Report of the Meeting of the *ad hoc* Group on Sheep Pox and Goat Pox

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World Organisation for Animal Health

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The WOAH *ad hoc* Group on sheep pox and goat pox (hereafter the Group) met in-person from 26 to 28 November 2024 at the WOAH headquarters in Paris to undertake a comprehensive review of *Terrestrial Code* Chapter 14.9. 'Sheep pox and goat pox'. This is the first meeting of the Group.

1. Opening

On behalf of Dr Montserrat Arroyo, WOAH Deputy Director General for International Standards and Science, Dr Gregorio Torres, Head of Science Department thanked the experts and representative from the WOAH Specialist Commissions and their supporting institutions for their commitment and support to the work of the Group. After providing a brief overview of the background of this work, he emphasised the importance of providing a sound rationale supported by scientific justification for the provisions proposed in the chapters as well as identifying gaps in scientific knowledge that may impact the development of standards.

Dr Torres also invited the Group to propose recommendations to *Terrestrial Manual* Chapter 3.8.11. 'Sheep pox and goat pox' as relevant and identify any potential need to amend Chapter 11.9. 'Infection with lumpy skin disease' taking into account its proposed updates to Chapter 14.9.

2. Appointment of the Chair and Rapporteur

Dr Nadav Galon was appointed as Chair and the WOAH Secretariat acted as rapporteurs. The Terms of Reference (ToR) and list of participants are provided as Annex 1 and Annex 2 respectively.

3. Revision of Chapter 14.9. Sheep pox and goat pox

In developing its recommendations to current Chapter 14.9., the Group referred to the background materials provided by the Secretariat on the framework for *Terrestrial Code* standards and associated documents including Chapter 3.8.11. of the *Terrestrial Manual* and Chapter 11.9.

3.1. Title of chapter

Following current convention for titles of disease-specific chapters, the Group proposed to rename the title of the chapter as 'Infection with sheeppox and goatpox virus'.

The Group noted that although 'sheeppox virus' (SPPV) and 'goatpox virus' (GTPV) are not official designations by the International Committee on Taxonomy of Viruses, these are common names of the pathogenic agents and should be retained as such. In addition, the Group noted that there should not be any spacing between the species and 'pox'.

The Group agreed to continue to have sheeppox and goatpox combined in one chapter as it considered the epidemiological features and risk mitigation measures of both sheeppox and goatpox to be similar.

3.2. General provisions

a) Definition of the disease

The Group agreed to refer to the pathogenic agent as 'sheeppox virus and goatpox virus' which are distinct yet closely related members of the genus capripoxvirus. The Group discussed primary host species involved in the epidemiology of sheeppox and goatpox and agreed domestic sheep and goat are the only relevant species for notification. The Group considered that other animals of the sub-family Caprinae may be susceptible to SPPV and GTPV but to date there is no strong evidence associating domestic animal outbreaks to infections in free-living or captive wild species. The Group therefore recommended to limit primary hosts for purpose of notification to domestic sheep (Ovis aries) and goats (Capra hircus).

The Group recommended notifying sheeppox and goatpox in both domestic sheep and goats, i.e. these infections should be notified to WOAH whether they occur in sheep or goats, based on evidence that the infections can transmit across these two species.

b) Definition of the occurrence of the disease

The Group agreed that isolation of SPPV and GTPV from an animal host is sufficient as a standalone test to identify a case. However, the detection of nucleic acid, antigen and antibody are not sufficient as standalone tests to determine a case and should be complemented by other supporting evidence such as demonstration of clinical signs or having an epidemiological link to a confirmed or suspected case.

