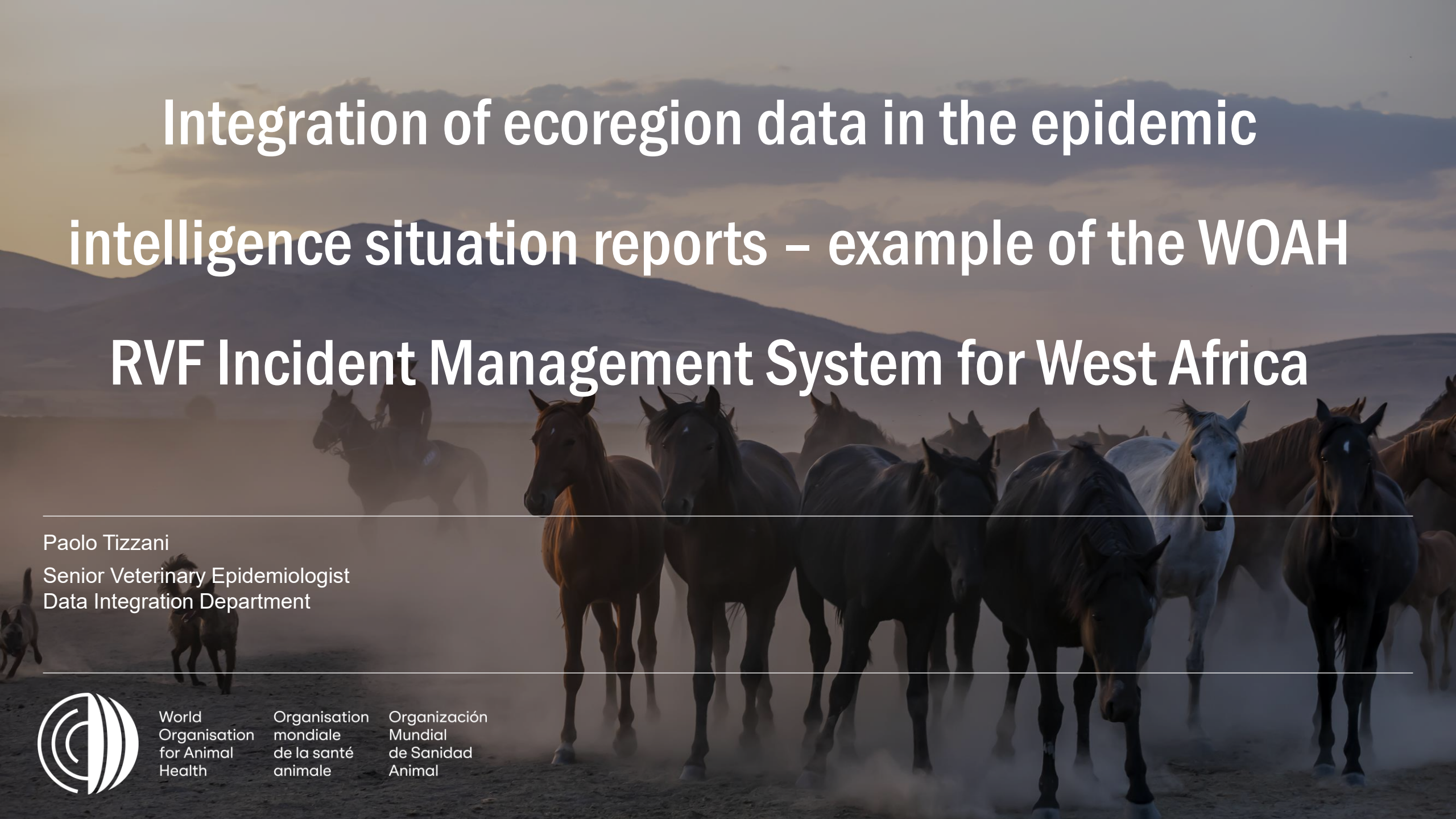
Integration of ecoregion data in the epidemic intelligence situation reports – example of the WOAH RVF Incident Management System for West Africa



Paolo Tizzani

Senior Veterinary Epidemiologist
Data Integration Department

World Organisation for Animal Health | Organisation mondiale de la santé animale | Organización Mundial de Sanidad Animal

