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2021 EFSA/IZSAM Animal Health Crisis Preparedness Exercise with Mediterranean Countries

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Abstract

In July 2021, the European Food Safety Authority (EFSA) jointly devised, developed and delivered an online workshop on animal health crisis preparedness with IZSAM, focusing on Rift Valley fever (RVF). The overall training objective was to improve incident response collaboration between animal and public health authorities from multiple countries, using a 'One Health' approach. The 4 specific exercise learning objectives were to test and improve skills in: (a) outbreak investigation; (b) prevention of RVF outbreaks; (c) control of RVF outbreaks; (d) identifying and communicating to affected stakeholders about RVF outbreaks. Workshop content was jointly developed by EFSA, IZSAM and Instinctif Partners, with input from ECDC, FAO, OIE, WHO and EC DG SANTE. Twenty-seven participants from 6 EU Member States (MSs) and 3 EU candidate countries attended the training, as well as 12 observers from 3 EU MSs and 3 international organisations. Plenary and working group activities extended across 3 days, preceded by the availability of an online RVF eLearning package developed by IZSAM. During the morning of Day One, 8 presentations were provided on various topics: (a) 'One Health'; (b) how EFSA and ECDC respond in urgent situations such as cross-border threats of zoonotic disease emergencies; (c) best practices in emergency risk communication; (d) examples of national-level preparedness activities; (e) lessons learned from FAO RVF missions in Mauritania. From the afternoon of Day One to the morning of Day Three, a desktop discussion addressed the national and EU-level responses that would ensue if RVF entered the EU, based on a fictional scenario. An additional presentation on Day Three reported on a recent RVF simulation exercise in Bulgaria. Concluding the event, subject matter experts provided interactive training on: (a) emergency response capacity building; (b) 'One Health'; (c) risk communication. The objectives of the event were achieved, based on recorded outcomes and feedback provided by participants in a series of online evaluation surveys. In addition, discussions during the event generated several practical recommendations for future enhancements and improvements.

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Key words: Rift Valley fever, RVF, One Health, training, crisis preparedness, networking, collaboration

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Summary

The European Food Safety Authority (EFSA), in conjunction with the Istituto Zooprofilattico Sperimentale dell' Abruzzo e del Molise (IZSAM) developed an online crisis preparedness workshop comprising 18.25 hours of training scheduled over 3 days (designated Day One, Day Two and Day Three below). The objective was to improve incident response collaboration between animal and public health authorities in preparedness for future zoonotic disease outbreaks, adopting a 'One Health' approach.

Due to ongoing travel restrictions arising from the Coronavirus disease 2019 (COVID-19) pandemic, the training was hosted online using IZSAM's Webex meeting system. It was attended by participants from animal health, public health and food safety disciplines from 6 European Union (EU) Member States (MSs) and 3 EU candidate countries, as well as subject matter expert presenters and observers from international animal and public health organisations. Prior to the training workshop, participants had the opportunity to participate in a detailed Rift Valley fever (RVF) eLearning training course developed specifically for the exercise by subject-matter experts at IZSAM.

Under an overall training theme of "strengthening the network of Italy and its Mediterranean neighbouring countries on rapid risk assessment (RRA), risk/crisis management, and risk communication during a human health/animal health crisis, adopting the 'One Health' Approach", 4 specific exercise learning objectives were set to test and improve skills in:

- outbreak investigation;
- prevention of RVF outbreaks;
- control of RVF outbreaks; and
- identifying and communicating to affected stakeholders about RVF outbreaks.

Two specific topics were covered during training:

- How best to collaborate in the phases of data gathering, risk assessment, risk communication.
- Networking to further exchange of information and data between all stakeholders (across departmental and national boundaries).

Day One of the workshop comprised during the morning session a number of presentations on RVF and related crisis response/preparedness topics, together with presentations by France, Italy and Montenegro on their national approaches to animal health incident preparedness.

From the afternoon of Day One until the morning of Day Three participants undertook a discussion-based simulation exercise based on a fictional but realistic technical scenario, where RVF enters the EU through contaminated products shipped from an East African country. The exercise concluded with a series of debrief activities, followed by a final presentation on another recent RVF simulation exercise undertaken by the UN Food & Agriculture Organisation (FAO) in Bulgaria.

During the afternoon of Day Three, and concluding the event, each participant was invited to attend 1 of 3 interactive training sessions delivered by international subject matter experts in 'One Health', Capacity Building and Risk Communication.

Participants gave positive feedback on the event, indicating through 3 discrete online evaluation questionnaires that the eLearning content, informative presentations, desktop discussion exercise and interactive training sessions had been useful and had encouraged them to change certain ways of working as a result of attending the event.

Through their feedback to the workshop evaluation questionnaire, participants also made important suggestions on ways to enhance future training workshops—particularly events held online.

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1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

1.1.1. Instinctif Partners Ltd

Contract number: Specific Contract (SPC) No. 01, implementing Framework Contract (FWC) No. OC/EFSA/SCER/2020/01, awarded by EFSA to Instinctif Partners Ltd.

Contract title: 'Food and feed safety crises preparedness'.

The overall objectives of the FWC are as follows:

- increase EFSA staff's knowledge and understanding of general crisis handling concepts and specifically of EFSA's crisis handling procedures;
- increase collaboration between EFSA and the institutional stakeholders that EFSA is likely to work with, during incident/crisis situations within EFSA's remit; and
- support the continuous improvement of EFSA's crisis handling procedures.

The specific objectives of the FWC are as follows:

- to develop a multi-annual training programme to enhance EFSA's crisis preparedness;
- to execute the multi-annual training programme; and
- to advise EFSA and make recommendations on areas that need further improvement for crisis preparedness.

Instinctif Partners served as crisis training facilitation consultants to the project, with duties including:

- strategic direction and project management during the preparation phase;
- supporting the sourcing and briefing of subject matter experts for the Day One and Day Three presentations;
- administrative support for IZSAM, including liaison with participants, presenters and observers, drafting evaluation questions for the training session, reviewing materials and minute-taking at meetings;
- chairing the Day One morning session of the training;
- contributing to breakout group discussions; and
- recording key details of discussions and presentations.

1.1.2. EFSA four-year crisis training strategy

Following a Call for Tenders based on EFSA's 2020-2022 Programming Document (EFSA, 2019a), Instinctif Partners was appointed to a four-year FWC with EFSA, to be implemented under SPCs issued on an annual basis.

Instinctif Partners proposed, in consultation with the Scientific Committee and Emerging Risks (SCER) unit of EFSA, a 4-year food and feed safety crisis preparedness training strategy for EFSA (Instinctif Partners Ltd., 2020). This was based on an audit of previous training exercises and responses to urgent advice requests, as well as input from EFSA personnel involved in monitoring emerging risks and those developing new crisis management tools and processes.

Additionally, the proposed strategy—and by derivation the 2021 crisis preparedness activity detailed elsewhere in this document—was designed to align with EFSA's wider strategic contexts, including:

- the prevailing strategy context at the time of publication, i.e. *EFSA Strategy 2020: Trusted science for safe food* (EFSA, 2016b); and

- the anticipated future strategic context, i.e. *EFSA Strategy 2027: Science, safe food, sustainability* (EFSA, 2021), in which Strategic Objective 2.1.2 requires that “the quality and scale of crisis preparedness and the identification of emerging risks is improved”.

The theme for the 4 years’ training is ‘Trusted Transparent Response’. This was chosen to reflect the challenge, not only of responding effectively in a crisis situation, but also being perceived to be responding effectively and in an open and transparent way. This theme builds on those adopted for the previous 2 4-year strategy periods, i.e.

- 2012 to 2015: ‘Effective Collaboration’
- 2017 to 2020: ‘Connected Capabilities’

The precise format of each year’s training is developed to meet the prevailing needs, with all events likely to comprise a combination of:

- concise, lecture-style presentations;
- plenary and small-group discussions;
- practical experience of using information-gathering and analysis tools (where applicable); and
- practical experience of responding to simulated crisis-type situations involving a range of hazards, encompassing technical and communication aspects.

1.1.3. IZSAM

Grant Agreement number: GP/EFSA/SCER/2020/01 Support EFSA’s Programme for Crisis Preparedness Trainings, awarded by EFSA to IZSAM.

Grant Agreement title: ‘Organisation of a workshop including a simulation exercise to strengthen the regional network of Italy for food and feed crises preparedness and communication’

In accordance with Article 55 of Council Regulation (EC) No 178/2002¹, the European Commission (EC) has drawn up, in close cooperation with EFSA and the MSs, a general plan for crisis management in the field of food and feed safety².

Lessons learned from food and feed safety crises showed the importance of crisis preparedness and collaboration between the institutions on different levels (European, national, regional) and remits (Public Health, Food Safety, Veterinary Public Health, etc.).

EFSA’s role is to provide scientific technical assistance for the assessment and communication of risks associated with the food chain, working together with the other European Agencies such as the European Centre for Disease Prevention & Control (ECDC); the European Chemicals Agency (ECHA); and the European Medicines Agency (EMA). This includes among other tasks the preparation of databases and analytical tools for risk assessments as well as training activities.

It is an overall objective of EFSA’s multi-annual training programme on crisis preparedness to increase awareness and collaboration between the European and national actors by conducting realistic simulation exercises.

The main goal of the above-mentioned Grant Agreement between EFSA and IZSAM is to strengthen the network of Italy and its Mediterranean neighbouring countries on RRA, risk/crisis management, and risk communication during a human health/animal health crisis, adopting a ‘One Health’ Approach. It was

¹ Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority (EFSA) and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p.1)

² Commission Implementing Decision (EU) 2019/300 of 19 February 2019 establishing a general plan for crisis management in the field of the safety of food and feed (OJ L 50, 21.2.2019, p. 55)

expected to reach this goal by organising a simulation exercise (crisis preparedness workshop) based on the following activities:

- **Networking:** bringing together risk assessors, risk/crisis managers, and risk communicators of neighbouring countries of Italy, the EC and EFSA.
- **Sharing:** presenting existing procedures to use in crisis for RRA, tracing, uncertainty assessment, coordinated communication from different areas, e.g. Human and Animal Health.
- **Motivating:** showing the advantage of preparedness by practising the knowledge in a realistic simulation exercise.

In the framework of this agreement, IZSAM involved its scientific and methodological experts in order to design, manage and deliver the eLearning preparatory training phase, and the web-based crisis preparedness workshop in collaboration with Instinctif Partners.

1.1.3.1. Target groups for the workshop

Target groups included:

- risk assessors, risk/crisis managers, and risk communicators from Albania, Croatia, France, Greece, Italy, Montenegro, Portugal, Spain and Turkey;
- observers from EFSA, EC, World Health Organisation (WHO), World Organisation for Animal Health (OIE), ECDC, FAO, European Commission for the Control of Foot-and-Mouth Disease (EuFMD);
- staff from different sectors (e.g. Human and Animal Health) and perspectives (e.g. regional, national, European, and international).

Participants are listed in Appendix A.

1.1.3.2. Workshop delivery

The training workshop was delivered using IZSAM's Cisco Webex training platform. The event was delivered over 3 consecutive days from 6 to 8 July 2021.

1.1.4. IZSAM's role

IZSAM played a key-role in all project phases, adopting an interdisciplinary approach in strong synergy with the EFSA and Instinctif Partners experts for the success of this training initiative. IZSAM's tasks were organised into 2 work packages:

1.1.4.1. Work Package 1: Support, development and delivery of the simulation exercise

Having established a group of internal developers, IZSAM assisted EFSA and its crisis preparedness contractor in the preparation of the simulation exercise, providing technical and scientific support for:

- designing the scenario proposal;
- setting the training methodologies;
- profiling and building of the group of participants;
- design and multimedia production of eLearning training tools;
- development of the scenario, workshop training and communication material;
- definition of the event agenda;
- proposal of additional workshop topics/presentations and identification of speakers; and
- drafting the external scientific report in collaboration with Instinctif Partners.

1.1.4.2. Work Package 2: Workshop organisation

IZSAM was responsible for:

- participants' survey on the content of the training and IT issues that could arise;
- support to candidate participants during the enrolment phase within the IZSAM webinar platform;
- coordination, management and eTutoring during the delivery phase of the eLearning preparatory training session;
- coordination and management during the delivery phase of the three-day simulation exercise;
- IT and secretarial support;
- collection of abstracts of presentations and presentations from presenters;
- collection of an attendance list of all the participants that attended the workshop; and
- participants' satisfaction analysis.

The role of IZSAM was crucial to define specific training materials, approaches and delivery methods, such as:

- simulation exercise scenario storyboard, including key 'real world' events and timescale of scenario;
- informative briefing presentations;
- 'hands-on' training sessions;
- pre-survey of the participants' needs and expectations;
- final agenda for the crisis preparedness workshop, including the list of participants, workshop information leaflet for participants, and organisational details;
- customised web-based learning environment for synchronous and asynchronous training sessions;
- eLearning module made of interactive and multimedia materials for the preparatory phase to the web-based crisis preparedness workshop, and related eLearning session;
- simulation exercise injects, including detailed chronology, delivery format and content;
- crisis preparedness workshop;
- documentation of the workshop, including presentations/abstracts and the attendance list;
- satisfaction questionnaires; and
- event report.

2. Development of the 2021 event

2.1. Overall objectives

The event was conceived under an overall training theme: “To strengthen the network of Italy and its Mediterranean neighbouring countries on rapid risk assessment, risk/crisis management, and risk communication during a human health/animal health crisis, adopting the ‘One Health’ approach”.

Practical implementation of the theme was translated into an overall training objective: “To improve incident response collaboration between animal and public health authorities from multiple countries, using a ‘One Health’ approach”—and 4 specific exercise learning objectives intended to test and improve skills in:

- outbreak investigation;
- prevention of RVF outbreaks;
- control of RVF outbreaks; and
- identifying and communicating to affected stakeholders about RVF outbreaks.

Two specific topics were covered during training:

- how best to collaborate in the phases of data gathering, risk assessment, risk communication; and
- networking to further exchange of information and data between all stakeholders (across departmental and national boundaries).

2.2. Development of training content and methodology

2.2.1. Development of training content

This simulation exercise was based on a fictional case study in which a zoonotic mosquito-borne disease (RVF), not currently present in Europe, was accidentally introduced to the EU via the arrival of infected vectors from an RVF-endemic country (see Appendix B for details).

The hypothesis of the introduction of RVF virus (RVFV) infected vectors through sea cargoes is in line with possible scenarios on RVF introduction in Europe considered in the EFSA opinion on RVF risk of introduction in the EU, adopted in January 2020 (EFSA, 2020).

The scenario considered the introduction of RVFV infected vectors in specific areas along the Croatian coast. This choice was made for the training purposes to contextualise the events from a temporal and spatial point of view; no specific considerations were made to any specific Croatian authority or institution.

The scenario unfolds chronologically through 3 key points at which crucial decisions must be taken:

- 1) initially, just after the confirmation of RVF presence and organisation of activities for early response;
- 2) later, when surveillance actions must be organised for a proper assessment of the epidemiological situation; and
- 3) finally, when control strategies must be identified, following the establishment of the disease in part of the national territory.

The simulation exercise followed a preparatory eLearning training phase delivered as detailed in Section 2.2.1.1 below.

2.2.1.1. Development of e-learning module

The eLearning module was designed, produced and delivered to provide the event participants with the necessary basic, entry-level knowledge about RVF, including a brief history and the health and economic implications for the areas in which it is present. The main morphological and structural features of the virus were described as well as its pathogenesis and resistance to physical and chemical agents. The epidemiology of the disease was discussed, specifically in relation to geographic distribution, transmission, receptive hosts, reservoirs, vectors, and the factors that favour its spread.

