables';
- e) recommendations for measures applied to pigs;
- f) references.

The Group agreed that the trend away from the use of gestation crates and toward management of pregnant sows in groups should be taken into account in the on-going development of animal welfare recommendations for pig production systems.

4. Review and finalise the report of the meeting

The *ad hoc* Group agreed to complete their meeting report and draft standard by April 2016 for submission to the June AWWG meeting.

5. Next meeting

It was agreed that the next meeting will take place after receipt of comments on the report of the September 2016 Code Commission meeting, most probably in March 2017.

.../Annexes

Annex 31 (contd)Annex I**OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS****Paris, 22–24 March 2016**

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Annex 31 (contd)

Annex II

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

Adopted agenda

1. Welcome and introduction – Dr Derek Belton
 2. Introduction of members – Background and representation
 3. Confirmation of Terms of Reference and comments from the Chair of the *ad hoc* Group
 4. Discussion of working documents and other relevant documents provided by the members of the *ad hoc* Group
 5. Development standards
 6. Review and finalise report of meeting
-

Annex 31 (contd)Annex III

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

Background and Terms of Reference

Background

Animal welfare was first identified as a priority in the OIE Strategic Plan 2001–2005. OIE Member Countries mandated the organisation to take the lead internationally on animal welfare and, as the international reference organisation for animal health, to elaborate recommendations and guidelines covering animal welfare practices, reaffirming that animal health is a key component of animal welfare.

The standards setting procedure of the OIE

The OIE develops standards through the work of expert *ad hoc* Groups that are convened to develop draft texts for the OIE *Terrestrial Animal Health Code* (*Terrestrial Code*). The draft texts are normally reviewed by the OIE Animal Welfare Working Group (AWWG), which provides recommendations to the OIE Terrestrial Animal Health Standards Commission (the Code Commission). Following review by the Code Commission, draft texts are sent to OIE Member Countries for comment. After two rounds of comments, a draft text may be proposed for adoption in the *Terrestrial Code*, in accordance with the democratic and transparent standard setting procedures of the OIE, at the World Assembly of Delegates which is held each year in May. Reports of *ad hoc* groups on animal welfare are normally released to the public as annexes to reports of the Code Commission. The Code Commission meets in February and September every year and its reports (in English, French and Spanish) are placed on the OIE Internet site after the meetings (normally in March and October).

Animal Welfare and livestock production systems

In May 2005, the OIE World Assembly of Delegates endorsed the proposals of the AWWG for the animal welfare priorities for 2005/2006. Among those priorities was the development of animal welfare guidelines for terrestrial animal production systems.

In April 2008, the OIE *ad hoc* Group on Animal Welfare and Livestock Production Systems proposed that the OIE develops guidelines based on species, with specific production sectors to be considered separately. The OIE was requested to focus on commercial scale production and particularly on products traded internationally. It was also suggested that the guidelines for a particular species should address all currently used production systems (e.g. extensive, intensive and mixed) and management procedures, in order to cover all practices used in the 180 Member Countries.

In 2009, and based on the priorities raised by the *ad hoc* Group on Animal Welfare and Livestock Production Systems, the OIE started a process to draft standards on animal welfare on animal production systems. At this moment, three OIE standards on animal production systems have been adopted: broiler chickens, beef cattle and dairy cattle.

As a consequence on the discussion during the adoption of the above mentioned standards, notably in relation to the inclusion of specific animal welfare measurables, it was agreed to develop some general principles for animal welfare and livestock production systems. These general principles were adopted in May 2012, as a new Article 7.1.4. “General principles for the welfare of animals in livestock production systems” of Chapter 7.1. of the *Terrestrial Code*.

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Annex III (contd)

Terms of Reference

Taking into account:

- The background history of the OIE regarding animal welfare and production systems;
- The discussion paper on the “Development of animal welfare guidelines for production systems”, written by the AWWG in 2006;
- The recommendations of the OIE *ad hoc* Group on Animal Welfare and Livestock Production in 2008, and
- The existing animal welfare and animal health standards in the *Terrestrial Code*, in particularly the Chapter 7.1, Article 7.1.2 on the “Guiding Principles for animal welfare” and Article 7.1.4 on the “General Principles for the welfare of animals in livestock production” (http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm).

The *ad hoc* Group is asked to elaborate draft animal welfare standards for pig production systems, (intensive, extensive and semi-intensive) for eventual inclusion in the *Terrestrial Code*. These standards should cover inter alia:

- appropriate definitions and scope;
- housing;
- feeding and watering of the animals;
- environmental considerations;
- management of endemic diseases;
- prevention of major infectious diseases (biosecurity) and planning for managing disease outbreaks (including emerging diseases);
- emergency management plans (e.g. disease outbreak, failure of electrical systems, fire, etc.);
- handling facilities (on farm only – transport and slaughter are covered elsewhere in the *Terrestrial Code*);
- management practices (e.g. castration, tail docking, teeth trimming, and nose ringing);
- breeding;
- farrowing;
- personnel training;
- protection from predators.

These standards must:

- be based on science (scientific references must be provided);
- harmonised in their structure with the rest of the *Terrestrial Code*, including the other animal welfare and production systems chapters;
- use criteria that address the outcome at the animal level (animal-based).

In developing these standards, the *ad hoc* Group should review relevant resource materials, including extracts from the *Terrestrial Code*, reports from AWWG and other *ad hoc* group meetings and examples of existing practices from all five OIE Regions. A draft document is expected after the first meeting and will be submitted to the AWWG, the Code Commission and OIE Member Countries, for comments, to be addressed by the *ad hoc* Group in a second meeting.

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Discussion paper on the development of animal welfare guidelines for production systems (terrestrial animals)

(Developed by the OIE Animal Welfare Working Group, 2006)

Background

The OIE International Committee in May 2005 endorsed the proposals of the Animal Welfare Working Group for priorities for 2005/2006. Among those priorities was the development of animal welfare guidelines for terrestrial animal production systems.

The development of global OIE animal welfare guidelines for production systems will be challenging for a number of reasons. Worldwide, animals are raised under extremely diverse conditions ranging from intensive systems with animals kept permanently indoors, to extensive systems with little or no housing. These different systems involve very different animal welfare challenges. There are also large differences from country to country in the level of priority accorded to the welfare of food animals.

Nonetheless, because of the close link between animal welfare and animal health, guidelines designed to improve animal welfare will often lead to better animal health, productivity and food safety. Especially in cases where these relationships can be clearly demonstrated, animal welfare guidelines may be broadly acceptable to Member Countries.

This discussion paper sets out some of the key issues that need to be considered in developing animal welfare guidelines for production systems, and suggests next steps in this area.

