Food and Agriculture Organization of the United Nations

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1st GF-TADs Regional Conference in the European region

Standing Group of Experts on Rabies for Europe: Members' vaccination and rabies control progress, 2017-2024

Dr Anne Meyer, Episystemic

22-25/September/2025, Belgrade, Serbia

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

Food and Agriculture Organization of the United Nations

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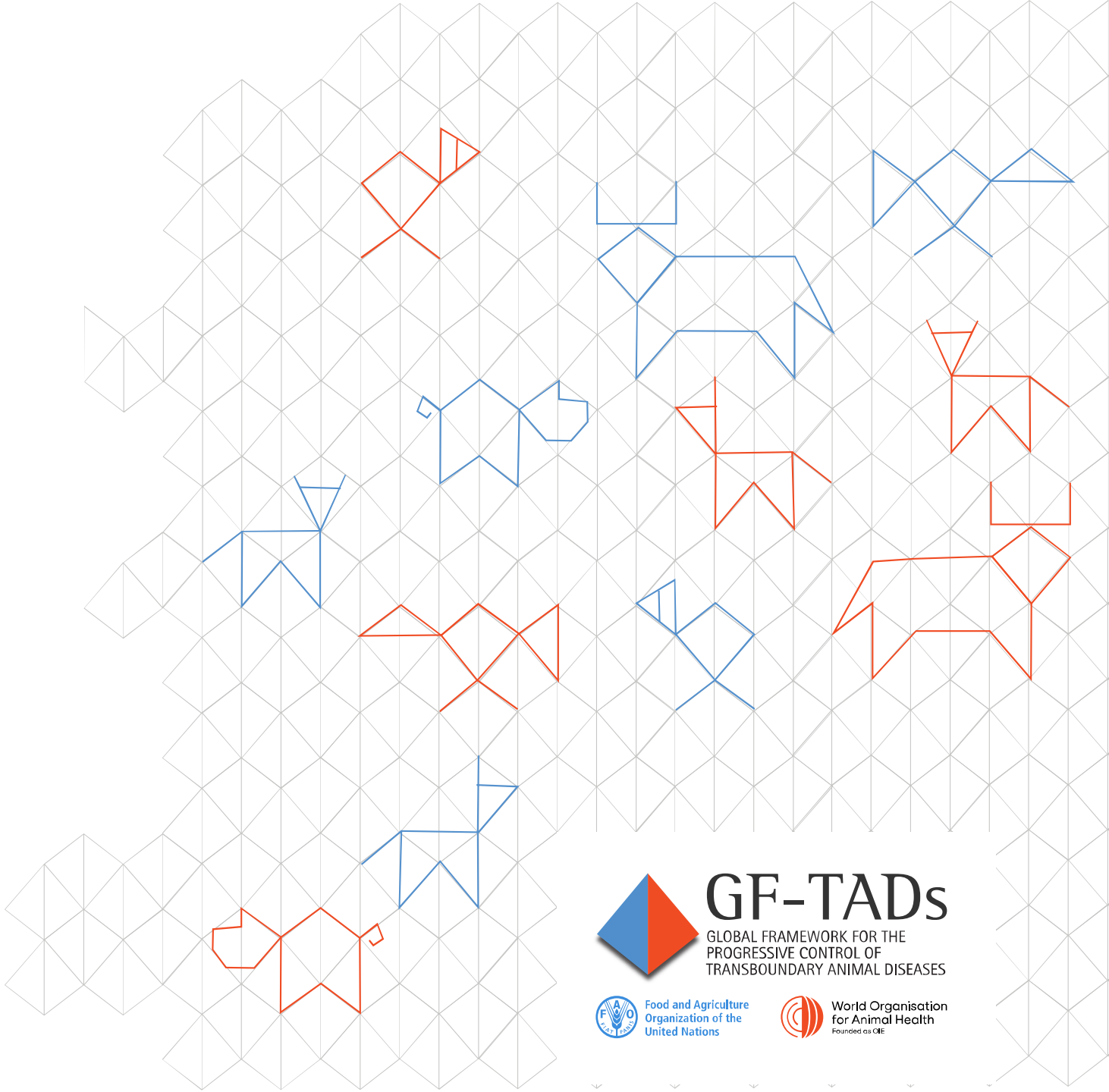
Introduction



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Objectives

The purpose of the present project was to:

- Analyse rabies epidemiological and vaccination data from the Members of the SGE on Rabies for Europe
- Describe the evolution of the situation in the region

=> To help identify the next steps for the elimination campaign

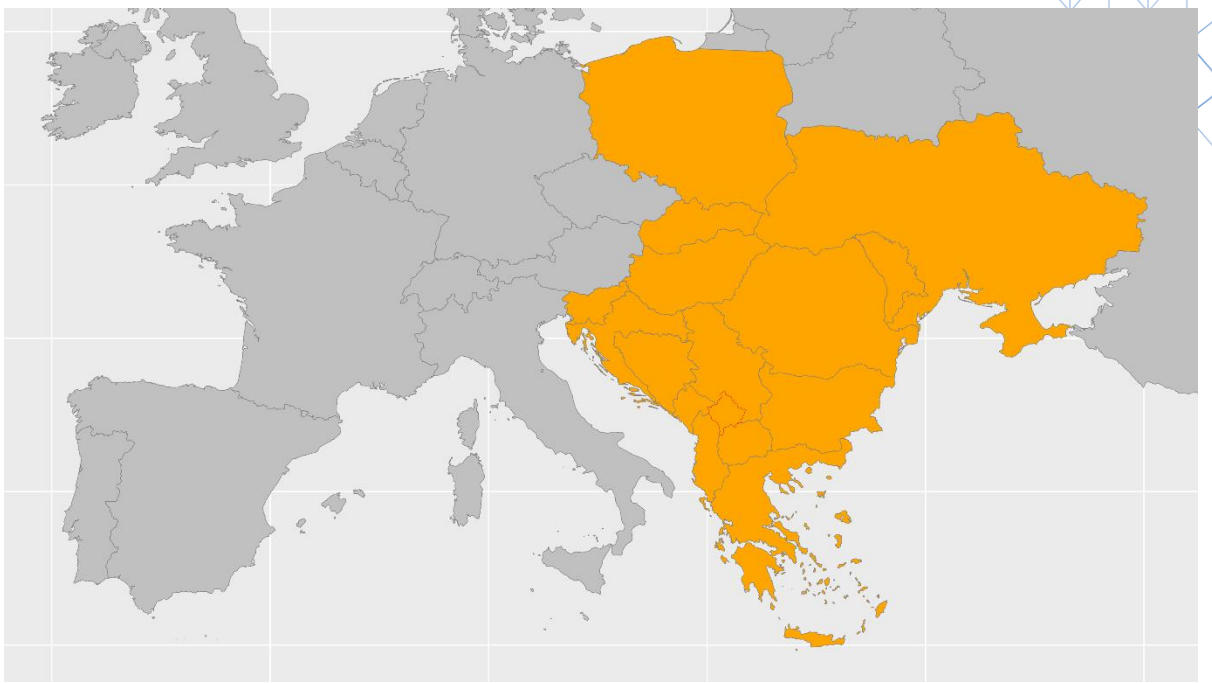
This analysis and report were produced under the World Organisation for Animal Health (WOAH) Services Agreement number BE/s-COS2025/1 and co-funded by the European Union. These contents are the responsibility of the author and do not necessarily reflect the views of WOAH and/or the European Union.

Note regarding Kosovo: this designation is without prejudice to the position on status and is in line with UNSCR 1244/1999 and the IJC Opinion on the Kosovo Declaration of Independence

Data management

Data sources:

- PowerPoint slides presented by the SGE Members at the annual meetings from 2019 to 2024
- Word questionnaires filled in by the SGE Members incrementally
- WAHIS rabies case data (INFUR / SMR)