Following on from this, there was a detailed review of the signs and the anatomo-histopathological lesions caused by RVF in sheep, goats, cattle, camels and in humans. The main diagnostic tools were summarised, together with the illnesses requiring differential diagnosis and the matrices to be sampled in order to make a clinical, anatomo-histopathological and laboratory diagnosis. The final area of focus was on prevention and control, with reference to the monitoring methods and control strategies to be adopted in order to limit the spread of RVF. More details are provided in Annex A.

2.2.2. Development of methodology

The principal training approach adopted for this simulation was the 'incident case' methodology. It is characterised by the following aspects:

- it is based on a particular event;
- it is very appropriate for decision making processes;
- it stimulates analytical and problem-solving skills; and
- it provides the basis for discussion of alternative solutions to a common problem.

The simulation exercise followed a preparatory 2/3-hour e-learning training phase (see previous section).

3. Training workshop agendas and descriptions of content/activities

3.1. Day One (Tuesday 5 July 2021)

Time	Agenda item			
0900	Online training environment open for participants to join at their convenience			
0930	Welcome to the event on behalf of EFSA and IZSAM	Plenary presentation	Bernard Bottex (EFSA) Paolo Calistri (IZSAM)	Section 3.4.1
0935	Overview of the agenda and details of the first day's activities	Plenary presentation	Julia Johnson & Andrew Vincent (Instinctif Partners)	
0940	Presentation: 'Fostering One Health?'	Plenary presentation	Susanne Dittman Rasmussen & Luis Vivas-Alegre (EC DG SANTE)	Section 3.4.2
1005	Presentation: 'EFSA Procedures for responding to urgent advice needs'	Plenary presentation	Bernard Bottex (EFSA)	Section 3.4.3
1020	ECDC's response and intersectoral collaboration during cross-border threats of zoonotic disease emergences	Plenary presentation	Tamas Bakonyi (ECDC) Francesca Baldinelli (EFSA)	Section 3.4.4 Section 3.4.4.1
1050	Emergency risk communications during a multi-country food-/feed-safety incident			
1115	Break			

Time	Agenda item			
1130	France—national animal health contingency plans and general preparedness	Plenary presentation	Khadija Ayadi-Akrout (Ministry of Agriculture & Food, France)	Section 3.4.6.1
1140	Italy—national animal health contingency plans and general preparedness	Plenary presentation	Francesca Calvetti (Ministry of Health, Italy)	Section 3.4.6.2
1150	Montenegro—national animal health contingency plans and general preparedness	Plenary presentation	Jelena Vračar Filipović (Directorate of Food Safety, Veterinary & Phytosanitary Affairs, Montenegro)	Section 3.4.6.3
1205	Lessons learned from RVF response missions	Plenary presentation	Ludovic Plée (FAO Emergency Management Centre for Animal Health)	Section 3.4.7
1240	Explanation of logistical arrangements for the crisis preparedness simulation exercise			
1245	Lunch			
1400	Introduction to crisis preparedness simulation exercise	Plenary presentation	Paolo Calistri & Ombretta Pediconi (IZSAM)	
1415	Simulation exercise, Round 1			
1630	End			

3.2. Day Two (Wednesday 6 July 2021)

Time	Agenda item	Type	Presented/led by...	Further details in...
0930	Presentation of all subgroups' outcomes from Round 1 of the exercise	Plenary presentations (10 minutes per group)	Appointed rapporteurs from each group	Section 3.5.1
	Simulation exercise, Round 2	Small group activities	Group facilitators	Section 3.5.2
1245	Lunch			
1345	Presentation of all subgroups' outcomes from Round 2 of the exercise	Plenary presentations (10 minutes per group)	Appointed rapporteurs from each group	Section 3.5.2
	Simulation exercise, Round 3	Small group activities	Group facilitators	Section 3.5.3
1630	End			

3.3. Day Three (Thursday 7 July 2021)

Time	Agenda item	Type	Presented/led by...	Further details in...
0930	Presentation of all subgroups' outcomes from Round 3 of the exercise	Plenary presentations (10 minutes per group)	Appointed rapporteurs from each group	Section 3.5.3
1040	Simulation exercise debrief	Plenary presentation	Paolo Calistri (IZSAM)	Section 3.5.4
1055	Break			
1110	Discussion of insights gained/lessons learned	Panel discussion with observers	Paolo Calistri (IZSAM)	Section 3.5.5
1130	Opportunity to complete online evaluation of Day One presentations, plus crisis preparedness simulation exercise activities on Days Two and Three	Individual activity	Participants	Section 4
1145	Lessons learned from the RVF exercise in Bulgaria organised by EuFMD	Plenary presentation	Maria de la Puente Arévalo (FAO EuFMD)	Section 3.6
1200	Introduction to the afternoon's interactive training sessions	Plenary presentation	Julia Johnson & Andrew Vincent (Instinctif Partners)	
1210	Closing words	Plenary presentation	Bernard Bottex (EFSA) Alessandra Perrella (Italian Ministry of Health)	
1230	Lunch			
1330	<u>Interactive Training Session—Option 1:</u> Assessing capacities for emergency and disaster management	Small group activity	Barbara Alessandrini (OIE)	Section 3.7.1
	<u>Interactive Training Session—Option 3:</u> Improving mutual understanding between animal health and public health professionals—future directions in 'One Health' approaches'	Small group activity	Cécile Aenishaenslin (University of Montreal) Alessio Lorusso (IZSAM)	Section 3.7.2
	<u>Interactive Training Session—Option 2:</u> Best practice in risk communication during a crisis	Small group activity	Eibhlínn Lynam & Daniela Scalise (FAO)	Section 3.7.3
1520	Opportunity to complete online evaluation of interactive training sessions	Individual activity	Participants	Section 6
1530	End			

3.4. Summary of Day One presentations

3.4.1. Welcome

Bernard Bottex, Team Leader, Emerging Risks in the EFSA SCER Unit, welcomed the participants to the training session and set out its context within EFSA's four-year crisis preparedness training strategy (Instinctif Partners, 2020). He provided an update on previous training exercises and thanked participants, presenters and observers from MSs, EU candidate countries, and animal and public health international organisations for their participation.

3.4.2. Keynote presentation on 'One Health'

This presentation, given jointly by Susanne Dittmann Rasmussen and Luis Vivas-Alegre from EC DG SANTE, commenced by synthesising the 'One Health' concept as a multi-disciplinary approach bringing together animal health, human health, agronomy, plant health, food production, the environment and climate considerations.

It could be considered that 'One Health' is an inherent component of the 'Farm to Fork' strategy, part of the European Green Deal³. The 'Farm to Fork' strategy recognises the interdependencies at all stages of the food chain, and the consequent need to achieve social, environmental and economic, sustainability and resilience goals while also taking advantage of new opportunities. The case study of 2011's multi-country outbreaks of *E. Coli*, arising from contamination of fenugreek seeds, was used to illustrate the point about the 'One Health' challenges that can be posed by extended supply chains and changes in consumer behaviour.

'One Health' also lies at the heart of EU initiatives to tackle Antimicrobial Resistance (AMR), for example in the 2017 European 'One Health' Action Plan against Antimicrobial Resistance⁴. The revision of EU regulated *Salmonella* microbiological targets in poultry production had implemented a 'One Health' approach. Furthermore and linked to EU Horizon 2020 research and innovation activities, there is a 'One Health' European Joint Programme⁵, coordinated by the French Agency for Food, Environmental and Occupational Health & Safety (ANSES). The goal of this European Joint Programme initiative is to "reinforce collaboration between institutes by enhancing transdisciplinary cooperation and integration of activities", encompassing foodborne zoonoses, AMR and emerging threats. It is worth noting that a Horizon Europe research and innovation Partnership on 'One Health – AMR' has been proposed for the coming years.

Some of the principal factors influencing the implementation of 'One Health' in practice are, for example:

- ownership, transparency and quality of data;
- education beyond classical human and veterinary disciplines;
- local to global 'One Health' governance models;
- multi-disciplinary, multi-actor engagement from researchers and policymakers to farmers and industry; and
- citizens' awareness and responsibility.

Finally, the presenters emphasised that access to local data is critical in responding to an animal disease outbreak and highlighted the need for "data siloes" to be broken down so that local data is shared effectively.

³ Available online: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

⁴ Available online: https://ec.europa.eu/health/antimicrobial-resistance/eu-action-on-antimicrobial-resistance_en

⁵ Available online: <https://onehealthjep.eu/>

3.4.3. EFSA Procedures for responding to urgent advice needs

This presentation, delivered by Bernard Bottex (EFSA), set out the EC legislation under which EFSA operates and interacts with the EC and MSs⁶; and the requirements introduced in 2019 (within the general plan for crisis management) for crisis coordination when Enhanced Coordination at Union level is necessary, or if a Crisis Unit would be established⁷.

EFSA has a standing mandate for risk assessment, and there are various circumstances in which EFSA would be requested to perform an RRA, in full cooperation with at least the affected MSs. EFSA has handled 14 urgent responses since 2007; and 6 requests for urgent technical assistance were handled without activating EFSA's *Procedures for responding to urgent advice needs* (EFSA, 2019b).

EFSA's involvement in an urgent response is to: assess the public health risk, advise on sampling and testing methods and strategies, and/or identify the critical sampling sites along the food/feed chain. MSs' EFSA Focal Points (FPs) are contacted to disseminate requests for specific information coming from EFSA or other focal points through the relevant national networks.

The EFSA urgent response procedures are updated on a bi-yearly cycle, with the most recent update having taken place in October 2019. The purpose is to:

- ensure effective response;
- provide guidance on practical arrangements; and
- take into consideration all the lessons learnt from previous experiences.

The EFSA urgent response procedures align with the general plan for crisis management⁵, adding explanation of situations requiring (i) enhanced coordination at European level; and (ii) the setting up of a Crisis Unit.

EFSA responds at 1 of 3 levels:

- Level 0.5
 - Potential urgent issues are identified, but no official request has yet been received
 - Existing monitoring activities on a specific issue are reinforced
- Level 1
 - Incident does not require intensive leadership, case management and staff allocation
 - Established if EC DG SANTE establishes enhanced coordination at Union level
- Level 2
 - Event requires intensive leadership, case management and staff allocation
 - Established if EC DG SANTE sets up a Crisis Unit

Predetermined 'Incident Science', 'Incident Communications' and 'Incident Management' teams are deployed according to the level of response established. Specific collaboration channels are created in Microsoft Teams by the EFSA SCER Unit for each new urgent response.

In case of foodborne zoonotic diseases, EFSA works with ECDC to perform a Joint Rapid Outbreak Assessment (JROA).

⁶ Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority (EFSA) and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p.1)

⁷ Commission Implementing Decision (EU) 2019/300 of 19 February 2019 establishing a general plan for crisis management in the field of the safety of food and feed (OJ L 50, 21.2.2019, p. 55)

3.4.4. ECDC's response and intersectoral collaboration during cross-border threats of zoonotic disease emergences

The main part of this presentation was delivered by Tamas Bakonyi from the Emerging, Food and Vector-borne Diseases Programme of ECDC. ECDC's mission and mandate were explained, as well as how the agency works with European and international stakeholders in the field of public health (mostly EU MSs and global public health agencies).

For ECDC, 'One Health' is the intersection of human health, animal health and the environment. Data is the most important requirement in informing any public health response. ECDC conducts indicator-based surveillance (of existing cases) and event-based surveillance (of new threats).

EpiPulse is the newly launched European surveillance portal for infectious diseases, accessible by MSs. It covers indicator-based and event-based surveillance and operates in the field of risk assessment. The Early Warning & Response System (EWRS) remains the risk management channel for MSs.

Details of how the event-based surveillance part of EpiPulse works were briefed.

The presentation also covered how ECDC responds to an emergency situation, and how ECDC would respond in the case of an RVF outbreak in Europe.

3.4.4.1. EFSA ECDC collaboration on avian influenza and SARS-CoV-2

As a contribution to the ECDC presentation, Francesca Baldinelli (EFSA's Animal & Plant Health Unit) shared case studies providing examples of how EFSA has worked with ECDC over the past year to produce Avian Influenza (AI) overview scientific reports, a threat assessment brief following the first identification of AI human cases; and—in relation to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infections of mustelids—monitoring reports and an RRA.

3.4.5. Emergency risk communications during a multi-country food/feed-safety incident

Giovanni Mancarella and Francesca Avanzini (EFSA's Communication Unit) started their presentation with the challenge of delineating crisis and risk communication in the absence of a formal regulatory definition. EFSA's proposed solution is to use the term 'crisis communication' whenever referring to a food- or feed-related incident; recognising as such that crisis communication should not occur only upon entering the 'hot phase' of a live response but should commence instead with prevention and preparation during the 'cold phase' of business as usual.

EFSA has 5 basic crisis communication principles:

- 1) communicate quickly to protect human health;
- 2) take control of communicating about the situation— even if facts are still unknown;
- 3) identify who you need to communicate with and how you will reach them;
- 4) be clear and transparent; and
- 5) collaborate: remember crises don't stop at international borders; network and prepare in 'peacetime'.

EFSA's crisis communication guidelines⁸, initially published in March 2016 (EFSA, 2016a), are due to be updated in 2021 in conjunction with members of EFSA's Communications Experts Network (CEN). EFSA should always be considered a source of information and resources for communication during a crisis, in addition to being a recipient of information. Interaction with EFSA operates within a four-phase workflow:

⁸ Available online: http://www.efsa.europa.eu/sites/default/files/crisis_manual_160315.pdf

- 1) information gathering;
- 2) preparing communication systems and materials;
- 3) external communication; and
- 4) monitoring and reviewing progress.

Social media has set new expectations for the way organisations communicate, particularly:

- an anticipation that there will be dialogue, not simply broadcast;
- that there will be a prompt and ongoing response;
- that there will be engagement on users' terms, with honest and plain speech; and
- that questions will be answered and concerns addressed in a 'human' way.

This, in turn, places great importance on the need for spokespeople who can put a human face on an organisation and deliver corporate messages correctly in order to earn the public's trust.

Another essential communication aspect to manage during a crisis is the impact on an organisation's reputation. EFSA uses a variety of tools to measure reputation during 'peacetime' and during a crisis response—from media monitoring and social listening tools, to social science and website/multimedia analytics. During a crisis the CEN would play a crucial role, coordinating risk assessment-related crisis communications between its members and the EC, ensuring timely access to information for all members, exchanging best practice experience and support for ensuring coherence and coordination of communication activities between EFSA, MSs and the EC.

Two crisis communication case studies were presented, both relating to multi-country foodborne disease outbreaks in which EFSA worked with ECDC to produce Rapid Outbreak Assessments:

- multi-country outbreak of *Salmonella* Agona infections linked to infant formula (EFSA/ECDC, 2018); and
- multi-country outbreak of *Listeria monocytogenes* clonal complex 8 infections linked to consumption of cold-smoked fish products (EFSA/ECDC, 2019).

Finally, there was a preview of the new EFSA Crisis Communications Roadmap, currently under development prior to anticipated implementation in 2022. Based on 3 pillars of 'capacity building', 'procedures & roles' and 'cooperation with partners & stakeholders', the roadmap seeks to achieve full integration of crisis communication into crisis preparedness & emergency response systems.

3.4.6. National animal health contingency plans and general preparedness

3.4.6.1. France (presentation by Khadija Ayadi-Akrout of the Sanitary Emergencies Unit within the General Directorate of Food in the Ministry of Agriculture and Food)

Under the structure for contingency planning and emergency management in France, ultimate responsibility rests with prefects (*préfets*) across the country.

Alert and escalation routes from central government to and from all stakeholders are clearly established and there is a single chain of command via the prefects. This structure is used for every kind of unexpected civic emergency, including epizootic events, plant health issues, fire and floods.

