AGRICONSULTING EUROPE SA

EuropeAid140314/DH/SER/Multi – SANTE/2018-G-046 EU

Regional action on animal disease eradication in the Western Balkans (ADEWB) Project

Workshop on Regional Approach in Control of Transboundary Animal Diseases, Cooperation, Communication and Coordination of activities

DISTRIBUTION OF VACCINE BAITS ON THE BORDERS OF THE WESTERN BALKAN COUNTRIES

Petrovac (Montenegro) ♦ 08 and 09 July 2021

Objectives of the analysis

- To determine the quality of vaccine baits distribution near the political borders in the Western Balkans
- To identify needs for further analysis with aim to pinpoint potential gaps in bait distribution
- To provide information to define recommendations for the future oral rabies vaccination campaigns in the region
- To demonstrate an approach for continuous assessment and use of data from the oral rabies vaccination campaigns

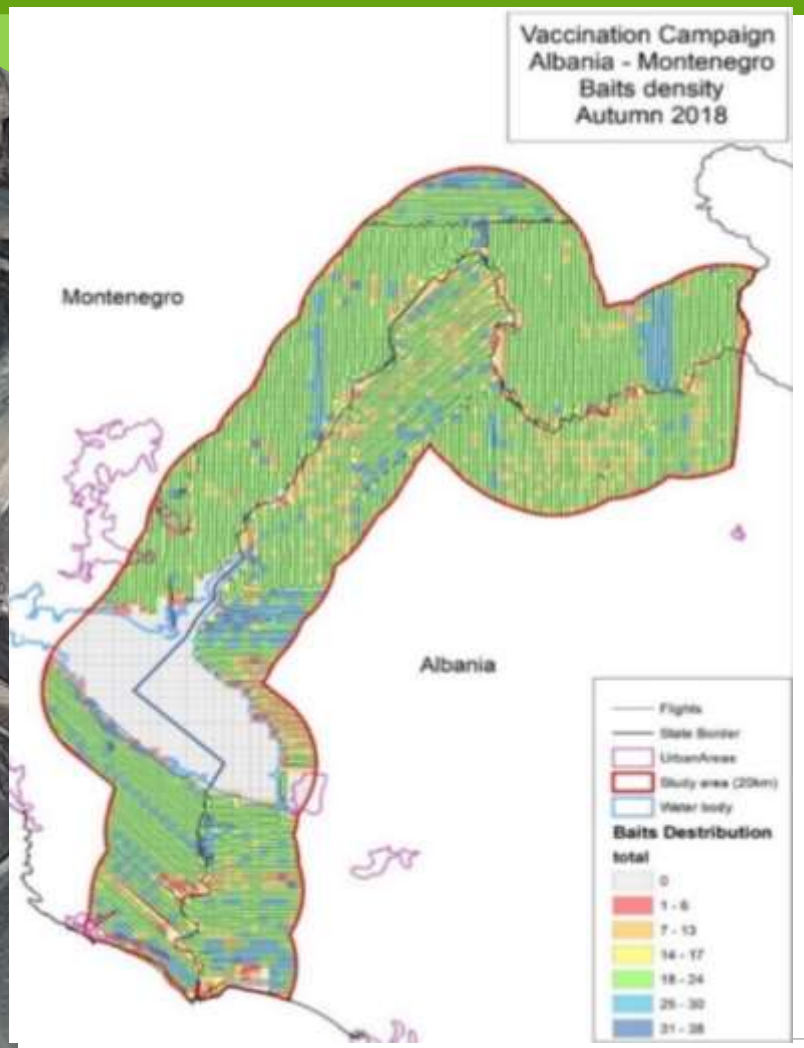
Objectives of the analysis

Country	ORV campaign
Albania	2018 Autumn
Bosnia and Herzegovina	2020 Autumn
Kosovo*	2018 Autumn
Montenegro	2018 Autumn
North Macedonia	2018 Autumn
Serbia	2018 Spring

Assumptions and disclaimer

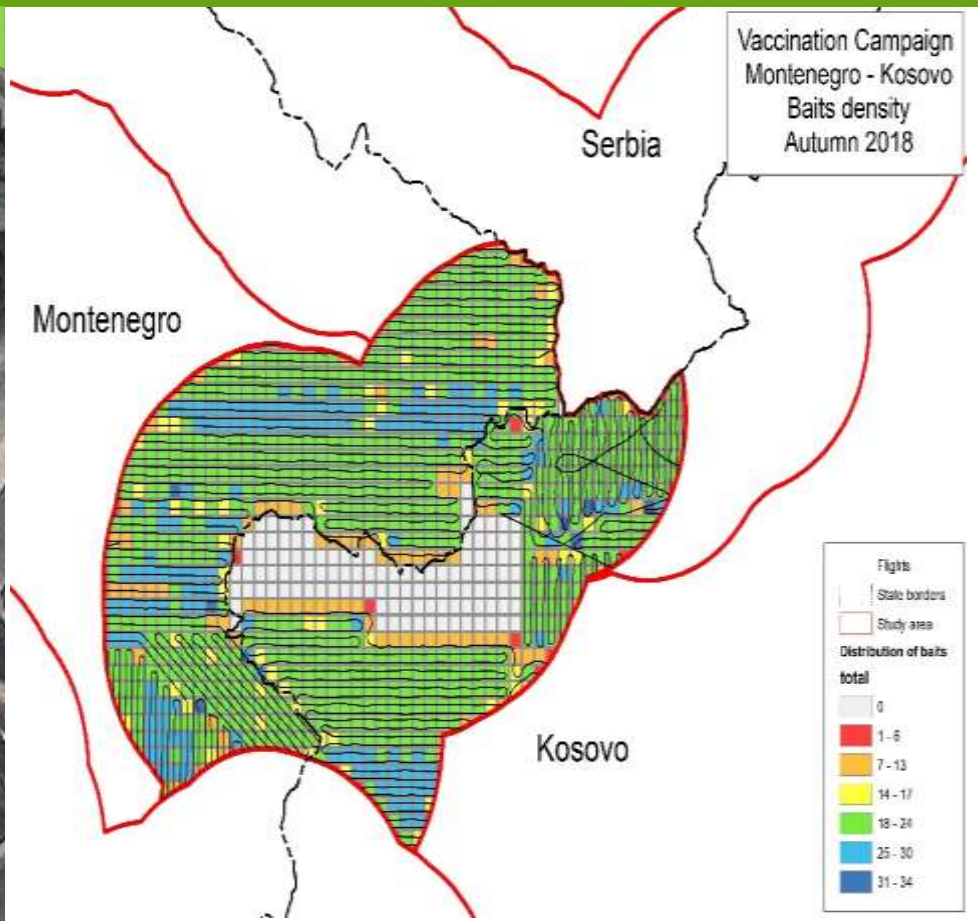
- **Extend of analysis and interpretation of results**
- **Delineation of the non-target areas**
- **Different density classes**
- **Squared kilometers**