The Group highlighted that there are no antibody or antigen tests specific to SPPV and GTPV; these can only detect capripoxviruses and therefore proposed to refer to specificity to capripoxviruses. The only other member in the genus capripoxvirus is lumpy skin disease virus (LSDV), which does not pose an issue as the latter has a different host range. The Group highlighted the lack of field or experimental evidence indicating that sheep and goats may be infected with LSDV and affirmed that sheep and goats appear to be resistant LSDV. There is also no evidence of recombination between LSDV and SPPV or GTPV which may confound diagnostic interpretation.

c) Incubation period

The Group noted that the incubation period described in the *Terrestrial Manual* is 8–13 days but noted that this was based on data from inoculation trials whereby animals were directly inoculated with doses which are probably higher than the inoculation dose under natural conditions. In field conditions, the incubation period may vary due to factors such as the infective dose, duration of contact, and route of transmission. Given that capripoxviruses demonstrate a dose-response relationship, the Group postulated that vector-borne transmission or acquisition of virus through fomite transmission, involving a smaller inoculation dose of SPPV and GTPV could result in an incubation period as long as 21 days (1). The Group therefore recommended setting the incubation period at 21 days.

3.3. Safe commodities

The Group considered different sheep and goat products that are generally traded and discussed if they complied with the criteria in Chapter 2.2. to be considered as safe commodities. The Group also referred to Article 11.9.2 for lumpy skin disease for reference.

The Group noted that skeletal muscle meat, casings, gelatine and collagen, tallow, hooves, and horns are included as safe commodities in Article 11.9.2. However, it determined that apart from hooves and horns, none of the other commodities should be considered safe. The Group considered casings to be a risk product and risk mitigation measures should follow those described in point 3.5.(j). The Group also developed provisions on skeletal muscle meat (see point 3.5.(h)).

With regard to protein meal and rendered fat, the Group referred to the technical information provided by the World Renderers Organization (WRO) to WOAH Headquarters, which specified industry-observed temperature and time combinations in the production process. The Group agreed that the 80°C and 30 minutes combination for protein meal is sufficient to inactivate sheeppox and goatpox and therefore protein meal may be considered safe. However, the conditions for the production of rendered fat, which involved 85°C instantaneously might be insufficient for virus inactivation. It therefore did not consider rendered fat to be a safe commodity.

As gelatin and collagen are derived from the skin of animals, the Group did not consider these to be safe commodities as the skin is the location with highest titres of virus in an infected animal and it was unclear whether processing methods would be sufficient in inactivating the virus. However one expert was of the opinion that the process of extracting gelatin and collagen involved several processing steps that could well inactivate the virus (2). The Group recommended to defer to the opinion of the WOAH Specialist Commissions on the safety of gelatin and collagen.

3.4. Provision on animal health status for definition of freedom

a) Countries or zones free from sheeppox and goatpox

The Group drafted an article on provisions for a country or zone to be considered free from sheeppox and goatpox, using the equivalent Article 11.9.3. as reference.

Similar to the approach used in Chapter 11.9., the Group agreed that in the absence of a widely accepted DIVA (differentiate infected from vaccinated animal) method, current laboratory techniques would not allow absence of infection to be demonstrated when vaccination is practiced, and therefore vaccination should be prohibited in a country or zone that is to be considered free. The Group recommended that vaccination should have been prohibited and ceased for at least the preceding eight months to ensure new-born animals have lost their maternal antibodies. This is consistent with the waiting period described under point 2 of Article 11.9.4. on lumpy skin disease where preventive vaccination is used. Unlike Article 11.9.3. however, the Group did not ascribe this period of vaccination prohibition to the duration recommended for surveillance as it considered that this period should be linked to the waning of maternal antibodies.

Likewise with Article 11.9.3., two different waiting periods were proposed depending on the type of surveillance implemented. Where only clinical surveillance is implemented, the Group recommended a waiting period of 24 months, and this may be reduced to 12 months if serological and virological surveillance were also implemented. The Group considered recent outbreaks that had lower than expected severity of clinical signs and therefore stressed that a minimum of two high risk periods, i.e. over two years was necessary if clinical surveillance alone is used. Unlike lumpy skin disease however, the main mode of transmission for sheeppox and goatpox is through direct contact rather than vector borne. Thus, there was no need to align with vector seasons to confirm the absence of virus circulation. Notwithstanding, the Group considered it was still important to allow one full vector season (i.e. 12 months) to ascertain that there is no ongoing virus persistence in the environment. Consequently, the minimum waiting period should be 12 months and not 6 months as per the current provision of Article 14.9.3. to recover freedom when stamping out policy is practised.