The above-mentioned plan was activated for the highly pathogenic avian influenza (HPAI) during the winter of 2020-2021—an example used during the presentation to illustrate how the plan is enacted during an outbreak response.

3.4.6.2. Italy (presentation by Francesca Calvetti of the Directorate General for Animal Health & Veterinary Medicinal Products within the Ministry of Health)

Italy's 'Itavetplan' aims to identify necessary resources and define essential aspects such as the tasks, responsibilities, methodologies and coordination required to enact the necessary surveillance, eradication and emergency management activities required to protect public health, improve animal health and reduce the risk of animal disease spread.

A national 'Vetinfo' web portal plays a central role in managing all information flows related to animal identification and registration, plus information related to official controls and other official activities, hence centralising data that could be required by EFSA, OIE and the EC.

The 'SIMAN' information system for animal disease notification is part of Vetinfo; it is an online tool for outbreak management both in terms of epidemiological investigation and step-by-step application of contingency plans.

Regarding the latter, Italy has adopted a unique contingency plan for all animal diseases, with 'technical cards' for each disease annexed to the plan, administered by a national animal disease control centre. A case study of Italy's response to epidemic waves of Highly Pathogenic Avian Influenza (HPAI) H5N8, experienced from December 2016 to March 2018, concluded to the presentation.

3.4.6.3. Montenegro (presentation by Jelena Vračar Filipović of the Montenegrin Administration of Food Safety, Veterinary & Phytosanitary Affairs)

Montenegro, which is an EU candidate country, has a system for animal health emergency management set out in a contingency plan, which is harmonised with EU processes.

Dedicated legislation and measures for the management of certain animal diseases, including RVF, are specified in a "rulebook". The rulebook includes measures to be taken upon suspicion of an outbreak, and when an outbreak is confirmed (to prevent reoccurrence and to learn from previous outbreaks).

Case studies of how the contingency plan was used in response to outbreaks of Lumpy Skin Disease (LSD) and African Swine Fever (ASF) were presented, together with the perceived strengths and weaknesses of the contingency plan and areas currently under development.

The presenter reported on a joint external evaluation of Montenegro's International Health Regulations (IHR) core capacities, that took place in May 2019—additionally, this included an evaluation of the investigation and response systems for zoonotic and foodborne outbreaks. A number of development areas were identified and are being implemented.

3.4.7. Lessons learned from RVF response missions

This presentation was given by Ludovic Plée, Manager of the FAO's Emergency Management Centre for Animal Health (EMC-AH), based in the FAO headquarters, which is involved in preparedness, response, incident coordination and collaboration/resources mobilisation at a global level.

The presentation described how Mauritania has evolved its 'One Health' capacity over the past 11 years in response to a series of RVF outbreaks. Improved collaboration between veterinary services and public health have increased the country's capacity to respond to future emergencies.

3.4.7.1. December 2010 outbreak: lessons learned from a novel situation

Traditionally in Mauritania, RVF outbreaks occur along the Senegal river, where the environment is more favourable for (mosquito) vector spread due to the presence of water. Accordingly, when in December 2010 news was received that people and camels were dying in the middle of the desert, vector-borne diseases were not initially considered the likely cause.

However, investigations by an EMC-AH field mission sent to Mauritania established that atypical rains in the desert had created many shallow lakes ideal for vector spread, with muddy areas on their margins where mosquito species could lay eggs. The rains had also promoted the growth of abundant vegetation

suitable for animal grazing, encouraging large numbers of animals such as camels to be transported into the area.

These 2 factors in combination significantly primed the RVF disease epidemiological cycle, with the introduction of infected animals in turn infecting the vector population (mostly *Culex* mosquito species), driving further spread to other animals and humans—especially farmers and slaughterhouse workers, veterinarians in contact with affected animals, and wider consumers coming into contact with infected food items. Plus, vectors carried not only RVF but also malaria into populations that had not experienced it previously.

Due to the Ministries of Health and Agriculture working separately, divergent separate risk communication messages potentially caused confusion and didn't target all stakeholders effectively.

It also meant that veterinary services were not made aware of malaria-like symptoms in humans (e.g. fever) in order to perform triangulation to animal populations to consider possible zoonotic connections.

3.4.7.2. November 2020 outbreak: a better outcome but still lessons to learn

November 2020 saw the gravest and most extensive RVF outbreak in Mauritania. In many ways this resembled the 2010 outbreak, with oases formed in desert areas due to heavy rains and large numbers of camels dying. However, this time a much wider range of areas was affected, and among 78 positive human cases with haemorrhagic symptoms, regrettably there were 25 fatalities.

Unlike in 2010, Mauritania was able to take more of a 'One Health' approach to the outbreak, for example in undertaking joint public/animal health investigation of cases (with rapid intervention teams in the field) and collaborating in risk communications. However, while the latter were better integrated this time, they were developed by technical specialists rather than subject-matter experts who would have been able to guide superior tailoring of messages and an overall approach that would have been more effective for the populations in greatest need of advice.

3.5. Simulation Exercise

As detailed in Section 2.2.1, the scenario considered the introduction of RVF infected vectors in specific areas along the coast of Croatia. During the simulation exercise participants were organised in different working groups (WGs) and invited to answer 3 sets of questions for each of the 3 exercise stages. Templates and other guiding documents were provided to the participants to help the implementation process and supported by expert facilitators. Results are described in Sections 3.5.1 to 3.5.3

In the elaboration of the outcomes of the WG exercise, participants did not have to refer to specific Croatian authorities, institutions or legal acts or provisions issued by the Croatian authorities, but to a broader European context. According to individual roles, each participant involved in working-group activities brought relevant competencies, experiences, perspectives and proposals to achieve the expected goals in the discussion, adopting a collaborative approach with the other group members. Supported by facilitators, every WG aimed to reach consensus-based conclusions that a rapporteur presented step-by-step, in subsequent plenary feedback sessions.

3.5.1. Part 1

At this stage the participants were asked to provide their views about the different professions and disciplines that should be represented within the National Crisis Unit (NCU) to be established to coordinate the control measures against the health crisis following the confirmation of RVF introduction into the country. Overall, the participants indicated the following institutions and related competencies should be included into the NCU, for the 3 risk sectors (Risk Management – RM; Risk Assessment – RA; Risk Communication - RC):

- National level – RM/RA/RC
 - Ministries of Human/Animal Health

- Ministry of Agriculture
- Ministry of Environment & Finance Representatives of regions
- Ministry of Defence/Interior Affairs (logistical resources)
- Veterinary Chamber (fieldwork/eradication)
- Laboratories (diagnoses)
- Ministry of Transport
- National level – RM
 - National Crisis Management Committee
- International level – RM
 - International organisations (e.g. OIE, EC, EuFMD, WHO)
 - EU reference laboratories
 - Additional lab resource outside country for diagnosis, confirmation etc.
- EU – RA
 - EFSA
 - ECDC

This multisectoral approach is particularly crucial for a vector borne zoonosis like RVF, which can require the involvement of experts in various fields. The WG identified many figures to be engaged such as entomologists, climatologists, pests control experts, biologists, epidemiologists, statisticians, social media professionals, economists, in addition to representatives from animal and public health disciplines.

3.5.2. Part 2

Participants were asked to reflect on the epidemiological data that would need to be collected for a proper assessment of the situation, and how these data should be exchanged among administrations. This can be considered as an example on how to apply the 'One Health' approach in practice. In fact, data sharing among all administrations involved is the key point for the implementation of any integrated control measure. The main data identified by the WGs were the following:

- Veterinary data (affected species, breeding locations, number of animals produced at each location)
- Animal & products movement/traceability
- Entomological data (testing mosquitoes for RVF)
- Serological (sentinels) & virological (human) data
- Food production data
- Clinical data (abortion, survival)
- Environmental—weather data

In addition, participants were asked to identify the potential stakeholders to be considered and the communication strategies that should be put in place, defining the main objectives of the messages and possible communication channels to be used.

The implementation of a correct communication strategy, in fact, is a crucial aspect in the management of a zoonosis like RVF, which could have an impact not only on farmers but also more generally on communities, potentially modifying living and social habits—also due to the adverse risk perceptions commonly linked to a vector borne disease.

In details, veterinarians, farmers, slaughterhouse workers, healthcare providers and consumers were listed among the main potential stakeholders while communication strategies and related objectives were identified as follows in Table 1.

Table 1: Summary of comments recorded by participants in the provided discussion categories, during WG discussions for Part 2 of the simulation exercises.

Stakeholders	Objectives of message	Channel	By whom (sender)	To whom (receiver)
Veterinarians	<p>Awareness of the situation including case definition and protocol on what to communicate</p> <p>Awareness of potential new cases</p> <p>What type of data to collect & report</p> <p>Good practice e.g. Protective Personal Equipment (PPE) use</p> <p>Advice to give to farmers</p>	Official communication, telephone, email, <i>ad hoc</i> meetings	National veterinary authorities	Local veterinarians National health authorities (note: with a different message from local vets)
Farmers	<p>Awareness of the situation (e.g. 'suspicious' symptoms to look out for)</p> <p>Good practice (e.g. call the vet if you see symptoms—and don't touch the animal)</p> <p>Essential biosecurity measures, how to notify veterinarians, how to protect animals, how to protect themselves etc. (especially in small-scale domestic slaughterhouses)</p> <p>Reduction of economic impact</p>	<p>Leaflets, posters (infographics), verbal / <i>ad hoc</i> meetings (vets), farmers' association, local authority / administration</p> <p>Media (radio, TV)</p>	<p>National veterinary authorities</p> <p>Local vets</p>	Farmers, farmers' association, local authority / administration
Slaughterhouse workers	<p>Awareness of the situation</p> <p>Good practice e.g. PPE use, report to vet if you see symptoms (and don't touch the animal)</p> <p>Need for caution/protective measures when handling potentially affected animal carcasses</p>	Official communication, <i>ad hoc</i> meetings	Facility vets	All slaughterhouse staff Retail butchers
Healthcare providers	<p>Awareness of the situation including case definition and protocol on what to communicate</p> <p>Symptoms</p> <p>What type of data to collect / report</p> <p>Clinical best practice</p>	Official communication, telephone, email, <i>ad hoc</i> meetings	National health authorities	Local medical professionals

Stakeholders	Objectives of message	Channel	By whom (sender)	To whom (receiver)
Border Inspection Posts	Strengthening the border Stop the spread	Official information	Central Level	Inspectors
Consumers	Follow official announcements – the national authorities have the problem under control, be reassured. Carefully word—and be specific—on food advice e.g. cook meat thoroughly Do not follow non-official information Precise information on the recalled food products Reassurance	Social media, media (radio, TV, print), official authority websites, press conferences, website created specifically for this situation	National food authorities	General public and consumer organisations

3.5.3. Part 3

The relationship with European Institutions is another important factor for effective management of a health emergency arising from a transboundary disease like RVF. Therefore for the final part of the simulation exercise, the participants were asked to discuss and elaborate 2 areas of thought:

- 1) risk questions that should be posed to EFSA in the framework of a mandate for urgent risk assessment, to be useful to guide the decisions on the best control and prevention options to be applied; and
- 2) other factors that should guide the decision of Animal Health authorities, in addition to the outcomes of the EFSA risk assessment.

Results are provided in Tables 2 and 3 below:

Table 2: Summary of participants' responses to the question: "Which risk questions should be posed to EFSA to be useful to guide the decisions on the best control and prevention options to be applied? Which type of data should be provided to EFSA for the risk assessment?"

Risk questions	Type of data	Data sources	Possible constraints and critical issues
Capacity for virus to become established and spread both within the infected country and to direct neighbouring countries. Advise appropriate strategy to control virus spread.	Epi data: incidence		
Likelihood virus will spread after summer/probability of infection over winter	Epi data on extension of infection; abundance of mosquitoes; temperatures and variations during winter season...		
Probability that infection will be halted by use of vaccines	Immunity duration (evidence from field studies of prior deployment)	Probability that infection will be halted by use of vaccines	Immunity duration (evidence from field studies of prior deployment)
Relative effectiveness of different combined measures to limit spread of virus (e.g. various use of pesticides vs. vaccination vs. quarantine / stamping out)—ideal combinations based on actual picture? (Modelling of different measures to be applied.)	Based on the 'current specific picture'.	Current picture from national competent authorities	
	Pesticides	Existing literature (considering residues/side effects)	
	Effectiveness of vaccination	Existing literature (e.g. OIE, international organisations)	
Likelihood of that mosquitos from infected areas are capable of flying to non-infected areas (separate from distribution)	Existing published distribution data for different species (flying capacity in km)		
Probability that disease will spread during next days/weeks/months through movement of wild animals	Presence and distribution of different wildlife species		
Probability that disease will spread during next days/weeks/months through movement of domestic/farmed animals	Epi data: incidence		
What is the geographical infection extension?	Microbiological determination in cattle and vectors	Field veterinarians and entomologists	No control of animal movement
Speed of virus transmission	Serological tests in animals	National laboratory (entomologists, biologists)	Management of information

Risk questions	Type of data	Data sources	Possible constraints and critical issues
Risk of transmission according to weather conditions	PCR insect pools	Meteorology	Insufficient data
Risk of transmission from <i>Aedes</i> spp. to local mosquitoes	Climate models	National laboratory testing insects	Climate changes
Risk of transmission by animal products	Molecular data insect pools	Laboratory of food-safety authority	Insufficient data
Vaccination as an appropriate solution to control this situation	Laboratory tests	Data from FAO; OIE	Insufficient laboratory tests
Development of epidemiological model of the disease to compare different control options and social economic impact of the disease (e.g. what would be the minimum radius for the definition of the restriction, vector control strategies etc.)	Vaccine types	What type of vaccination and effectiveness	Inapplicable data
Vaccination with non-DIVA vaccine	Mosquito population	MSs	Lack of information
Wildlife involvement or role in transmission	Animal populations	Endemic countries experts	Uncertainty
Characterization of the vector activity along the year	Epidemiological parameters	Scientific literature	Lack of information
Comparisons with any similar, previous vector-borne incidents	Animal population	Vaccine labs	Uncertainty
Speed, extent and medium of disease spread	Technical information about vaccines	Endemic countries' experience of vaccination from <i>in vitro</i> clinical trials	Lack of information
Whether virus is more infectious in some species than others	Vector transmission in vaccinated animals	Member States	Uncertainty
Countries involved / that could be affected	Wildlife population,	Endemic countries' experts	Environmental authorities' involvement
Probability of transmission by mosquito and impact on latter of temperature / rainfall (i.e. to inform how far into Autumn the disease may be encountered)	Parameters	Scientific literature	Some lab constraints

Table 3: Summary of participants' responses to the question: "Which other factors should guide the decision of Animal Health authorities, in addition to the outcomes of the EFSA risk assessment?"