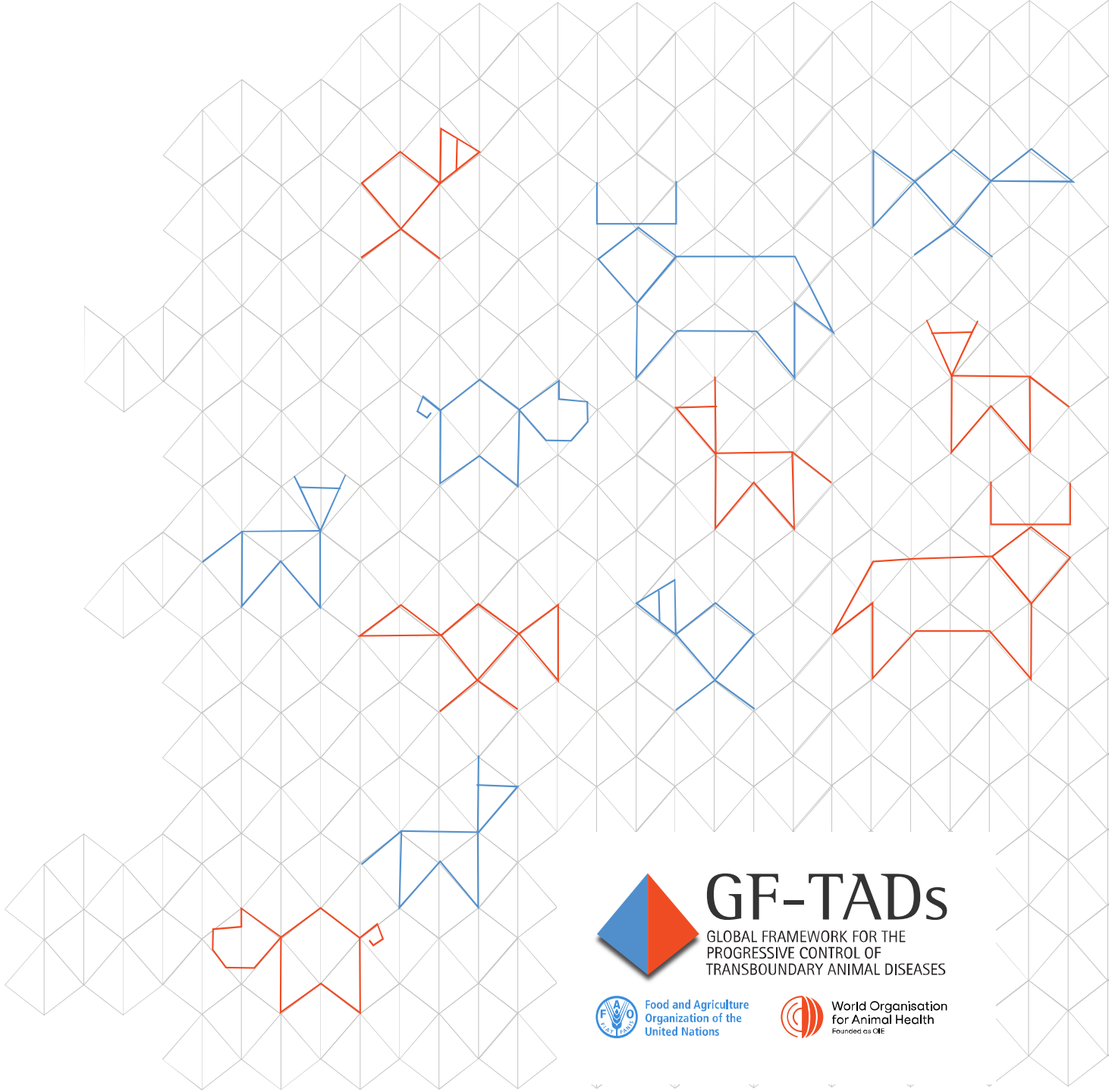
Data collated and cleaned:

- Generic data on ORV campaigns (per year) → 2010-2024
- Detailed data on ORV campaigns (per campaign) → 2017-2024
- PVM and active surveillance data (per year) → 2017-2024
- Passive surveillance data (per year) → 2017-2024
- Case data (per year) → 2005-2024

Disclaimers:

- "Cases" versus "outbreaks"
- Results shown in this presentation still under verification by SGE Members and may not represent the true number of cases.
- The WAHIS dataset was downloaded on May 19th and does not account for amendments or corrections provided by Members after this date.

Results:
Part 1 – rabies surveillance



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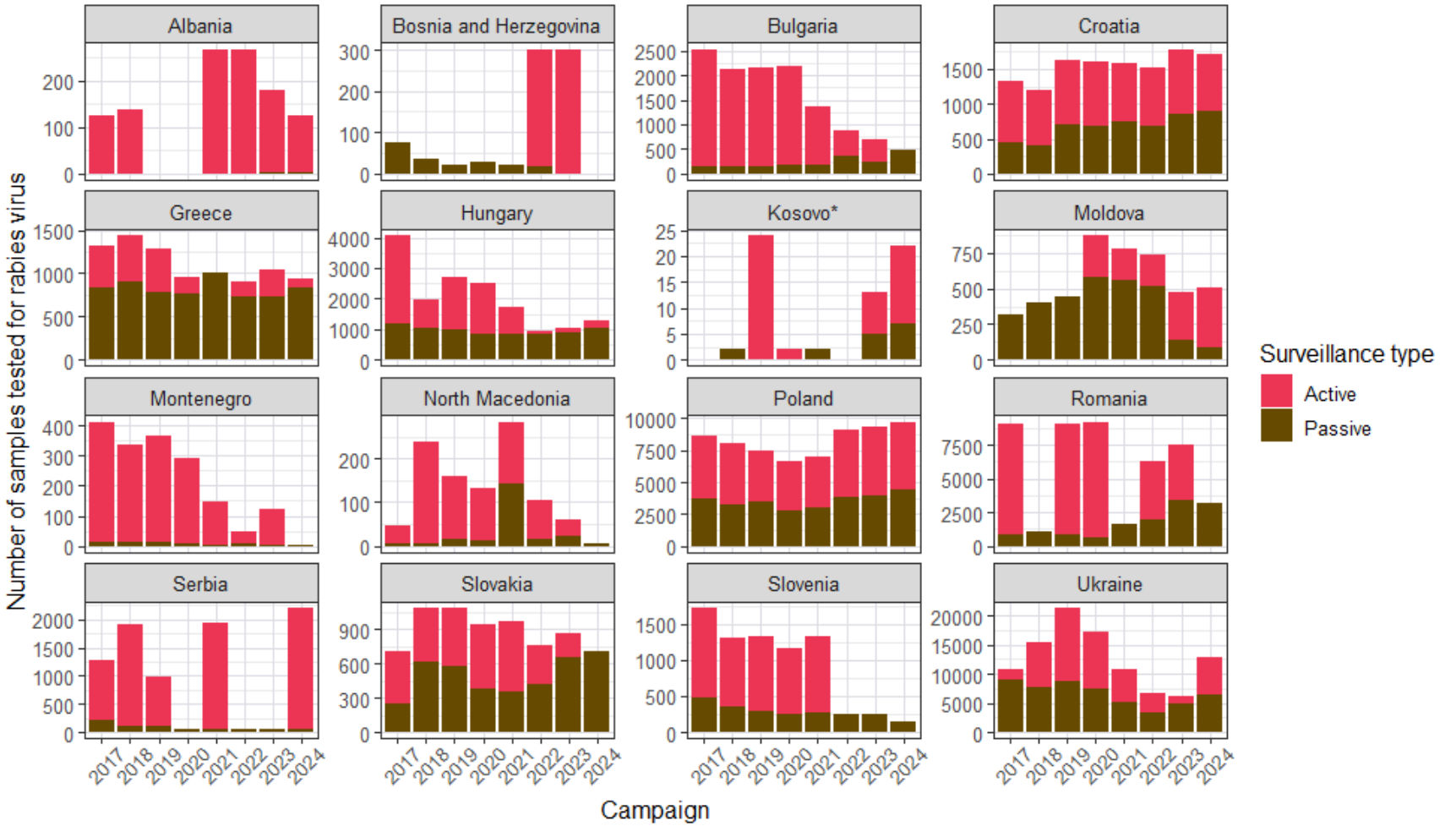
Volume of samples tested

2017-2024: almost 300,000 samples were tested

57% of these samples came from active surveillance

Mean number of samples tested: 1.7 samples per 100 km²

No indication of location of origin within territories



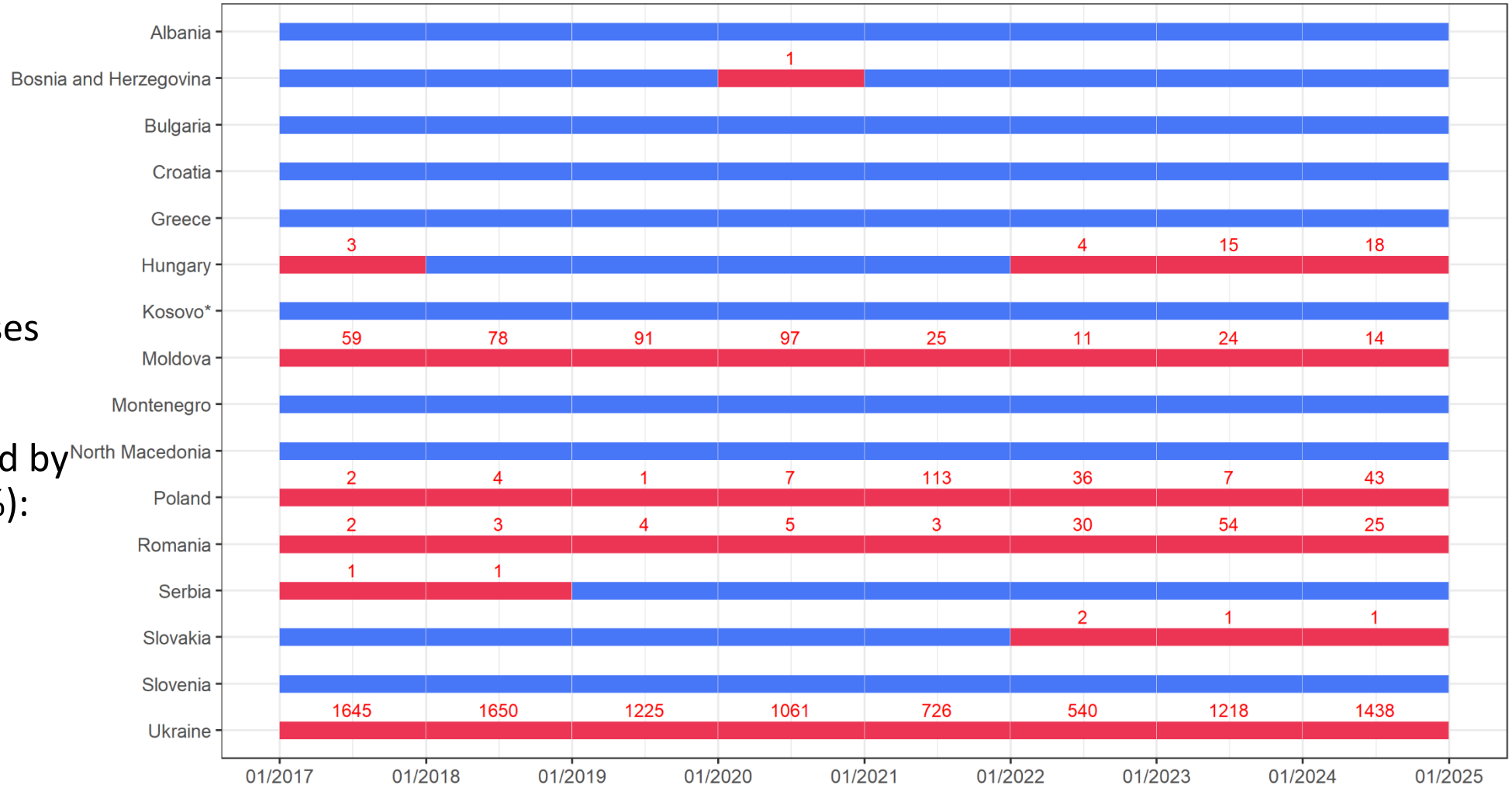
Number of rabies cases: SGE data

Rabies detected in 8 SGE Members (2017-2024)