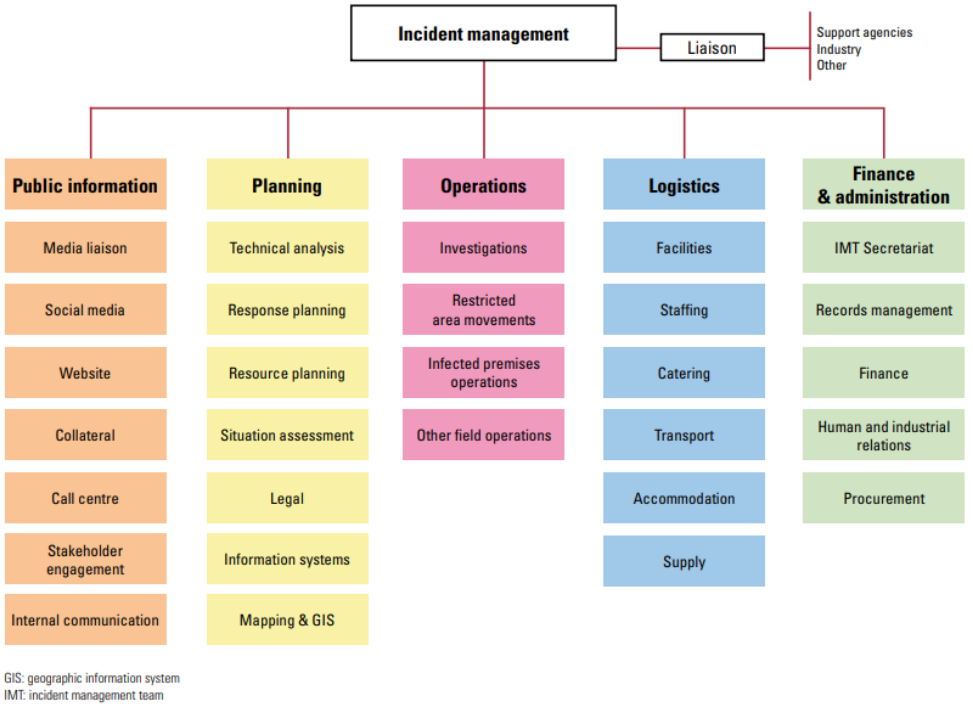
Summary

1. WOAH Incidence management system
2. The role of Epidemic intelligence in the IMS and event monitoring
3. Rift Valley fever event in western Africa and IMS activation
4. The epidemic intelligence situation report and the inclusion of ecoregion, the added value of PROVNA data

WOAH Incidence Managemente System (IMS)

What is an IMS?

- Structured, coordinated, organised responses to incidents
- Identified roles and responsibilities
- Set of policies, procedures and templates to help us respond



From: Callan, 2020, OIE Sci Tech Rev 39(2) pp 309-405)

WOAH Incidence Managemente System (IMS)

89 GS/FR – PARIS, May 2022 RESOLUTION No. 28

World Organisation for Animal Health, Veterinary Services and Aquatic Animal Health Services engagement in global, regional and national emergency management systems

6. The OIE develops an internal Incident Management System (IMS), building on past experience, to better support OIE and its partners, and OIE Members during international emergencies. The OIE should explore possibilities to support its Members in the development of their own IMS;

89th General Session World Assembly
World organisation for animal health Paris, 23-26 May 2022

SG89/8

Original: English

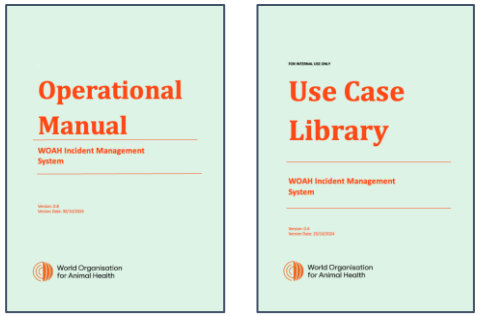
WORLD ORGANISATION FOR ANIMAL HEALTH, VETERINARY SERVICES AND AQUATIC ANIMAL HEALTH SERVICES ENGAGEMENT IN GLOBAL, REGIONAL AND NATIONAL EMERGENCY MANAGEMENT SYSTEMS