Description of factors to be considered	Reasons for considering	Importance for final decision (relevant / marginal)
Socio-economic considerations on whole food production chain, e.g. from farmers to finished product manufacturers and consumers; and associated areas such as tourism.	Financial impact on / compensation to the impacted organisations / sectors.	Socio-economic considerations on whole food production chain, e.g. from farmers to finished product manufacturers and consumers; and associated areas such as tourism.
Public perception of 'extreme' control measures (e.g. mass culling)	Political/societal acceptance of desired risk management actions.	Relevant insofar as more serious/controversial measures may prove more contentious and thus harder to implement.
Environmental factors (e.g. use of pesticides)	Public concern over zoonotic characteristics of the disease (and implications for food consumption habits)	But urgent control measures may need to be enacted swiftly and unilaterally.
Human health Economic impact Social impact	Protecting 'licence to operate' against attacks from NGOs/activists	Relevant—would be considered when considering pesticides as one of the control measure options.
	Impact on ecosystems and public health from extended/ extensive use of pesticides	Very Relevant
	Transmission of the virus to people	Very Relevant
Vulnerable human category (economic/social impact)	Economic impact of stamping out policy; no trade; no export	Relevant (it depends on number of people involved)
Founding availability	Reaction to the information or, in contrast reaction for animal health (reaction of animalists)	Very Relevant
Cost benefit analysis of control options	Public opinion very sensitive to vulnerable people (pregnant, babies)	Very Relevant
Risk perception by General Population and Stakeholders		Relevant
Social, cultural, economical impact	Limit of resources available	Relevant
Proportion of risk groups in the region concerned	Acceptability of measures in the long or short term	Relevant
International trade	Acceptability of measures in the long or short term	Relevant
Economic factors	Morbidity and Mortality rate	Relevant
Environmental	Available human resources, equipment and insurance schemes, co-operation of farmers	Relevant
Public perception of 'extreme' control measures (e.g. mass culling)	Communication, confidence in authorities, acceptability of control measures,	Relevant

Description of factors to be considered	Reasons for considering	Importance for final decision (relevant / marginal)
	perception of risk challenges	
Environmental factors (e.g. use of pesticides)	Climate change, meteorological authorities, acceptability of control measures, perception of	Relevant insofar as more serious/controversial measures may prove more contentious and thus harder to implement.
Human health	Political/societal acceptance of desired risk management actions.	But urgent control measures may need to be enacted swiftly and unilaterally.

3.5.4. Simulation exercise debrief

Common to all of the WG opinions was a strong belief in the importance of adopting the 'One Health' approach in all steps. In addition, other feedback from the WGs highlighted the importance of:

- the crisis preparedness phase;
- collecting and sharing data from many different sources (entomology, climatic, wildlife);
- having already established skills, capacities and facilities for entomological surveillance and mosquito control;
- setting a transboundary and international surveillance system and control actions;
- communication strategies and the need for proper communication skills and dedicated personnel;
- awareness campaigns for the stakeholders (farmers, slaughterhouse workers, private vets, etc.); and
- considering the impact of control measures on environment and their social acceptability.

3.5.5. Insights gained/lessons learned

Although originally planned as a 'physically-attended' event, the ongoing COVID-19 pandemic required the 2021 EFSA/IZSAM Animal Health Crisis Preparedness Exercise to be reconfigured as a 'distance-learning' event. A combination of methods and resources were tailored to provide an effective training programme, based on prior experience of delivering similar programmes

At an event where not only is the core topic is very specific and not commonly known, it's important to harmonise the 'entry knowledge' of participants representing various countries, different organisations and professional positions. A particular challenge to successful engagement of participants in this type of event is the need to avoid individuals feeling isolated from the wider training cohort. To mitigate this, high levels of communication with participants and recognition of their individual needs were maintained along the whole distance learning pathway.

Standardised information tools, such as templated documents for recording notes and observations, were developed for use by everyone involved in the exercise: tutors/facilitators, observers and participants themselves.

Careful facilitation of the WG 'virtual breakout' sessions was required to 'break the ice' and create a friendly collaborative environment amongst participants who, in the majority of cases, had not worked together previously. WG facilitators played a central role, both to maintain the rhythm of discussions according to the scenario storyboard and time schedule; and to encourage contributions from all WG participants.

Thanks to this, during the simulation exercise part of the exercise, WG members were active and enthusiastically engaged, yielding often dynamic and ultimately fruitful interactions—crucial for the achievement of the established goals.

Maintaining coordination between the various WG sessions poses another challenge in a virtual tabletop exercise where physical intervention is impossible. This was managed at the 'participant' level through the breakout room control and communications functions available within the Webex platforms, via a "control room" operated by the scientific coordinator, web platform manager and the eTutor. At the tutor/facilitator level, 'behind the scenes' communications (e.g. to solve *ad hoc* problems or agree trigger points for next steps) were maintained in a separate private messaging platform using mobile devices.

The approach to implementing the simulation exercise was well accepted by the participants, and the availability of pre-defined templates facilitated the discussion process within the groups. Well-prepared facilitators played a crucial role in stimulating the discussion and guiding the groups to formulate their final answers within the time allocated.

Although the same questions were posed to all WGs, each group demonstrated a unique perspective in response; however, complementary and positive 'One Health' perspectives were observed across all WGs' outputs.

3.6. Lessons learned from the RVF exercise in Bulgaria organised by EuFMD

This presentation was delivered by Maria de la Puente Arévalo of FAO-EuFMD. Although EuFMD normally supports the organisation of physically role-played simulation exercise in specific countries, in this case the exercise in Bulgaria had to be implemented online due to COVID-19 restrictions. It was undertaken using 'Conducttr' software⁹, which provides an interactive IT platform on which participants can receive and respond to a range of inputs—including fictional social media and media posts—in a realistic fashion albeit within a completely offline and secure environment.

The scenario for the event was an outbreak of RVF, although the exercise required participants to work this out for themselves since initially the cause was not revealed. At the end of the simulation, a discussion session on lessons learned and practical next steps was held. The latter included developing standard operating procedures for operationalising joint interventions by animal and public health authorities.

The presentation closed with reference to an online, open access, 'mobile first' course for the efficient recognition, surveillance, prevention and control of RVF¹⁰ which will be live from July 2021. There will also be simulation exercises organised in Spain and Portugal (October 2021).

3.7. Day 3 interactive training sessions

Three interactive sessions were run simultaneously on the final afternoon of the training. Prior to the event, participants were requested to indicate their level of preference for each session by assigning a score from 1 to 3, where 1 was most preferred and 3 was least preferred. In practice, the outcome of this process yielded an even distribution of first choices across the 3 groups, therefore all participants who indicated a preference were able to attend their first-choice training session. Where no preference was expressed, participants were assigned to a session based on facilitators' understanding of their professional sector, discipline and interests. The training content provided during the 3 sessions is summarised below.

⁹ Available online: <https://www.conducttr.com/>

¹⁰ Available online: <https://eufmdlearning.works/>

3.7.1. Assessing capacities for emergency and disaster management

This training session was provided by Barbara Alessandrini, Head of the Capacity-building Department at OIE. It was focused on improving awareness of the importance in assessing institutional and staff capacities within Human Health and Veterinary Services, to be prepared for (and able to respond during) emergencies and disasters affecting human and animal health, in a 'One Health' approach. The training presentation was delivered as 3 components described under the sub-headings below.

3.7.1.1. The evaluation of the Performances of Veterinary Services: a tool to assess institutional capacities

The Performance of Veterinary Services (the 'PVS') is OIE's 'flagship' capacity-building programme¹¹. It is a continuous process aiming to sustainably improve the compliance of veterinary services with international standards. As such, it provides the fundamental methodological basis of what OIE describes as its "multi-staged PVS Pathway cycle of Veterinary Services (VS) support", which has 4 stages:

- 1) orientation;
- 2) evaluation;
- 3) planning; and
- 4) targeted support

The PVS Pathway orientation activities are based on the methodology of the OIE PVS Tool, as the guide for evaluating performance against the international standards published in the Terrestrial Animal Health Code. The PVS Tool, now in its 7th edition, describes 45 Critical Competencies of Veterinary Services, categorised into four Fundamental Components:

- 1) human, physical and financial resources;
- 2) technical authority and capability;
- 3) interaction with stakeholders; and
- 4) access to markets.

The Critical Competencies are systematically evaluated via documentation reviews, interviews and physical observations against 5 qualitative graded levels of advancement. Each one has detailed descriptions or indicators to transparently guide the process. The final output is a comprehensive assessment report, providing a complete overview of current status in VS, evaluating its performance and identifying strengths and weaknesses, based on OIE international Standards.

3.7.1.2. Assessing the critical competences of Human Health and Veterinary Services (VS) for emergency and disaster management (DM)

OIE has published *Guidelines on disaster management and risk reduction in relation to animal health and welfare and veterinary public health*¹². These are intended to strengthen VS capacities, addressing the need to unify all DM components in cohesive response plans using a multidisciplinary approach.

Adopting an 'all-hazards' approach to the management of natural, man-made and technological disasters indicates that a wide range of stakeholders from both government and society should be involved. Accordingly the *Guidelines* advocate the integration of DM and risk reduction measures relevant to national VS into broader networks and policies for resilience, disaster management and response, i.e. those that promote the health and welfare of animals, safeguard human and environmental health ('One Health') and help Member Countries restore and enhance economic and societal conditions in the aftermath of a disaster. The Guidelines put forward a DM cycle encompassing 4 phases:

¹¹ Available online: <https://www.oie.int/app/uploads/2021/03/2019-pvs-tool-final.pdf>

¹² Available online: <https://www.oie.int/en/document/disastermanagement-ang/>

- 1) mitigation & prevention;
- 2) preparedness;
- 3) response; and
- 4) recovery

These can be used as a framework to plan and organise the processes, policies and procedures involved in DM, including disaster risk reduction. Elements that should always be considered include:

- legislation and regulatory authority;
- budgeting and resourcing;
- internal and external communications (processes and infrastructure);
- training and education;
- information technology and knowledge management; and
- integration and coordination with other agencies, organisations and stakeholders.

An example of building a customised approach for improving the emergency preparedness and response of VS through assessment of VS capacities was presented and discussed, using a series of evidence-gathering forms from the PVS Tool's four Fundamental Components, i.e.:

- Chapter I – Human, physical and financial resources
 - Competency and education
 - Continuing education
 - Technical independence
 - Planning, sustainability and management of policies and programmes
 - Coordination capabilities of the veterinary services
 - Emergency funding
- Chapter II – Technical authority and capability
 - Laboratory diagnosis
 - Risk analysis and epidemiology
- Chapter III – Interaction with stakeholders
 - Communication
 - Consultation with stakeholders
 - Accreditation/authorisation/delegation
- Chapter IV – Access to market
 - Veterinary legislation

3.7.1.3. Setting the scene for a learning needs assessment on emergency and disaster management

The final section of the training session introduced the OIE Competency-based learning Framework and its methodology for developing multi-level human resources (HR) competencies from critical institutional competencies, in the context of training. Moreover, the importance of learning needs assessment was underlined as central to this approach, leading to a scalable, continuous capacity-building process focused on emergency and disaster preparedness and response. An example was provided of a multi-approach-

based methodology carried out by Istituto Zooprofilattico Sperimentale dell’Abruzzo e del Molise for the Italian Ministry of Health, also presented during a 2018 Better Training Safer Food (BTSF) workshop¹³.

3.7.2. Improving mutual understanding between animal health and public health professionals—future directions in ‘One Health’ approaches

This training session was delivered jointly by Alessio Lorusso from IZSAM and Cécile Aenishaenslin from the University of Montreal. It highlighted the importance of ‘One Health’ in response to the SARS-CoV-2 pandemic and future similar events. There is an aspiration to erase the ‘invisible line’ between human and veterinary diagnostics to perform strategic tasks and empower the response to future pandemics. Cross-sectoral integration at all surveillance stages would offer effectiveness, economic efficiency, resilience and sustainability—which can be demonstrated from a ‘One Health’ perspective.

3.7.2.1. ‘One Health’ Concept

Alessio Lorusso is a Research Veterinary Officer/Veterinary Virologist at IZSAM. Although unable to attend in person he gave a recorded presentation examining the challenges facing professionals trying to implement a ‘One Health’ approach. Obstacles include:

- lack of public understanding of the role of vets;
- reporting by the media featuring non-experts and medical experts whose specialism lies outside the focus of the outbreak or disease of interest; and
- late deployment of the veterinary sector in zoonotic outbreaks.

The presentation focused on the response to SARS-CoV-2 in different parts of the world, including Italy, to exemplify the challenges faced. The presenter highlighted the importance of surveillance and genome sequencing, introducing the concept of Next Generation Sequencing (NGS), and the vital need for animal health and public health to join forces in combating future pandemics and anti-microbial resistance. He finished by arguing that now is the “last call” for the ‘One Health’ concept and political efforts must be made to encourage collaboration between disciplines and countries, and to build trust in science.

Discussion

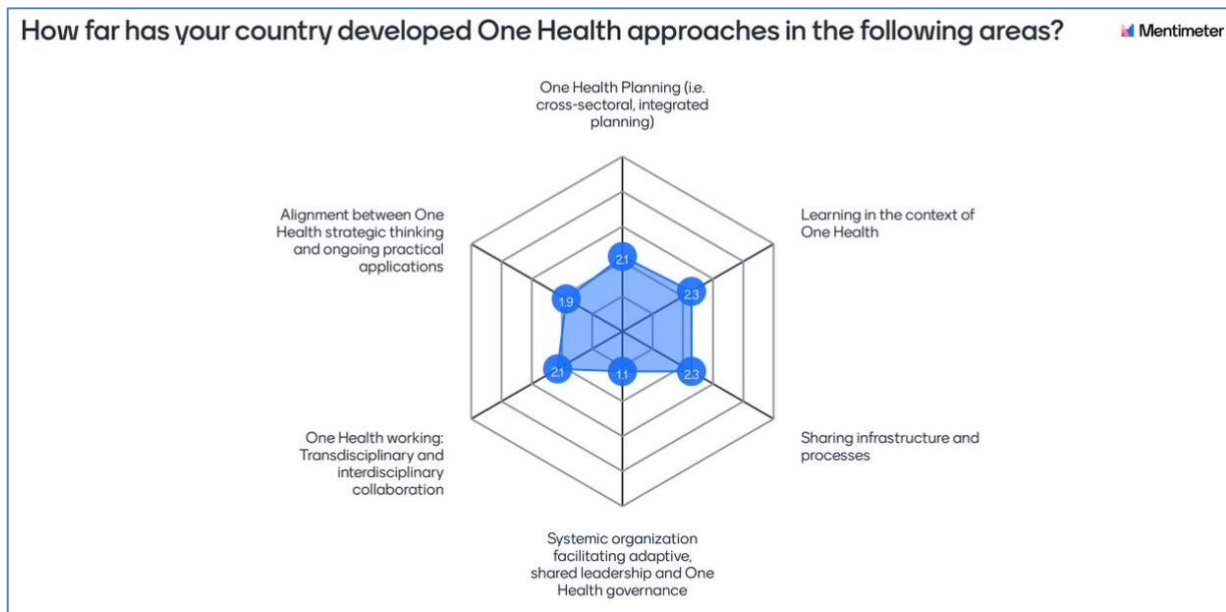
After the presentation, there was a discussion between participants and the following points were made:

- Political will is indeed key. Informal communication on animal health is also vital, together with formal protocols for communication.
- While COVID-19 has been a wake-up call, there was concern that it still won’t be enough to drive ‘One Health’ to where it needs to be. It was felt the veterinary profession takes the concept seriously but other stakeholders less so. A suggestion was made that regulation around ‘One Health’ is required. The participants admitted theoretical conceptualisation of ‘One Health’ but call for early integration of multidisciplinary elements and further education and practical training to facilitate such approach.
- Milen Georgiev (EFSA SCER Unit) created a query-poll for the participants, asking 6 questions on how far participants’ countries had developed ‘One Health’ approaches, based on a suggested conceptual assessment of ‘One Health-ness’ (Rüegg, SR *et al*, 2018; Chapter 3.5). The results are shown in Figure 1 below.

Figure 1: Results of interactive ‘One Health’ poll indicating participants’ views (in scores on the scale 0 to 5) on the status of ‘One Health’ perspectives in Planning, Learning, Sharing

¹³ Available online: https://ec.europa.eu/food/audits-analysis/overview_reports/act_getPDFannx.cfm?ANX_ID=24 (pages 11-14)

infrastructure and processes, Systemic organisation, Working in collaboration, Alignment between strategic thinking and practical application.



None of the areas scored very highly, with all areas coming in below the mid-point. The lowest scoring was 'Systematic organisation facilitating shared leadership' and 'One Health governance'. It was acknowledged that there is still more work to be done.