Total of 10,288 rabies cases

Most cases were detected by passive surveillance (81%):

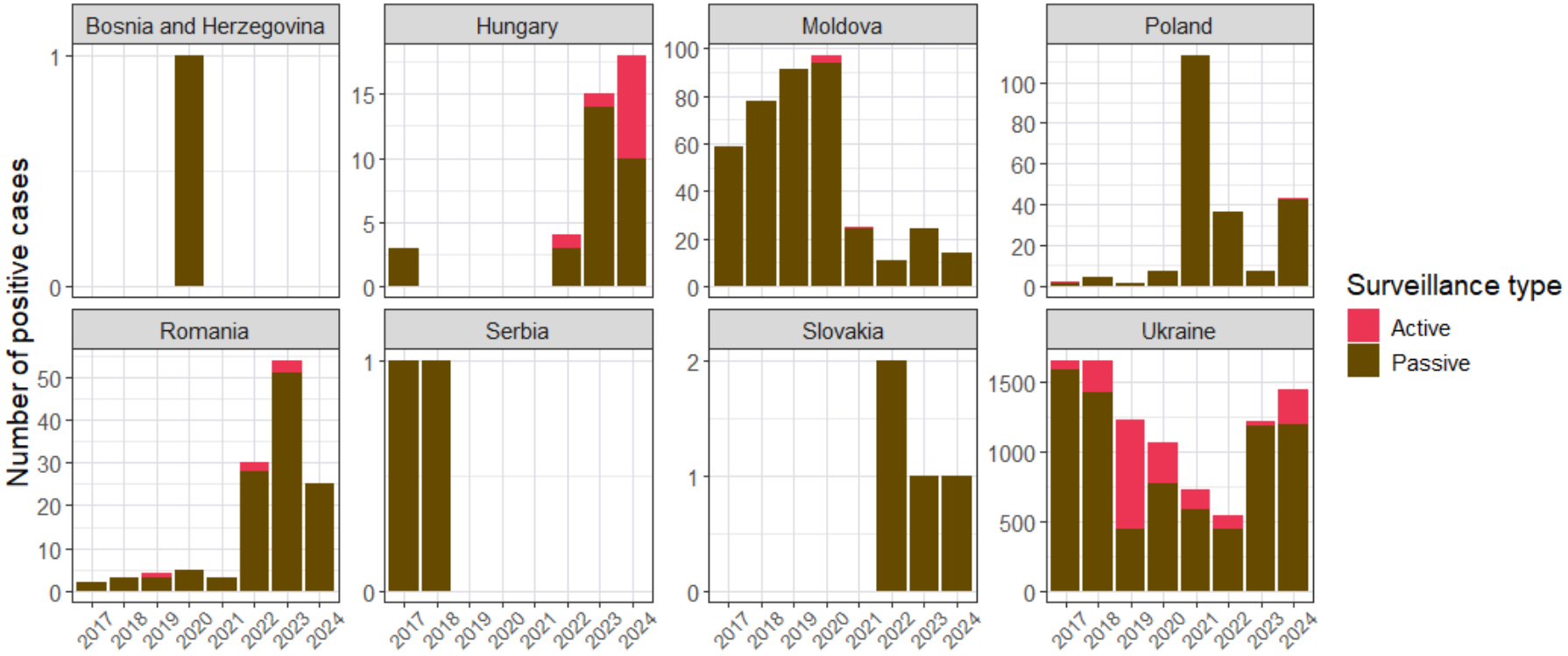
- 75% in Hungary
- 80% in Ukraine
- 95% in Romania
- > 99% elsewhere



Number of rabies cases: SGE data

Broadly, three epidemiological situations:

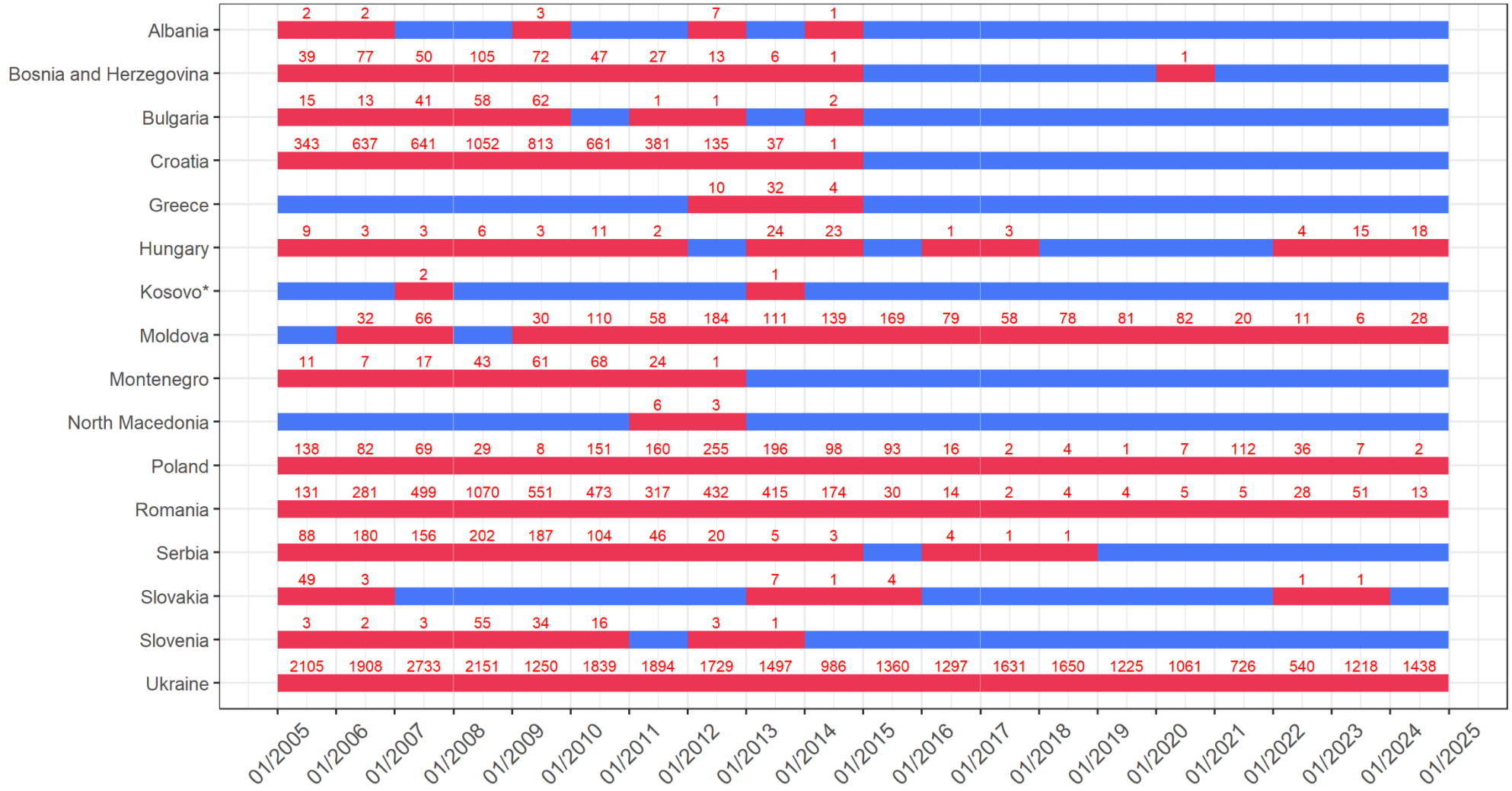
- *Sporadic cases*: Bosnia and Herzegovina, Serbia, Slovakia.
- *Recent increase in the number of cases*: Hungary, Poland, Romania, Ukraine.
- *Recent decrease in the number of cases*: Moldova.