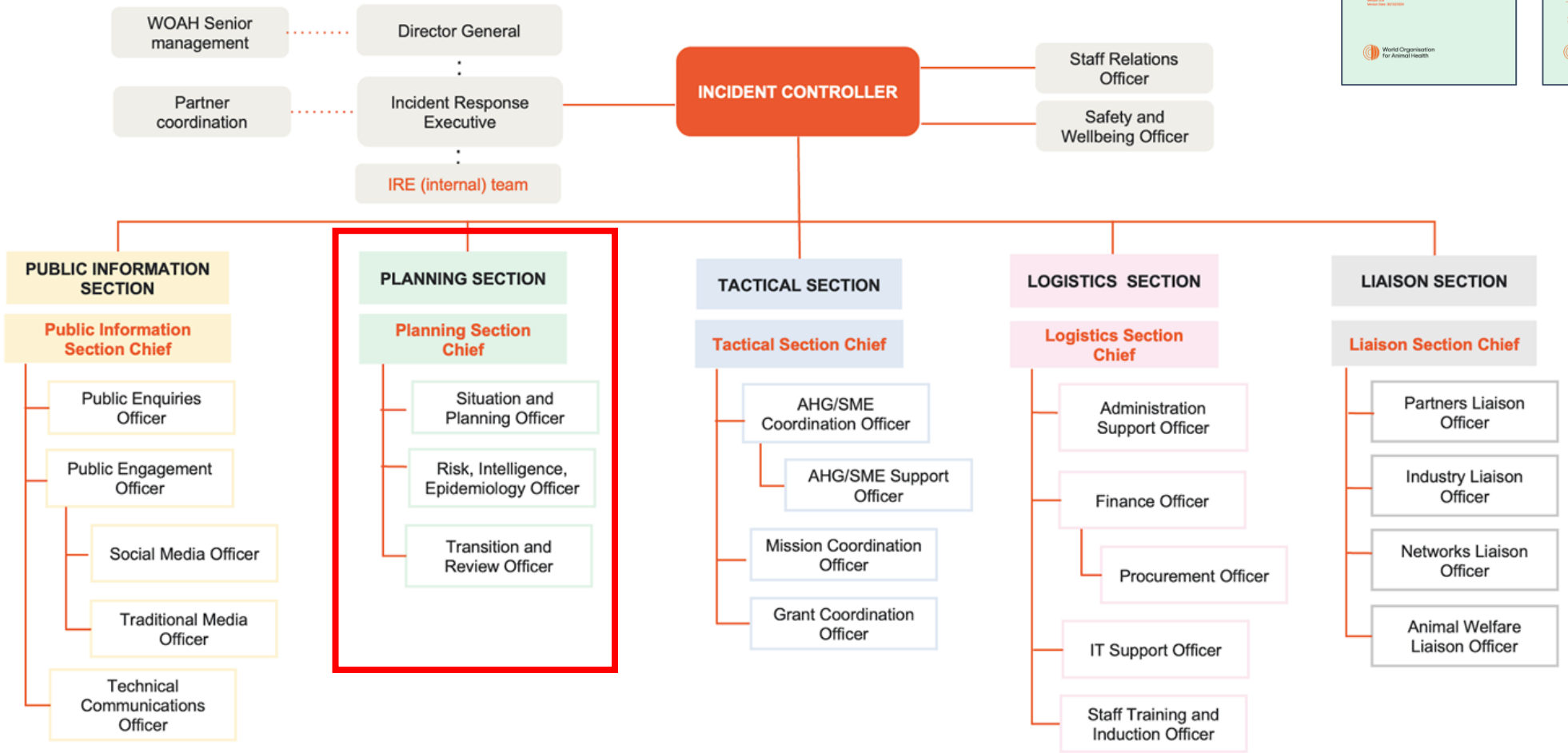
Matthew Stone[1], Daniel Donachie[2], Chadia Wannous[2], Keith Hamilton[2]

“Incident management consists of processes, decisions and actions aimed at resolving incidents and supporting recovery”

WOAH Incidence Managemente System (IMS)

IMS Design





Schematic of full WOAH Incident Response Team

The role of Epidemic intelligence in the IMS and event monitoring

Epidemic Intelligence conducted at WOAH is defined as the cycle of ***organised and standardised collection, analysis and interpretation*** *of information from* ***multiple sources (official and non-official)*** *to detect, verify and investigate potential animal health risks in a timely manner in accordance with WOAH's mandate when relevant. This work is systematic or conducted on an ad hoc basis depending on the source of information. Epidemic Intelligence includes* ***risk monitoring and risk assessment*** *and is conducted with the objective of allowing for prompt and effective* ***risk management and communication****, whilst fostering* ***multisectoral collaboration*** *and taking into account a One Health approach.*

The role of Epidemic intelligence in the IMS and event monitoring

Using epidemic intelligence (EI) to monitor animal health threats, including mis- and disinformation, using WOAH's Incident Management System (IMS): case study on FMD in Europe

WIMMERS Madison[1], DONACHIE Daniel[1], TIZZANI Paolo[1], HAMILTON Keith[1], EWANN Fanny[2], KIM Cheong Ju[2], LIOBARD Elodie[2], Silvi Marchini Camilla[2], CARACCIO Camilla[2], DUBOIS Denise[1], MELENS Peter[1], TORRES Gregorio[1], PARK Min-Kyung[1], BEGER Gerrit[1], SIMIGNON Adrien[2], FEDIAEVSKY Alexandre[2]

[1] WOAH; [2] INTERPOL

Background

In 2025, the World Organisation for Animal Health (WOAH) established an Incident Management System (IMS), thanks to the support of the Government of Canada, to coordinate its response to animal health emergencies, with epidemic intelligence as a core component (Figure 1). Epidemic intelligence (EI) is defined as the cycle of organised and standardised collection, analysis and interpretation of information from multiple sources to detect, verify and investigate potential animal health risks in a timely manner.

