Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

Peste des petits ruminants outbreak investigation in wildlife

Report of the virtual training workshop
16–17 March 2021

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Photo cover: *Twin Mongolian saiga antelope calves in Sharga Reserve, Gobi Altai Province, Mongolia.*
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Acknowledgements

The Peste des petits ruminants Secretariat and workshop organising partners are grateful to the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) Regional Offices for Asia and the Pacific for their organisational assistance and for hosting the meeting; the wildlife group of the PPR Global Research and Expertise Network (GREN), the Wildlife Conservation Society, the Joint FAO/IAEA Centre (Nuclear Technique in Food and Agriculture, CJN) and all experts, presenters and participants.

Executive summary

Peste des petits ruminants (PPR) is an important disease of wildlife and a threat to biodiversity, in addition to its impact on small ruminant production, the wildlife component must also be considered to enable the success of the PPR Global Eradication Programme (GEP). Aiming to enhance capacity to detect and respond to suspected PPR events in wildlife and to enhance coordination between wildlife and livestock sectors, a training workshop on PPR outbreak investigation in wildlife was conducted virtually on 16 and 17 March 2021. The workshop was organised in partnership with the FAO and OIE Regional Offices for Asia and the Pacific, the FAO/OIE PPR Secretariat and the wildlife working group of the PPR Global Research and Expertise Network (GREN). The training had a focus on the field experiences and capacity of Bhutan, Iran (Islamic Republic of), Mongolia and Nepal in relation to PPR in wildlife, but was an open meeting with participants registered from 34 countries. More than 120 participants were connected on both days of the meeting, including wildlife veterinarians, livestock veterinarians, PPR National Coordinators, OIE Delegates/Chief Veterinary Officers and Focal Points, wildlife ecologists and laboratory specialists. Presentation topics included the current status and significance of PPR in wildlife, guidance for the prevention and control of PPR in wildlife, disease outbreak investigation, the One Health approach and inter-sectoral coordination, laboratory diagnostics, risk analysis and the use of in-field disease surveillance tools, including SMART (Spatial Monitoring And Reporting Tool). A participant survey indicated that the presentations greatly contributed to learning and that the workshop was very well received. Based on breakout room discussions and the feedback from participants and trainers, key recommendations were made. Among others, countries were recommended to establish formal mechanisms and cross-sectoral communication plans for coordinated capacity and response for disease outbreaks in wildlife. Countries were also recommended to conduct active and passive surveillance for PPR in wildlife, to conduct thorough investigation of outbreaks (collecting and making available all epidemiological and ecological metadata) and to report confirmed cases of PPR in wildlife to OIE. The post-workshop survey was used to identify key future training needs to enhance capacity for managing PPR in wildlife. Recommendations to FAO/OIE also included that communication be maintained with workshop participants to maintain and inform the community of interest around PPR in wildlife, and to continue to support countries to build capacity to prevent and respond to suspected PPR events in wildlife and to include wildlife in National Strategic Plans and in the next phase of the PPR GEP (PPR GEP II).

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Background

Peste des petits ruminants (PPR) is a widespread, virulent and devastating animal disease of domestic small ruminants and wild artiodactyls. The global eradication of the disease by 2030 is the final goal of the PPR Global Eradication Programme (GEP). Sheep and goats are a primary source of food and income for 300 million rural families across the globe. Food (milk and meat) from sheep and goats are an essential part of the daily diet of these communities and contribute to preventing malnutrition. Thus, eradicating PPR is an effective tool for tackling food insecurity and malnutrition, resulting in a lasting positive impact on the nutritional status of vulnerable rural populations, and has positive benefits for biodiversity conservation. PPR causes an estimated USD 2.1 billion economic loss per year and its impact on biodiversity has not been quantified.

Recent years have seen an increasing number of reports of PPR in free-ranging wildlife and evidence that PPR can cause significant impacts at the population level. PPR elimination will help to reduce threats to biodiversity in many countries, which is of key economic and ecological significance, and will thereby contribute to achieving Sustainable Development Goal 15 (Life on Land). The eradication of PPR will also contribute to fighting rural poverty by preserving the income and asset base of small farmers, which is fundamental for the economic empowerment of women in Africa, Asia and the Middle East.