The Group also agreed, as with Article 11.9.3., that the introduction of vaccinated animals will not cause a country or zone to lose its free status and proposed wording to clarify this.

b) Compartment free from sheeppox and goatpox

The Group recommended including an article on compartmentalisation for sheeppox and goatpox. The Group considered this to be a useful tool that may be applied to ensure ongoing business continuity despite the external risk of sheeppox and goatpox. The Group also considered there are high resourced, high-technology sheep and goat rearing enterprises for which compartmentalisation might be applicable. From the provisions outlined in Chapter 4.5. 'Application of Compartmentalisation' of the *Terrestrial Code*, the Group highlighted that effective biosecurity measures would also need to consider the involvement of vectors in disease transmission and thus measures should include vector-proofing.

c) Country or zone infected with SPPV and GTPV

A country or zone should be considered as infected with SPPV and GTPV when the conditions for freedom from sheeppox and goatpox are not fulfilled.

d) Recovery of free status of the country or zone

The Group drafted a new article for a country or zone previously free from disease to recover their free status should a case occur. The provisions were aligned with the time periods recommended in Article 14.9.3. and based on the type of surveillance undertaken. This period is calculated from when the last case is slaughtered/culled if a stamping-out policy is implemented. If vaccination was also applied as control or preventive measure, the waiting period would be eight months after the last vaccination, to account for interference from maternal antibodies, whichever occurs later.

Otherwise, if a stamping-out policy is not applied, the provisions of draft Article 14.9.3. would apply.

3.5. Recommendations for safe trade

a) Recommendations for importation of domestic sheep and goats from countries, zones or compartments free from sheeppox and goatpox

In addition to animals not showing any clinical signs on the day of shipment, the Group recommended that the animals undergo a minimum residency period of 28 days in a free country, zone or compartment, to take into account the incubation period of sheeppox and goatpox with an added safety margin of 7 days.

b) Recommendations for importation of domestic sheep and goats from countries or zones infected with SPPV and GTPV

In addition to animals not showing any clinical sign on the day of shipment, the Group recommended that the animals should be kept in a quarantine centre for a period of 42 days, which is twice the duration of the incubation period, so that any clinical cases may be detected. During this time, any animal that is infected and not picked up would have also survived and cleared the infection and therefore would not pose any risk to the importing country.

In terms of any screening tests that may be employed whilst animals are in quarantine, the Group pointed out that there are no feasible tests. Agent identification methods such as PCR, are ineffective in detecting low levels of viremia and serological tests would not provide meaningful results since commonly used tests such as ELISA (and to a lesser extent VNT) have a limited sensitivity and it can take up to 28 days after infection before antibodies are detected. The Group therefore did not propose the use of any tests during the quarantine period. In addition, it proposed updates to Table 1 of Chapter 3.8.11. to indicate that the PCR is not a recommended test for individual animal freedom prior to movement.

If animals have been vaccinated, the Group recommended that the animals be vaccinated no less than 28 days prior to shipment to address any risk of horizontal transmission of vaccinal virus if live attenuated vaccines were used.

c) Recommendations for importation of semen of sheep and goat from countries, zone or compartments free from sheeppox and goatpox

The Group proposed to align the recommendations in this article with the equivalent article for live animals, with the added provision that the semen was collected in accordance with standards outlined in Chapters 4.6 and 4.7. The Group highlighted that If the process of semen collection follows Chapters 4.6. and 4.7., it is not necessary to limit the place of collection to a semen collection centre.

d) Recommendations for importation of semen of sheep and goats from countries or zones infected with SPPV and GTPV

The Group noted that while there is no definitive evidence of transmission of sheeppox and goatpox via semen (a knowledge gap), lesions may be observed in the testicles of infected animals and this could represent a risk of semen contamination during the extraction process. The Group also noted a remote possibility given the experimental infection of a cow via LSD-infected semen, which led to risk mitigation measures being proposed in Article 11.9.7. Therefore, the Group proposed to include risk mitigation measures for the importation of semen.