The IMS and use of EI enables WOAH to combine official (e.g. information coming from veterinary services) and unofficial information (e.g. Media reports) to support its Members and partners during incidents and improve preparedness and response.

WOAH uses the Epidemic Intelligence from Open Sources (EIOS) as its main tool to scan and analyse media, reports and other informal data sources to produce timely, evidence-based epidemic intelligence situation reports. WOAH's IMS is informed through this EI activity (Figure 2).

Figure 1. Full scale WOAH Incident Response Team, highlighting Intelligence role.

Figure 2. Screenshot of the dedicated FMD board in the EIOS system.

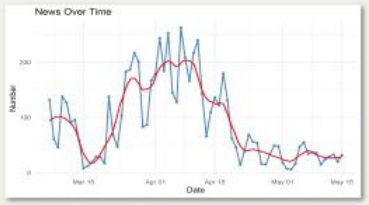


Figure 4. Number of news items related to the FMD event in Europe between 3 March and 15 May 2025.

Figure 3. FMD outbreaks reported to WOAH through the World Animal Health Information System (WAHIS) in some countries in Europe in 2025.

Results and Discussions

The WOAH-IMS was activated for the first time in 2025 following the resurgence of foot-and-mouth disease (FMD) in some areas in Europe (Figure 3).

WOAH staff involved in the response had previously undergone training in IMS procedures.

From 3/3/2025 to 15/5/2025, news monitoring was conducted. Around 6,400 relevant news items were monitored, analysed, and summarised in weekly EI situation reports (Figure 3). These reports were shared internally to improve risk-based decision-making. WOAH also partnered with INTERPOL to exchange EI, including on misinformation, and coordinated efforts to engage Law Enforcement agencies to support the efforts of Veterinary Services. INTERPOL used WOAH's information to inform its threat assessment and own monitoring of the event from a security perspective.

Based on information exchanges and analysis, the following actions were taken to support Members and partners:

- publication of an article by WOAH on tackling misinformation (specific to the event - https://www.woah.org/en/article/fmd-managing-the-response-amidst-media-chaos-during-a-recent-resurgence/)
- coordination of actions with EU institutions (e.g. GF-TADs information Webinar on the FMD situation) and other international organisations
- publication of an epidemiological report on the FMD situation
- release of a Q&A to convey correct information to the public
- production of joint key messages for law enforcement in collaboration with INTERPOL. WOAH intends to continue expanding the use of EI within its alert and response mechanisms.

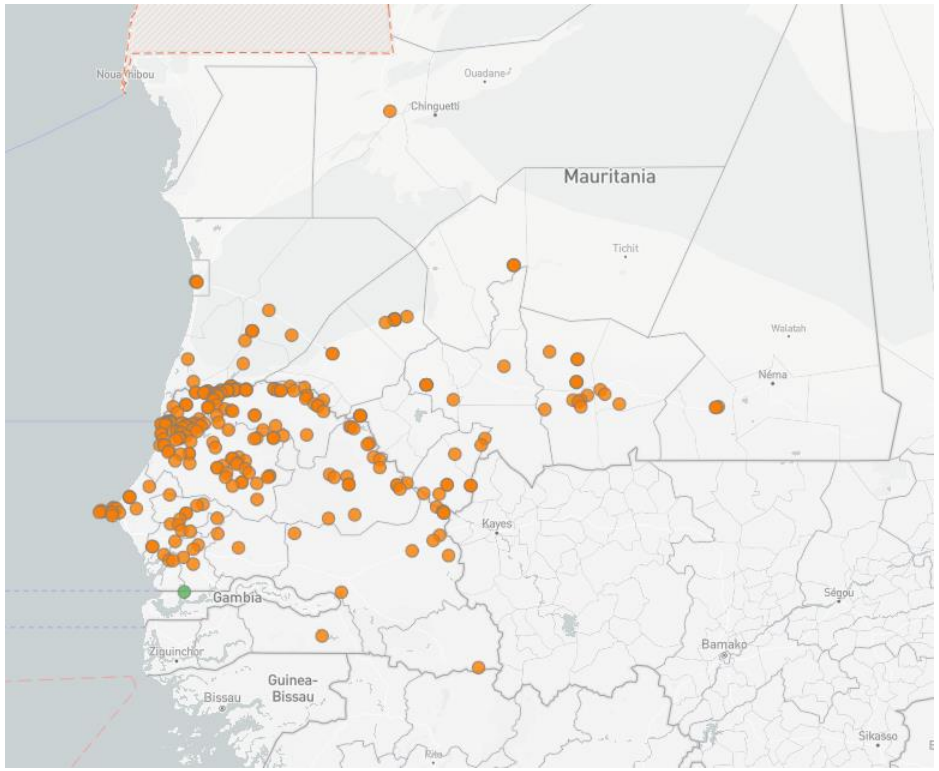
World Organisation for Animal Health | INTERPOL | In partnership with Canada