Animal-based and resource-based criteria

Animal welfare guidelines may include (1) animal-based criteria and (2) resource-based criteria of animal welfare. Resource-based criteria (also called design criteria or input criteria) indicate the resources that should be provided. These often specify space allowances and dimensions, ambient temperature range, humidity, condition of the litter, air quality, availability of feed and water, frequency of inspection, and biosecurity and sanitation measures. Animal-based criteria (also called performance criteria or output criteria) are described/specified in terms of the animals' state. They often include such elements as survival rate, incidence of disease and injury, body condition scoring, the ability of animals to behave in certain ways, and the reaction of animals to their handlers.

Resource-based criteria are widely used in animal welfare assurance programmes because they are often easier to evaluate and score than animal-based criteria. However, they have important limitations:

- Resource-based criteria are generally derived from research carried out with specific species/breeds and production systems, and they may not be applicable to other breeds and other production systems. For example, a space allowance that minimises crowding-related problems in light hybrid hens in battery cages may not apply to other breeds or to other housing systems.
- The welfare of animals is strongly influenced by the skill and attitude of animal handlers, and it is difficult to develop and implement resource-based criteria to describe these elements.
- Resource-based criteria are often created in response to well researched problems such as over-crowding and air quality, and they may not apply to new or emerging problems such as new diseases or genetic modifications of the animals.

Perhaps because of these limitations, research shows that animal production units that conform to the same resource-based criteria may still have widely varying animal welfare outcomes.

Annex 31 (contd)Annex IV (contd)

Animal-based criteria are not as widely used in existing animal welfare standards but they should, in principle, be applicable to any production system. In fact animal-based criteria may provide a better measure of the animal welfare outcomes because they reflect the influence of variables (e.g. experience and attitude of handlers, presence of emerging diseases) that may be missed by resource-based criteria. However, many animal welfare concerns are difficult to address using animal-based criteria. Examples include the capacity of the ventilation system to prevent extreme temperatures, the use of pain mitigation for surgical procedures, and the implementation of appropriate biosecurity measures.

A reasonable approach, therefore, would be for the OIE to incorporate animal-based criteria in its guidelines where feasible and to supplement these with resource-based criteria where there is a good scientific basis for doing so. Thus, for example, animal welfare guidelines for chickens might specify certain levels of survival and freedom from disease and injury (animal-based criteria) and would also recommend requirements for ambient temperature, humidity, air quality and litter quality (resource-based criteria) for birds that are kept indoors.

Clarifying the objectives of animal welfare guidelines

Animal welfare guidelines are generally designed to achieve one or more of three objectives:

- 1) to protect the basic health and normal functioning of animals, for example by preventing and alleviating disease, injury, malnutrition and similar harm;
- 2) to protect the psychological well-being of animals, for example by preventing and alleviating pain, fear, distress and discomfort;
- 3) to provide living conditions that are considered to be 'natural' for the species, for example by providing a social and physical environment where animals can perform key elements of their natural behaviour.

The three objectives overlap. For example, preventing injury is important for psychological well-being, and preventing pain and fear can be important for normal functioning. However, the overlap is not perfect. For example, environments that limit the spread of disease do not necessarily allow natural behaviour and vice versa.

The three objectives are based on somewhat different bodies of scientific research. The research relevant to objective 1 includes studies of survival rate, incidence of disease and injury, body condition scoring, and productivity measures. The research relevant to objective 2 includes studies of pain, fear and distress in animals, studies of ways to alleviate such states, and studies that determine the animals' own preferences and aversions. Research relevant to objective 3 includes studies of the normal (and abnormal) behaviour of animals, how these are influenced by the social and physical environment, and the strength of the animals' motivation to carry out elements of their natural behaviour.

In the past, confusion has sometimes occurred because different standards, which are all claimed to address animal welfare, have involved very different requirements. Often such differences arise because the different standards address different objectives and rely on different bodies of research. In order to avoid confusion, it is important that recommendations be clear as to the welfare objectives they are intended to address.

Standards based on objective 1, because they reinforce basic health and functioning of animals, tend to be the most aligned with the traditional objectives of animal producers and veterinarians. The cost/benefit ratio is often favourable because implementation often leads to measurable improvements in productivity (e.g. improved survival or reduced mortality due to stress and disease). Hence, these standards are likely to be the most acceptable to animal producers and in cultures where concern for the welfare of animals is relatively low. However, in cultures where the public is actively interested in and concerned about animal welfare, standards based on objective 1 are likely to be viewed as minimum standards that promote productivity rather than animal welfare per se.

Annex 31 (contd)

Annex IV (contd)

Standards based on objective 2 (alleviating pain and distress, etc.) vary in their ease of implementation and their economic implications. Some (such as handling animals in ways that do not cause distress) should be relatively easy to implement, involve little or no cost, and may produce measurable economic benefit. Others (such as requiring anaesthesia for minor surgery) may be difficult and costly to implement. The level of acceptance by producers will likely vary accordingly. In countries which accord a high priority to animals welfare, standards based on objective 2 tend to be strongly supported by the concerned public who generally see the alleviation of pain and distress as a key element of animal welfare.

Standards based on objective 3 (providing more ‘natural’ living conditions) can have widely varying implications. Some requirements, such as providing more natural social grouping of animals, can be achieved in confinement production systems with only small cost implications. Others may require substantial redesign of animal environments and incur higher land and labour costs. Such standards may, however, allow producers using alternative production systems to market products to consumers who support such standards.

In proposing OIE guidelines on animal production systems, one approach would be to focus principally on objective 1 because of the clear linkage with animal health and traditional veterinary priorities of this objective, and to propose the adoption of guidelines based on objectives 2 and 3 where this is feasible and appropriate. If this approach is used, however, it should be made clear that the guidelines are intended as basic guidelines designed mainly to promote the health and functioning of animals as health is the one of the key components of welfare. In cultures that place a high priority on animal welfare, the development and implementation of guidelines that more closely address animal welfare objectives 2 and 3 would be appropriate to meet societal expectations.

Clarifying the underlying science

In the past, the development of animal welfare guidelines for production systems has sometimes been hampered by a lack of clarity over the scientific literature. In some cases organizations have attempted to create guidelines without a clear review or understanding of the science. In other cases, scientific reviews are available but these lead to conflicting conclusions. Guidelines that lack a clear and transparent link to science are often criticised as reflecting the subjective views or self-interest of those (animal producers, regulators or animal welfare organizations) that produce them.

In general, then, a good first step in developing animal welfare guidelines for a given production system is to ensure that a competent review of the relevant science is in place and widely accepted. If there is no such review, or if there are significant conflicts among existing reviews, then a new review may need to be created before beginning to develop a guideline.