Referring to equivalent Article 11.9.8., the Group recommended a similar approach, though residency period in the semen collection centre was proposed to be 42 days (two incubation periods).

Regarding donor males that have been vaccinated, the Group noted that there is no available scientific data on the excretion of vaccinal virus in semen and therefore proposed to require that the animals be vaccinated at least 60 days prior to the first semen collection, in line with Article 11.9.8. However, the Group was of the view that testing for antibodies does not need to be limited to at least 30 days after vaccination as antibodies against sheeppox and goatpox in response to vaccination can occur anytime post-vaccination. In the text therefore, it did not propose a specific time to test for antibodies post-vaccination.

Likewise, as recommended in Article 11.9.8., unvaccinated donor males should be subject to serological and agent detection tests. However, unlike lumpy skin disease (21 days), the serological test is recommended to be conducted 28 days after the final collection of the consignment to allow sufficient time for seroconversion to occur and be detected by commercially available tests such as ELISA. The Group also noted that the agent detection test used to be used in addition to the serological test on the donor males should be PCR.

e) Recommendations for importation of oocytes or embryos of sheep and goats from countries, zones or compartments free from sheeppox and goatpox

Poxviruses are demonstrated to have a predilection to ovaries, and therefore the Group recommended risk mitigation measures for oocytes and embryos. The Group proposed to align the recommendations in this article with the equivalent article for live animals, with the added provision that the oocytes and embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10. and that any semen used to fertilise the embryos should be in compliance with the recommendations in the chapter for semen.

f) Recommendations for importation of oocytes or embryos of sheep and goats from countries, zones or compartments infected with SPPV and GTPV

The Group opined that the risk mitigation measures for oocytes or embryos should be similar to that for semen under Article 14.9.10., with the exception that embryos and oocytes are not subjected to an agent detection test owing to their fragility.

g) Recommendations for importation of skeletal muscle meat from countries and zones free from sheeppox and goatpox

For consistency, the Group proposed aligning the recommendations in this article with those outlined in Article 14.9.7., which pertains to live animals originating from disease-free countries or zones.

h) Recommendations for importation of skeletal muscle meat from countries and zones infected with SPPV and GTPV

The Group noted that SPPV and GTPV may occasionally be found in skeletal muscle meat as an extension of papules and lesions that develop on the skin. This risk may be mitigated by ensuring animals were not showing clinical signs and were subjected to ante and postmortem examination inspections in accordance with Chapter 6.3.

i) Recommendations for importation of fresh meat and meat products excluding skeletal muscle meat from countries and zones free from sheeppox and goatpox

For consistency, the Group proposed aligning the recommendations in this article with those outlined in Article 14.9.7., which pertains to live animals originating from disease-free countries or zones.

j) Recommendations for importation of fresh meat and meat products excluding skeletal muscle meat from countries and zones infected with SPPV and GTPV

Fresh meat and meat products other than skeletal muscle meat, such as organs and offals are sites where sheeppox and goatpox lesions may be found and thus the Group recommended an additional measure for heat processing to a minimum internal temperature of 65º C for at least 30 minutes to inactivate the virus, similar to Article 11.9.12. Nevertheless, the Group also pointed out that the industry might use other effective temperature-time combinations that would inactivate SPPV and GTPV.

k) Recommendations for importation of milk and milk products from sheep and goat from countries, zones or compartments free from sheeppox and goatpox

The Group proposed to align the recommendations in this article with the equivalent article for live animals originating from free countries or zones.

l) Recommendations for importation of milk and milk products from sheep and goat from countries or zones infected with SPPV and GTPV

The Group noted that similar to LSDV, pasteurisation techniques or any other similar method with an equivalent performance can reduce viral load to non-infectious levels in milk and milk products. However, one expert shared an ongoing study that demonstrated residual viral loads despite pasteurisation and noted that this provision may have to be revisited depending on the published outcomes of the study.

m) Recommendations for importation of skins, wool and hair from sheep and goat from countries or zones free from sheeppox and goatpox

The Group proposed to align the recommendations in this article with the equivalent article for live animals.