Number of rabies cases: contributions from the WAHIS data

(1) A longer timeline

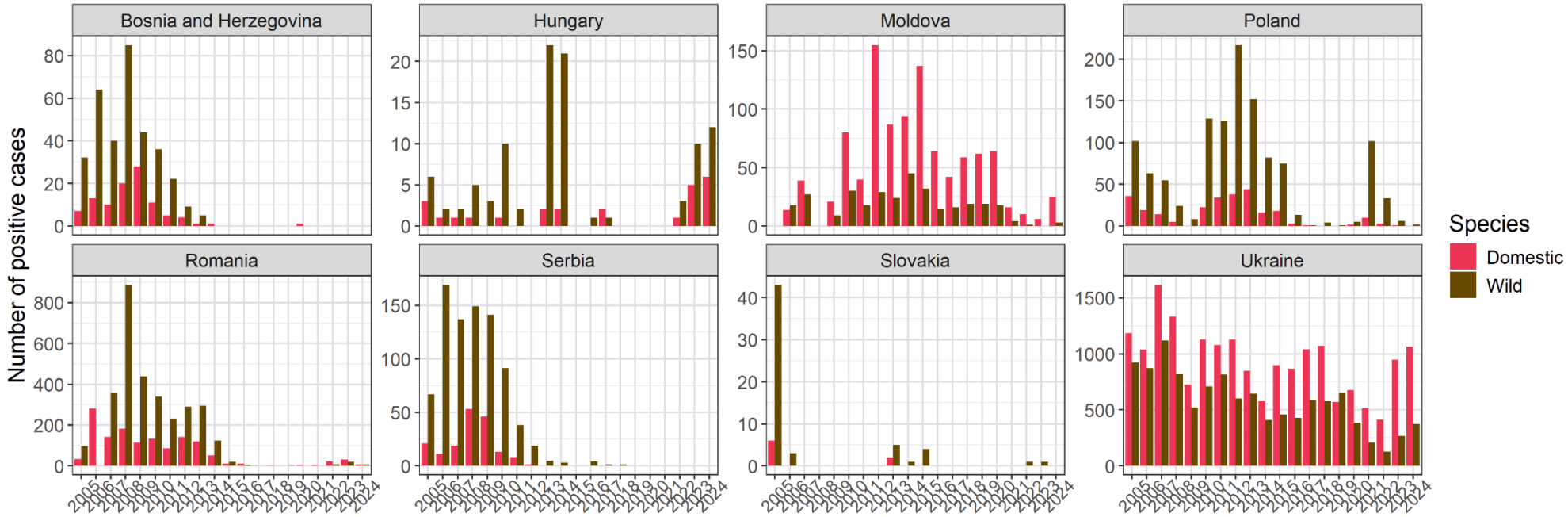
Many SGE Members achieved zero rabies cases before 2017



Number of rabies cases: contributions from the WAHIS data

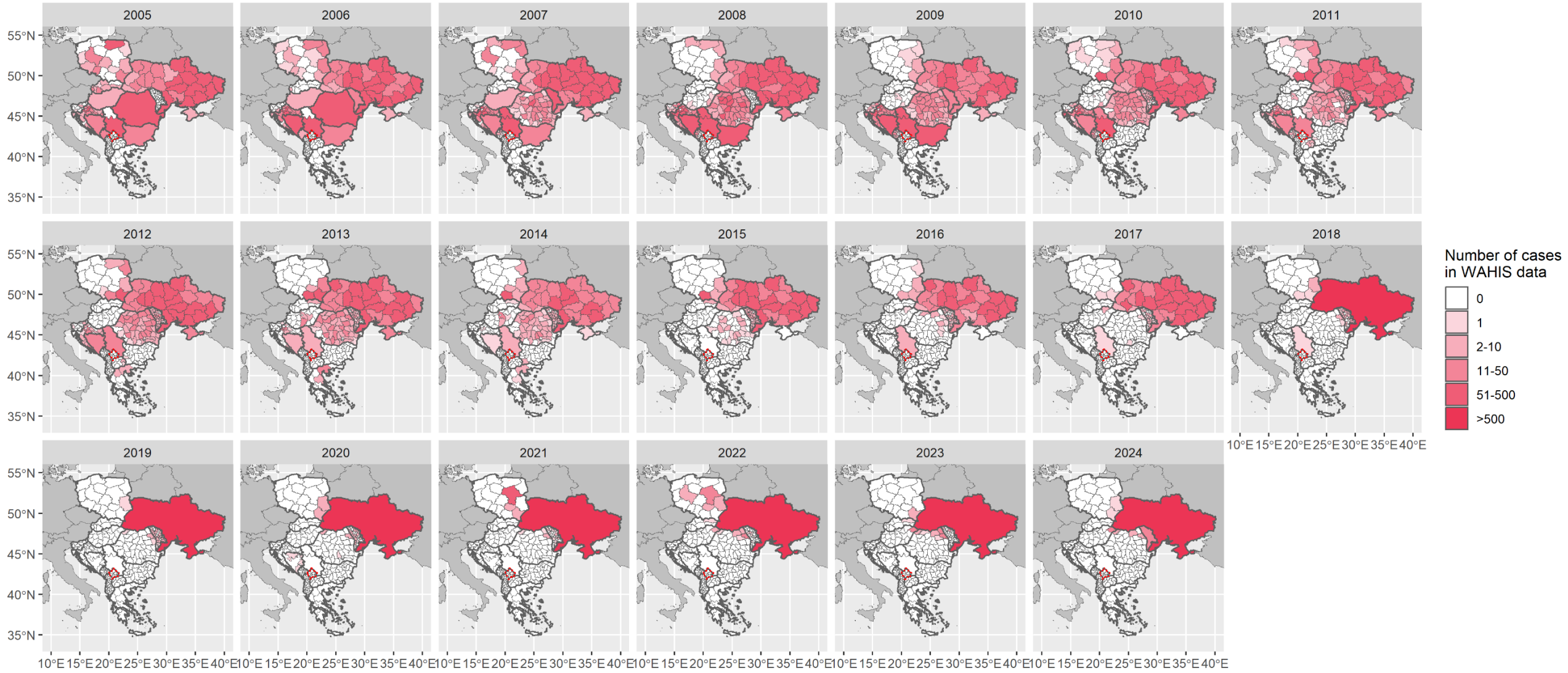
(2) Distribution of cases between domestic and wild animals

- Proportion of cases in domestic animals: 10% in Poland, 34% in Hungary, 66% in Romania and Ukraine, and 78% in Moldova
- Increasing trend in Ukraine and Moldova



Number of rabies cases: contributions from the WAHIS data

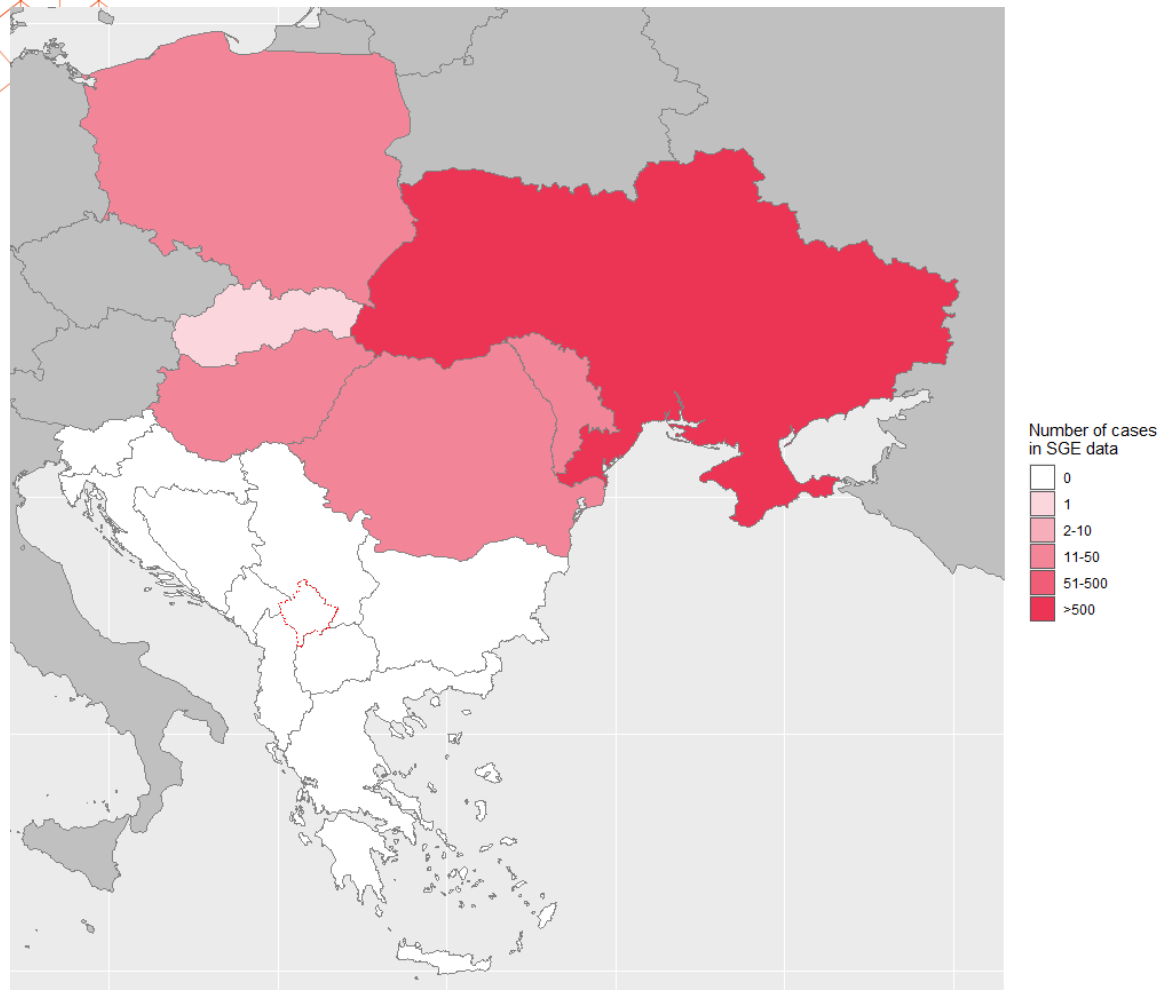
(3) Distribution of cases at subnational level