Recommended next steps

Given the number of strategic decisions involved in the development of guidelines for terrestrial animal production systems, the Working Group on Animal Welfare recommends that the OIE proceed as follows.

Appoint an *ad hoc* group to consider the issues presented in this paper and prepare a Guidance Document on the development of animal welfare guidelines for terrestrial animal production systems. The *ad hoc* group should, at a minimum, consider and report on the following:

- the various objectives of animal welfare guidelines, how these relate to animal health, and the role that the objectives should play in OIE guidelines;
- the advantages and disadvantages of animal-based versus design-based criteria, with examples and recommendations on how these different criteria should be addressed in developing OIE guidelines;
- the role of science in animal welfare guidelines, with recommendations on how the OIE should proceed to ensure that guidelines are clearly and transparently based on relevant science;

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- a proposed strategy, including whether to approach the development of guidelines based on species (e.g. *Gallus gallus*) or production systems (e.g. caged layers);
- recommendations on the composition of expert groups including the appropriate scientific expertise, regulatory experience and regional and cultural representation;
- priorities for development of guidelines (species, production systems).

This Guidance Document should be submitted to the Animal Welfare Working Group and, if endorsed, submitted to the OIE Code Commission and possible distribution to OIE Delegates.

With the Guidance Document in place and endorsed by the International Committee, the OIE could proceed by appointing one or more *ad hoc* groups to work on particular animal species or production systems. Such groups should begin with the creation of a comprehensive review of the literature where this is needed.

Annex 31 (contd)Annex V

Recommendations to the OIE in Developing Guidelines on Animal Welfare in Livestock Production Systems

Objectives of animal welfare guidelines

In keeping with the OIE mandate, the key objective of the OIE's animal welfare guidelines is to assure and support the essential linkage between animal health and animal welfare. In the context of this paper, animal health refers not only to freedom from diseases listed by the OIE but also to freedom from other diseases (e.g. mastitis, lameness), injuries and other conditions (e.g. malnutrition) that significantly affect the biological functioning.

In this respect, considerations relating to affective states and animal behaviour may be relevant insofar as the scientific evidence shows that they are related to animal health.

Maintaining freedom from OIE listed diseases is an important element of animal welfare and the guidelines should provide for the implementation of appropriate biosecurity measures to exclude these diseases. The guidelines should also be cross referenced to appropriate chapters in the *Terrestrial Code* that deal with the surveillance, reporting, control and eradication of listed diseases.

Existing OIE standards

Review of relevant existing OIE standards contributing to the objective described above will be made.

Animal-based versus design-based criteria

Animal-based criteria (also called performance or output criteria) are described in terms of the animal's state. They include such elements as survival rate, incidence of disease and injury and body condition scoring. Many problems are multifactorial and it is therefore difficult to provide specifications (resource-based criteria) for all contributing factors. The most practical solution is to monitor animal-based criteria to ascertain if animal welfare problems are occurring.

Resource-based criteria (also called design criteria, input criteria and engineering criteria) indicate the resources that should be provided. These specify such elements as space allowances and dimensions, ambient temperature range, humidity and condition of the litter. Resource-based criteria are usually based on specific research with a particular species in a particular production system. For example, heat stress is well studied in cattle. Resource-based criteria to prevent thermal stress would include specifying acceptable temperature and humidity range and rates of ventilation. However, the precise recommendations would have to be tailored for the genotype, reproductive state and history of the individual animal. Animal-based criteria such as respiratory rate and rectal temperature as measures of thermal stress, on the other hand, would be applicable across animal and genotype.

Consider the example of tail-biting in fattening pigs. Investigating the incidence and severity of tail biting is best accomplished by monitoring lesions, either by examining the pigs during the fattening period or by monitoring at the abattoir. However, correcting the problem will likely require modifying resources, for example the design of housing, stocking density, provision of material for rooting, air quality, nutrition, general hygiene and the provision of veterinary attention.

Annex 31 (contd)Annex V (contd)**List of advantages and disadvantages of animal-based and resource-based criteria**

Animal-based criteria: advantages

- Provide information on the actual state of the animal, regardless of the number of variables affecting that state
- Can be used in a range of production systems, species, genotypes, etc.
- Can be quantitative or semi-quantitative (objective interpretation is possible)
- Can be used to get an appreciation of the impact of animal handling
- Post mortem monitoring may be less costly and is not stressful to the animal.

Animal-based criteria: disadvantages

- May be costly to implement and stressful to the animal if based on direct intervention with individual live animals
- Can be difficult to interpret behaviour (e.g. response to chronic pain or stress)
- Range of 'normal' values and acceptable variation from normal may be difficult to establish
- Quantification may be technically difficult and require specialized training
- Identify the problem but do not indicate what corrective measures are appropriate.

Resource-based criteria: advantages

- Can be easier and less costly to implement and interpret as to whether the value is within the established tolerance
- Required corrective action is evident
- Easier to calculate the cost of modifying these criteria
- Can be quantitative or semi-quantitative (objective interpretation is possible)
- Can be used in a preventative mode (e.g. biosecurity measures).

Resource-based criteria: disadvantages

- Difficult to develop and implement criteria relating to handling of animals
- Criteria may not be generally applicable (they are developed on the basis of research in particular species, breeds and production systems)
- May not be available in regard to new problems (as are mainly based on research to address known problems)
- Provide only partial information on the impact on animal welfare (as many variables contribute)
- May not be well validated with respect to the overall impact on animal welfare.

The criteria for use by the OIE must be devised in a manner that provides for them to be adapted and used in a wide range of environments and circumstances, in order to be widely applicable to OIE Members.

In keeping with the OIE's proposed definition of animal welfare, the OIE guidelines should focus on animal-based criteria. Animal-based criteria should be supplemented with resource-based criteria where these criteria are well validated scientifically as these provide some practical advantages.

The incorporation of resource-based criteria is more likely to be useful when dealing with livestock production systems and livestock that are very similar, regardless of the country/region of production.

Annex 31 (contd)

Annex V (contd)

The role of science in animal welfare guidelines

The guidelines should be based on scientific information and, to the extent that is possible, on peer-reviewed literature. However, there is a major shortage of scientific studies and publications on animal welfare from some regions, including Africa, Asia, Latin America and the Middle East, with the majority of scientific information reflecting work in the European Union, North America and Australia/New Zealand.

OIE should support the conduct of studies to generate information relevant to other regions.

Informed judgement of veterinarians and other relevant professionals is also a valid input to the development of OIE guidelines. This may be particularly relevant in addressing guidelines for livestock production systems where there is a shortage of published scientific studies.

The OIE should make clear the source and basis of its guidelines, whether this relates to professional judgement or published studies.