Cecile Aenishaenslin advised that the concept of a 'One Health' Survey (Rüegg, SR, *et al*, 2018; Chapter 3.5) is an excellent starting point to encourage government departments to take 'One Health' seriously. A cost benefit analysis is also key to this process.

- One participant noted that 'One Health' tends to be used as a 'buzzword' with little understanding of what it means in practice. The fact that there are multiple definitions by different organisations, such as WHO and OIE, complicates matters.
- Spain has a multi-disciplinary approach at all levels, from research to sociology, so there may be opportunities to learn from this methodology.
- Establishing context is a vital prerequisite to establishing the problem that needs solving. One participant noted that in response to COVID-19, 'One Health' wasn't necessarily applied; in her country input from the veterinary sector was sought very late, when much earlier integration would have been preferable.
- The representative from OIE recommended that there should be increased education during veterinary and medical training, involving paraprofessionals and other co-workers.
- The point was made that surveillance of wild animals is very difficult. Typically, responsibility for them does not fall under the veterinary sector nor the ministry of agriculture, therefore it is easy for them to 'fall beneath the radar'.
- Comments noted that the establishment of a One Health High Level Expert Panel¹⁴ was welcomed at the G20 summit in May 2021.
- It is important to share successes when animal and public health sectors have worked effectively together. This, in turn, will encourage knowledge sharing.

¹⁴ See [https://www.who.int/news/item/11-06-2021-26-international-experts-to-kickstart-the-joint-fao-oie-unep-who-one-health-high-level-expert-panel-\(ohhlep\)](https://www.who.int/news/item/11-06-2021-26-international-experts-to-kickstart-the-joint-fao-oie-unep-who-one-health-high-level-expert-panel-(ohhlep))

3.7.2.2. The added value of 'One Health' surveillance

The presentation from Cécile Aenishaenslin (professor at the Faculty of Veterinary Medicine at the University of Montreal and a researcher at the Public Health Research Center and the *Groupe de recherche en épidémiologie des zoonoses et santé publique* [GREZOSP]) focused on the added value of 'One Health' surveillance. She began by examining what 'One Health' surveillance is and defined it as "the systematic collection, validation analysis, interpretation of data and dissemination of information collected on humans, animals and the environment to inform decisions for more effective, evidence and system-based health intervention" (Stark, KDC *et al*, 2015), thereby presenting the view that 'One Health' surveillance is, indeed, more than simply a 'buzzword'.

Surveillance is not a passive process, but an information system. The presenter illustrated this through 2 examples of 'One Health' surveillance in action: the Canadian program for AMR (CIPARS) and the Raccoon rabies surveillance and mitigation program in Québec.

An inventory of frameworks and tools for evaluating 'One Health' surveillance was provided, and the presenter shared 2 open access resources for learning about 'One Health' surveillance evaluation. Both are part of the 'Convergence in evaluation frameworks for integrated surveillance of AMR' (CoEvalAMR) initiative¹⁵ provided by the EU FP7-funded RISKSUR project:

- written guidance on choosing an evaluation framework for surveillance of Antimicrobial Use (AMU) and AMR¹⁶; and
- supporting video resources.¹⁷

Discussion

The participants appreciated the view presented, and comments included:

- indications of other examples of co-working between the public health and animal health sectors, including professional contributions of vets within ECDC and *ad hoc* complex situations when various experts may get involved;
- highlighting the importance of multidisciplinary, 'One Health' approach in the area of AMR;
- outlining some difficulties in achieving practical integration and use of 'One Health' approaches if not supported by policy, and/or if not able to demonstrate an economic efficiency during the work—more knowledge and analysis may be required to demonstrate benefits on public health if the impacts are not direct or clear at first; and
- one participant appreciated the information presented on available tools and options for evaluating 'One Health' surveillance systems, commenting on the usefulness of a tool applied at national level.

3.7.3. Best practice in risk communication during a crisis

This training session was undertaken jointly by Eibhlínn Lynam and Daniela Scalise of FAO. It was based on material originally developed for the publication *Risk communication in animal disease outbreaks and emergencies* (FAO, 2020). The latter, in turn, is based on a risk communication strategy that the FAO Animal Health Emergency Centre for Transboundary Animal Diseases (ECTAD) in Myanmar developed for the Livestock Breeding and Veterinary Department belonging to the Ministry of Agriculture, Livestock and Irrigation (LBVD), within the Republic of the Union of Myanmar. Notwithstanding its origins, the publication is applicable to Western countries.

¹⁵ Available online: <https://coevalamr.fp7-risksur.eu/>

¹⁶ Available online: <https://guidance.fp7-risksur.eu/>

¹⁷ Available online: <https://www.youtube.com/channel/UCIJJaV-o8xUs8DWcqjnt6-g/videos>

A standard definition of risk communication was presented at the outset: “Providing people with accurate information so they can make informed decisions”. Those on the ‘receiving end’ of risk communications are important—it is an exchange of perceptions—hence 3 success factors for this include:

- 1) Interactive, transparent exchange of how a risk is perceived;
- 2) Participatory, non-judgmental discussion in which authorities are open to being wrong; and
- 3) Strategic and tactical use of communication to engage communities for change.

Changing behaviour is a core objective of risk communication. Effecting the necessary behaviour change requires not only education (to improve knowledge) but also risk communication (to affect emotions) and behavioural science (to change the context within social norms).

However, although facts and knowledge could be assumed of paramount importance, in fact they are not always the best motivators; human psychology must be considered too. For example, in relation to Kahnemann’s concepts of fast, instinctive, emotional ‘System 1’ thinking and slower, more deliberate and logical ‘System 2’ thinking (Kahnemann, 2011), in situations where System 1 overrides System 2, showing emotion and concern may be stronger motivators of behaviour change than providing rational facts alone.

An example was given of how COVID-19 risk communications in South-East Asian countries were made more effective by underwriting the specific messages of risk communication with the ‘learned behaviour’ of receiving practical public health advice—a fact of life in countries near to the equator where seasonal disease outbreaks are common.

A challenge for risk communicators is avoiding unintended consequences due to misunderstanding or misperception. An example was given of COVID-19 awareness-raising material illustrating their messages with animals; subsequently some animals were mistreated and abandoned by the public due to fears they were responsible for disease spread. This example highlights the importance of both careful planning and consideration of how intended audiences will perceive and interpret what they see.

A variation on the ‘5W2H’ model was put forward as a framework for risk communication strategy development, i.e. ‘Why?’, ‘Who?’, ‘How?’, ‘What?’, ‘Where?’, ‘When?’; plus ‘What Resources?’ and ‘How Effective?’. Within the ‘How’ part of the framework there are a number of considerations to be made of the environment in which risk communication will take place, i.e.

- Precaution Advocacy—where the authorities are concerned but the public is not;
- Crisis Communication—where both are concerned; and
- Outrage Management—where authorities are not concerned but the public is.

Media trained spokespeople and adequately prepared media packages (e.g. including press releases, photos and video footage) must be used to ensure that risk communication is a ‘two-way’ interaction with the public rather than a ‘one-way’ broadcast. Particularly important within this is the need to monitor the spread of misinformation and rumours, which need to be rebutted with correct information and disseminated through the channels where they arise (a practical example of this is WHO’s COVID-19 ‘Mythbusters’ website¹⁸).

Identifying and establishing stakeholders’ needs is an essential part of effective risk communication—so too is the need to challenge the common perception of stakeholders as passive information receivers; in fact they are very much active decision-makers. WHO’s ‘communications continuum’ model¹⁹, extending from awareness at one end to action and decision-making at the other, is a useful model here.

¹⁸ Available online: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>

¹⁹ WHO Strategic Communications Framework for effective communications 2017, page 10. Available online: <https://cdn.who.int/media/docs/default-source/documents/communication-framework.pdf>

3.7.3.1. Tactics

Development of effective risk communication messages needs to achieve a balance between experts' risk assessments based on probability and consequence of harm related to a disease threat, against non-technical people's judgements that are likely to be based on more personal, emotional, social and cultural influences. Accordingly, if the correct balance is not achieved, either excessively worried consumers may stop purchasing animal products that are safe to eat; or insufficiently informed livestock producers may continue to sell contaminated products that are unsafe.

Through their communication activities, authorities need to build trust by demonstrating:

- power and authority;
- perceived integrity (transparency and honesty) and expertise; and
- caring.

When responding to a live situation, it's important to prioritise content to provide:

- 1) the most important aspects that stakeholders need to know 'right now' about the situation, and guidance related to animal/human health protection;
- 2) the issues they most want to know about; and
- 3) what they are most likely to get wrong.

The FAO's Emotional, Participatory, Imperfect, Continuous (EPIC) toolkit²⁰ provides a useful summary of the behaviours required from risk communicators during a live response:

- E Take your and others' feelings into consideration and share your humanity—people need to feel united during a crisis
- P Ask for help from the public, both in giving them a role as well as allowing them the chance to contribute ideas and share feelings
- I Communicate early, even if information is incomplete—be willing to recognize when you make mistakes; admit them and ask forgiveness.
- C Share regularly and correct any mistakes as soon as possible

Participants undertook an exercise to redraft a fictional risk communication message relating to an outbreak of viral illness in chicken flocks. The objective was to promote action by stakeholders in response to building trust. Participants posted proposed drafts in the online meeting's chat function, prior to being discussed and critiqued by the trainers.

The session concluded with questions and answers, including a discussion about the importance of having an integrated media strategy for dealing with a crisis, for example to include:

- media/social monitoring support to shape, inform or validate social media engagement;
- a website backed by a strong web development team including user experience experts capable of effectively identifying audience needs;
- integrated communications across all channels;
- 'paid' social and digital campaigns; and
- good-quality infographics.

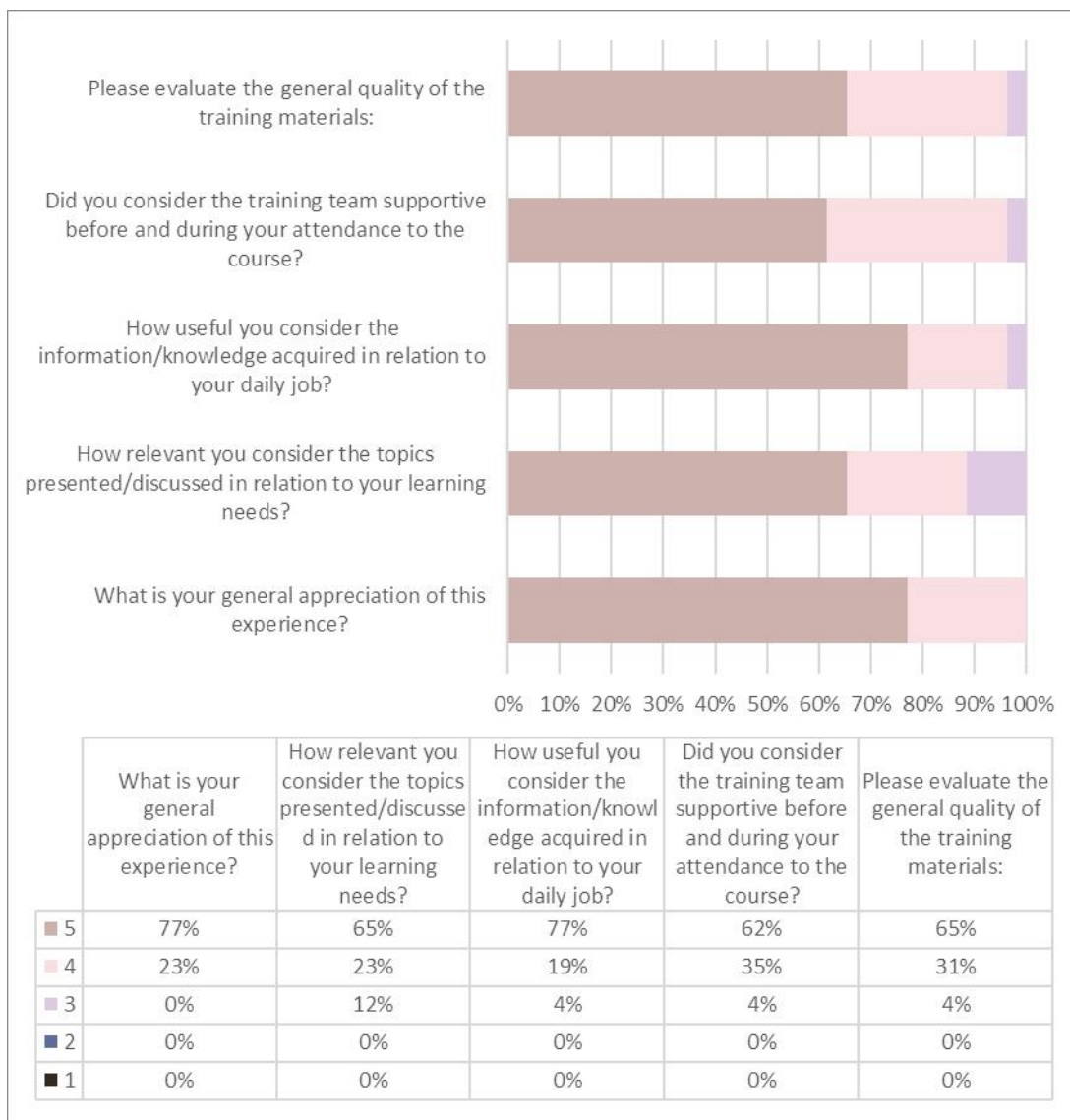
²⁰ Available online: https://eufmdlearning.works/pluginfile.php/8483/mod_page/content/2/EPIC_RiskCommToolkit.pdf

4. Workshop evaluation

4.1. Evaluation of eLearning Activity

At the end of the eLearning course, participants completed an evaluation questionnaire. The respondents' scores for the most relevant aspects are reported in Figure 2 below, where 1 = high and 5 = low.

Figure 2: Proportions of respondents giving scores of 1 to 5 according to criteria provided for questions relating to various aspects of the eLearning experience



4.2. Evaluation of Day One presentations plus crisis preparedness simulation exercise activities on Days Two and Three

Time was set aside during the agenda of Day Three for all participants to evaluate their experience of:

- 1) the plenary presentations and discussions provided in the morning of Day One (as described above in Section 3.4) and on Day Three (described in Section 3.6); and
- 2) the WG and plenary activities facilitated during the simulation exercise in the afternoon of Day One, during Day Two and in the morning of Day Three (described in Section 3.5).

The evaluation was undertaken using an online survey questionnaire comprising 19 questions overall. Responses from 26 participants were collected (i.e. 68% of the 38 participants who attended at least some of the activities on Days One or Two).

Evaluation results are reported in various different categories under Sections 4.2.1 to 4.2.5 below.

4.2.1. Evaluation of event 'as a whole'

Four questions were used to evaluate this category. Two of these requested a qualitative score from 1 to 5 against provided criteria; 1 question requested qualitative comments; and 1 requested multiple-choice selections among a series of statements. Details are provided below.