Montenegro-Albania border



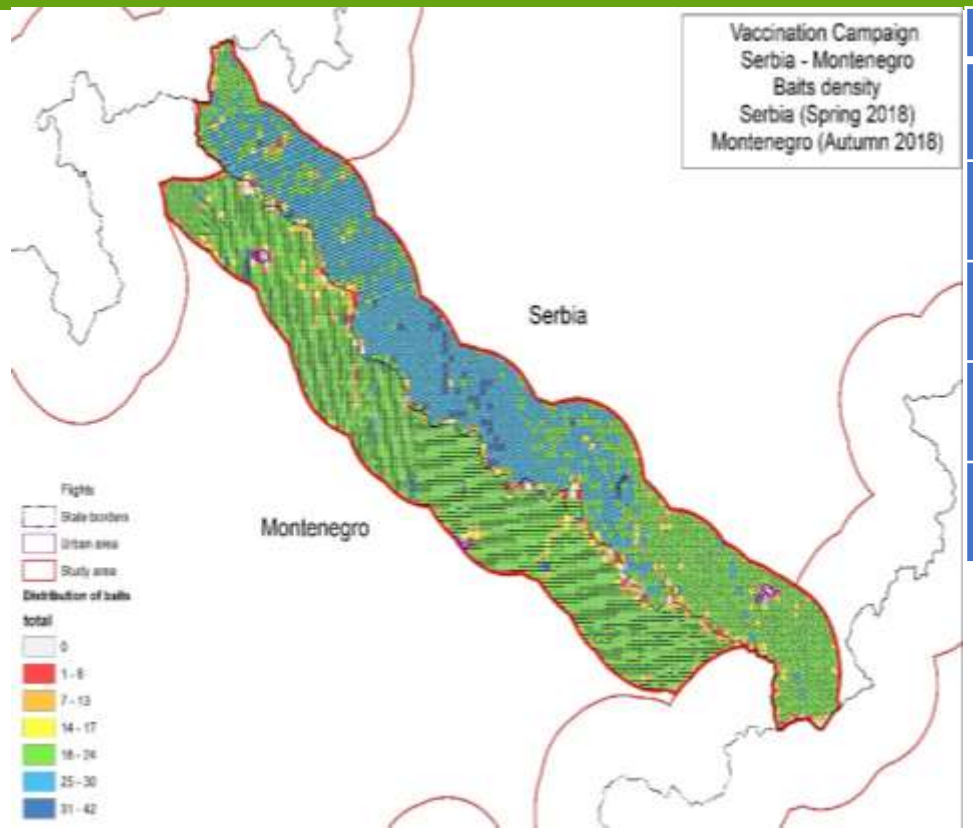
Parameter	Value
Average bait density (target area)	19.52
Total no. squares (1x1 km)	2,946
Number of squares with 0 baits	137
Proportion of squares with 0 baits (%)	4.65
Size of squares with 0 baits (km^2)	61.87

Montenegro-Kosovo* border



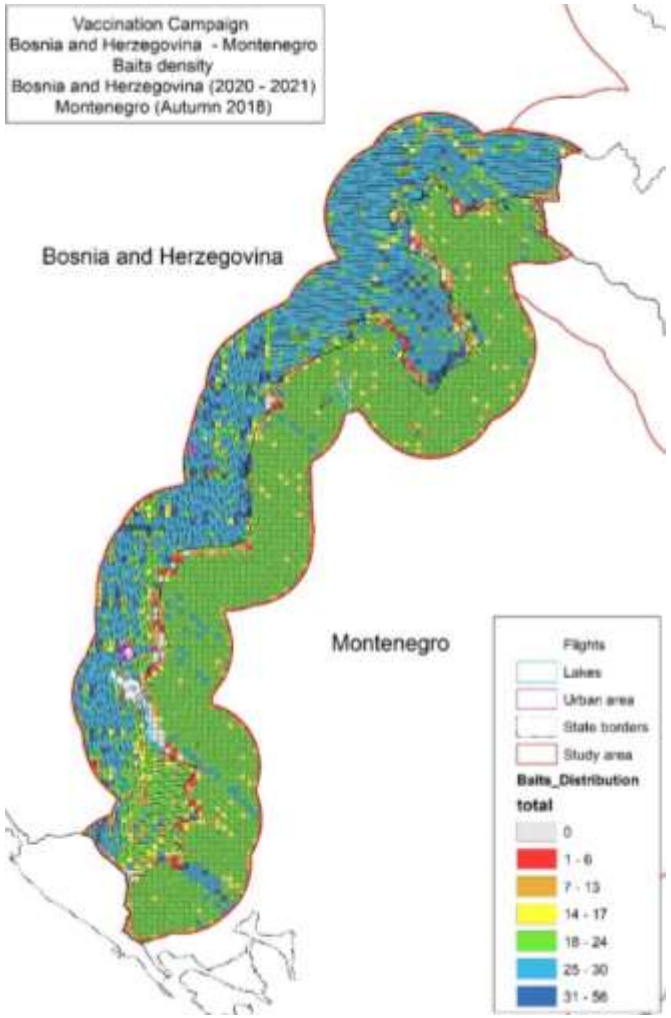
Parameter	Value
Average bait density (target area)	19.15
Total no. squares (1x1 km)	1,145
Number of squares with 0 baits	150
Proportion of squares with 0 baits (%)	13.10
Size of squares with 0 baits (km^2)	115.99

Montenegro-Serbia border



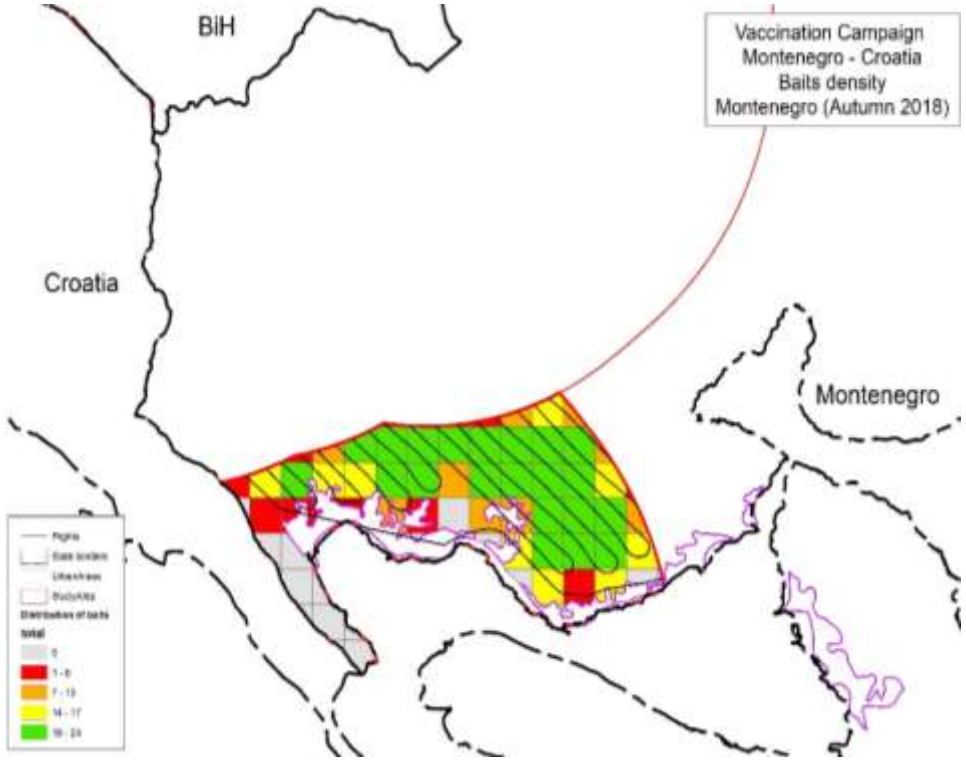
Parameter	Value
Average bait density (target area)	21.9
Total no. squares (1x1 km)	2,755
Number of squares with 0 baits	105
Proportion of squares with 0 baits (%)	3.81
Size of squares with 0 baits (km^2)	30.03