The OIE should undertake a review of published scientific information on:

- 1) based and resource-based criteria relevant to each guideline proposed for development (e.g. beef cattle and broiler chickens); and
- 2) relationship of affective states (e.g. chronic fear) and animal behaviour (e.g. nesting) to animal health.

The results of these reviews should be provided to OIE Delegates and animal welfare focal points to improve the transparency of the OIE guidelines' scientific basis.

When establishing national animal welfare policies, societal value judgements may play a large part. While science can provide useful information, ethical and social considerations may be more influential. The OIE should avoid making recommendations based on value judgements that lack a scientific basis.

Recommended strategy for the OIE

The development of guidelines based on species or sector

It is proposed that the OIE develop guidelines based on species, with specific production sectors to be considered separately as set out below. The OIE should focus on commercial scale production and particularly of products traded internationally. The guidelines for a particular species should address all currently used production systems (e.g. extensive, intensive and mixed) and management procedures (e.g. beak trimming, dehorning). The establishment of guidelines on a species by species basis is appropriate in view of the adoption of animal-based welfare criteria. Regardless of the production system, it is possible to establish animal health and welfare principles that are generally relevant to individuals of the same species.

Appropriate criteria for establishing the priority species/sectors include:

- Products that are extensively traded internationally
- Products that are internationally traded and the subject of actual or proposed animal welfare standards, measures or restrictions (government or private)
- Availability of relevant scientific information
- Likely positive impact on animal welfare of introducing standards
- Input from OIE Members and Regions regarding issues and concerns
- Relevance of one guideline for others (e.g. the OIE guideline on chickens could be used as a model to develop guidelines on ducks and turkeys).

Annex 31 (contd)

Annex VI

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 22–24 March 2016

List of Documents

- 1) Welfare Quality® assessment protocol for pigs (sows and piglets, growing and finishing pigs)
- 2) Recommendations for the on farm welfare of pigs. Submission to the OIE by the International Coalition for Animal Welfare (ICFAW).
- 3) Criteria or measurables for the welfare of pigs. Working document prepared by Rebecca Hibbard. Intern at the OIE International Trade Department.
- 4) Commission Staff Working Document on best practices with a view to the prevention of routine tail-docking and the provision of enrichment materials to pigs.
- 5) Commission Recommendation (EU) 2016/336 of 8 March 2016 on the application of Council Directive 2008/120/EC laying down minimum standards for the protection of pigs as regards measures to reduce the need for tail-docking.
- 6) Scientific Opinion concerning a Multifactorial approach on the use of animal and non-animal-based measures to assess the welfare of pigs. EFSA Panel on Animal Health and Welfare (AHAW).
- 7) Scientific Opinion on the use of animal-based measures to assess welfare in pigs. EFSA Panel on Animal Health and Welfare (AHAW).
- 8) Animal Welfare (Pigs). Code of Welfare 2010. A code of welfare issued under the Animal Welfare Act 1999. New Zealand.
- 9) Canadian code of practice for the care and handling of pigs, 2014. National Farm Animal Care Council (NFACC). Canada.

Annex 31 (contd)Annex VII

DRAFT CHAPTER 7.X.
**ANIMAL WELFARE AND
PIG PRODUCTION SYSTEMS**

Article 7.X.1.

Definitions

'Pig production systems' are defined as all commercial systems in which the purpose of the operation includes some or all of the breeding, rearing and management of pigs intended for production of *meat*.

For the purpose of this chapter, 'management' is defined at the farm management level and at the *animal handler* level. At the level of farm management, human resources management practices including selection and training, and animal management practices, such as best practice in housing and husbandry and implementation of welfare protocol and audits, all impact on *animal welfare*.

At the *animal handler* level this requires a range of well-developed husbandry skills and knowledge to care for animals.

For the purpose of this chapter, 'environmental enrichment' means increasing the complexity (e.g. foraging opportunities, social housing) of the animal's environment to foster the expression of normal behaviour and reduce the expression of abnormal behaviour and provide cognitive stimulation. The endpoint of enrichment should be to improve the biological functioning of the animal (Newberry, 1995).

Article 7.X.2.

Scope

This chapter addresses the welfare aspects of pig production systems. However, *captive wild* pigs are not considered.

Article 7.X.3.

Commercial pig production systems

Commercial pig production systems include:

1. Indoors

These are systems in which pigs are kept indoors, and are fully dependent on humans to provide for basic animal needs such as food and water. The type of housing depends on the environment, climatic conditions and management system. The animals may be kept in groups or individually.

2. Outdoors

These are systems in which pigs live outdoors with shelter or shade, have some autonomy over access to shelter or shade, and may be fully dependent on humans to provide for basic animal needs such as food and water. They are typically confined in paddocks according to their production stage.

3. Combination systems

These are systems in which pigs are managed in any combination of indoor and outdoor production systems, depending on weather or production stage.

Annex 31 (contd)Annex VII (contd)

Article 7.X.4.

Criteria (or measurables) for the welfare of pigs

The following outcome-based criteria, specifically animal-based criteria, can be useful indicators of *animal welfare*. The use of these indicators and their appropriate thresholds should be adapted to the different situations in which pigs are managed. Consideration should also be given to the design of the systems. These criteria can be considered as a tool to monitor the efficiency of design and management, given that both of these can affect *animal welfare*.

1. Behaviour

Certain behaviours could indicate an *animal welfare* problem. These include changes of feed and water intake, altered locomotory behaviour and posture, altered lying time, altered respiratory rate and panting, coughing, shivering and huddling, increased agonistic behaviours and stereotypic, apathetic or other abnormal behaviours (e.g. tail biting).

Stereotypy is defined as a sequence of invariant motor acts, which provide no obvious gain or purpose for the animal. Some stereotypies commonly observed in pigs include sham chewing, tongue rolling, teeth grinding, bar biting and floor licking.

2. Morbidity rates

Infectious and metabolic diseases, lameness, peri-partum and post-procedural complications, injury and other forms of morbidity, above recognised thresholds, may be direct or indirect indicators of the *animal welfare* status of the whole *herd*. Understanding the aetiology of the disease or syndrome is important for detecting potential *animal welfare* problems. Mastitis and metritis, leg and hoof, and reproductive diseases are also particularly important animal health problems for pigs. Scoring systems, such as for body condition, lameness and injuries, provide additional information.

Both clinical examination and pathology should be utilised as indicators of disease, injuries and other problems that may compromise *animal welfare*.

3. Mortality and culling rates

Mortality and culling rates affect the length of productive life and, like morbidity rates, may be direct or indirect indicators of the *animal welfare* status. Depending on the production system, estimates of mortality and culling rates can be obtained by analysing the causes of *death* and culling and their temporal and spatial patterns of occurrence. Mortality and culling rates, and their causes, when known, should be recorded regularly, e.g. daily, and used for monitoring e.g. monthly, annually.