Regarding importation of these commodities from infected countries, the Group noted that skins, wool and hair are high risk commodities as lesions and scabs from infected animals contain high amounts of viral load. Therefore, it did not recommend including any provisions for importation of these commodities from infected countries or zones.

n) Provision for inactivation of the pathogenic agents from skins, wool and hair

Regarding parameters to inactivate the virus in skins, wool and hair, the Group noted that a Member had suggested referring to equivalent provisions in Article 8.8.36. of Chapter 8.8. ‘Infection with foot and mouth disease virus’ and Article 14.7.24. of Chapter 14.7. ‘Infection with peste des petits ruminant's virus’. However, the Group did not consider these measures to be effective in inactivating SPPV and GTPV. The Group also clarified that the inactivation parameters outlined in Chapter 3.8.11. of the *Terrestrial Manual* may well be suitable for surface inactivation but would not be adequate to inactivate high viral loads present in skin lesions. It was also unclear on the common industrial processes involved in the production of these commodities and was not able to advise whether any industry-appropriate modifications could render the products safe. The Group requested to obtain further information from the industry before providing recommendations on inactivation.

3.6. Provisions on surveillance for sheeppox and goatpox

a) Principles of surveillance

The Group noted that general principles of surveillance are outlined in Chapters 1.4. and 1.5. of the *Terrestrial Code*. In this article, the Group identified a few key features of SPPV and GTPV that are important to consider when designing surveillance programmes. This includes multiple routes of transmission, not just through close contact but also through vector-borne and carriage on fomites and the ability of the virus to survive for months in the environment.

b) Surveillance for early warning system

The Group recommended an effective early warning system for detecting suspected cases based on pathognomonic clinical signs of skin lesions, as well as lymphadenopathy and high fever. The Group also considered that depending on resources available and assessed level of risk, early warning systems may be based not just on clinical surveillance and notification of suspected or confirmed cases to Veterinary Authorities but may also involve targeted surveillance of high-risk subpopulations such as animals in areas bordering infected countries or zones and at animal congregation sites such as markets and abattoirs. Clinically suspect animals should be subject to laboratory confirmation.

c) Surveillance for demonstrating freedom

The Group drafted an article to recommend surveillance for demonstrating freedom in accordance with Articles 14.9.3. and 14.9.6.

Due to the pathognomonic nature of sheeppox and goatpox and the high morbidities associated when it occurs in countries where the disease is not endemic. Clinical surveillance is normally a first line of surveillance that allows disease detection. The Group clarified that for the purpose of freedom demonstration, passive surveillance relying on reporting of suspected cases by livestock owners or abattoir personnel is insufficient, and this should be based on a well-designed surveillance programme that may provide a high level of confidence of detection of disease and this requires active clinically surveillance deliberately examining animals at an appropriate frequency and in sufficient numbers.

Members can choose to enhance clinical surveillance with virological and serological surveillance which could reduce the waiting period for recovery of freedom. However, the Group highlighted that serological surveillance cannot be used in vaccinated animals due to the lack of DIVA tests and can only be meaningfully interpreted when used in non-vaccinated subpopulations including lambs between 5 months and a year with no history of vaccination.

In case of using virological surveillance, Member must account for vaccination strategies used at country as well as regional level. Although virological surveillance is valuable for confirming suspected cases and distinguishing vaccine strains, its sensitivity depends on the type of sample collected. For instance, high viral load may be observed in scabs and lesions. However, viremia in blood is often short-lived and low and thus less useful as a diagnostic matrix. Given the higher cost and lower sensitivity of virological surveillance, it is unsuitable for broad application at a programmatic level. A targeted approach is recommended to optimise its effectiveness while recognising the limitations imposed by vaccination plans and available DIVA tests.