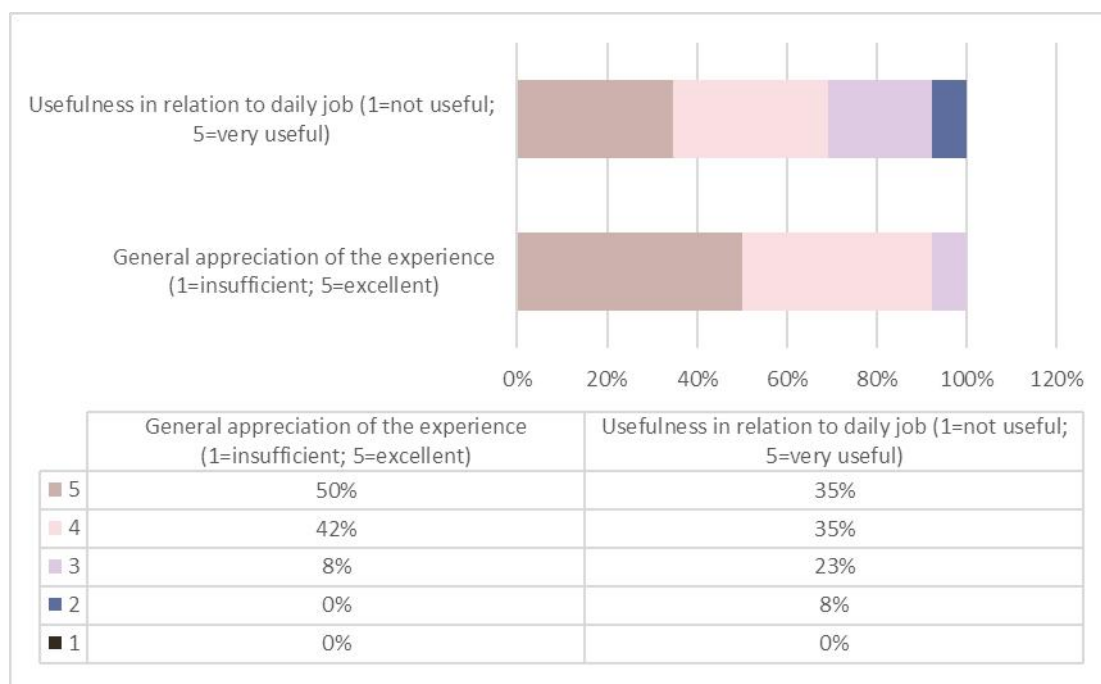
4.2.1.1. Responses to the 2 qualitative scoring questions concerning 'general appreciation' and 'usefulness'

The 2 questions were:

- How useful you consider this event in relation to your daily job?
- What is your general appreciation of this experience?

Results are shown in Figure 3 overleaf.

Figure 3: Proportions of respondents giving scores of 1 to 5 according to criteria provided for questions relating to 'usefulness' and 'appreciation' of the event.



Although not detracting from an overall positive opinion, the lower score regarding the usefulness of the training may reflect the fact that, for an event focused on a broad and interdisciplinary topic such as 'One Health'—hence requiring a diverse training cohort—it's not easy to ensure all participants find all aspects fully relevant to their 'day job'.

The 2 'qualitative' questions used to evaluate this category are discussed below.

4.2.1.2. Summary of qualitative responses to question 'What will you change in the way you work as a result of attending the event?'

All 26 respondents provided comments in response to this question. Of these, 18 were deemed significant and can be grouped under 3 principal activity headings, summarised below:

- Changes in crisis preparedness/response
 - consideration of further work needed to prepare for an event, such as the one described in the fictional simulation exercise scenario—and feeling more 'comfortable' about this;
 - improved knowledge of disease epidemiology and control measures to be used for contingency planning, and for developing national simulation exercises and awareness campaigns; and
 - understanding of how different actors become involved during a crisis (with relevance to the role of EFSA Focal Points).
- Changes in risk/crisis communication
 - awareness of online resources providing risk communication reference materials, which in turn can inspire/catalyse further enhancement of in-house crisis communication processes (again, with relevance to the role of EFSA Focal Points).
- Changes in multidisciplinary collaboration/'One Health'
 - sharing information with colleagues, e.g. availability of helpful 'EU-level' tools;

- enhanced sharing and collection of information and knowledge with national Competent Authorities;
- awareness of need for more intersectoral working when dealing with animal diseases, and especially with zoonoses—advocacy for greater cooperation between animal and health sectors in surveillance activities, response and control;
- involvement of additional professional stakeholders—e.g. specialists from environmental sectors as well as entomologists—in contingency planning, and need for better public communication; and
- importance of consistently promoting the broad 'One Health' approach considering plant health and environmental factors alongside animal and human health.

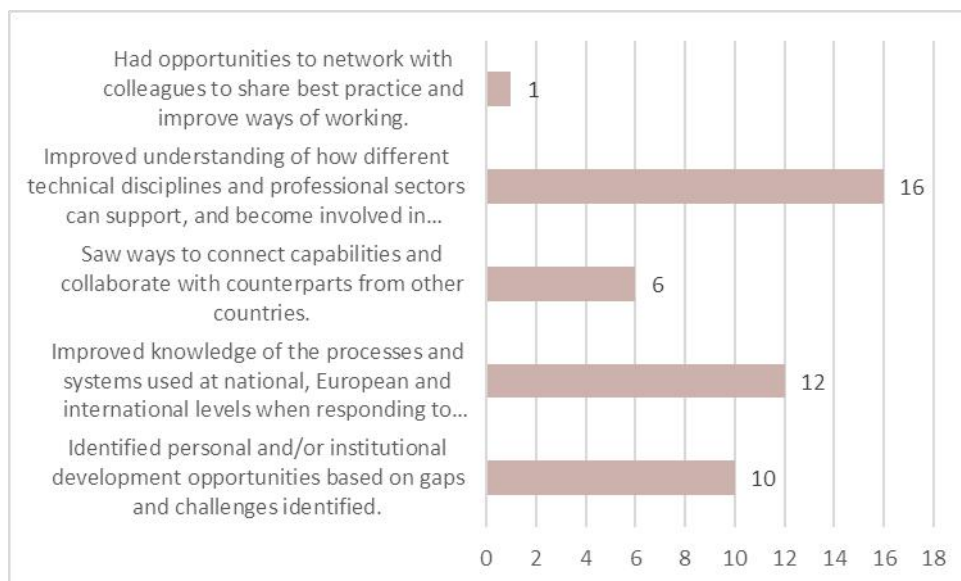
4.2.1.3. Summary of multiple-choice responses to question 'What were the main benefits you received from the event?'

The questionnaire provided 5 'benefit' statements:

- Identified personal and/or institutional development opportunities based on gaps and challenges identified.
- Improved knowledge of the processes and systems used at national, European and international levels when responding to multi-country animal health incidents.
- Saw ways to connect capabilities and collaborate with counterparts from other countries.
- Improved understanding of how different technical disciplines and professional sectors can support, and become involved in actions, by regulatory entities during multi-country animal health incidents.
- Had opportunities to network with colleagues to share best practice and improve ways of working.

Respondents were requested to choose up to 3 of these statements most closely matching their individual perceptions. Twenty-five of the 26 respondents (96%) participated in this question. The chart in Figure 4 overleaf expresses the outcome in terms of the total selections of each statement overall.

Figure 4: Number of respondents who indicated agreement with various provided statements of benefits potentially obtained from the event.



In addition to this question's 'benefit statement options, there was also a free-text 'other' field, into which 1 respondent entered an additional perceived benefit: "Time to think through the issues".

4.2.2. Evaluation of training content

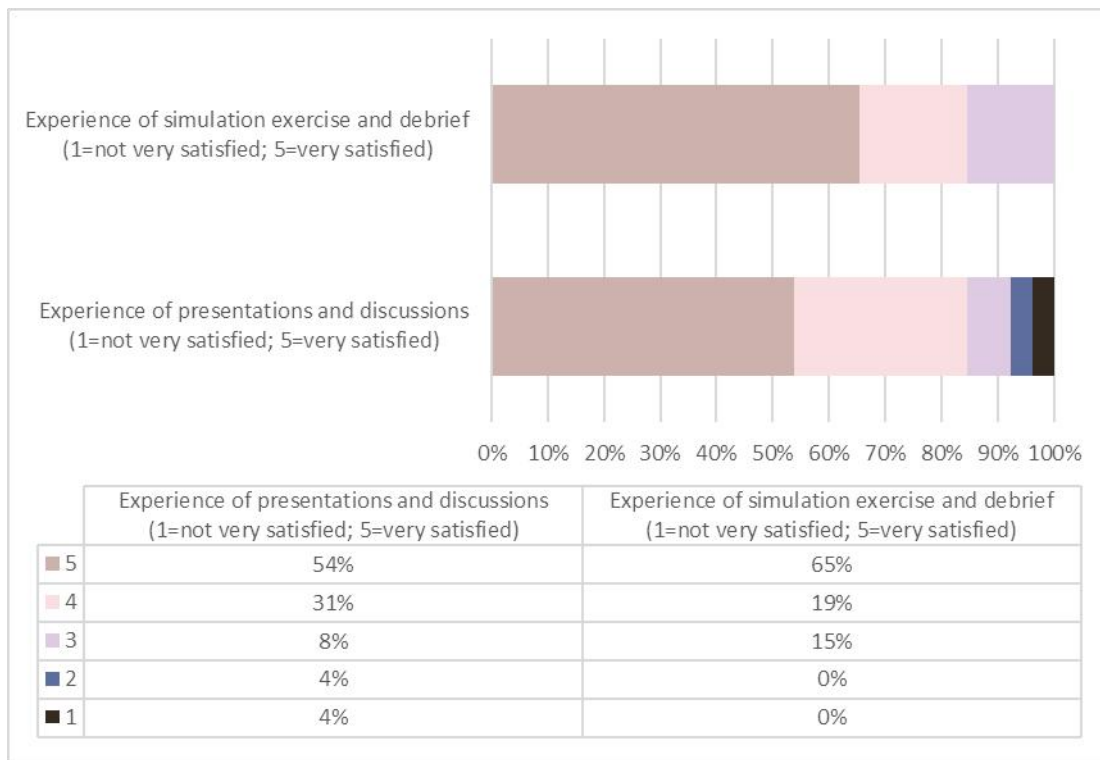
For evaluation purposes, training content was considered in 2 parts:

- 1) Presentations and discussions (Day One and Day Three morning)
- 2) Simulation exercise & debrief (Day One afternoon, Day Two and Day Three morning)

For each part, respondents were asked to provide both a quantitative score and qualitative comments.

Both quantitative questions asked respondents to rate their experience with a score from 1 to 5, where 1 is 'not very satisfied' and 5 is 'very satisfied'. Responses are summarised in Figure 5 overleaf.

Figure 5: Proportions of respondents giving scores of 1 to 5 according to criteria provided, for questions relating to the experience obtained from the event’s presentations and simulation exercise.



The qualitative responses are summarised in Sections 4.2.2.1 and 4.2.2.2 below.

4.2.2.1. Presentations—summary of qualitative responses to question ‘Please indicate which presentation you found most valuable, and any topics or activities that could have been added, or omitted, to improve the experience’

All 26 respondents answered this question; of these, 24 provided useful comments. A ‘most valuable’ ranking was developed (see Table 4 below), based on the total number of times a particular item was mentioned. This includes both references to specific individual presentations and generic statements. A summary of additional qualitative comments is provided below the table.

Table 4: Respondents' indications of the 'most valuable' presentations

Presentation	Number of specific mentions	Section references	Summary/"recital" of relevant supporting comments (where provided)
Emergency risk communications during a multi-country food/feed-safety incident	4	3.4.5	Although risk assessment and management are very important during a crisis, communication need particular care.
Emergency risk communications during a multi-country food/feed-safety incident AND ECDC's response and intersectoral collaboration during cross-border threats of zoonotic disease emergencies	3	3.4.3 3.4.4	
Lessons learned from RVF response missions	2	3.4.7	It was valuable to see how other countries managed and responded to the disease, and the involvement of international organisations in an emergency situation. This presentation provided useful information on real RVF cases.
ECDC's response and intersectoral collaboration during cross-border threats of zoonotic disease emergencies	2	3.4.4	
Not specified (general positive comment)	11		"I found the Day One morning session very well designed, rich in content, nicely presented, all with value for the exercise theme." "Some presentations were a little long but overall were useful. "

In addition to the responses summarised in the table, 1 respondent suggested that "a presentation from a country in Africa or the Middle East that has managed RVF would have been interesting". A few respondents commented that some individual presentations, and indeed the morning session itself, could have been shorter and/or encompassed fewer topics presented by fewer speakers—i.e. could have been more focused. Another proposed solution was to make greater use of pre-reading/eLearning materials.

4.2.2.2. Simulation exercise & debrief—summary of qualitative responses to question 'Please indicate any aspects of the exercise that could have been added, or omitted, to improve the experience'

All 26 respondents provided comments in response to this question; of these, 25 provided useful comments. Twelve respondents indicated there were no aspects that could have been added, supported by remarks such as:

- "exercises were very beneficial for me";
- "good and engaging exercise with participants from various sectors";
- "properly organised activities in the context of a teleconference session"; and
- "all the presentations and explanations made during the training are very valuable to me".

Seven respondents identified 3 aspects that could have been added:

- more active roleplay and configuration as a regional simulation exercise;

- greater accommodation of individual national circumstances, e.g.
 - reflection of diversity in national regulatory frameworks and decision-making
 - practical case studies from each participant country
 - discussions on control measures, e.g. addressing topics such as emergency vaccination (especially if it's possible to incorporate the experience of countries that have successfully deployed this approach); and
- crisis communication.

Six respondents also commented on various 'facilitation' aspects of the exercise, consolidated as follows:

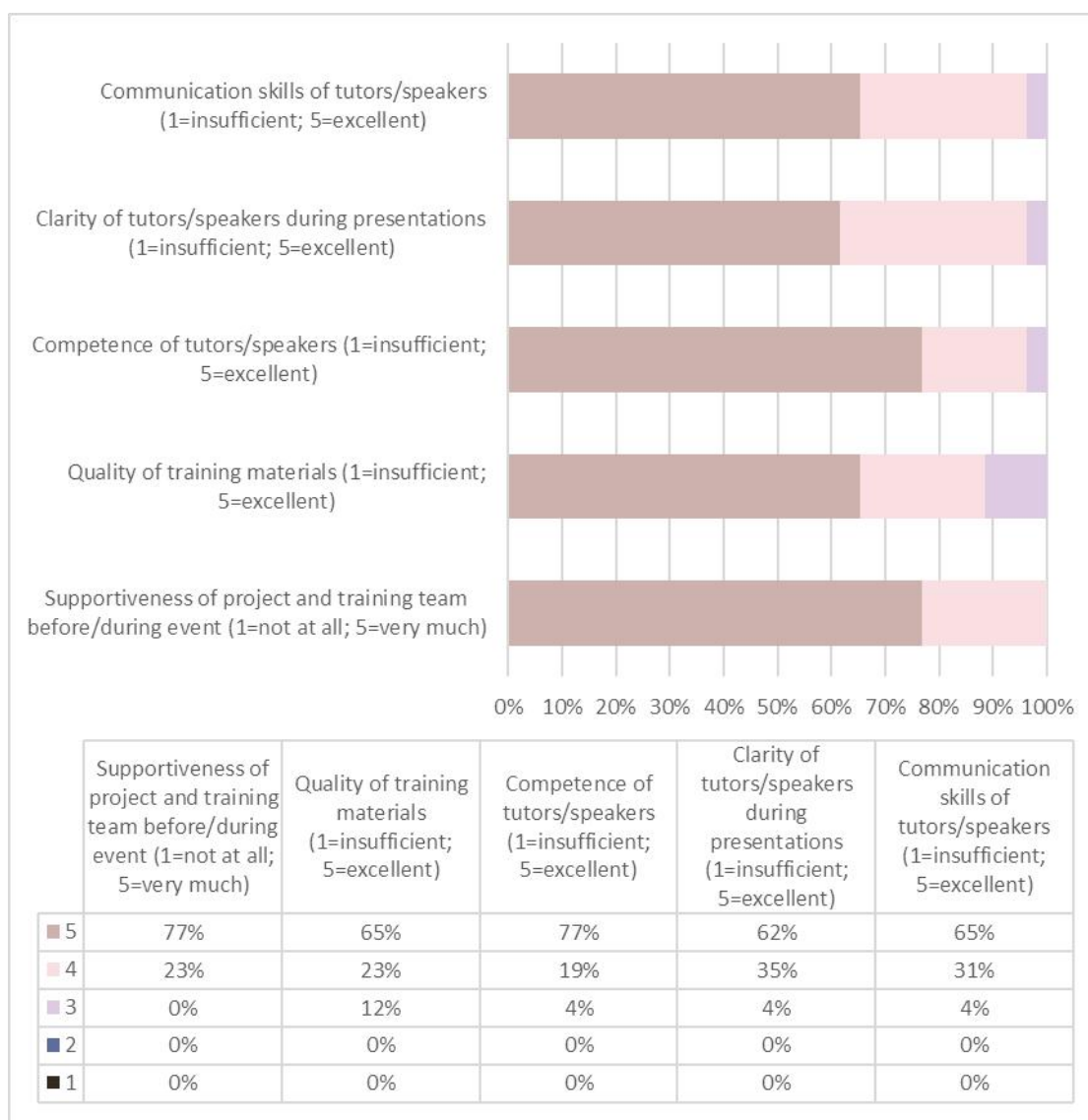
- there could have been more time for discussions;
- larger WGs may have encouraged contributions from a wider range of participants;
- the requirement to summarise written feedback may not have encouraged the widest possible group discussions;
- capturing group feedback via collaborative editing tools instead of 'static' presentation slides could have made this process more interactive; and
- some aspects were repetitious.