Necropsy is useful in establishing the cause of *death*.

4. Changes in body weight and body condition

In growing animals, body weight changes outside the expected growth rate, especially excessive sudden loss, are indicators of poor *animal welfare* and health.

In mature animals, body condition outside an acceptable range may be an indicator of compromised *animal welfare*, health and reproductive efficiency.

5. Reproductive efficiency

Reproductive efficiency can be an indicator of *animal welfare* and health status. Future performance of sows or gilts can be affected by under- or over-nutrition at different stages of rearing. Poor reproductive performance, compared with the targets expected for a particular breed or hybrid, can indicate *animal welfare* problems.

Annex 31 (contd)

Annex VII (contd)

Examples may include:

- low conception rates,
- high abortion rates,
- metritis and mastitis,
- low litter size,
- low numbers born alive,
- high numbers of stillborns or mummies.

6. Physical appearance

Physical appearance may be an indicator of *animal welfare* and health. Attributes of physical appearance that may indicate compromised welfare include:

- presence of ectoparasites,
- abnormal texture or hair loss,
- excessive soiling with faeces in indoor systems,
- swellings, injuries or lesions,
- discharges (e.g. from nose or eyes),
- feet and leg abnormalities,
- abnormal posture (e.g. rounded back, head low),
- emaciation or dehydration.

7. Handling response

Improper handling can result in fear and distress in pigs. Fear of humans may be an indicator of poor *animal welfare* and health. Indicators include:

- evidence of poor human-animal relationship, such as disturbed behaviour when being moved or when *animal handlers* enter a pen,
- animals slipping or falling during handling,
- injuries sustained during handling, such as bruising, lacerations and fractured legs,
- animals vocalising abnormally or excessively during restraint and handling.

8. Lameness

Pigs are susceptible to a variety of infectious and non-infectious musculoskeletal disorders. These disorders may lead to lameness and to gait abnormalities. Pigs that are lame or have gait abnormalities may have difficulty reaching food and water and may experience pain. Musculoskeletal problems have many causes, including genetic, nutrition, sanitation, floor quality, and other environmental and management factors. There are several gait scoring systems available.

9. Complications from common procedures

Some procedures such as surgical castration, tail docking, teeth clipping or grinding, tusk trimming, identification, nose ringing and hoof care are commonly performed in pigs to facilitate management, to meet market requirements and improve human safety and *animal welfare*.

However, if these procedures are not performed properly, *animal welfare* and health can be compromised.

Annex 31 (contd)Annex VII (contd)

Indicators of such problems include:

- post-procedure *infection* and swelling,
- post-procedure lameness,
- behaviour indicating pain, fear and distress,
- morbidity, mortality and culling rates,
- reduced feed and water intake,
- post procedure body condition and weight loss.

Article 7.X.5.

Recommendations

Ensuring good welfare of pigs is contingent on several management factors, including system design, environmental management, and animal management practices which include responsible husbandry and provision of appropriate care. Serious problems can arise in any system if one or more of these elements are lacking.

Articles 7.X.6. to 7.X.26. provide recommendations for measures applied to pigs.

Each recommendation includes a list of relevant outcome-based measurables derived from Article 7.X.4.

This does not exclude other criteria being used where or when appropriate.

Article 7.X.6.

Housing

When new facilities are planned or existing facilities are modified, professional advice on design in regards to welfare and health of animals should be sought.

Housing systems and their components should be designed, constructed and regularly inspected and maintained in a manner that reduces the risk of injury, disease or stress for pigs. Facilities should to allow for the safe, efficient and humane management and movement of pigs.

There should be a separate area where sick and injured animals can be treated and monitored. When a separated space is provided, this should accommodate all the needs of the animal e.g. recumbent or lame animals or animals with severe wounds may require additional bedding or an alternative floor surface.

Pigs should not be tethered as part of their normal housing systems.

Good outcomes in the welfare and health of animals can be achieved in a range of housing systems. The design and management of the system are critical for achieving that.

Pigs are social animals and prefer living in groups, therefore housing systems where pregnant sows and gilts can be kept in groups are recommended.

Outcome-based criteria (or measurables): physical appearance (injuries), behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.7.

Personnel training

Pigs should be cared for by a sufficient number of personnel, who collectively possess the ability, knowledge and competence necessary to maintain the welfare and health of the animals.

Annex 31 (contd)

Annex VII (contd)

All people responsible for pigs should be competent through formal training or practical experience in accordance with their responsibilities. This includes understanding of and skill in animal handling, nutrition, reproductive management techniques, behaviour, *biosecurity*, signs of disease, and indicators of poor *animal welfare* such as stress, pain and discomfort, and their alleviation.

Outcome-based criteria (or measurables): handling response, physical appearance, behaviour, changes in body weight, body condition, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.8.

Handling and inspection

Pigs should be inspected at least once a day when fully dependent on humans to provide for basic needs such as food and water and to identify welfare and health problems.

Some animals should be inspected more frequently, for example, farrowing sows, new born piglets, newly weaned pigs and newly-mixed gilts and sows.

Pigs identified as sick or injured should be given appropriate treatment at the first available opportunity by competent *animal handlers*. If *animal handlers* are unable to provide appropriate treatment, the services of a *veterinarian* should be sought.

Recommendations on the handling of pigs are also found in Chapter 7.3. In particular handling aids that may cause pain and distress (e.g. electric goads) should be used only in extreme circumstances and provided that the animal can move freely. The use of electric prods should be avoided (see also point 3 of Article 7.3.8.), and in any case should not be used in sensitive areas including the udder, face, eyes, nose or ano-genital region.

Exposure of pigs to sudden movement or changes in visual contrasts should be minimised where possible to prevent stress and fear reactions. Pigs should not be handled aggressively (e.g. kicked, walked on top of, held or pulled by one front leg, ears or tail). Pigs that become distressed during handling should be attended to immediately.

Pigs should be restrained only for as long as necessary and only appropriate, well-maintained restraint devices should be used.

Outcome-based criteria (or measurables): physical appearance, behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.9.

Painful procedures

Some procedures such as surgical castration, tail docking, teeth clipping or grinding, tusk trimming, identification, and nose ringing are commonly performed in pigs. These procedures should only be performed to facilitate management, to meet market requirements and improve human safety and *animal welfare*.

These procedures have the potential to cause pain and thus should be performed in such a way as to minimise any pain and distress to the animal.