3.7. Article 14.9.23. Recommendation for the prevention and control measures

The Group noted that there was an additional request to develop a draft article on prevention and control measures, which has not normally featured in a disease-specific chapter of the *Terrestrial Code*. Based on general recommendations in Chapter 4.19., the Group highlighted key components relevant for sheeppox and goatpox and emphasised the importance of implementing a combination of measures for the control and prevention of sheeppox and goatpox. Key measures include effective risk communication to ensure stakeholder compliance, stamping out infected and at-risk animals, and integrating vaccination into stamping-out policies for resource-limited or endemic regions.

The Group noted that while not all Members may apply a complete stamping-out policy, it is the most effective method to remove virus and achieve rapid control of sheeppox and goatpox. The Group discussed examples of Members that have applied a modified stamping-out policy that involved the removal of selected animals only, that could support the progressive reduction of disease prevalence. In these cases, movement controls and biosecurity are critical in ensuring that sources of virus are not introduced. The Group also considered that compensation is important to facilitate notification and compliance with these measures.

The Group considered vaccination, both reactive and preventive, to be an important tool, especially in countries that do not consider stamping-out to be a control measure. It would be important to conduct post-vaccination monitoring to ensure that vaccinated animals are indeed protected and to measure the success of the vaccination programme in reducing disease prevalence. The Group also noted that the provision in Article 4.4.6. offers Members the possibility of setting up a protection zone on a temporary basis where preventive vaccination may be implemented, without affecting the rest of the status of the country or zone. Enhanced biosecurity measures, including disinfection and safe carcass disposal, are also critical to limit virus spread as the virus can persist for months in the environment.

Given the possibility for vector transmission of sheeppox and goatpox, the Group included a point on vector control, but noted that in reality, this is not the main transmission route and should not be the main focus of control measures.

4. General recommendations on revision of *Terrestrial Manual* Chapter 3.8.11. Sheep and goat pox virus

In drafting revisions to Chapter 14.9., the Group noted that some of the information in Chapter 3.8.11. would have to be updated, including the suitability of tests for screening animals at the individual level given that virus neutralisation tests (VNT) and ELISA would not be sensitive enough for detecting low levels of antibody titres in mild disease or vaccinated animals.

The Group highlighted that sensitive strain-specific PCR tests are available. Depending on the vaccinal virus strain, PCR can differentiate between wild type and vaccine strains (3–5). However these tests are only suitable for certain vaccine strains, and may misclassify other vaccine strains as wild type strains. The Group therefore recommended highlighting the utility of PCR for detecting vaccinated animals but stressed the need for caution, given the absence of a universal DIVA PCR test capable of accurately distinguishing all vaccine strains from wild-type strains.

The Group also recommended revisions to update the epidemiological features of sheeppox and goatpox in the *Terrestrial Manual*.

The Group noted that there are recent publications of platforms that may differentiate infected from vaccinated animals, and this may warrant an update of section on vaccines when these become widely acceptable in the scientific community (3–5).

5. General recommendations on revision of Chapter 11.9. Infection with Lumpy skin disease virus

Based on the proposed updates to Chapter 14.9. and current scientific data, the Group also identified areas for review in Chapter 11.9. One expert recommended to include yaks (*Bos grunniens*) and mithuns (*Bos frontalis*) in the scope of the chapter as these are important livestock species in certain countries and they can get infected and play a significant role in transmission (6,7).

As with sheeppox and goatpox, antibodies may only be specific to the level of capripoxviruses and are not ‘specific to lumpy skin disease virus’. The Group also suggested that antibody response to vaccination may be demonstrated anytime post-vaccination, without the need to wait 30 days before testing.