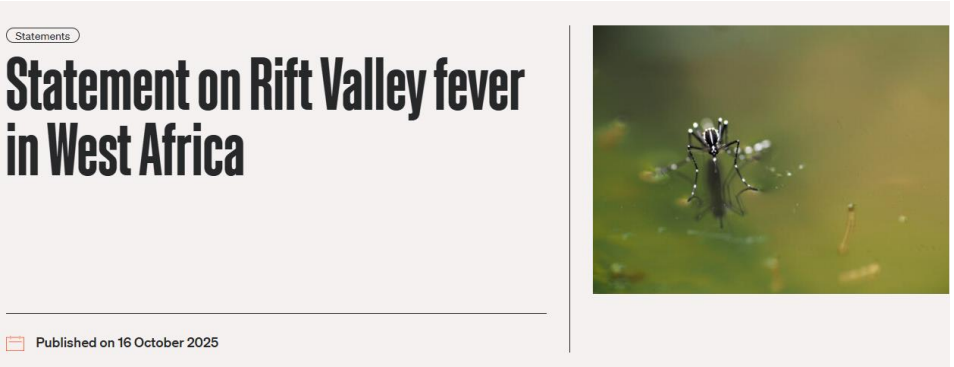
Rift Valley fever event in western Africa and IMS activation

Senegal
One event reported on *21 September 2025* for disease recurrence with **231 outbreaks** reported. Link to the event here.

Mauritania
One event reported on *3 October 2025* for Unexpected change in disease epidemiology with **67 outbreaks** reported. Link to the event here.

Gambia
One event reported on *29 October 2025* for the first occurrence in a zone with **1 outbreak** reported. Link to the event here.





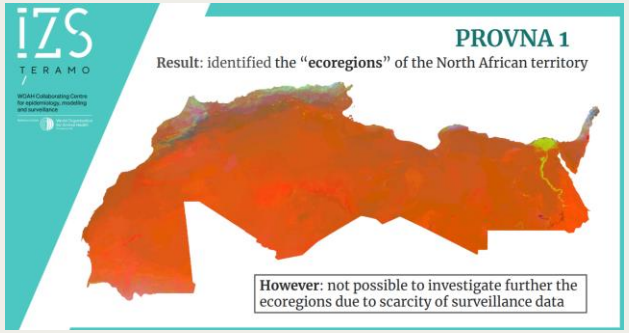
World Organisation for Animal Health | WAHIS

El sit rep – Rift Valley Fever

Data integration form multiple sources

World Organisation for Animal Health | WAHIS

EIOS



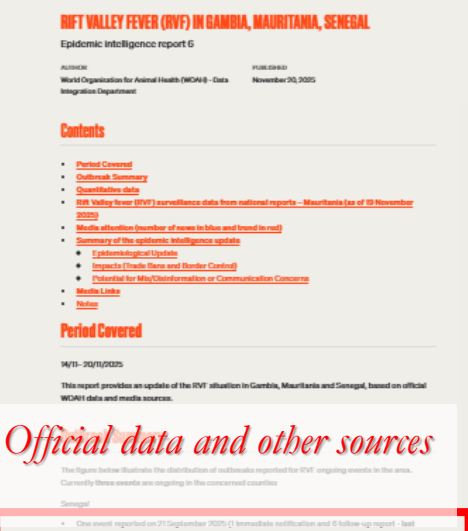
AI use:
-Summary of news from different sources
-News title translation