PPR control (including surveillance and vaccination) is ongoing in several countries. Country-wide and risk-based surveillance has been conducted in many countries to delineate the distribution of the disease, but to date PPR epidemiology in the entire ruminant community (including wildlife) has not been sufficiently considered. In some instances, at least, where wild ruminants and domestic sheep and goats coexist, the wild ruminant populations must be incorporated within risk-based disease surveillance and control approaches. Therefore, wildlife must be considered and integrated within the next phase of the PPR GEP (PPR GEP II) and within Regional and National Strategic Plans, in line with an epizone approach.

The expansion of PPR in wildlife is currently a major concern regarding its impact on biodiversity and the vision of a PPR-free world by 2030. There is need to galvanize broader support and knowledge regarding the capacity, investigations, research, and actions that are required at the wildlife/livestock interface for controlling PPR. This aligns with a One Health approach to disease control, and the need to enhance the previously limited coordination between livestock and wildlife sectors to combat diseases that infect both livestock and wildlife.

Workshop context, objectives and anticipated outcomes

The training was organised within the framework of the PPR GEP and under the umbrella of the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs), in partnership with the FAO/OIE PPR Global Secretariat, the FAO and OIE Regional Offices for Asia and the Pacific and the wildlife working group of the PPR Global Research and Expertise Network (GREN).

This training focused on Bhutan, Iran (Islamic Republic of), Mongolia and Nepal, with these countries invited to present updates and their experiences related to outbreak investigation of suspected PPR in wildlife. Observer countries, including China (People's Republic of), India, Kazakhstan and others, were also invited. To meet the aims of the workshop, a wide range of participants were invited to participate, including field veterinarians from wildlife and livestock sectors, OIE National Wildlife Focal Points, representatives from environment, wildlife and veterinary sectors, laboratory personnel from national (and regional) laboratories performing PPR virus diagnosis, Chief Veterinary Officers (CVOs), Government policymakers for wildlife/animal health, Non-Governmental Organisations (NGOs), international experts and academics.

More than 120 participants were connected during the workshop.

*The **aims** of this virtual training workshop on PPR outbreak investigation in wildlife were:*

- to assist countries to develop capacity to detect, investigate and respond to suspected outbreaks of PPR, as well as other diseases, in wildlife, with a focus on practical and operational guidance for outbreak investigations;
- to share experiences between countries and participants of (i) surveillance and outbreak investigation in PPR-susceptible wildlife, and (ii) communication and coordination between wildlife and livestock sectors.

*The **anticipated outcomes** were:*

- increased awareness of the current status and significance of PPR in wildlife (focused on Eastern and Southern Asia);
- increased understanding of the principles and practice of outbreak investigation, control and prevention of PPR in wildlife;
- enhanced appreciation of best practices for communication and collaboration between wildlife and livestock sectors to enhance PPR control and prevention;
- increased awareness of the support available via GREN Wildlife Working Group, the Joint FAO/IAEA Animal Health and Production Laboratory and the FAO Emergency Management Centre-Animal Health (EMC-AH), to countries in case of suspected PPR in wildlife (in addition to support from PPR Secretariat and the FAO and OIE Regional Offices);
- increased knowledge of the adaptation of SMART, the Spatial Monitoring And Reporting Tool, and other disease surveillance tools, to collect and manage wildlife morbidity and mortality data.

Key suggestions and follow-up actions

Considering the experience and expertise of trainers and participants, including break-out room discussions, it is recommended that:

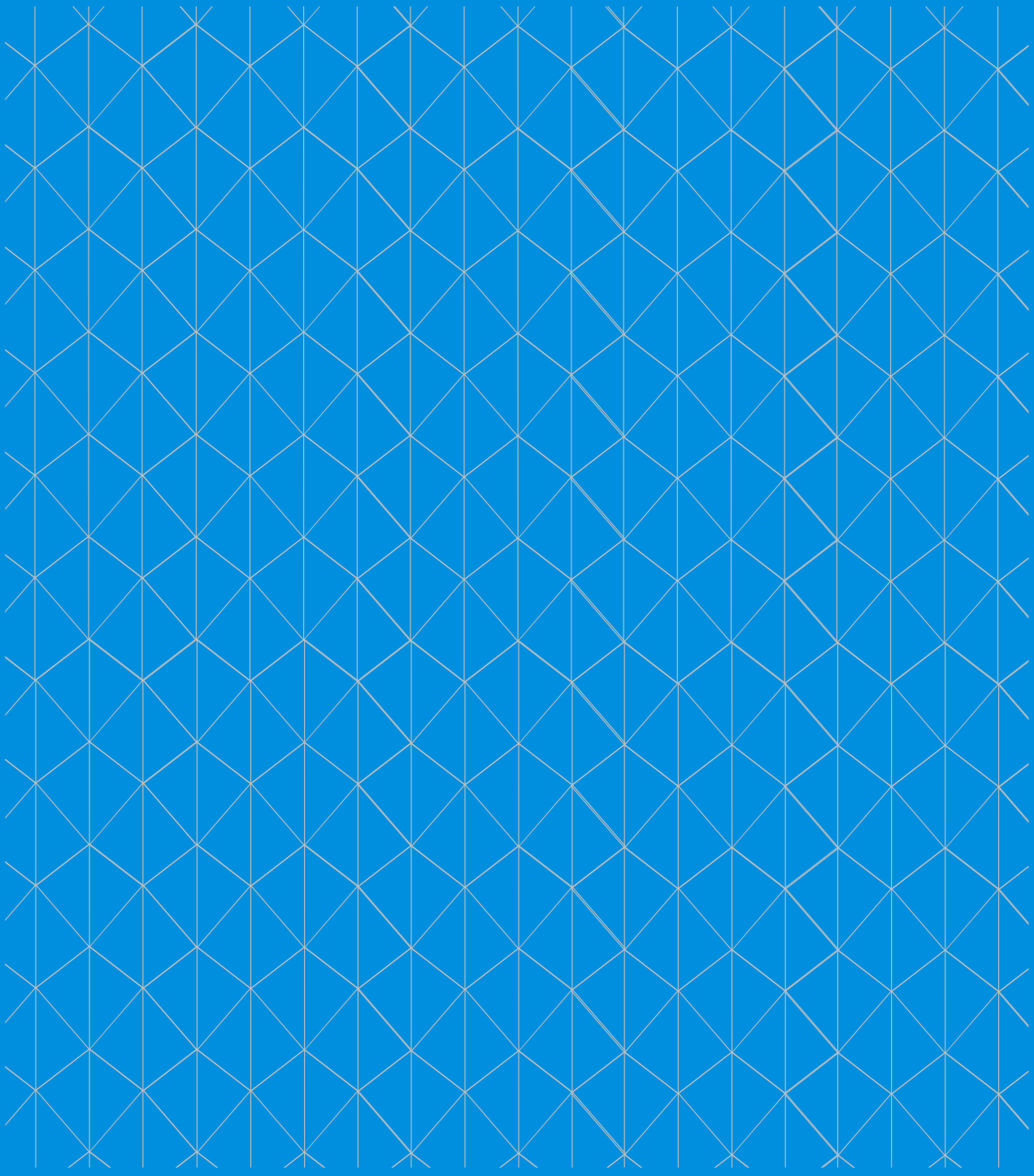
For countries:

- Countries should seek to establish a formal mechanism (including communication, legal frameworks, and memoranda of understanding (MoUs) for coordinated capacity and response for dealing with disease outbreaks in wildlife (e.g. a multi-sectoral agency working group or committee).
- Countries should develop a cross-sectoral; communication plan for wildlife disease outbreaks, for example, by using the exercise shared during the meeting as a resource (see https://www.oie.int/fileadmin/Home/eng/Internationa_Standard_Setting/docs/pdf/WGWildlife/A_Training_Manual_Wildlife_5.pdf pages 194-196).
- Countries should establish baseline health data on wildlife populations (using, for example, data from the literature, ongoing work in wildlife departments and research in wildlife sciences), in order to inform surveillance activities.
- Countries should undertake active and passive surveillance for PPR in PPR-susceptible wild ungulates, which takes a situational and risk-based approach.
- Countries should encourage notification of suspected PPR cases in wildlife by enhancing awareness among all relevant stakeholders, and develop partner networks that can identify potential cases in the field.
- Countries should also take advantage of opportunistic sampling of wildlife, and ensure that results (including negative results) are recorded, along with all available epidemiological and ecological metadata, and published if possible.
- Countries should report confirmed cases of PPR in wildlife to OIE.
- Countries should ensure that an individual with wildlife expertise is part of the National PPR Coordination Team and the team involved in completing the PPR Monitoring and Assessment Tool (PMAT) assessment.
- Countries should consider PPR in wildlife when updating their National Strategic Plans for PPR.
- Countries should consider the use of technologies such as SMART to enhance information sharing and reporting for wildlife health (see https://smartconservationtools.org/ and https://oneworldonehealth.wcs.org/SMARThealth.aspx).