The Group did not consider skeletal muscle meat to be a safe commodity based on ongoing experiments undertaken by an expert demonstrating residual virus load in skeletal muscle meat as well as meat juice from infected animals. Though the Group considered the assessment of the *ad hoc* Group on lumpy skin disease that met in January 2016 that biting flies are unlikely to land on skeletal muscle meat and transmit infection, this Group considered there to be a potential risk still of mechanical carriage by vectors that could transmit the virus.

6. Research gaps in evidence for sheeppox and goatpox and lumpy skin disease

Besides the research gaps identified in the discussion points above, the Group also considered there to be insufficient published literature on sheeppox and goatpox, citing there to be about 120 publications. The Group also noted that there is insufficient genomic data that has been uploaded onto publicly available genetic sequence databases to allow more thorough analysis on strains and spread mechanisms and encouraged WOAH Members to share genomic information where available.

7. Next steps

The Group’s report and draft Chapter 14.9. will be considered by the WOAH Specialist Commissions at their February 2025 meetings.

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…/Appendixes

Annex 1. Terms of Reference

MEETING OF THE *AD HOC* GROUP ON SHEEP POX AND GOAT POX

Paris, 26 to 28 November 2024

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1. Purpose

The purpose of the *ad hoc* Group on sheep pox and goat pox is to comprehensively revise *Terrestrial Code* Chapter 14.9. Sheep pox and goat pox.

This *ad hoc* Group is convened under the authority of and reports to, the WOAH Director General.

2. Background

Terrestrial Code Chapter 14.9. Sheep pox and goat pox was first adopted in 1986 and has not been updated since. The corresponding *Terrestrial Manual* Chapter 3.8.11. (then numbered 3.8.12) was recently updated and adopted in 2024, with updates to the section on diagnostic techniques, and the section on vaccines is currently being reviewed and planned for adoption in 2025. As per Chapter 3.8.12., sheep pox and goat pox are contagious, viral diseases of sheep and goats cause by Sheeppox virus (SPPV) and goatpox virus (GTPV) from the genus *Capripoxvirus* in the family Poxviridae. This disease is endemic in Africa north of the Equator, the Middle East and Asia, while some parts of Europe have experienced outbreaks recently.

In February 2023, in response to a comment to review Chapter 14.9. Sheep pox and goat pox, the *Terrestrial Animal Health Standards Commission* (TAHSC) agreed to add the work to its work programme, given that the chapter had not been revised since its first adoption in 1986 and did not include the case definition and recommendations for the importation of some commodities such as milk and meat. At the September 2023 meeting the TAHSC received another comment requesting to revise Article 14.9.9. of Chapter 14.9. to provide recommendations for importation of skins, fur, wool and hair from sheep and goats from countries considered infected with sheep pox and goat pox.

At the February 2024 meeting of the *Scientific Commission for Animal Diseases* (SCAD) during the prioritisation of case definition development, the SCAD recommended prioritising the work on sheep pox and goat pox since there have been reports of incursion of disease into new areas, apparent under-reporting of cases and difficulties in diagnosis owing to recombination between lumpy skin disease virus and sheep pox and goat pox virus. Furthermore, SCAD had noted that Chapter 3.8.12. of the *Terrestrial Manual* was being reviewed and therefore the *Terrestrial Code* Chapter 14.9., revised in 1986, should be reviewed to ensure that it remains up-to-date. SCAD recommended to review Chapter 14.9. thoroughly, besides developing the case definition and including up-to-date recommendations on disease prevention, control, vaccination, and surveillance, which would benefit members in controlling the disease.

In terms of the updates to the *Terrestrial* Manual, updates to Sections A and B of Chapter 3.8.12. concerning diagnostic techniques were proposed by the *Biological Standards Commission* (BSC) and adopted by the General Assembly in May 2024. At its February 2024 meeting, the BSC also affirmed that the update to Chapter 3.8.12. had no impact on the *Terrestrial Code* chapter, however it noted that this may need to be considered once the vaccine section had been reviewed (aimed for adoption in May 2025).