Gemini

R

Rstudio
Integrate information and produce report

IMS Report


RIFT VALLEY FEVER (RVF) IN GAMBIA, MAURITANIA, SENEGAL

Epidemic intelligence report 6

Contents

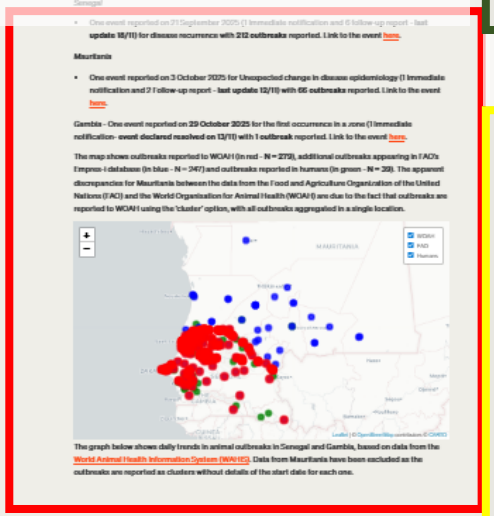
- Period Covered
- Outbreak Summary
- Quantitative data
- Rift Valley fever (RVF) surveillance data from national reports – Mauritania (as of 19 November 2025)
- Media attention (number of news in blue and trend in red)
- Summary of the epidemic intelligence update
  - Epidemiological Update
  - Impacts (Trade Bans and Border Control)
  - Potential for Mis/Disinformation or Communication Concerns
- Media Links
- Notes

Period Covered

14/11- 20/11/2025

This report provides an update of the RVF situation in Gambia, Mauritania and Senegal, based on official WOAH data and media sources.

Official data and other sources


Mauritania

- One event reported on 3 October 2025 for Unexpected change in disease epidemiology (1 Immediate notification and 2 Follow-up report - last update 12/11) with 66 outbreaks reported. Link to the event here.

Gambia - One event reported on 29 October 2025 for the first occurrence in a zone (1 Immediate notification- event declared resolved on 13/11) with 1 outbreak reported. Link to the event here.

The map shows outbreaks reported to WOAH (in red - N = 272), additional outbreaks appearing in FAO's Empres-i database (in blue - N = 247) and outbreaks reported in humans (in green - N = 28). The apparent discrepancies for Mauritania between the data from the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (WOAH) are due to the fact that outbreaks are reported to WOAH using the 'cluster' option, with all outbreaks aggregated in a single location.

The graph below shows daily trends in animal outbreaks in Senegal and Gambia, based on data from the World Animal Health Information System (WAHIS). Data from Mauritania have been excluded as the outbreaks are reported as clusters without details of the start date for each one.

PROVNA data


Based on the location of the outbreak in Mauritania and partially in Senegal, and using the PROVNA data (PROVNA app), it can be seen that outbreaks are occurring in 28 ecoregions. However, 52% of the outbreaks fall in just five ecoregions. The ecoregions most frequently affected, which have environmental and climatic characteristics within which the outbreak occurred, are marked in red on the map below.

National reports


Rift Valley Fever (RVF) Surveillance Report – data provided by Mauritania (as of 25 October 2025)

Animal Health Situation

Confirmed Outbreaks

91 suspected outbreaks reported via KoboToolbox.

56 confirmed positive by ONARDEL/P lab, including 8 asymptomatic viral circulation cases (from active surveillance).

35 outbreaks tested negative.

Epidemiological Observations

Geographic Concentration: Southern and southeastern Wilayas (Brakna, Trarza, Hodh Gharbi, Assaba, Gorgol) are hotspots due to:

- High pastoral density. Cross-border livestock movement.
- Seasonal Transhumance: Movement between wet and dry zones facilitates virus spread.
- Climate Conditions: Excess rainfall has created stagnant water bodies, favoring mosquito vector proliferation.

Actions taken

- Activation of One Health and surveillance committees.
- Daily SitReps and vigilance circulars to meat inspectors and private vets.
- Strict meat inspection protocols in slaughter areas.
- Distribution of Pharmaceuticals and vector control products. Protective equipment. Communication

Media scanning (EIOS)


Media attention (number of news in blue and trend in red)

Summary of the epidemic intelligence update

Epidemiological Update

Senegal

Animals

- The World Organisation for Animal Health (WOAH) reports rising RVF cases in Senegal and Mauritania, linked to recent floods. It calls for international cooperation and One Health strategies to manage the transboundary zoonotic threat.

Humans

- Public awareness remains low despite 277 RVF cases and 22 deaths. The Ministry of Health emphasizes the need for improved communication and preventive measures, especially in urban areas.

Mauritania

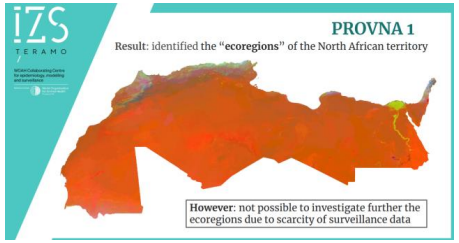
Animals

- In Maliam, herders express concern over delayed vaccine delivery for RVF. The disease poses serious risks to livestock and humans, especially during the rainy season. Authorities have committed to supplying vaccines, but no timeline has been provided.