Montenegro-Bosnia and Herzegovina border



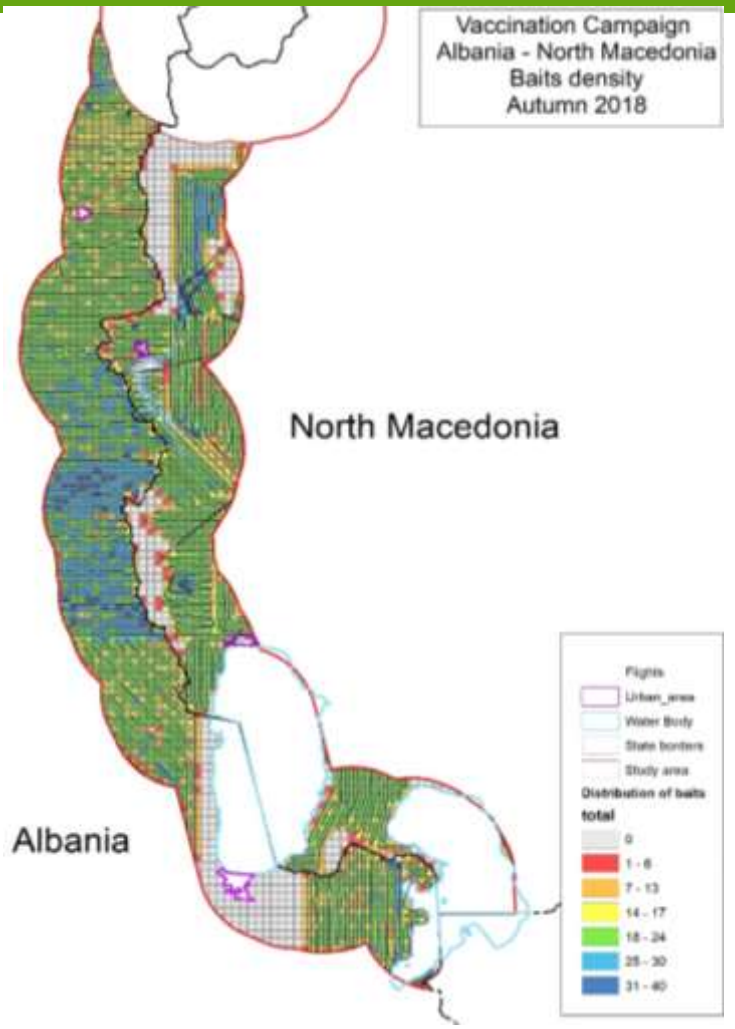
Parameter	Value
Average bait density (target area)	22.2
Total no. squares (1x1 km)	4,143
Number of squares with 0 baits	147
Proportion of squares with 0 baits (%)	4
Size of squares with 0 baits (km^2)	52.61

Montenegro-Croatia border

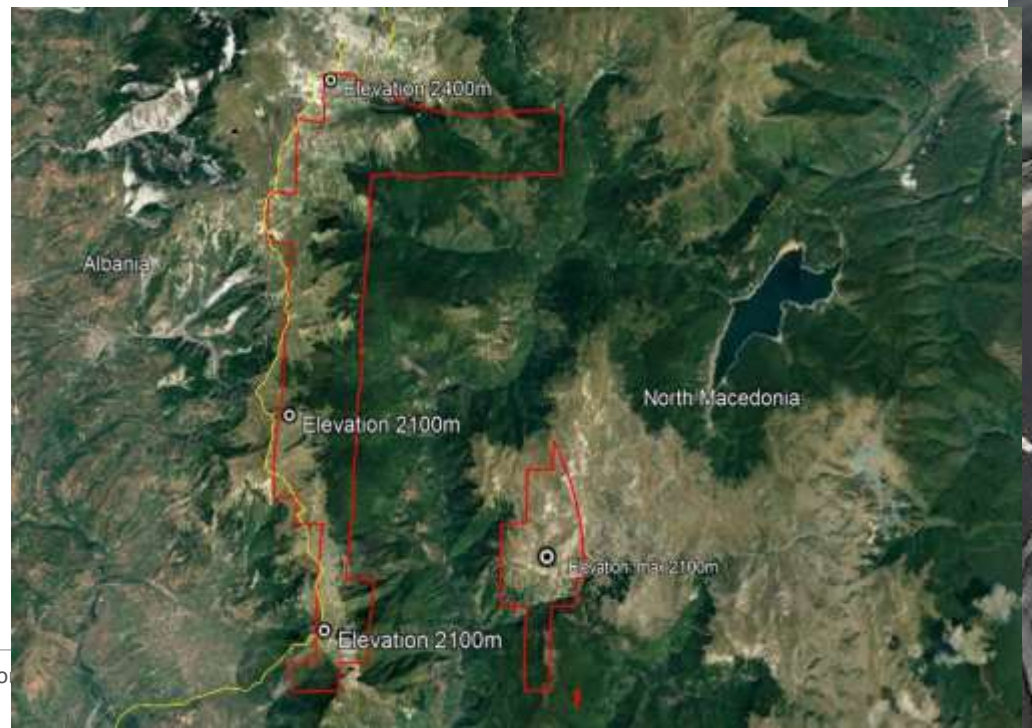


Parameter	Value
Average bait density (target area)	15.70
Total no. squares (1x1 km)	78
Number of squares with 0 baits	24
Proportion of squares with 0 baits (%)	30.77
Size of squares with 0 baits (km^2)	6.60