For FAO/OIE and partners:

- The participant list from the workshop should be used to maintain communication between the PPR Secretariat, and Regional Offices as appropriate, with this community, to provide updates on other training events and initiatives related to PPR at the wildlife–livestock interface (for example, the outcomes of the Global Challenges Research Fund (GCRF) Research Translation Award project on validated serological tests for wildlife).
- Participants should be asked to identify their priorities for future training needs (this was done in the post-workshop questionnaire).
- An event webpage should be created, including workshop presentations and training resources (such as the FAO/OIE Guidelines for PPR Control and Prevention in Wildlife, Steppe Health SNAPP Working Group).
- Annexes should be developed for the FAO/OIE Guidelines for PPR Control and Prevention in Wildlife, led by the PPR GEP Secretariat, the OIE Working Group on Wildlife and the Wildlife Group of the GREN and with collaborating partners as appropriate (e.g. the development of the diagnostic annex will be led by the Joint FAO/IAEA Centre (Nuclear Technique in Food Agriculture, CJN) in collaboration with the FAO and OIE Reference Laboratories/Centres).
- When organizing a PPR simulation exercise, the wildlife component should be considered as part of the exercise.
- Continue to respond to partner and country needs related to PPR and wildlife as they arise.

Annex



Final agenda

DAY 1		
Time (UTC)	**Topics**	**Speakers**
05:00	Welcome and Introductions from FAO, OIE (10 min)	*FAO/OIE Regional Offices*
05:10	Brief introduction to meeting's aim and agenda (5 min)	*FAO/OIE Secretariat*
05:15	Summary of the history of PPR in Asian wildflife, the epidemiology of the disease in wildlife and possible role of wildlife (10 min)	*Richard Kock*
05:25	Update from Bhutan on recent PPR events in wildlife (10 min)	*A nominee from each country*
05:35*	Update from Mongolia on recent PPR events in wildlife (10 min)	*A nominee from each country*
05:45	Update from Nepal on recent PPR events in wildlife (10 min)	*A nominee from each country*
05:55	Update from Iran on recent PPR events in wildlife (10 min)	*A nominee from each country*
06:05	Discussion	*All participants*
HEALTH BREAK		
06:20	Guidelines for Prevention and Control of PPR in wildlife (10 min)	*Jonathan Sleeman*
06:30	PPR notification in wildlife and PPR situation in wildlife in Asia and globally (15 min)	*Paolo Tizzani, OIE WAHIAD*
06:45	Global and Regional/National Architecture of Wildlife health (research and intervention) (15 min)	*Richard Kock*
07:00	Principles and Practice of Wildlife Disease Outbreak Investigations (30 min)	*Jonathan Sleeman/ Richard Kock*
07:30	One Health Approach to Disease Management (interagency coordination and governance) (20 min)	*Jonathan Sleeman*
07:50-08:00	Discussion	*All participants*

** no presentation was provided by Mongolia*

DAY 2		
Time (UTC)	**Topics**	**Speakers**
05:00	Laboratory Diagnostics (including sample collection) (60 min)	*William Dundon*
06:00	Field Experiences of outbreak investigations of PPR in wildlife in Mongolia (10 min)	*WCS (Amanda Fine/Enkhtuvshin Shiilegdamba)*
06:10	Field Experiences of outbreak investigations of PPR in wildlife in Iran (10 min)	*Sasan Fereidouni/Mahmoud Marashi*
06:20	Risk analysis for wildlife disease events (15 min)	*Ludovic Plee, FAO Emergency Management Centre for Animal Health*
HEALTH BREAK		
06:20	SMART and tools to support wildlife disease surveillance networks (20 min)	*Diego Montecino*
06:30	Field Experience of using SMART to investigate wildlife disease events (20 min)	*Kinley Choden (NCD, Bhutan)*
06:45	Discussion, Action Items, Next Steps (40 min)	*All participants*

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GF-TADs
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

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