Humans

- As of October 26, Senegal has recorded 328 confirmed cases of Rift Valley Fever (RVF), including 28

Rift Valley fever event in western Africa and IMS activation

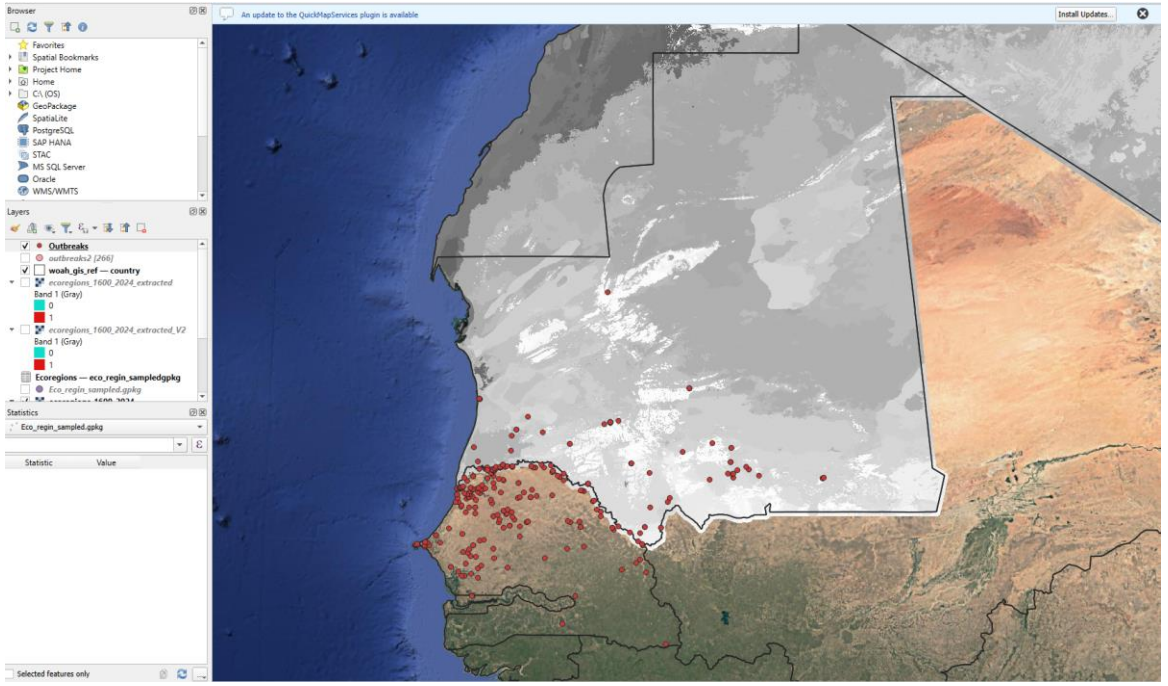


Raster data

World Organisation for Animal Health | WAHIS

Outbreaks data

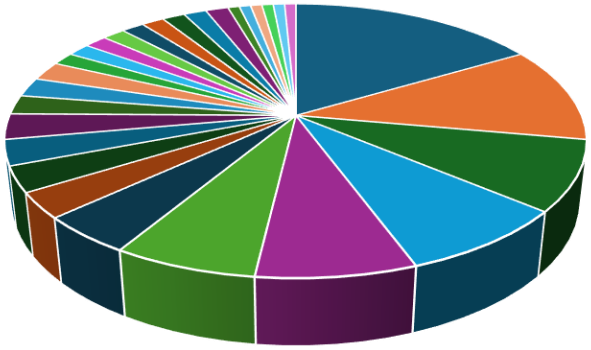
Data representation and extraction



outbreakId	reportId	ecoregions_1600_2024
166600	6820	1474
168449	6820	1474
168877	6820	1476
170510	6820	1474
173109	6837	1476
170509	6820	1474
172698	6837	1515
172700	6837	1515
172699	6837	1475
172701	6837	1475
171275	6820	1435
172703	6837	1391
172704	6837	1391
170537	6820	1435
173104	6837	1392
165832	6820	1150
166553	6820	1230
168660	6820	1230
166552	6820	1150
165183	6820	1231
168658	6820	1231
165833	6820	1150
168661	6820	1150
165184	6820	1231
165834	6820	1231
165185	6820	1231
173083	6837	1394
173084	6837	1394
173085	6837	1394
173090	6837	1394
173110	6837	1394
168889	6820	1394
168655	6820	1231
171268	6820	1394
172688	6837	1390
166783	6820	1350
168892	6820	1350
170460	6820	1231
166781	6820	1313
168651	6820	1313
170485	6820	1313
170505	6820	1313
170528	6820	1313