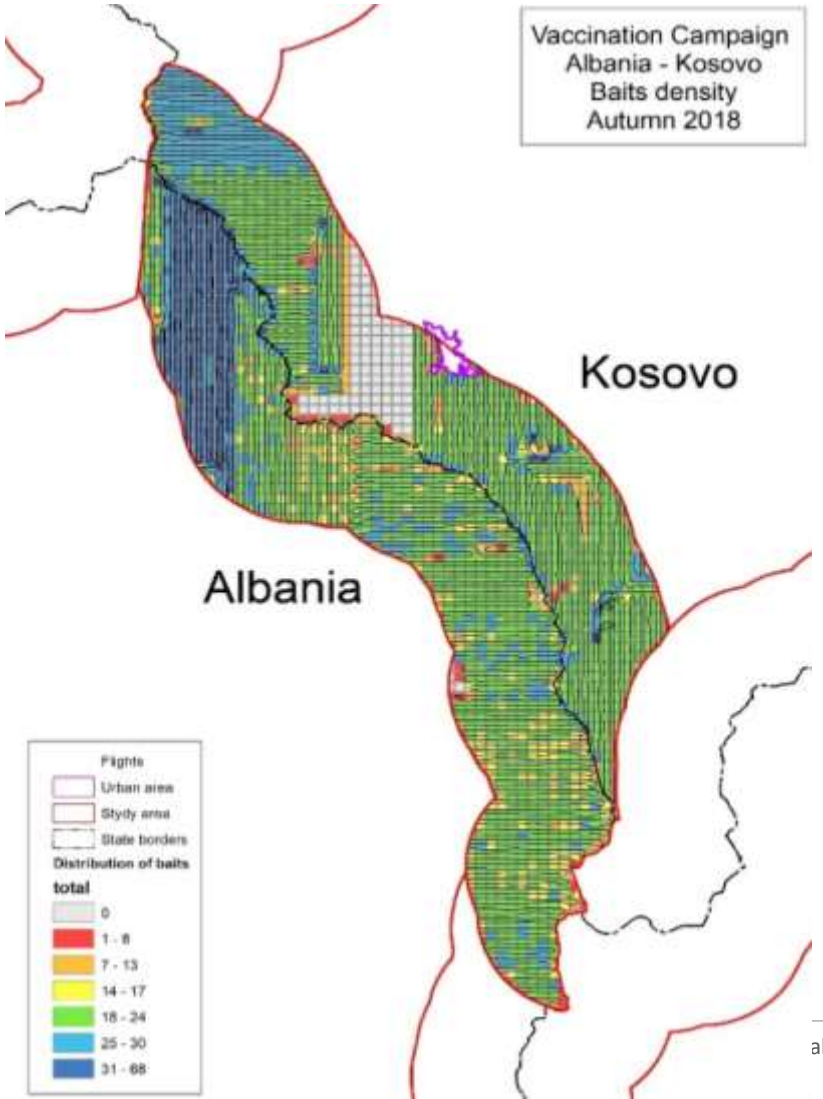
Albania-North Macedonia border



Parameter	Value
Average bait density (target area)	16.92
Total no. squares (1x1 km)	2,701
Number of squares with 0 baits	514
Proportion of squares with 0 baits (%)	19
Size of squares with 0 baits (km^2)	334.19

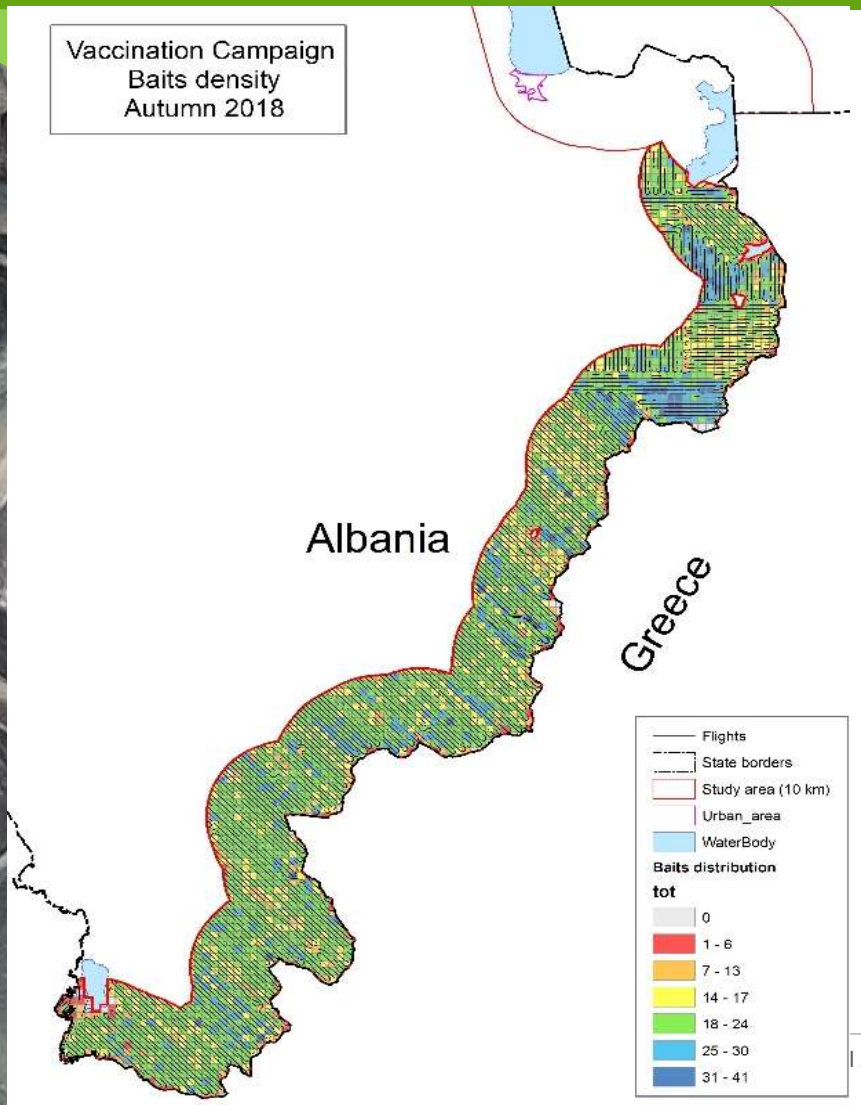


Albania-Kosovo* border



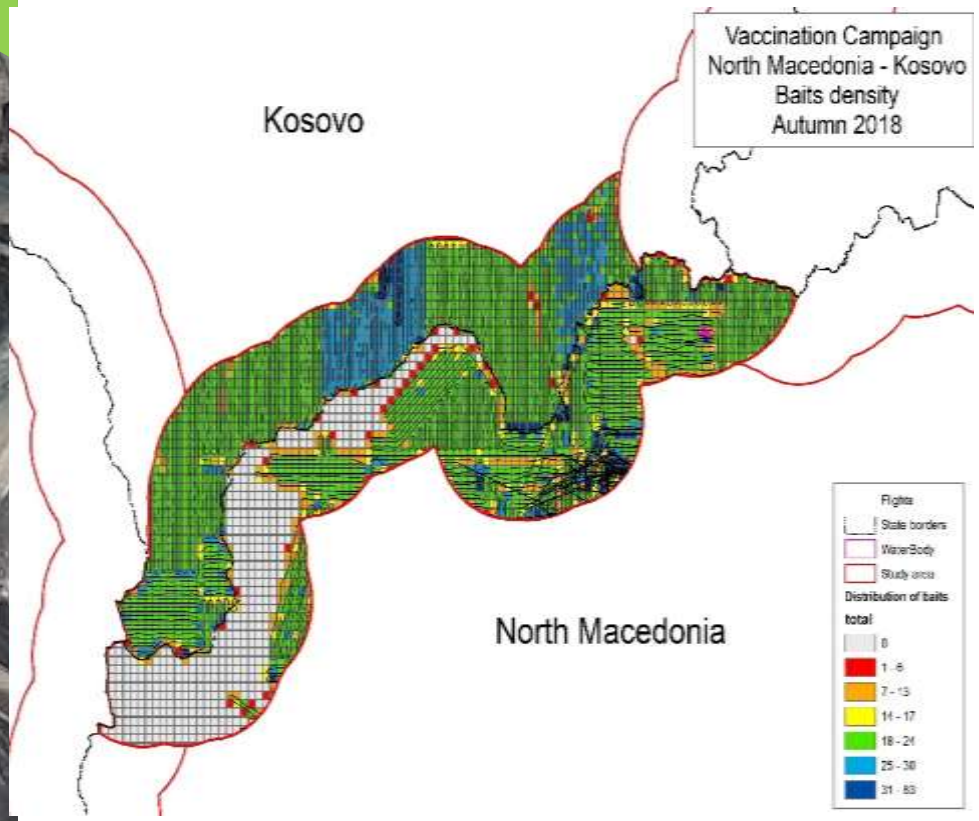
Parameter	Value
Average bait density (target area)	22.4
Total no. squares (1x1 km)	1,972
Number of squares with 0 baits	151
Proportion of squares with 0 baits (%)	7.66
Size of squares with 0 baits (km^2)	95.98