4.2.3. Evaluation of facilitators, speakers, training management team and materials

Six quantitative questions were used in this part of the evaluation, summarised in the bullet points below and with results represented in Figure 6.

- Please evaluate the general communication skills of the tutors/speakers (where 1=insufficient; 5=excellent)
- Please evaluate the general clarity of the tutors/speakers during their presentations (where 1=insufficient; 5=excellent)
- Please evaluate the general competence of the tutors/speakers (where 1=insufficient; 5=excellent)
- Please evaluate the general quality of the training materials (where 1=insufficient; 5=excellent)
- Did you consider the project and training team supportive before and during your attendance to the event? (where 1=not at all; 5=very much)

Figure 6: Proportions of respondents giving scores of 1 to 5 according to criteria provided, for questions relating to the evaluation of facilitators, speakers, training management team and materials



4.2.4. Evaluation of participants' experience in attending

Five questions were used to evaluate this category. Four of these were quantitative, requesting a score between 1 and 5 against provided criteria. One qualitative question sought comments in response to a specific question.

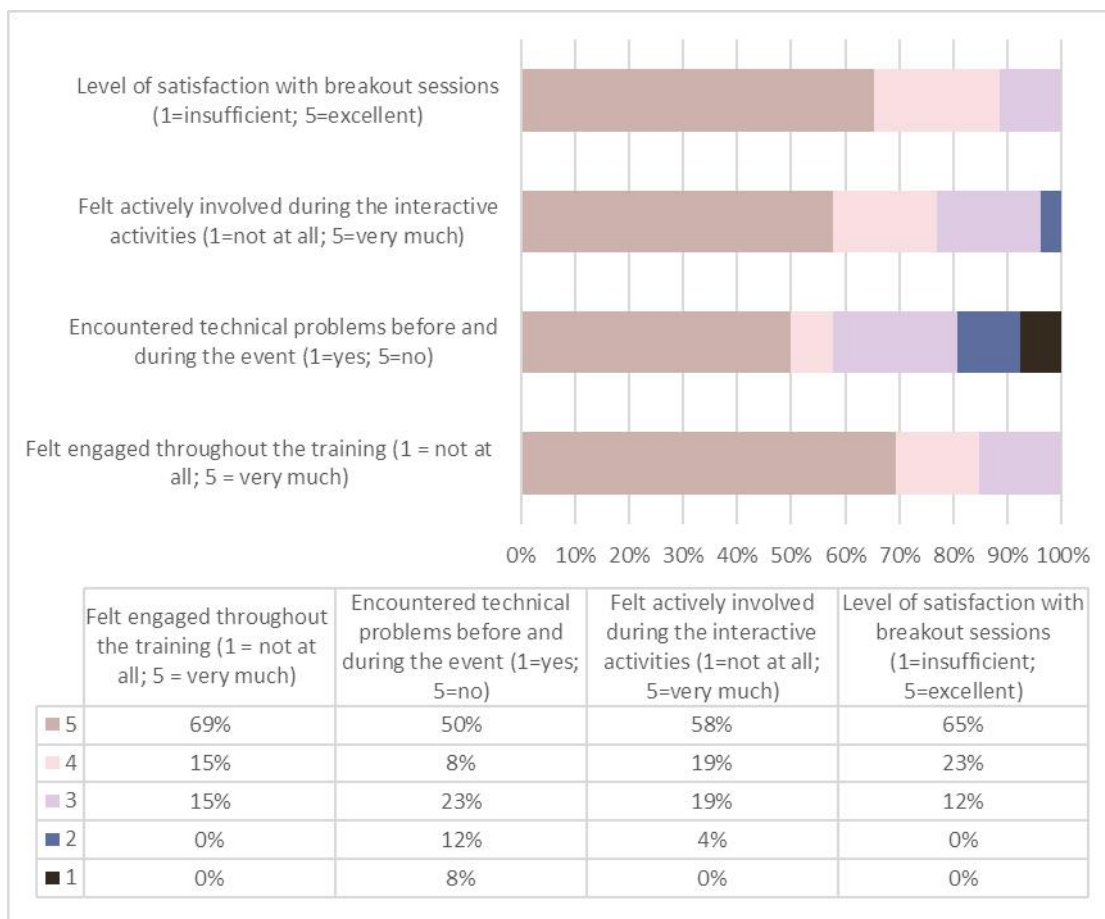
4.2.4.1. Responses to quantitative scoring questions

The 4 questions are summarised in the bullet points below, with results represented in Figure 7.

- Please express your level of satisfaction concerning breakout sessions (where 1=insufficient; 5=excellent)
- Have you felt actively involved in the interactive activities foreseen in the event? (where 1=not at all; 5=very much)

- Did you encounter technical problems before and during the event? (where 1=yes; 5=no)
 - Note: while around 50% of respondents indicated some form of technical problem, only a very small number appear to have indicated that it was an unequivocal drawback to their participation in the event.
- Did you feel engaged throughout the training? (where 1=not at all; 5=very much)

Figure 7: Proportions of respondents giving scores of 1 to 5 according to criteria provided, for questions relating to the evaluation of participants’ experience of attending the event.



4.2.4.2. Summary of qualitative responses to question: ‘Were there any limitations and/or benefits you experienced due to the event being held online as a CISCO Webex meeting?’

The majority of respondents answered ‘no’ to this question. One specifically confirmed familiarity with the online meeting system, 1 indicated it worked ‘perfectly’ and 3 specifically reinforced the positive aspects of attending the training online—for example recognising the benefits of not needing to travel and have greater flexibility to fit around normal work commitments.

Four comments were equivocal, noting minor limitations such as fewer networking opportunities in an online event, and sound quality. Six respondents indicated they had experienced limitations such as connectivity problems and user-interface language barriers. One comment specifically addressed the challenges of being available online over 3 days in succession, suggesting that it could have been better to offer the sessions over a longer period with fewer hours required per individual day.

4.2.5. General suggestions, comments and proposals

The majority of responses to this question fell under 2 topic categories summarised below.

4.2.5.1. Indications for future training

Four responses supported the need in general to hold further exercises like this one—as 1 comment put it, “Preparedness is core!” Four responses suggested specific areas that should be covered by future crisis preparedness exercises of this type:

- “different EFSA remit areas”;
- transboundary diseases;
- additional “pre-training” on emergency management, e.g. “principles of command and control, and levels of command such as strategic, tactical and operational (gold, silver, bronze)”;
- further training activities focused on RVF, employing a ‘One Health’ approach, in person if possible.
 - This response also suggested it would be important for EFSA and ECDC to follow up on conclusions from the event, and for the EC to raise awareness about the ‘peacetime’ opportunities and needs in connection with RVF.

4.2.5.2. Suggestions for future online event facilitation

Six comments addressed various aspects of this category, summarised below. Some of the points made below relate to the responses summarised in Section 4.2.4.2 above.

- Two days could have been sufficient for this event, and/or the duration if individual days could have been shorter.
- During the event, more interactive presentations would have helped to sustain participants’ attention, particularly on Day One—in general, the use of additional digital tools could help to increase involvement.
- The volume of pre-event administrative correspondence with participants “was at a certain point annoying”, according to 1 respondent—however this was accepted in the context of efforts by EFSA and IZSAM to ensure the event ran smoothly.

4.3. Evaluation of Day Three interactive training sessions

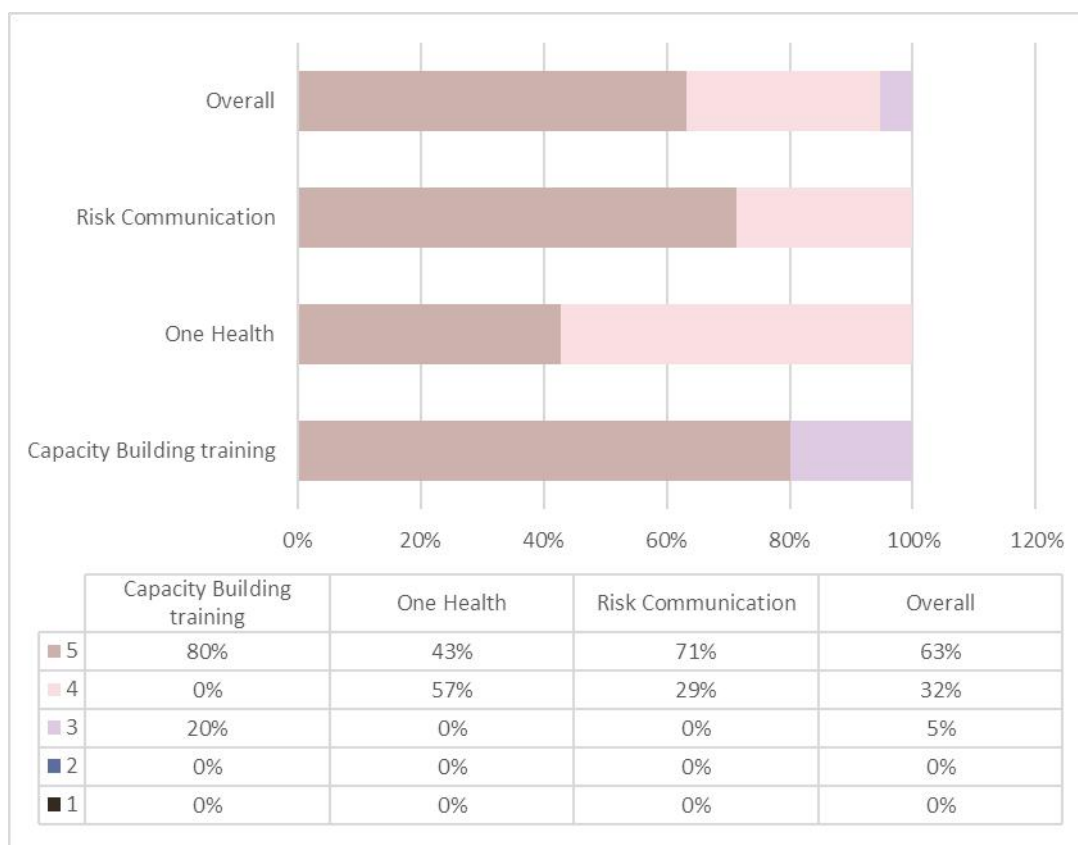
At the end of the 3 interactive training sessions described in Section 3.7, participants (excluding trainers and IZSAM/EFSA facilitators) were asked to evaluate their experience via another short online survey questionnaire. In total, responses from 19 participants were collected across the 3 sessions (i.e. 59% of the 32 participants who attended the interactive training sessions). In a simple quantitative evaluation of the session they attended, participants were asked to rate their experience from 1 to 5, where 5 is very satisfied and 1 is not very satisfied. Results for each individual session and the 3 sessions considered as a whole, are summarised in Figure 8.

In addition, participants were asked to provide qualitative responses to 2 questions:

- 1) Please indicate any aspects that could have been added, or omitted, to improve the experience
- 2) Was it useful for you to attend the event? If yes, what were the main benefits you received from the event? If no, why not?

Responses to those questions from each of the 3 individual sessions are summarised in Sections 4.3.1 to 4.3.3 below. A common overall theme emerging was that participants would have welcomed longer-duration sessions, e.g. for extended questioning of the trainers and discussion of additional case studies.

Figure 8: Proportions of respondents giving scores of 1 to 5 according to criteria provided, in order to rate experience of the 3 interactive training sessions, plus an ‘overall’ aggregated rating.



4.3.1. Evaluation of Capacity Building session

(Note: here we refer to the session entitled 'Assessing Capacities for Emergency and Disaster Management', described in Section 3.7.1.)

Evaluation responses were received from 5 out of the 13 eligible participants who attended this session (i.e. 38%). 3 respondents answered Question 1; all 5 respondents answered Question 2.

4.3.1.1. Summary of responses to question: 'Please indicate any aspects that could have been added, or omitted, to improve the experience'

Respondents indicated that the session content had been well calibrated to focus on the most important aspects of a very broad discipline, within the time available. No missing topic were reported.

4.3.1.2. Summary of responses to question: 'Was it useful for you to attend the event? If yes, what were the main benefits you received from the event? If no, why not?'

The majority of respondents indicated that it had been useful to attend this session. Examples of benefits received were indicated by comments such as the following:

- "Important benefits for me ... were that authorities have to prioritise needs before taking actions according to their own capacities; and that OIE offers help to the veterinary staff of a country upon demand".
- "It was very interesting to hear about the methodology to assess the needs of capacity for emergencies, and to learn how can we do it".
- "I have gained important information on risk management, risk assessment and risk communication measures that should be taken for a truly possible international epidemiological disease".

- “The methodology that the Dr Alessandrini explained was very interesting”.

One respondent indicated that it was not relevant to his/her current professional role.

4.3.2. Evaluation of ‘One Health’ session

(Note: here we refer to the session entitled ‘Improving Mutual Understanding Between Animal Health and Public Health Professionals—Future Directions in ‘One Health’ Approaches’, described in Section 3.7.2.)

Evaluation responses were received from 7 out of the 10 eligible participants who attended this session (i.e. 70%). 4 respondents answered Question 1; 6 respondents answered Question 2.

4.3.2.1. Summary of responses to question: ‘Please indicate any aspects that could have been added, or omitted, to improve the experience’

One respondent suggested that additional case studies could have been included. However, the comments indicated that the content of this session had been well tailored to participants’ needs, e.g.

- “It was perfect for an online session ... nothing to add or omit”.
- “All the presentations were very interesting and useful ... I will share the gained experience with my colleagues ... the exercises selected for stimulation were very helpful.”
- “The discussion was very interesting and the presentations (personal perspective and surveillance) very informative”.

4.3.2.2. Summary of responses to question: ‘Was it useful for you to attend the event? If yes, what were the main benefits you received from the event? If no, why not?’

Various comments received helped to indicate why the session comment had been valuable and relevant. For example:

- “Very interesting to see that professionals from different backgrounds and countries share the same problems regarding the implementation of ‘One Health’ approach[es] in different contexts ... common understanding of problems and solutions in my opinion is one of the main benefits from this activity”.
- “The importance of working together for safeguarding human and animal health”.
- “Better understanding of the concept from different perspectives”.
- “Awareness of all the work to be done to achieve a ‘One Health’ approach, considering the administrative limitations”.