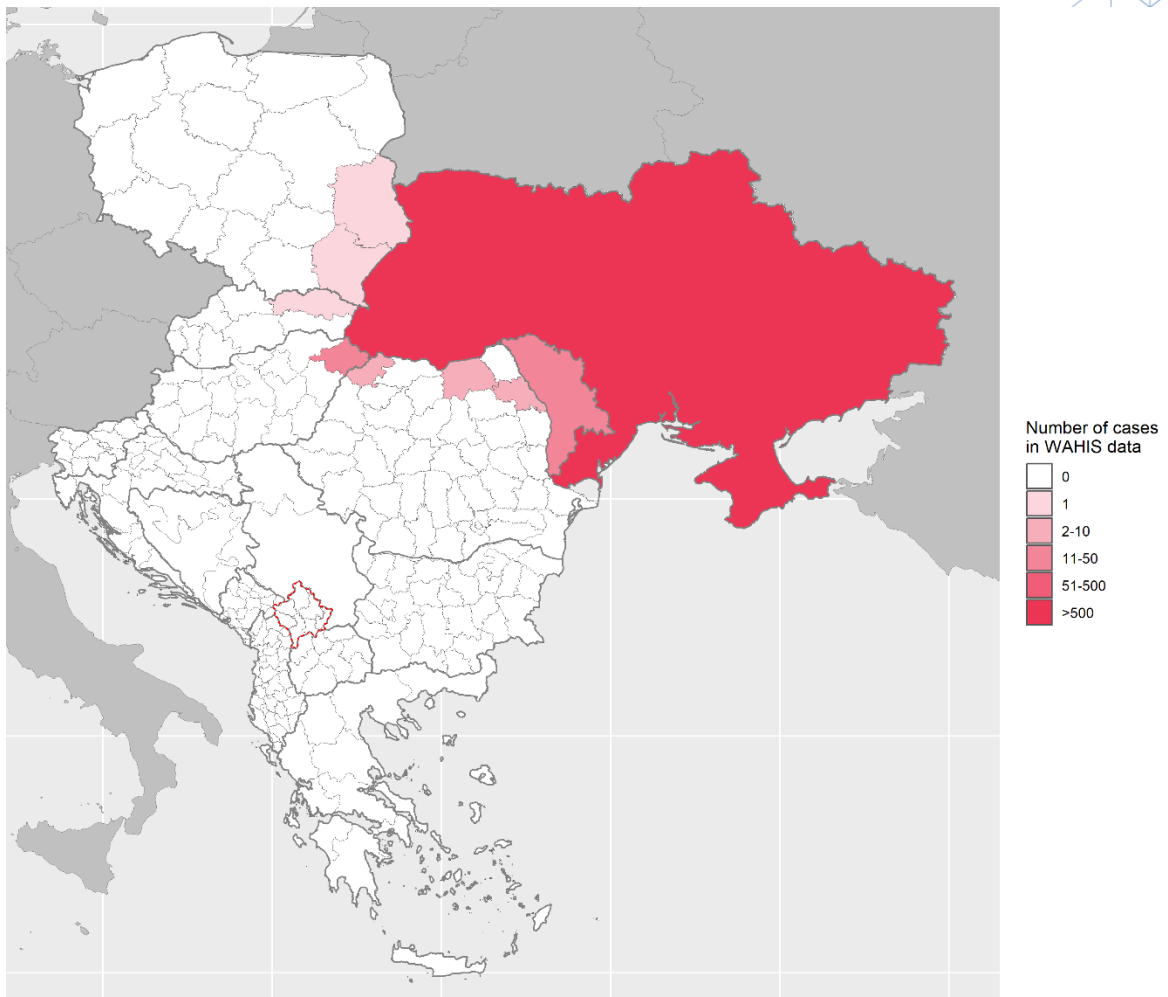


Summary of the epidemiological situation, as of 2024

Group	SGE Member	Year of last rabies case	EU Membership	Status as per EU regulations	WOAH self-declaration of freedom
Disease present	Ukraine	*Not applicable*	No	*Not applicable*	No
	Moldova	*Not applicable*	No	*Not applicable*	No
Disease present in some areas only	Hungary	*Not applicable*	Yes	Rabies free except Szabolcs-Szatmár-Bereg	No
	Poland	*Not applicable*	Yes	Rabies-free in most powiaty	No
	Romania	*Not applicable*	Yes	Not rabies-free	No
	Slovakia	*Not applicable*	Yes	Rabies free except some areas	No
No cases in the last four years (2021-2024)	Albania	2014	No	*Not applicable*	No
	Bosnia and Herzegovina	2020	No	*Not applicable*	No
	Bulgaria	2014	Yes	Rabies-free	2022
	Croatia	2014	Yes	Rabies-free	No
	Greece	2014	Yes	Rabies-free	2024
	Kosovo*	2013	No	*Not applicable*	No
	Montenegro	2012	No	*Not applicable*	2022
	North Macedonia	2012	No	*Not applicable*	No
	Serbia	2018	No	*Not applicable*	No
	Slovenia	2013	Yes	Rabies-free	2016

Summary of the epidemiological situation, as of 2024





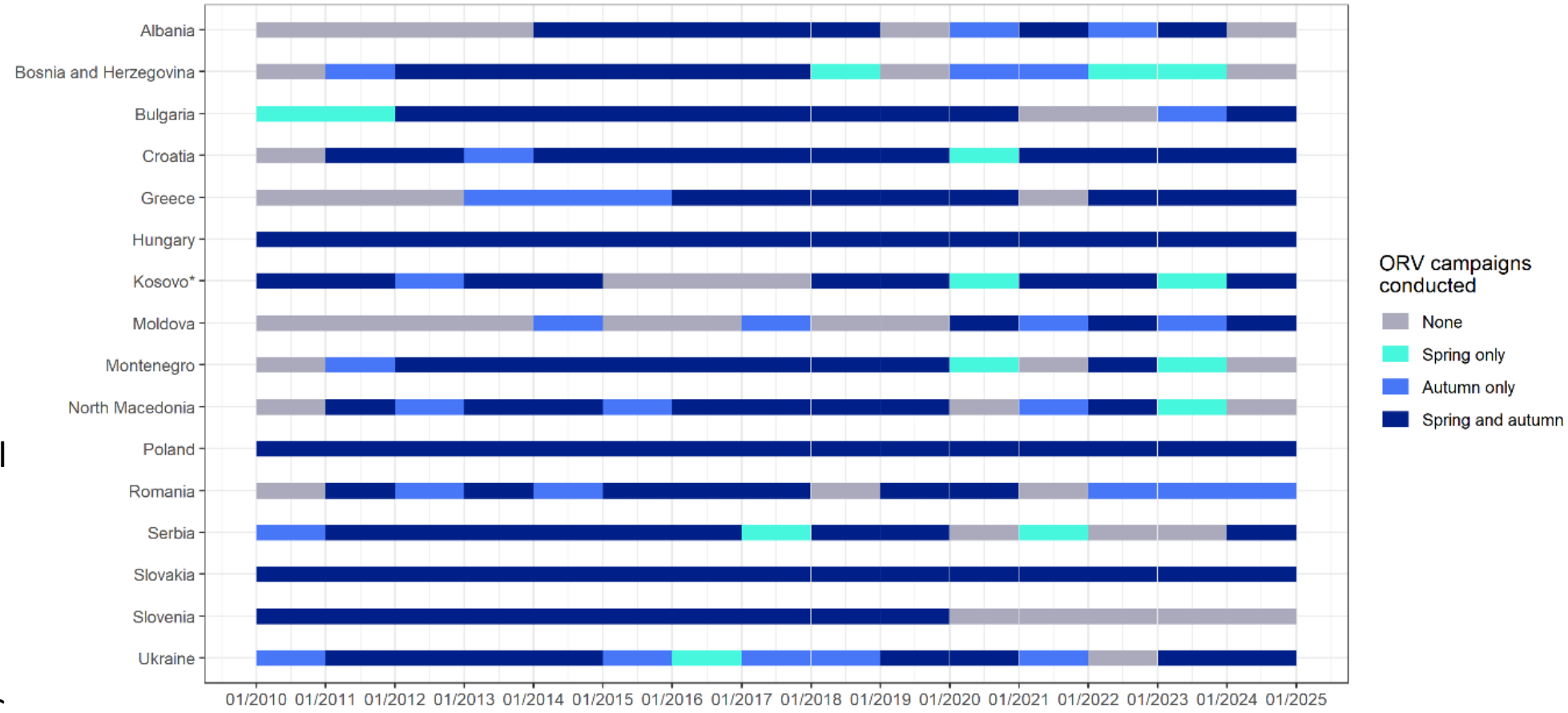
Results:
Part 2 – oral rabies vaccination