Albania-Greece border

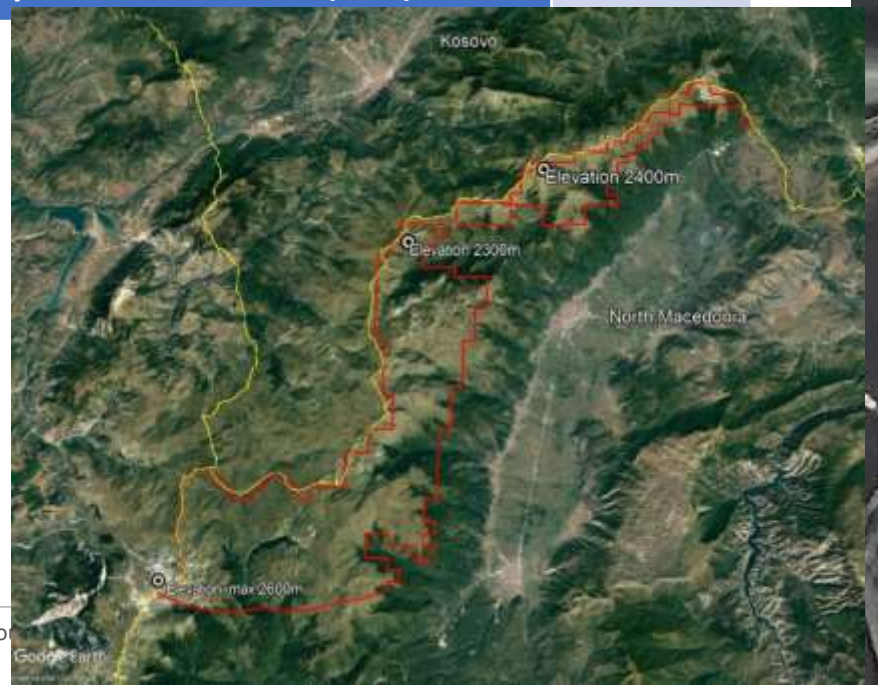


Parameter	Value
Average bait density (target area)	19.85
Total no. squares (1x1 km)	2,262
Number of squares with 0 baits	149
Proportion of squares with 0 baits (%)	6.59
Size of squares with 0 baits (km^2)	26.38

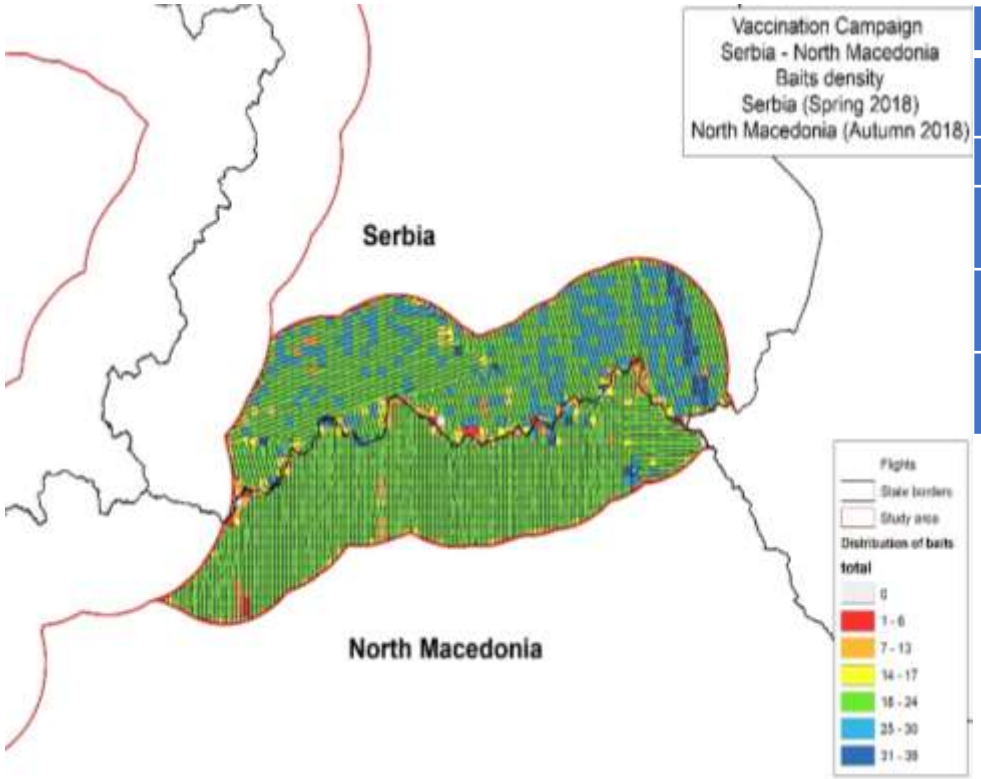
North Macedonia-Kosovo* border



Parameter	Value
Average bait density (target area)	17.89
Total no. squares (1x1 km)	2,664
Number of squares with 0 baits	516
Proportion of squares with 0 baits (%)	19.37%
Size of squares with 0 baits (km^2)	442.49



North Macedonia-Serbia border

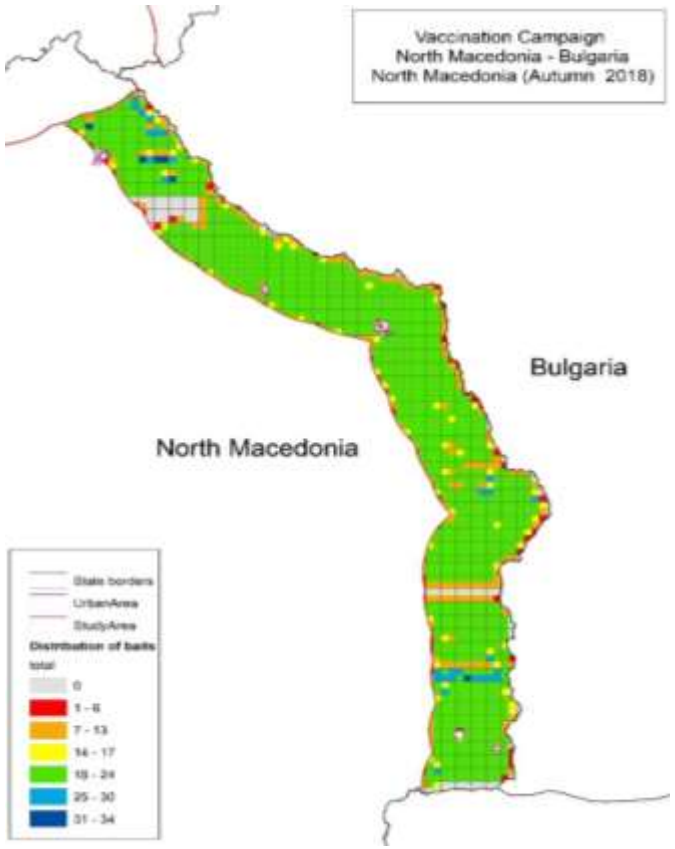


Parameter	Value
Average bait density (target area)	21.81
Total no. squares (1x1 km)	1,468
Number of squares with 0 baits	43
Proportion of squares with 0 baits (%)	2.93
Size of squares with 0 baits (km^2)	6.93