Options for enhancing *animal welfare* in relation to these procedures include the internationally recognised 'three Rs' which involves replacement (entire or immunocastrated males vs. castrated males), reduction (tail docking and teeth clipping only when necessary) and refinement (providing analgesia or anaesthesia).

Outcome-based criteria (or measurables): complications from common procedures, morbidity rates, mortality and culling rates, abnormal behaviour, physical appearance and changes in weight and body condition.

Annex 31 (contd)Annex VII (contd)

Article 7.X.10.

Feeding and watering of animals

The amount of feed and nutrients pigs require in any management system is affected by factors such as climate, the nutritional composition and quality of the diet, the age, gender, size and physiological state of the pigs (e.g. pregnancy, lactation), and their state of health, growth rate, previous feeding levels and level of activity and exercise.

All pigs should receive adequate quantities of feed and nutrients each day to enable each pig to:

- maintain good health;
- meet its physiological demands; and
- avoid metabolic and nutritional disorders.

Feed and water should be provided in such a way as to prevent undue competition and injury.

Pigs should be fed a diet with sufficient fibrous feedstuffs in order to reduce as much as possible the occurrence of gastric ulcers (Hedde *et al.*, 1985).

All pigs should have access to an adequate supply of palatable water at a temperature that does not inhibit drinking and that meets their physiological requirements and is free from contaminants hazardous to pig health (Patience, 2013).

Outcome-based criteria (or measurables): changes in body weight and body condition, agonistic behaviour at feeding and watering places and abnormal behaviour such as tail biting, mortality and culling rates, and morbidity rates (gastric ulcers).

Article 7.X.11.

Environmental enrichment

Animals should be provided with an environment that provides complexity and cognitive stimulation (e.g. foraging opportunities, social housing) to foster normal behaviour, reduce abnormal behaviour and improve biological function.

Pigs should be provided with multiple forms of enrichment that aim to improve the welfare of the animals through the enhancement of their physical and social environments, such as:

- sufficient quantity of suitable materials to enable pigs to fulfil their innate needs to look for feed (edible materials), bite (chewable materials), root (investigable materials) and manipulate (manipulable materials) (Bracke *et al.*, 2006);
- social enrichment which involves either keeping pigs in groups or individually with visual, olfactory and auditory contact with other pigs;
- positive human contact (such as pats, rubs and talking).

Outcome-based criteria (or measurables): physical appearance (injuries), behaviour (stereotypies, tail biting), changes in body weight and body condition, handling response, reproductive efficiency, lameness and morbidity, mortality and culling rates.

Article 7.X.12.

Prevention of abnormal behaviour

In pig production there are a number of abnormal behaviours that can be prevented or minimised with management procedures.

Annex 31 (contd)Annex VII (contd)

Many of these problems are multifactorial and minimising their occurrence requires an examination of the whole environment and of several management factors. However some recommendations to reduce their occurrence include:

- 1) Oral stereotypies (e.g. bar biting, sham chewing, excessive drinking) in adult pigs can be minimised by providing environmental enrichment and increasing feeding time and satiety by increasing fibre content in the diet or foraging roughage (Robert *et al.*, 1997; Bergeron *et al.*, 2000).
- 2) Tail biting may be reduced by providing an adequate enrichment material and an adequate diet (avoiding deficiencies of sodium or essential amino-acids), and avoiding high stocking densities and competition for feed and water (Walker and Bilkei, 2005). Other factors to consider include animal characteristics (breed, genetics, gender) and social environment (*herd* size, mixing animals) (Schroder-Petersen and Simonsen, 2001; EFSA, 2007; Taylor *et al.*, 2010).
- 3) Belly nosing and ear sucking may be reduced by increasing the weaning age, and providing feed to piglets prior to weaning to avoid the abrupt change of feed (Marchant-Forde, 2009; Sybesma, 1981; Worobec, 1999).
- 4) Vulva biting may be reduced by minimising competition in accessing the feeding area (Bench *et al.*, 2013; Leeb *et al.*, 2001; Rizvi *et al.*, 1998).

Outcome-based criteria (or measurable): physical appearance (injuries), behaviour (abnormal behaviour), morbidity rates, mortality and culling rates, reproductive efficiency and changes in body weight and body condition.

Article 7.X.13.

Space allowance

Space allowance should be managed taking into account different areas for lying, standing and feeding. Crowding should not adversely affect normal behaviour of pigs and durations of time spent lying.

Insufficient and inadequate space allowance may increase stress, the occurrence of injuries and have an adverse effect on growth rate, feed efficiency, reproduction and behaviour such as locomotion, resting, feeding and drinking, agonistic and abnormal behaviour (Gonyou *et al.*, 2006; Ekkel, 2003; Turner, 2000).

1. Group housing

Floor space may interact with a number of factors such as temperature, humidity, floor type and feeding systems (Marchant-Forde, 2009; Verdon, 2015). All pigs should be able to rest simultaneously, and each animal lie down, stand up and move freely. Sufficient space should be provided to enable animals to have access to feed, water, to separate lying and elimination areas and to avoid aggressive animals.

If abnormal behaviour is seen, corrective measures should be taken, such as increasing space allowance and providing barriers where possible.

In outdoor systems where pigs have autonomy over diet selection, stocking density should be matched to the available feed supply.

Outcome-based criteria (or measurables): reduction or variation in body weight and body condition, increasing agonistic and abnormal behaviour such as tail biting, injuries, morbidity, mortality and culling rates, and physical appearance (e.g. presence of faeces on the skin).

2. Individual pens

Pigs must be provided with sufficient space so that they can stand up, turn around and lie comfortably in a natural position, and that provides for separation of dunging, lying and eating areas.

Outcome-based criteria (or measurables): increasing abnormal behaviour (stereotypies), morbidity, mortality and culling rates, and physical appearance (e.g. presence of faeces on the skin, injuries).

Annex 31 (contd)Annex VII (contd)3. Stalls (crates)

Stalls must be sized appropriately to allow pigs to:

- be able to stand up in their natural stance without contact with either side of the stall,
- stand up without touching the top bars,
- stand in a stall without simultaneously touching both ends of the stall,
- lie comfortably on their sides without disturbing neighbouring pigs.

Outcome-based criteria (or measurables): physical appearance (e.g. injuries), increasing abnormal behaviour (stereotypies), reproductive efficiency, lameness and morbidity, mortality and culling rates (e.g. piglets).

Article 7.X.14.

Flooring, bedding, resting surfaces

In all production systems pigs need a well-drained and comfortable place to rest.

Floor management in indoor production systems can have a significant impact on pig welfare (Temple *et al.*, 2012; Newton *et al.*, 1980). Flooring, bedding, resting surfaces and outdoor yards should be cleaned as conditions warrant, to ensure good hygiene, comfort and minimise risk of diseases and injuries. Areas with excessive faecal accumulation are not suitable for resting.