4.3.3. Evaluation of Risk Communications session

(Note: here we refer to the session entitled ‘Best Practice in Risk Communication During a Crisis’ described in Section 3.7.3.)

Evaluation responses were received from 7 out of the 9 eligible participants who attended this session (i.e. 78%). 6 respondents answered Question 1; all 7 respondents answered Question 2.

4.3.3.1. Summary of responses to question: ‘Please indicate any aspects that could have been added, or omitted, to improve the experience’

One respondent suggested that “addressing confidentiality in risk communications” could have been a useful addition to this session’s content. Three respondents indicated directly or indirectly that a longer duration would have been useful, e.g. to provide time for additional practical exercises or more extended questioning.

4.3.3.2. Summary of responses to question: 'Was it useful for you to attend the event? If yes, what were the main benefits you received from the event? If no, why not?'

All 7 responses reported that this training session had been useful, particularly in terms of combining valuable perspectives and practical guidance. Additional narrative quantified areas of particular benefit, e.g.

- "Introduction to a deeper approach in risk communication aspects and methodology".
- "The risk communication continuum and actions related to each step".
- "Provided more applied insights for my work".
- "Very useful because it [gave] different perspectives".
- "Information of different tactics that can be used in risk communication".

5. Conclusions

The overall objectives of the exercise were met:

- To improve incident response collaboration between animal and public health authorities from multiple countries, using a 'One Health' approach"—and 4 specific exercise learning objectives intended to test and improve skills in:
 - outbreak investigation;
 - prevention of RVF outbreaks;
 - control of RVF outbreaks; and
 - identifying and communicating to affected stakeholders about RVF outbreaks.

Feedback on the event was positive, with participants giving good scores for specific activities, identifying specific benefits received and giving clear indications that they found the activities useful, notwithstanding the fact that the event was held exclusively online due to ongoing restrictions arising from the COVID-19 pandemic.

Participants also identified clear ways in which they would change their ways of working as a result of attending.

Feedback in the online evaluation questionnaire also provided many suggestions of activities to be included in future training workshops—for example: transboundary diseases, emergency management principles and risk communications—as well as indicating the value of tailoring future activities more closely to align with regional and national priorities.

6. Practical recommendations arising from training discussions

6.1. General recommendations

Simulation exercises should be used more frequently as a tool for the identification of gaps and aspects in 'real world' operational environments where further enhancements may be needed.

A 'real world' action plan should be developed after this exercise, with feedback on the implementation of actions, and how the exercise contributed to improve preparedness against RVF, made available to participants and even EU MSs.

6.2. Facilitation and participation

6.2.1. Participant recruitment and assignment

Anticipate the challenges of optimising content relevance for the largest possible proportion of a diverse participant cohort—such as is likely to attend training in a broad and interdisciplinary topic such as 'One Health'.

Configure larger WGs and/or use additional facilitation techniques to encourage contributions from a wider range of participants within each group—ideally, ensure each group includes 1 person with background in animal health, public health and food safety.

6.2.1.1. Involvement of professional roles

Consider including the following roles:

- veterinary paraprofessionals (who may engage in many of the disease control measures such as sampling, culling, cleaning and disinfection etc.);
- laboratory staff at international level (e.g. reference labs in countries that have already experienced an RVF outbreak) and/or national level (which could be limiting factors if they do not have the correct testing protocols in place for RVF); and
- decision makers in international trade, whose expertise would be applied to complex trade issues that could arise, in liaison with EC, trading partners and embassies.

6.2.2. Facilitation approach

Provide as much time as possible for discussions and case studies to illustrate topic-specific training.

Consider capturing WG feedback via collaborative editing tools, instead of 'static' presentation slides, to make the process more interactive.

Consider scheduling online event content over a longer period of days with fewer hours' commitment per day required (recognising that maintaining concentration over many hours is more challenging in online events compared to face-to-face meetings).

6.2.3. Regional factors

Identify more ways to configure exercises for stronger regional emphasis and even greater accommodation of individual national circumstances, e.g. in aspects such as:

- reflecting diversity in national regulatory frameworks and decision-making;
- practical case studies from each participant country; and
- directly sharing the experience of non-EU countries—e.g. within Africa or the Middle East—in dealing with RVF, and the lessons learned.

6.3. Implementation of content

Make wider use of interactive digital tools/presentations throughout an online exercise to help sustain participants' attention.

Make greater use of pre-read materials/eLearning modules to facilitate shorter, more focused presentations with less risk of repetition.

- Pre-training sessions could be enriched with content more closely focussed on the management of health emergencies, including the activation of command chain at various levels.

6.3.1. Future training topics and themes

6.3.1.1. Preparedness and resilience

Consider incorporating the following areas:

- integrated approaches to strengthening the preparedness of health and veterinary services in the management of zoonotic emergencies—in relation to transboundary diseases in general, not only RVF;
- provision of mental health support for emergency personnel and farmers; and
- general emergency management principles (e.g. bronze, silver and gold command)—e.g. in reference to the FAO's 'Good Emergency Management Practice' guide. (FAO, 2021).

6.3.1.2. Dealing with RVF

Consider incorporating the following areas:

- coordination required among different sectors at different levels to deal with a RVF incursion—including coordination between ECDC and EFSA for this zoonotic disease;
- relevant aspects of control measures, e.g. preparedness success factors in emergency vaccination—especially if it's possible to incorporate the experience of countries that have successfully deployed this approach;
- identification and consideration of RVF risk questions that should be addressed during 'peace time';
- updates on state of play in RVF across the world, e.g. through presentation of relevant OIE code chapters and its emergency response work—also addressing longer-term issues such as requirements for countries to regain disease free status; and
- additional training on RVF employing a 'One Health' approach.

6.3.1.3. Communication

Consider strengthening skills and competencies in communication strategies within the health and veterinary services, for example including:

- confidentiality in risk communications;
- crisis communication;
- 'informal' communications (i.e. taking place during emergency situations in parallel to formal communications);
- communication to raise awareness on the risk posed by the disease and to increase early reporting; plus
- communication on the control measures that will be applied to eradicate the disease—including:

- how to convey this information in the best way possible to minimize opposition to certain unpopular measures such as stamping out; and
- with whom this communication should take place (e.g. farmers in addition to general public and animal welfare associations).

Also consider addressing the inevitable variances in communication channels used between countries, depending on aspects such as country size, level of association with livestock producers etc.

6.3.1.4. Use of data

Consider incorporating the following areas:

- serology of animals and people plus population data (human, domestic and wild animals)—which is important in order to define the population at risk in a given area, their distribution, how populations overlap, etc.;
- exchange of spatially distributed data (e.g. animal population, animals tested-with positive and negative results-, vectors, human population etc.) which would be useful for a joint analysis to produce risk maps; and
- data protection issues (a possible constraint on the use of data while responding to a live situation).

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Abbreviations

AI	Avian Influenza
AMR	Antimicrobial Resistance
AMU	Antimicrobial Use
ANSES	French Agency for Food, Environmental and Occupational Health & Safety
ASF	African Swine Fever
BTSF	Better Training Safer Food
CEN	EFSA's Communications Expert Network
COVID-19	Coronavirus Disease 19
CVO	Chief Veterinary Office
CIPARS	Canadian Program for Antimicrobial Resistance Surveillance
DM	Disaster Management
DG-SANTE	European Commission's Directorate-General for Health and Food Safety
EC	European Commission
ECDC	European Centre for Disease Prevention and Control
ECHA	European Chemicals Agency
ECTAD	FAO Animal Health Emergency Centre for Transboundary Animal Diseases
ECVET	European Credit system for Vocational Education and Training
EFSA	European Food Safety Authority
EMA	European Medicines Agency
EMC-AH	FAO's Emergency Management Centre for Animal Health
EU	European Union
EuFMD	European Commission for the Control of Foot-and-Mouth Disease
EWRS	Early Warning Response System
FAO	Food & Agricultural Organisation of the United Nations
FP	EFSA Focal Point
G20	Intergovernmental forum comprising 19 countries and the European Union (EU)
FWC	Framework Contract
HPAI	Highly Pathogenic Avian Influenza
HR	Human resources
IHR	International Health Regulations
INFOSAN	FAO/WHO International Food Safety Authorities Network
ISCIII	Instituto de Salud Carlos III
IZSAM	Istituto Zooprofilattico Sperimentale dell' Abruzzo e del Molise
JROA	Joint Rapid Outbreak Assessment
LSD	Lumpy Skin Disease
MS	Member State of the European Union
NGS	Next Generation Sequencing
NCU	National Crisis Unit
OIE	World Organisation for Animal Health

PPE	Protective Personal Equipment
RA	Risk Assessment
RRA	Rapid Risk Assessment
RC	Risk Communication
RISKSUR	Risk-Based Animal Health Surveillance Systems project
RM	Risk Management
RVF	Rift Valley fever
RVFV	Rift Valley fever virus
RT-PCR	Real-Time Polymerase Chain Reaction
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SCER	EFSA's Scientific Committee & Emerging Risks Unit
SPC	Specific Contract
VS	Veterinary Services
WG	Working group
WHO	World Health Organisation

Appendix A – List of participants

Family name	First name	Country	Organisation
Exercise facilitators (6)			
AMATO	Laura	Italy	IZSAM
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GAGLIONE	Rosa	Italy	Ministry of Health
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HRAPOVIC	Mevlida	Montenegro	Administration for Food Safety, Veterinary and Phytosanitary Affairs
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NABAIS	Pedro	Portugal	Food and Economic Safety Authority
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Appendix B – Summary of fictional simulation exercise scenario

Part 1

On July 21, a ship leaves Port Sudan (Sudan) with a cargo of hundreds of containers inside the hold and on deck. Many containers are empty, since they were used for importing farm equipment (tractors, threshers, other equipment for agriculture) from Italy to Sudan; others contained:

- various materials to be unloaded in the ports of Dubrovnik (Croatia), and
- orchid bulbs and other tropical flowers with soil, dispatched towards Croatia, to be unloaded in the port of Rijeka (Croatia).

On July 25 the cargo ship stops overnight at Heraklion (Greece) to load food for the personnel. On July 28, the ship docks at Dubrovnik where containers both empty and including various materials are unloaded. On July 29, the ship leaves again and on July 30 in the morning it arrives at the port of Rijeka where all of the other containers are unloaded.

On August 24, the local office of Veterinary Services in Dubrovnik is notified that an unusual number of abortions and mortality in lambs are occurring at a sheep farm located in a village near the sea, lying around 4 km from the trading port of Dubrovnik. The farmer reports that a significant percentage of pregnant sheep already aborted in the past 2 weeks and that the problem still persists. In addition, a large group of around 2-week-old lambs have died with acute haemorrhagic clinical signs. Samples have been taken for laboratory examinations for the most common abortive agents, and to check possible intoxications or poisonings.

On August 28, after excluding any known case, blood samples of the sheep that had aborted, and 2 aborted foetuses, are sent to the Croatian Veterinary Institute of Zagreb. Here, with the support of international reference laboratories, on August 30 samples (blood and 5 organs) are tested for RVF with positive results by RT-PCR in organs and detection of IgM antibodies against RVFV in blood.

In the afternoon of 30 August, at 6 p.m., the Croatian Chief Veterinary Officer (CVO) in the Ministry of Agriculture receives confirmation of the RVF diagnosis. CVO immediately notify the outbreak to the EU Animal Disease Notification System as well as to the OIE and informed the competent offices of the EC. CVOs also decide to establish a National Crisis Unit, to support the central veterinary authority on the management of the crisis.

Part 2

The preliminary results of the epidemiological investigations and surveys carried out around the infected farm have been completed. Results show:

- specimens of *Aedes aegypti* have been captured close to the sheep farm in Dubrovnik;
- results of the serological survey carried out around Dubrovnik (in a radius of 20 km around the outbreak) indicate that a noticeable percentage of sheep and cattle (at least > 1%) are serologically positive;
- in August, from farms close to Dubrovnik (1 of which resulted serologically positive), 42 cattle were moved towards Montenegro and 10 little Tibetan goats towards Slovenia.

In the meantime, a popular national internet blog site publishes rumours about an unusual high number of febrile cases affecting humans living in Dubrovnik and in Rijeka, and a popular newspaper published a news article about the possibility that milk and meat coming from infected animals could be infectious for humans. A general drop in meat and milk consumption is immediately observed in the following days, and requests for clarifications from the Veterinary and Public Authorities are publicly launched by the Consumers Associations.

Part 3

The results of the laboratory investigations on animals traced back show that:

- the little Tibetan goats in Slovenia tested negative; and
- two out of 42 cattle in Montenegro tested IgM positive for RVF.

In addition:

- entomological investigations in Split identify RT-PCR positive pools of *Aedes aegypti* and *Culex pipiens*;
- further serological investigations in the region of Rijeka confirm a noticeable serological prevalence of infection (at least > 1%) in sheep and cattle; and
- reports of abortions in pregnant sheep and mortality in lambs arrive from various locations along the coast of Croatia.

Annex A – Overview of eLearning course on RVF offered by IZSAM

Introduction

The eLearning course on RVF was a pre-training preparatory step foreseen during early planning stages of the event described in this report. This 'asynchronous' preliminary self-learning process would provide the participants with the basic-level knowledge about RVF disease, together with other relevant documents. The eLearning course presented a brief history of RVF together with its health and economic implications in the geographical areas where it is present.

It described the principal morphological and structural features of the virus as well as its pathogenesis and resistance to physical and chemical agents. It discussed the epidemiology of the disease, encompassing the aspects relating specifically to geographic distribution, transmission, receptive hosts, reservoirs, vectors, and the factors that favour its spread will all be addressed.

There was a detailed review of the signs and the anatomo-histopathological lesions that RVF causes in sheep and goats, cattle, camels and in humans, and indications of the main diagnostic tools, the illnesses requiring differential diagnosis, and the matrices to be sampled in order to make a clinical, anatomo-histopathological and laboratory diagnosis. Finally, there was a focus on prevention and control, with reference to monitoring methods and control strategies to be adopted in order to limit the spread of RVF.

Participant profile

The whole training path was directed towards the exercise participants from Albania, Croatia, France, Greece, Italy, Montenegro, Portugal, Spain and Turkey.

Methodologies

At methodological level, the eLearning module was designed to maximise interactivity using videos, photos, pictures, animations, and self-assessment exercises. In line with the European Credit system for Vocational Education and Training (ECVET)²¹, it was structured into learning outcomes (Units) facilitating the assessment, validation and recognition of the acquired skills. The course was designed using Articulate for Moodle²², an open source and collaborative platform, responsive to all kind of devices (including mobile). This aimed to encourage dynamic and interactive participation in the learning process, employing a variety of resources to support effective learning, such as:

- animated elements (graphics, images, pictures, pop-up etc.);
- interactive content (drag and drop, multiple choice, multiple response, true-false, etc.) requiring active learner involvement;
- papers, chapters of books, guidelines, pop-up, hyperlinks, printable versions.

Duration

The estimated time for the eLearning course completion was about 3 hours. The course was made available from 14 June to 5 July 2021. The time required to complete the course by individual participants would be influenced by factors such as:

- initial background in this field;
- study method; and
- attention dedicated to additional reading matter such as in-depth contents, useful links, etc.

²¹ Available online: https://ec.europa.eu/education/resources-and-tools/the-european-credit-system-for-vocational-education-and-training-ecvet_en

²² Available online: <https://moodle.org/>

Content tree

Section 1: Rift Valley Fever—Presentation and History

- 1.1 Introduction
- 1.2 Objective and themes
- 1.3 Definition and origin
- 1.4 Human health and economic impact
- 1.5 Test
- 1.6 Summary
- 1.7 Printable version

Section 2: Rift Valley Fever—Aetiology and Pathogenesis

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Section 6: Rift Valley Fever—Prevention and control

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