North Macedonia-Greece borders

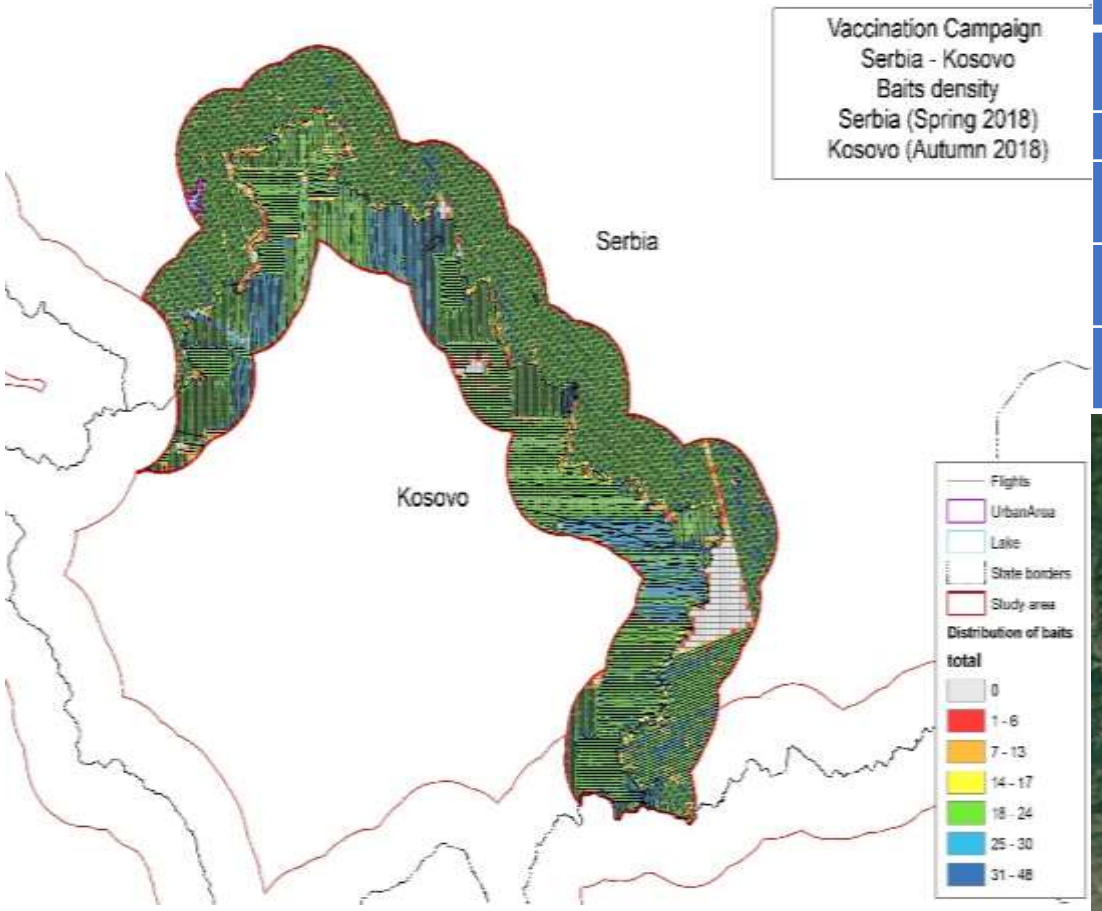
Parameter	Value
Average bait density (target area)	18.80
Total no. squares (1x1 km)	2,143
Number of squares with 0 baits	306
Proportion of squares with 0 baits (%)	14.28%
Size of squares with 0 baits (km^2)	159.85

North Macedonia-Bulgaria border



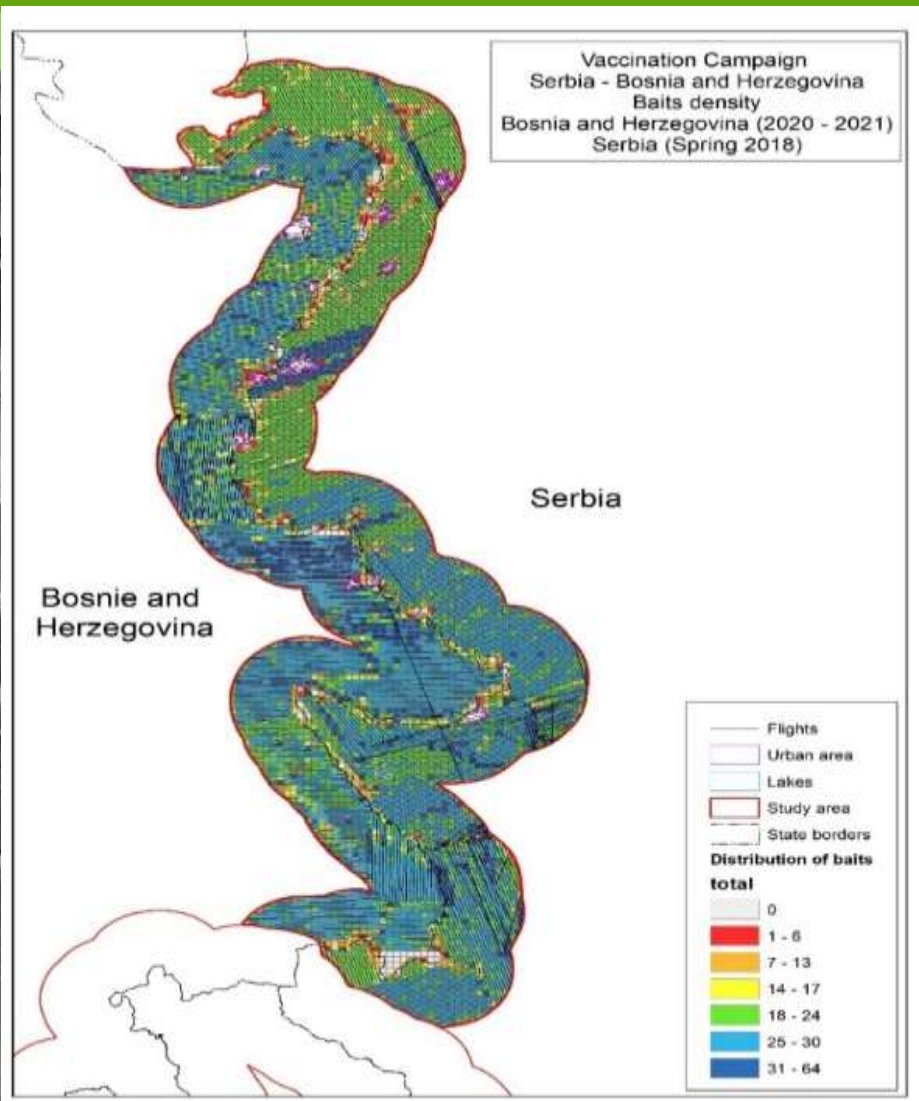
Parameter	Value
Average bait density (target area)	19.01
Total no. squares (1x1 km)	1,549
Number of squares with 0 baits	170
Proportion of squares with 0 baits (%)	10.97
Size of squares with 0 baits (km^2)	70.84