Floors should be designed to minimise slipping and falling, promote foot health, and reduce the risk of claw injuries.

If a housing system includes areas of slatted floor, the slat and gap widths should be appropriate to the claw size of the pigs to prevent injuries.

Slopes of the pens should allow water to drain and not pool in the pens.

In outdoor systems, pigs should be rotated between paddocks to ensure good hygiene and minimise risk of diseases.

If bedding is provided it should be suitable (e.g. hygienic, non-toxic) and maintained to provide pigs with a clean, dry and comfortable place on which to lie.

Outcome-based criteria (or measurables): physical appearance (e.g. injuries, presence of faeces on the skin, bursitis), lameness and morbidity rates (e.g. respiratory disorders, reproductive tract infections).

Article 7.X.15.

Air quality

Good air quality and ventilation are important for the welfare and health of pigs and reduce the risk of respiratory discomfort and diseases. Dust, micro-organisms and noxious gases, including ammonia, hydrogen sulphide, and methane, can be problematic in indoor systems due to decomposing animal waste (Drummond *et al.*, 1980).

Air quality is influenced strongly by management and building design in housed systems. Air composition is influenced by stocking density, the size of the pigs, flooring, bedding, waste management, building design and ventilation system (Ni *et al.*, 1999).

Proper ventilation is important for effective heat dissipation in pigs and to prevent the build-up of effluent gases (e.g. ammonia and hydrogen sulphide), including those from manure and dust in the housing unit. The ammonia level in enclosed housing should not exceed 25 ppm. A useful indicator is that if air quality is unpleasant for humans it is also likely to be a problem for pigs.

Outcome-based criteria (or measurables): morbidity, mortality and culling rates, behaviour (especially respiratory rate or coughing), reductions in weight and body condition.

Annex 31 (contd)

Annex VII (contd)

Article 7.X.16.

Thermal environment

Although pigs can adapt to different thermal environments particularly if appropriate breeds are used for the anticipated conditions, sudden fluctuations in temperature can cause heat or cold stress.

1. Heat stress

Heat stress is a serious problem in pig production. It can cause significant reductions in weight gain and fertility, or sudden death (Werremann and Bazer, 1985).

The risk of heat stress for pigs is influenced by environmental factors including air temperature, relative humidity, wind speed, stocking density, shade and wallow availability in outdoor systems, animal factors including breed, age and body condition (Heitman and Hughes, 1949; Quiniou and Noblet, 1999).

Animal handlers should be aware of the risk that heat stress poses to pigs and of the thresholds in relation to heat and humidity that may require action. If the risk of heat stress reaches too high levels the *animal handlers* should institute an emergency action plan that gives priority to access to additional water and could include provision of shade and wallows in outdoor systems, fans, reduction of stocking density and provision of cooling systems as appropriate for the local conditions.

Outcome-based criteria (or measurables): behaviour (feed and water intake, respiratory rate, panting, agonistic behaviour), physical appearance (presence of faeces on the skin), morbidity, mortality and culling rates, and reproductive efficiency.

2. Cold stress

Protection from cold should be provided when these conditions are likely to create a serious risk to the welfare of pigs, particularly in neonates and young pigs and others that are physiologically compromised (e.g. ill animals). This can be provided by extra bedding, heat mats or lamps and natural or man-made shelters in outdoor systems (Blecha and Kelley, 1981).

Outcome-based criteria (or measurables): morbidity, mortality and culling rates, physical appearance (long hair, piloerection), behaviour (especially abnormal postures, shivering and huddling) and changes in body weight and body condition.

Article 7.X.17.

Noise

Pigs are adaptable to different levels and types of noise. However, exposure of pigs to sudden or loud noises should be minimised where possible to prevent stress and fear reactions. Ventilation fans, feeding machinery or other indoor or outdoor equipment should be constructed, placed, operated and maintained in such a way that they cause the least possible amount of noise (Algers and Jensen, 1991).

Outcome-based criteria (or measurables): behaviour (e.g. fleeing and vocalisation), physical appearance (e.g. injuries), reproductive efficiency, changes in body weight and body condition.

Article 7.X.18.

Lighting

Indoor systems should have light levels sufficient to allow all pigs to see one another, to investigate their surroundings visually and to show other normal behaviour patterns and to be seen clearly by staff to allow adequate inspection of the pigs. The lighting regime shall be such as to prevent health and behavioural problems. It should follow a 24-hour rhythm and include sufficient uninterrupted dark and light periods, preferably no less than 6 hours for both.

Annex 31 (contd)

Annex VII (contd)

A minimum of 40 lux of lighting is recommended for a minimum of 6 hours per day (Martelli *et al.*, 2005; Taylor *et al.*, 2006).

Artificial light sources should be located so as not to cause discomfort to the pigs.

Outcome-based criteria (or measurable): behaviour (locomotive behaviour), morbidity rates, reproductive efficiency, physical appearance (injuries) and changes in body weight and body condition.

Article 7.X.19.

Farrowing and lactation

Sows and gilts need time to adjust to their farrowing accommodation before farrowing. Nesting material should be provided where possible some days before farrowing (Yun *et al.*, 2014). Sows should be observed frequently around their expected farrowing times. As some sows and gilts need assistance during farrowing, there should be sufficient space and competent staff.

Outcome-based criteria (or measurables): mortality and culling rates (piglets), morbidity rates (metritis and mastitis), behaviour (stereotypies), reproductive efficiency, physical appearance (injuries).

Article 7.X.20.

Weaning

Weaning can be a stressful time for sows and piglets and good management is required. Problems associated with weaning are generally related to the piglet's size and physiological maturity. Early weaning systems require good management and nutrition of the piglets.

An average weaning age of three weeks or older is recommended (Worobec *et al.*, 1999).

Regardless of age, low weight piglets require additional care and can benefit from being kept in small groups in specialised pens until they are able to be moved to the common nursery area.

Newly weaned pigs are susceptible to disease challenges, so adherence to high-level hygiene protocols is important. The area that piglets are weaned into should be clean and dry.

All newly weaned pigs should be monitored during the first two weeks after weaning for any signs of ill-health.

Outcome-based criteria (or measurable): mortality and culling rates (piglets), morbidity rates (respiratory disease, diarrhoea), behaviour (belly nosing and ear sucking), physical appearance (injuries) and changes in body weight and body condition.

Article 7.X.21.

Mixing

Mixing of unfamiliar pigs can result in fighting to establish a dominance hierarchy, and therefore mixing should be minimised as much as possible (Moore *et al.*, 1994; Fabrega *et al.*, 2013). When mixing, strategies to reduce aggression and injuries should be implemented and animals should be supervised.