At the September 2024 meeting, both TAHSC and SCAD considered the Terms of Reference for the *ad hoc* Group, and recommended to include the knowledge gaps in this disease that may impact the development of the standards.

3. Actions/ specific issues to be addressed

The *ad hoc* Group should comprehensively review and update Chapter 14.9. to ensure that it reflects the latest scientific evidence and is aligned with current *Terrestrial Code* conventions as described in the "*Framework for* Terrestrial Code *Standards*", in particular, but not limited to addressing the following:

a. Develop a case definition for sheep pox and goat pox to be included in Article 14.9.1., for the purpose of notification to WOAH as per Chapter 1.1.;

b. Recommend safe commodities based on criteria in Chapter 2.2.;

c. Review recommendations to qualify for free status and measures for status recovery;

d. Review articles on the safe trade of commodities and propose amendments, taking into account advances in diagnostic tools and vaccines and knowledge of transmission routes;

e. Develop recommendations on surveillance for sheep pox and goat pox

f. Draft recommendations for sheep and goat pox prevention and control programmes at national level to be considered for potential inclusion in the Chapter

Given the similarities between sheep pox and goat pox and lumpy skin disease, the *ad hoc* Group should also consider Chapter 11.9. Infection with lumpy skin disease and also identify potential need for amendments to Chapter 11.9., if any, taking into account its proposed changes to Chapter 14.9. The *ad hoc* Group is also requested to highlight any knowledge gaps that may impact the development of the standards.

4. Considerations

The *ad hoc* Group members should consider:

a. *Terrestrial Code* Chapter 14.9. 'Sheep pox and goat pox' and Chapter 11.9. 'Infection with lumpy skin disease virus'

b. *Terrestrial Code* Chapter 1.4. 'Animal health surveillance' and Chapter 4.4., 4.18. and 4.19.

c. *Terrestrial Manual* Chapter 3.8.12. 'Sheep pox and goat pox' and Chapter 3.4.12. Lumpy skin disease of the *Terrestrial Manual*;

d. Framework for disease-specific chapters of the *Terrestrial Code*, a document that outlines the format and content of a disease-specific chapter to ensure harmonisation across chapters

All proposed amendments should be based on the latest scientific information and consistent with the structure and scope of the *Terrestrial Code.*

5. Prerequisites

Ad hoc Group members should:

a. be familiar with the structure of the *Terrestrial Code* including horizontal chapters in Volume I, the use of Glossary definitions and the Framework for *Terrestrial Code* standards;

b. have read and considered Chapter 14.9. and Chapter 11.9. of the *Terrestrial Code*;

c. have read and considered Chapter 3.8.12. and Chapter 3.4.12. of the *Terrestrial Manual*;

d. have read all working documents provided by the WOAH Secretariat prior to the meeting;

e. contribute to discussions, and drafting text for the revised chapters and the report of the meeting understand that the membership of the *ad hoc* Group may be retained between *ad hoc* Group meetings to ensure continuity of the work;

Ad hoc Group members should:

a. sign the WOAH Undertaking on Confidentiality.

b. complete the WOAH Declaration of Interest form, and;

c. read and acknowledge the WOAH personal data management policy.

6. Deliverables

a. A meeting report including the rationale for decisions made for the proposed texts and supporting references.

b. A draft revised Chapter 14.9.

c. Recommendations, as applicable, for a potential future revision of *Terrestrial Code* Chapter 11.9. based on amendments to Chapter 14.9.

7. Reporting / timeline

The work of this *ad hoc* Group will likely take place through a 3-day in-person meeting in Paris in November 2024. Prior to this meeting a short virtual meeting will be organised to familiarise members with working documents and scope of the meeting. The *ad hoc* Group will finalise its deliverables within two weeks after the completion of the meeting.

Annex 2. List of Participants

MEETING OF THE *AD HOC* GROUP ON SHEEP POX AND GOAT POX

Paris, 26 to 28 November 2024

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Annex 3. Reference

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