Serbia-Kosovo* border



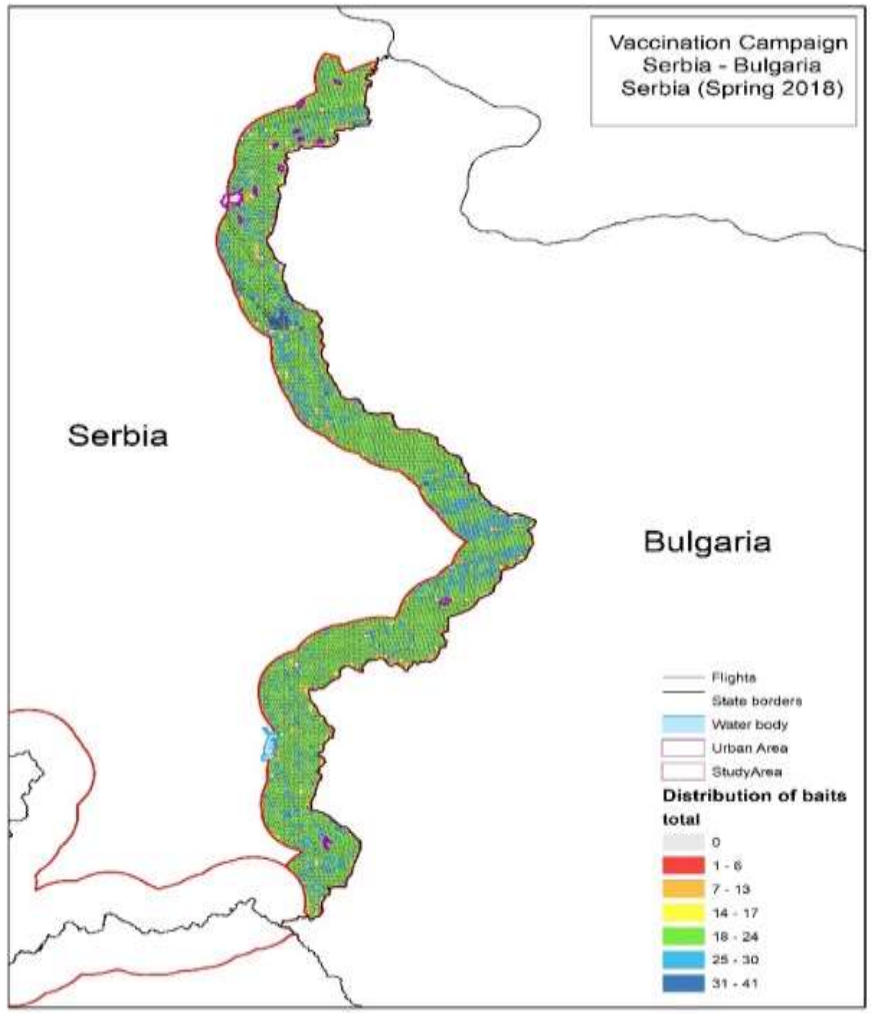
Parameter	Value
Average bait density (target area)	21.42
Total no. squares (1x1 km)	5,389
Number of squares with 0 baits	249
Proportion of squares with 0 baits (%)	4.62
Size of squares with 0 baits (km^2)	152.05

Serbia-Bosnia and Herzegovina border



Parameter	Value
Average bait density (target area)	24.36
Total no. squares (1x1 km)	5,648
Number of squares with 0 baits	192
Proportion of squares with 0 baits (%)	3.40%
Size of squares with 0 baits (km^2)	80.32

Serbia-Bulgaria border

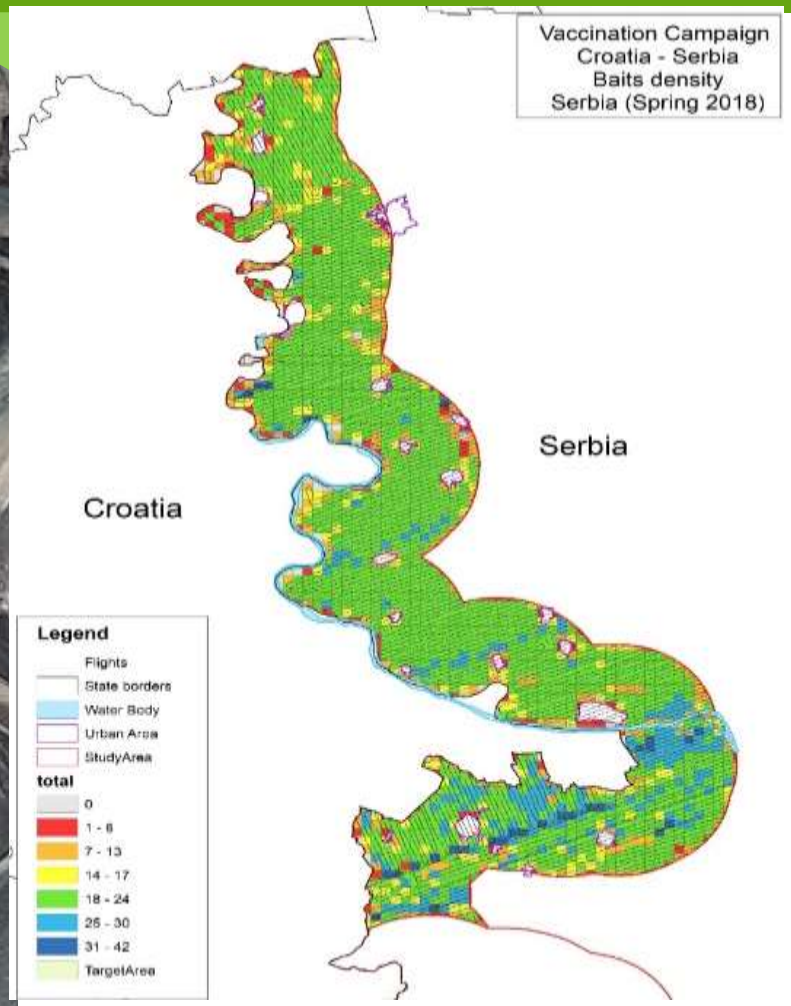


Parameter	Value
Average bait density (target area)	22.28
Total no. squares (1x1 km)	3,185
Number of squares with 0 baits	203
Proportion of squares with 0 baits (%)	6.37
Size of squares with 0 baits (km^2)	32.90