ORV campaigns: overview

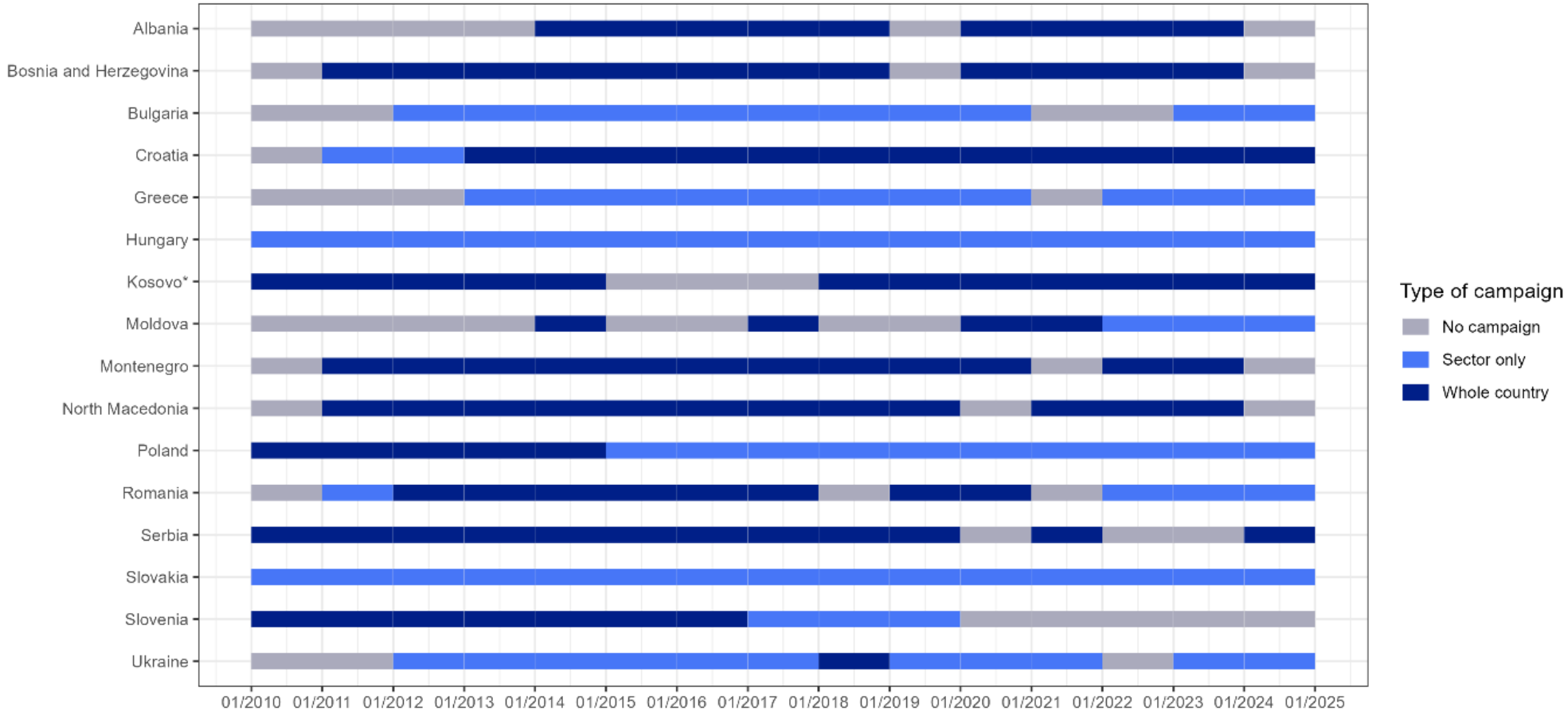
2010-2024: 346 ORV campaigns, including 165 spring campaigns and 181 autumn campaigns.

No simultaneous implementation of two consecutive campaigns by all SGE Members.

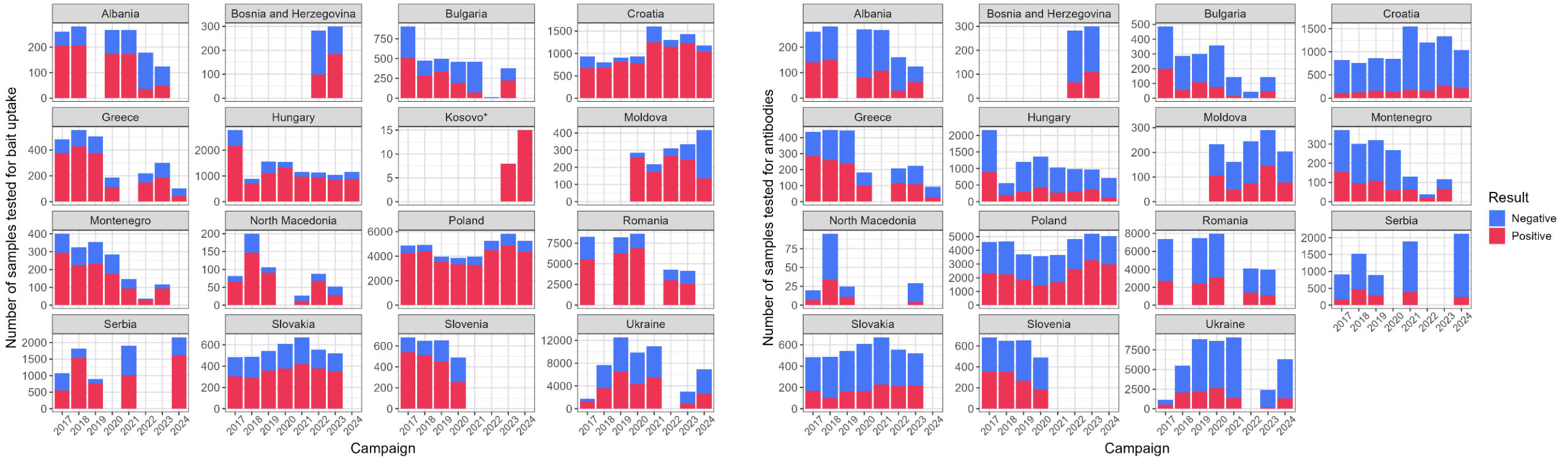
Gaps: administrative delays, budgetary reasons, political context, COVID-19 pandemic, etc.



ORV campaigns: coverage



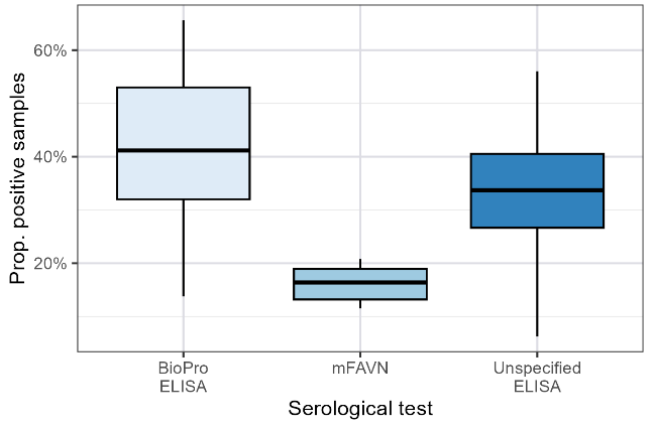
ORV campaigns: post-vaccination monitoring

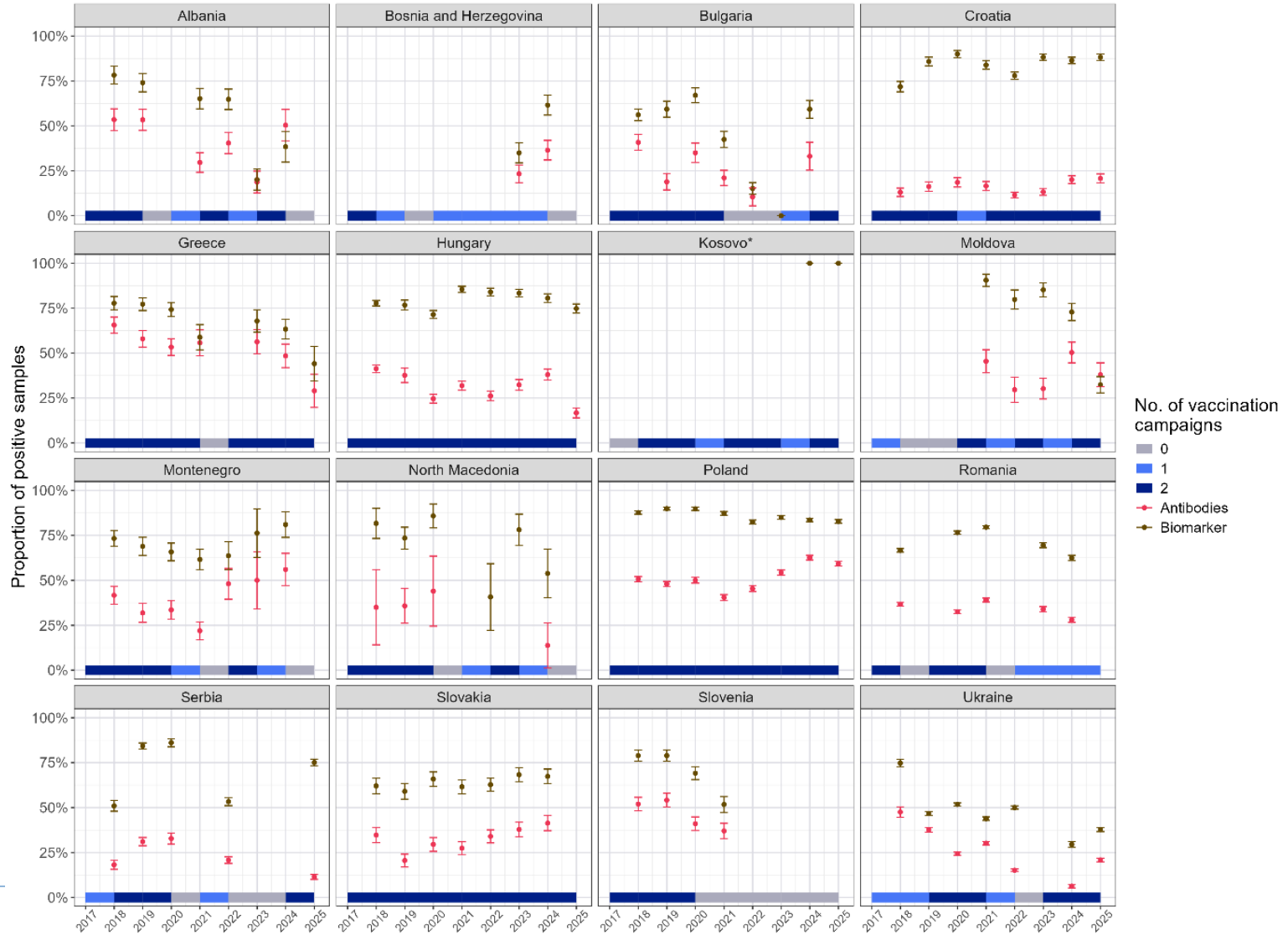


- 169,869 fox samples tested for the presence of tetracycline (68% positive)
- 147,851 fox samples tested for the presence of rabies antibodies (35% positive)