Rift Valley fever event in western Africa and IMS activation

Ecoregion representation



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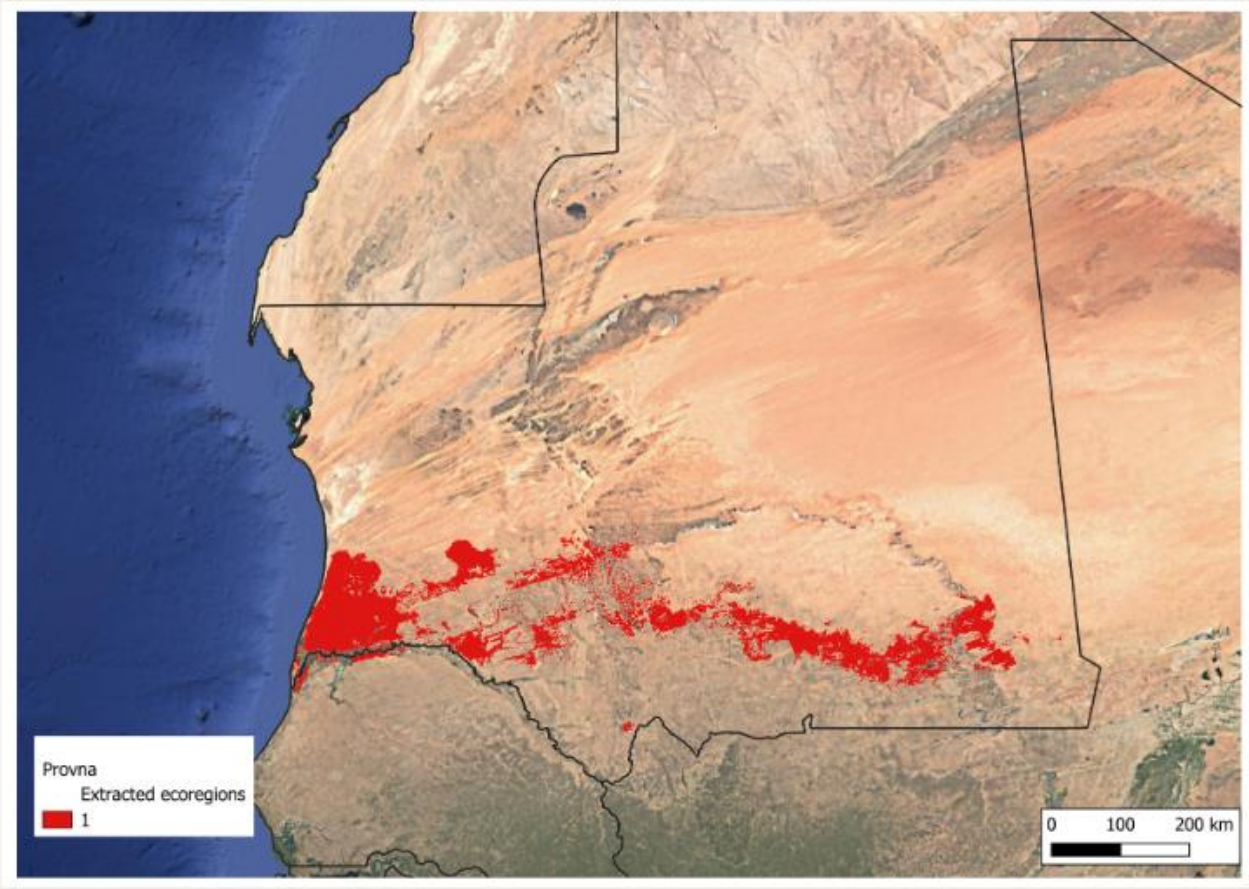
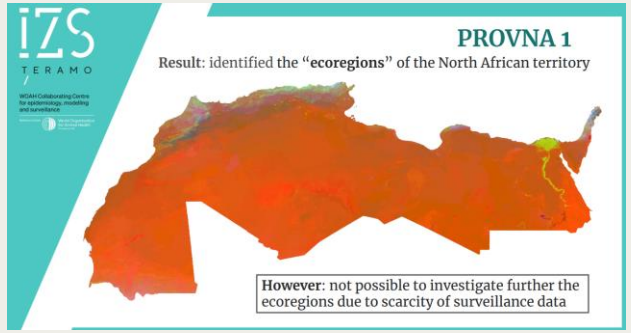


Key highlights

- Data integration and epidemic intelligence are key to event monitoring.
- The introduction of the PROVNA / ecoregion concept contributes to expanding the epidemic intelligence approach and providing a clearer picture of the epidemiological situation.
- Provides indication for targeted surveillance in the ecoregions with the highest reporting of outbreaks
- Improved decision-making and support to Members
- Next step: improve the automatic integration in the epidemic intelligence situation reports
- Current limitation: only some areas covered



Thank you

Acknowledgement to the entire WOAH Incidence

Management Team

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