Measures to prevent excessive fighting and injuries can include (Arey and Edwards, 1998):

- providing additional space and a non-slippery floor,
- feeding before mixing,
- feed on the floor in the mixing area,
- provision of straw in the mixing area,

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- providing opportunities to escape and to hide from other pigs, such as visual barriers,
- mix previously familiarised animals whenever possible,
- young animals should be mixed as soon after weaning as possible,
- avoid adding one or small number of animals to a large established group.

Outcome-based criteria (or measurables): mortality, morbidity and culling rates, behaviour (agonistic), physical appearance (injuries), changes in body weight and body condition and reproductive efficiency.

Article 7.X.22.

Genetic selection

Welfare and health considerations should balance any decisions on productivity and growth rate when choosing a breed or hybrid for a particular location or production system.

Selective breeding can improve the welfare of pigs for example by selection to improve maternal behaviour, piglet viability, temperament and resistance to stress and disease and to reduce tail biting and aggressive behaviour (Turner *et al.*, 2006).

Outcome-based criteria (or measurable): physical appearance, behaviour, changes in body weight and body condition, handling response, reproductive efficiency, lameness, and morbidity, mortality and culling rates.

Article 7.X.23.

Protection from predators

In outdoor and combination systems pigs should be protected from predators.

Outcome-based criteria (or measurable): morbidity, mortality and culling rates, behaviour, and physical appearance (injuries).

Article 7.X.24.

Biosecurity and animal health

1. Biosecurity and disease prevention

Biosecurity plans should be designed, implemented and maintained, commensurate with the best possible *herd* health status, available resources and infrastructure, and current disease risk and, for *listed diseases* in accordance with relevant recommendations in the *Terrestrial Code*.

These *biosecurity plans* should address the control of the major sources and pathways for spread of pathogen agents:

- pigs, including introductions to the *herd*,
- young animals coming from different sources,
- other domestic animals, *wildlife*, and pests,
- people, including sanitation practices,
- equipment, tools and facilities,
- *vehicles*,
- air,
- water supply, feed and bedding,
- manure, waste and disposal of dead animals,
- semen.

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Outcome-based criteria (or measurables): morbidity, mortality and culling rates, reproductive efficiency, changes in weight and body condition, physical appearance (signs of disease).

a) Animal health management

Animal health management should optimise the physical and behavioural health and welfare of the pig herd. It includes the prevention, treatment and control of diseases and conditions affecting the herd (in particular respiratory, reproductive and enteric diseases).

There should be an effective programme for the prevention and treatment of *diseases* and conditions, formulated in consultation with a *veterinarian*, when appropriate. This programme should include the recording of production data (e.g. number of sows, piglets per sow per year, feed conversion, and body weight at weaning), morbidity, mortality and culling rate and medical treatments. It should be kept up to date by the *animal handler*. Regular monitoring of records aids management and quickly reveals problem areas for intervention.

For parasitic burdens (e.g. endoparasites, ectoparasites and protozoa), a programme should be implemented to monitor, control and treat, as appropriate.

Lameness can be a problem in pigs. *Animal handlers* should monitor the state of feet and legs and take measures to prevent lameness and maintain foot and leg health.

Those responsible for the care of pigs should be aware of early specific signs of *disease* or distress, such as coughing, abortion, diarrhoea, changes in locomotory behaviour or apathetic behaviour, and non-specific signs such as reduced feed and water intake, changes in weight and body condition, changes in behaviour or abnormal physical appearance.

Pigs at higher risk will require more frequent inspection by *animal handlers*. If *animal handlers* suspect the presence of a *disease* or are not able to correct the causes of *disease* or distress, they should seek advice from those having training and experience, such as *veterinarians* or other qualified advisers, as appropriate.

Non-ambulatory pigs should not be transported or moved unless absolutely necessary for treatment or diagnosis. Such movements should be done carefully using methods that avoid dragging the animal or lifting it in a way that might exacerbate injuries.

Animal handlers should also be competent in assessing fitness to transport, as described in Chapter 7.3.

In case of *disease* or injury, when treatment has failed or recovery is unlikely (e.g. pigs that are unable to stand up, unaided or refuse to eat or drink), the animal should be humanely killed as soon as possible in accordance with Chapter 7.6.

Outcome-based criteria (or measurable): morbidity, mortality and culling rates, reproductive efficiency, behaviour (apathetic behaviour), lameness, physical appearance (injuries) and changes in body weight and body condition.

b) Emergency plans for disease outbreaks

Emergency plans should cover the management of the farm in the event of an emergency disease outbreak, consistent with national programmes and recommendations of *Veterinary Services* as appropriate.

Article 7.X.25.

Emergency plans

Where the failure of power, water and feed supply systems could compromise *animal welfare*, pig producers should have contingency plans to cover the failure of these systems. These plans may include the provision of fail-safe alarms to detect malfunctions, back-up generators, contact information for key service providers, ability to store water on farm, access to water cartage services, adequate on-farm storage of feed and an alternative feed supply.

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Preventive measures for emergencies should be input-based rather than outcome-based. Contingency plans should be documented and communicated to all responsible parties. Alarms and back-up systems should be checked regularly.

Article 7.X.26.

Disaster management

Plans should be in place to minimise and mitigate the effect of disasters (e.g. earthquake, fire, flooding, blizzard and hurricane). Such plans may include evacuation procedures, identifying high ground, maintaining emergency feed and water stores, destocking and humane *killing* when necessary.

Humane *killing* procedures for sick or injured pigs should be part of the disaster management plan.

Reference to emergency plans can also be found in Article 7.X.25.

Article 7.X.27.

Euthanasia (Humane killing)

Allowing a sick or injured animal to linger unnecessarily is unacceptable. Therefore, for sick and injured pigs a prompt diagnosis should be made to determine whether the animal should be treated or humanely killed.

The decision to kill an animal humanely and the procedure itself should be undertaken by a competent person.

Reasons for humane *killing* may include:

- severe emaciation, weak pigs that are non-ambulatory or at risk of becoming non-ambulatory,
- non-ambulatory pigs that will not stand up, refuse to eat or drink, have not responded to therapy,
- rapid deterioration of a medical condition for which therapies have been unsuccessful,
- severe, debilitating pain,
- compound fracture,
- spinal injury,
- central nervous system disease,
- multiple joint *infections* with chronic weight loss,
- piglets that are premature and unlikely to survive, or have a debilitating congenital defect, and
- as part of disaster management response.

For a description of acceptable methods for humane *killing* of pigs see Chapter 7.6.

Annex 31 (contd)Annex VII (contd)**Scientific references**

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