ORV campaigns: post-vaccination monitoring

- Sensitivity of the different tests used for serology
- Seroprevalence drops rapidly when ORV campaigns not implemented continuously (even when only one of the two annual campaigns is missed)
- Population immunity not re-built immediately after ORV campaigns start again





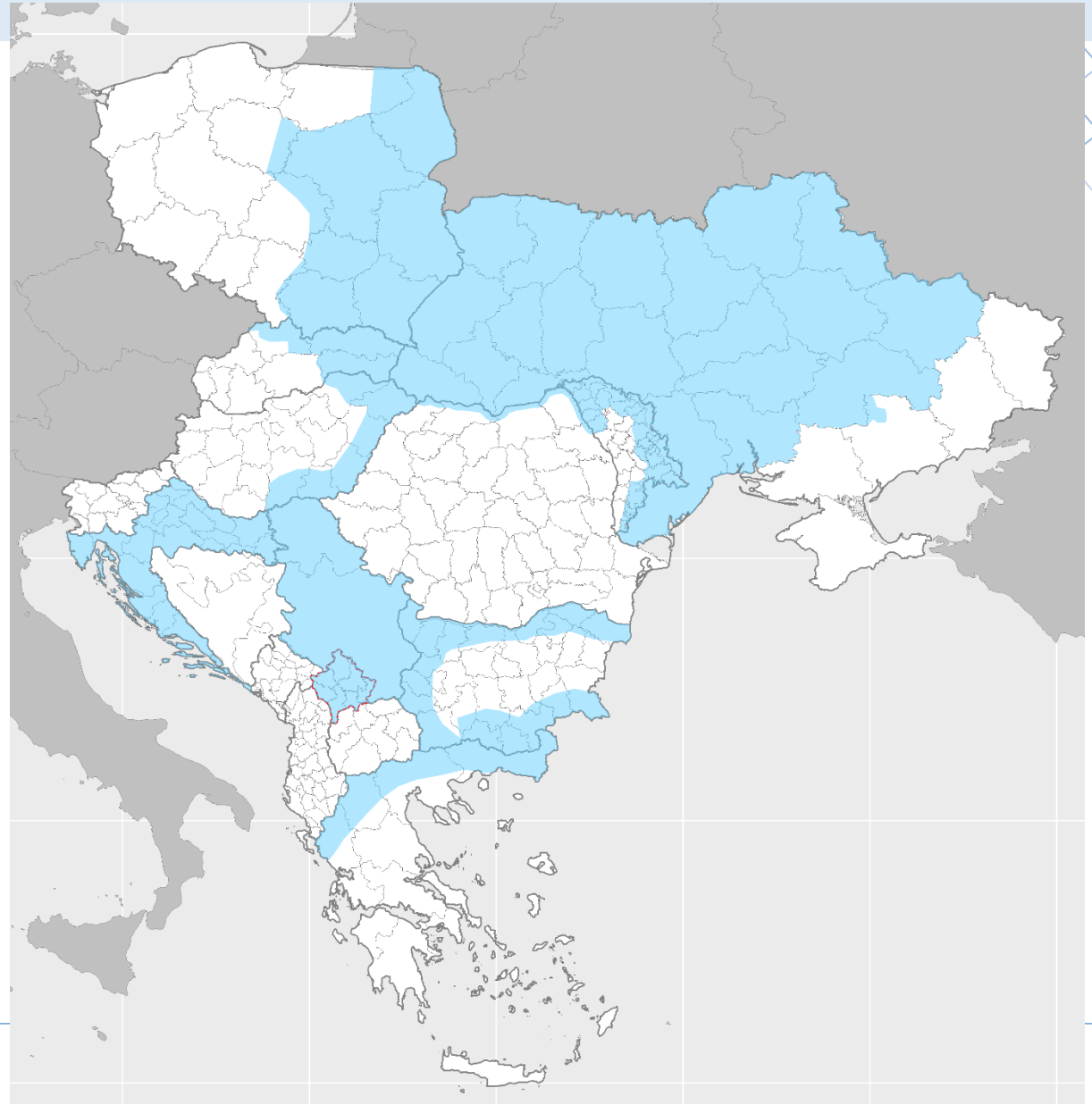
ORV campaigns: implementation in 2024

Campaigns covering the whole national territory:

- *Recognised as rabies-free by the EU:* Croatia.
- *No official status but no cases reported in 2024:* Kosovo*, Serbia.

Campaigns targeting designated areas:

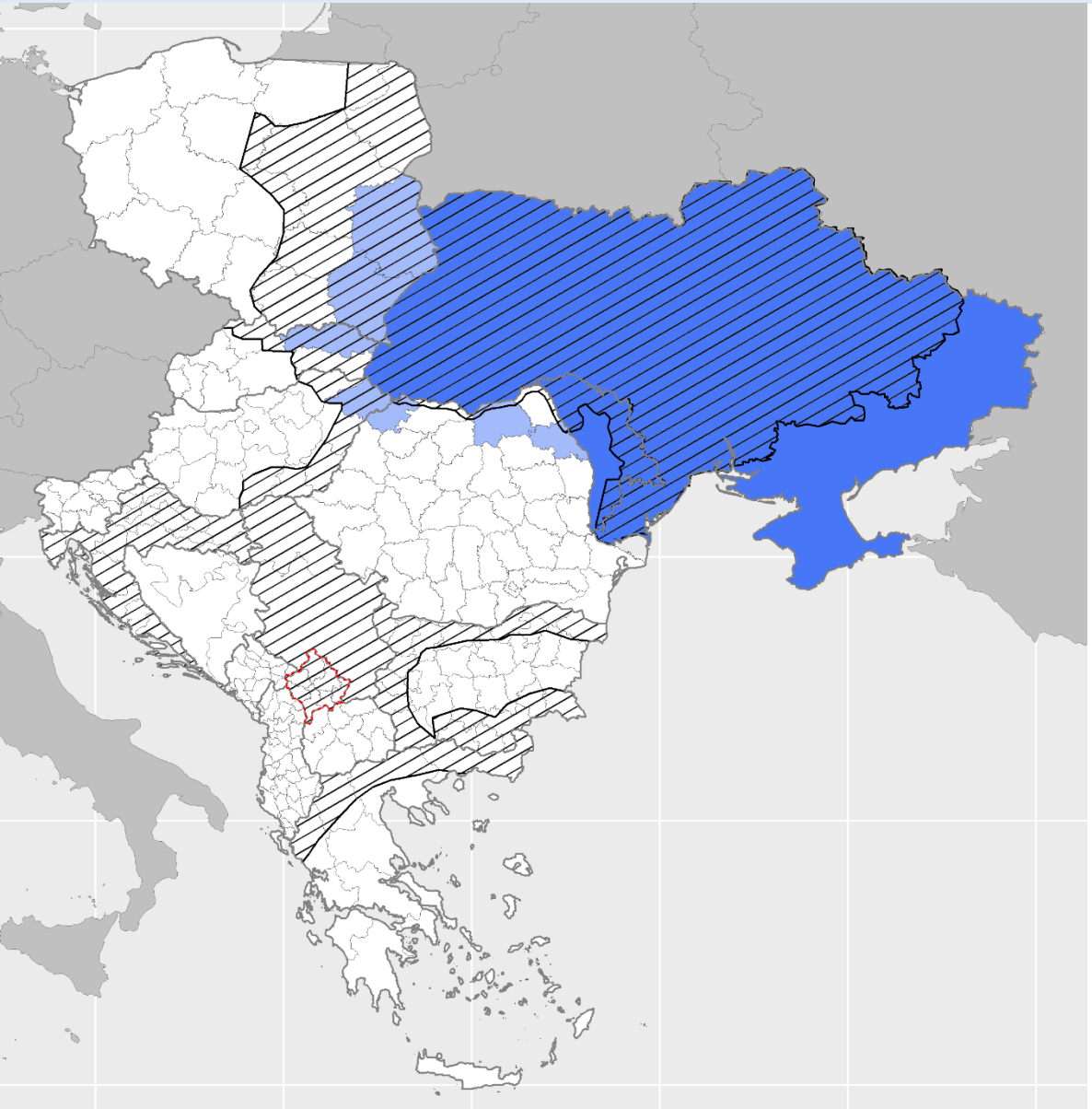
- *Rabies-free countries vaccinating areas at high risk of re-introduction*: Greece, Bulgaria.
- *Areas of disease persistence*: Hungary, Poland, Slovakia, Romania(1).
- *Whole national territory affected*: Moldova, Ukraine.



(1) Only manual distribution of vaccines was conducted in Romania, in autumn 2024

Results:
Part 3 – summary

Summary of the epidemiological and vaccination situation for 2024



ORV campaigns	Situation as of 2024: None	Border area(s)	Whole territory
Whole territory	**Croatia**, Kosovo*, Serbia	-	-
Designated area(s)	**Greece**, **Bulgaria**	Hungary, Poland, Slovakia, Romania	Moldova, Ukraine
None	Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, **Slovenia**	-	-

Reported rabies cases

Vaccination

Rabies cases

- No cases
- Reported locally
- Reported for whole country

Situation in countries still reporting rabies cases between 2017 and 2024

Hungary:

- Re-incursion of rabies virus in 2022 from the bordering endemic areas, after four years without cases.
- Cases have increased afterwards, with Hungary reporting more than 10 cases per year in 2023 and 2024.
- Infection pressure in border area => reinforced ORV implementation in the Szabolcs-Szatmár-Bereg county in 2024.

Slovakia:

- Re-incursion of rabies virus in 2022 after six years without cases.
- Cases have remained sporadic afterwards in 2023 and 2024.

Poland:

- Rabies outbreak observed in 2021 in a county where the last case was reported at least 16 years earlier. Re-emergence far from the border but now appears under control.
- Current cases reported in 2023 and 2024 at the border of endemic area.

Situation in countries still reporting rabies cases between 2017 and 2024

Romania:

- Less than 5 cases were reported annually until 2021.
- Increasing incidence of cases since 2022, in counties along the borders with Ukraine and Moldova
- Strong decrease in ORV coverage, including in infected areas: cancellation of both 2021 campaigns, only autumn campaigns implemented since 2022, only manual distribution was performed in 2024.

Moldova:

- ORV implementation is co-funded by the EU since 2020
- Strong decrease in the number of cases reported annually since 2021
- Proximity of the disease front => infection pressure remains very high

Ukraine:

- ORV does not cover all infected areas + disturbances caused by the war (absence of ORV campaigns in 2022)
- Surge in cases observed in 2023-2024.

Discussion and recommendations

ORV implementation

Many SGE Members no longer report rabies cases:

- Need for a regional, progressive approach to the interruption of ORV campaigns in areas that are furthest away from the disease front
- Requires regional coordination, data sharing and decision-making
- Need to increase the confidence in disease freedom first.

Within and around the endemic area:

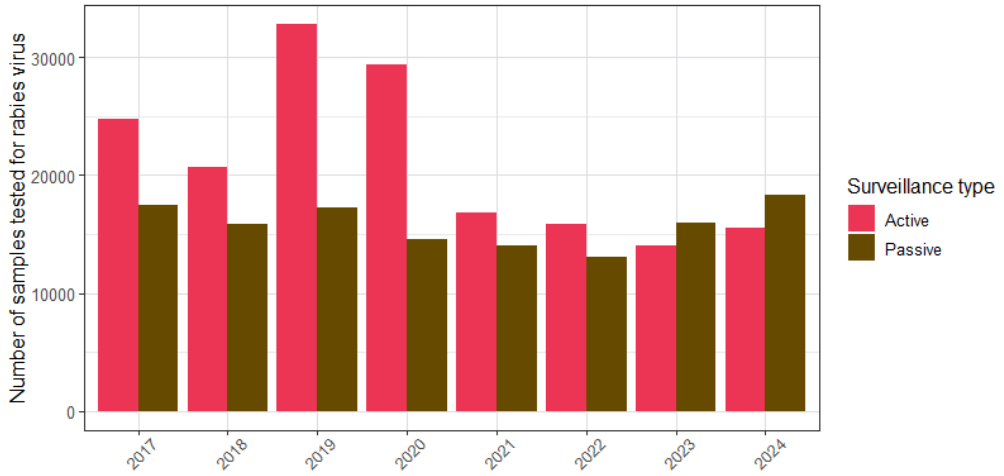
- Temporary interruptions in ORV campaigns and gaps of vaccination in infected areas lead to disease resurgence
- Need for continuous implementation of ORV, in all infected and at-risk areas, twice a year, every year

Disease surveillance

Findings of this work:

- Sufficient evidence of rabies freedom in wildlife is not yet available, low confidence in disease freedom in several SGE Members.
- More than half of the samples came from active surveillance but 81% of cases were detected by passive surveillance: higher performance (sensitivity) of passive surveillance.
- This is especially true as the disease incidence decreases: all sporadic cases detected by passive surveillance.
- Significant proportions of cases detected in domestic animals.
- As rabies is progressively eliminated, awareness of the disease decreases in parallel.

Focus on passive surveillance



Disease surveillance

Recommendations regarding disease surveillance:

- Passive surveillance: the cornerstone of the surveillance system. It should be reinforced, especially in wildlife:
  - Awareness activities designed for pet and livestock owners on one hand, and for hunters and other wildlife workers on the other hand (symptoms, importance, reporting pathway)
  - Training and awareness activities designed for veterinarians (opportunistic clinical surveillance)
  - Focus on the systematic testing of animals found dead (including road kills)
- Confidence in disease freedom requires consistent, high volumes of sample testing conducted every year on the whole territory
- Unexpected cases should be investigated thoroughly by the local authorities, including increased testing for rabies of wildlife found dead, hunted or trapped. Ex: 2020 case in Dâmbovița
- Place for systematic testing of foxes hunted or trapped outside of PVM? Costly (healthy population) but can provide coverage in areas which would otherwise remain blind spots.

Disease surveillance

Improve the sharing of information on rabies surveillance regionally:

- Negative testing data is very valuable for disease surveillance, and not available in official sources such as WAHIS or ADIS.
- Share the geographical distribution of negative samples at subnational level (needed to assess the surveillance performance, identify surveillance blind spots and build confidence in disease freedom): coordinates or subnational administrative units
- Share the number of animals tested and positive by animal type (wildlife versus domestic) for passive surveillance
- Provide the name of the ELISA kits used in serology, to allow for correction of the seroprevalence results

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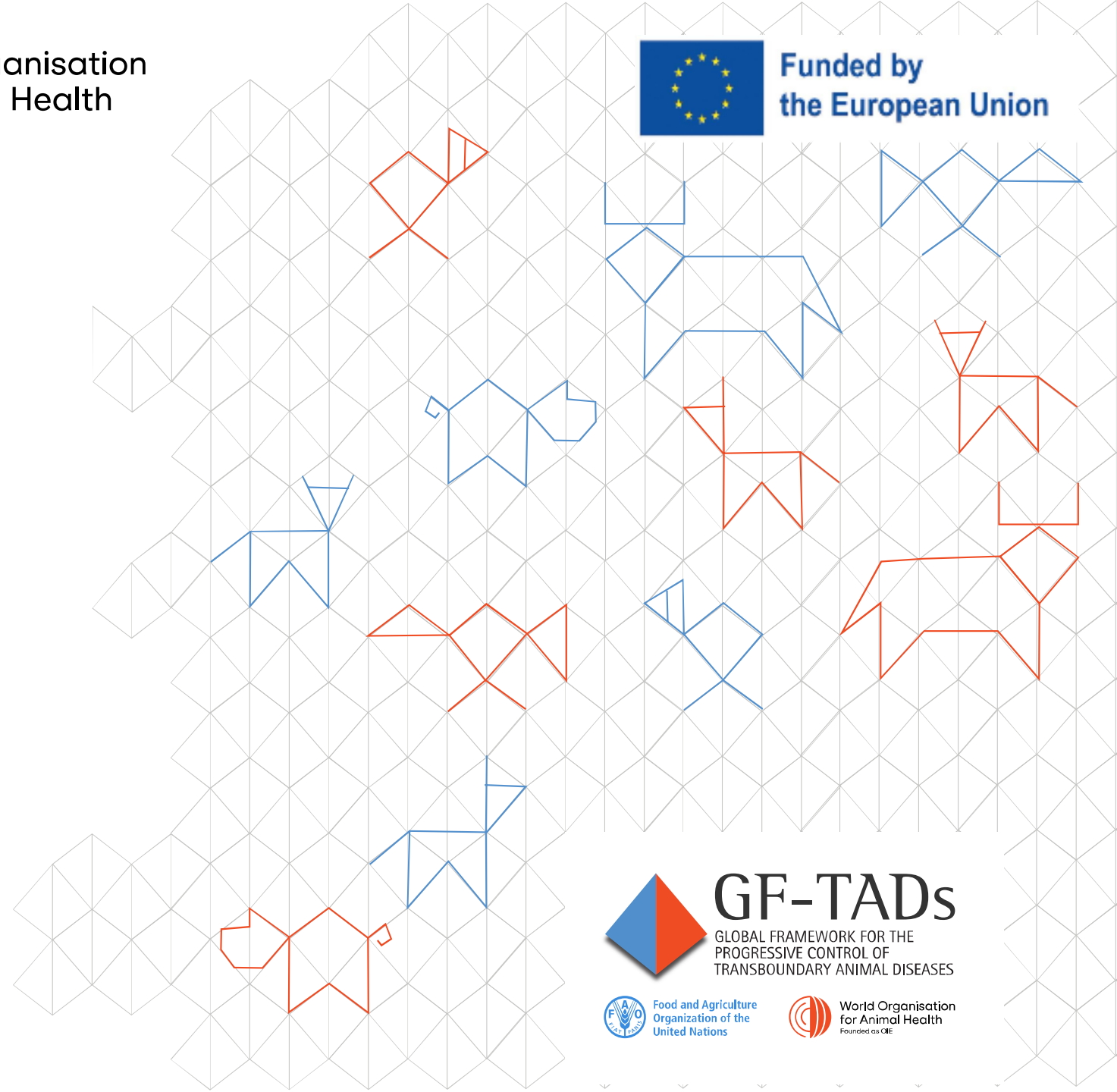
THANK YOU



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