Serbia-Romania border

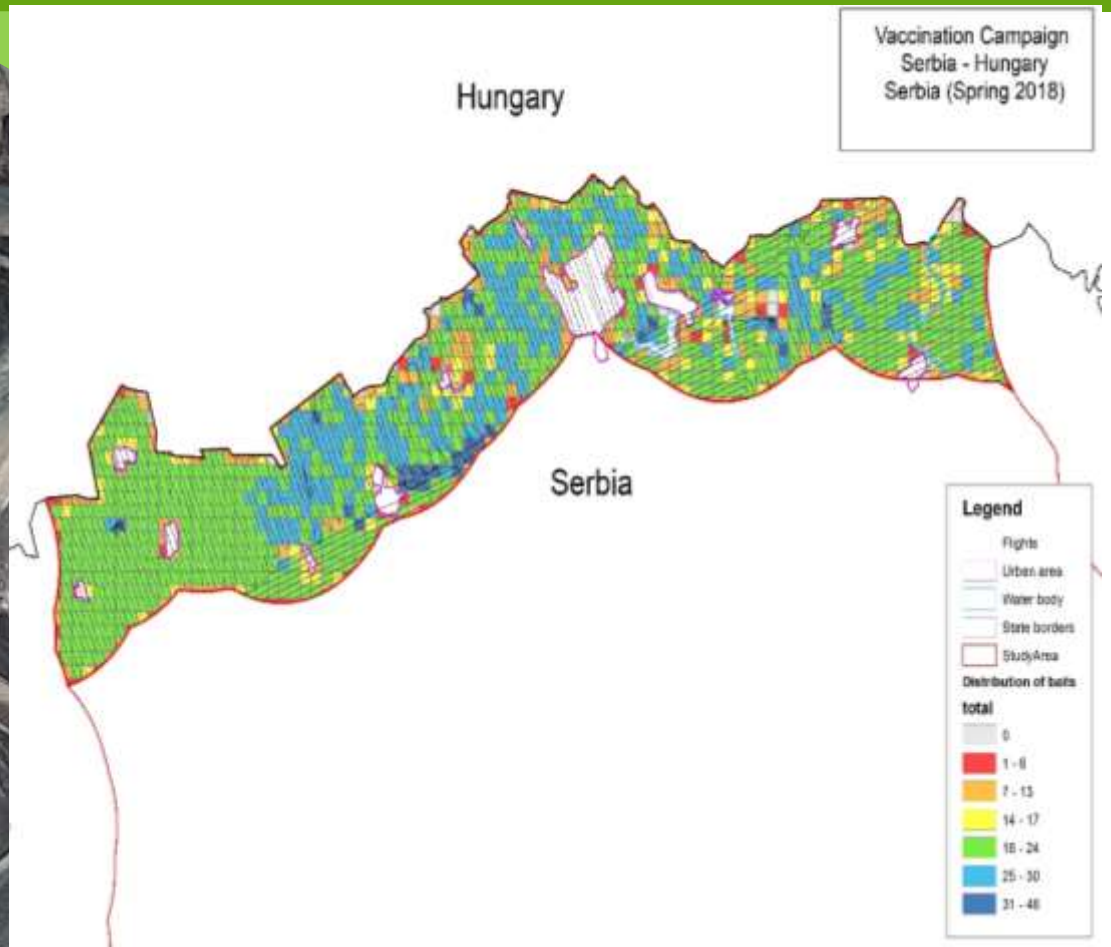
Parameter	Value
Average bait density (target area)	21.67
Total no. squares (1x1 km)	4,924
Number of squares with 0 baits	293
Proportion of squares with 0 baits (%)	5.95%
Size of squares with 0 baits (km^2)	38.76

Serbia-Croatia border



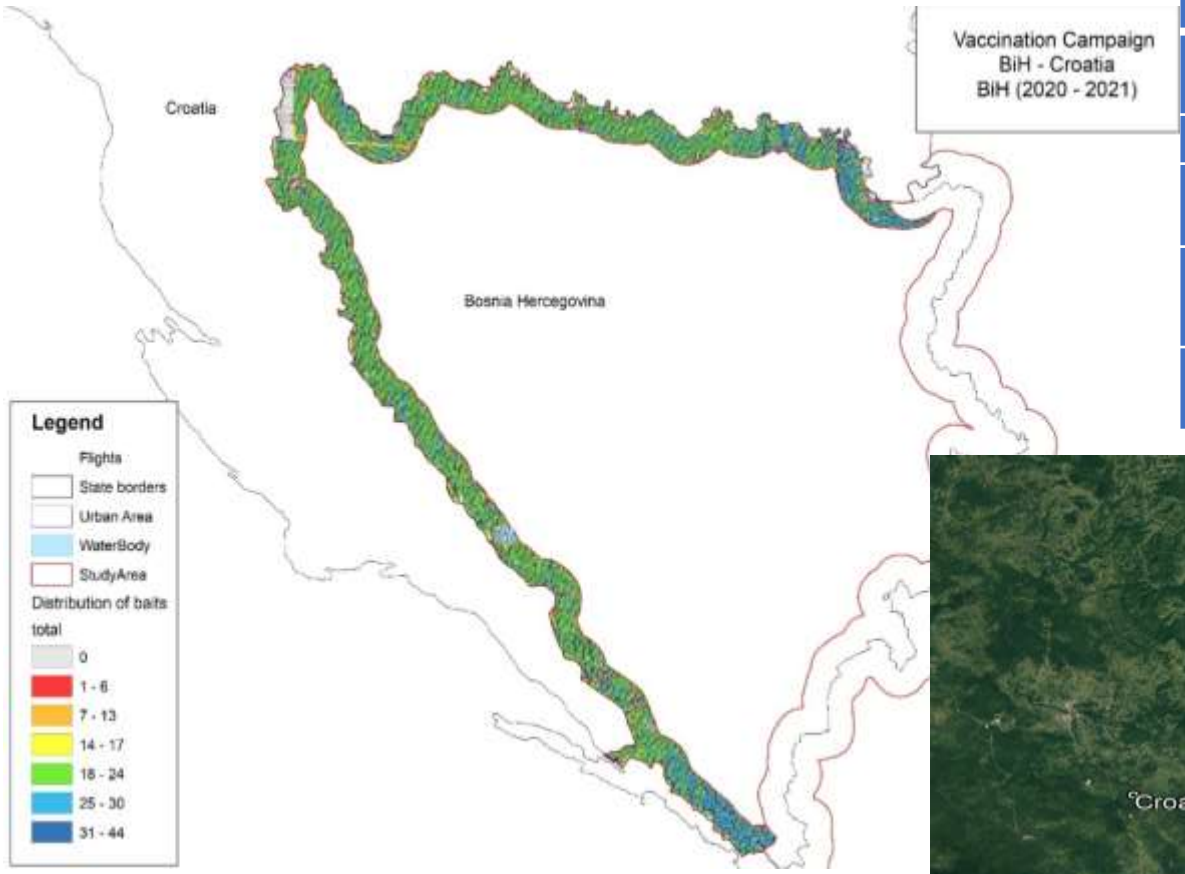
Parameter	Value
Average bait density (target area)	20.04
Total no. squares (1x1 km)	2,044
Number of squares with 0 baits	176
Proportion of squares with 0 baits (%)	8.61
Size of squares with 0 baits (km^2)	32.97

Serbia-Hungary border



Parameter	Value
Average bait density (target area)	21.46
Total no. squares (1x1 km)	1,238
Number of squares with 0 baits	85
Proportion of squares with 0 baits (%)	6.87
Size of squares with 0 baits (km^2)	15.40

Bosnia and Herzegovina - Croatia border



Parameter	Value
Average bait density (target area)	22.47
Total no. squares (1x1 km)	8,337
Number of squares with 0 baits	830
Proportion of squares with 0 baits (%)	9.96
Size of squares with 0 baits (km^2)	282.77

Conclusions

- The overall average vaccine bait density may be assessed as uniform and to a large extend within the requirements relevant to the achieved bait densities
- In most of the cases, flight lines were correctly aligned to a close proximity of just few hundred meters from the border lines. In such cases, there were no adjacent larger areas that remained untreated
- When only border areas are considered, there are several more or less large adjacent areas apparently remained untreated. It is also apparent that in some cases higher mountain areas (>2000-meter altitude) remained untreated.

Recommendations

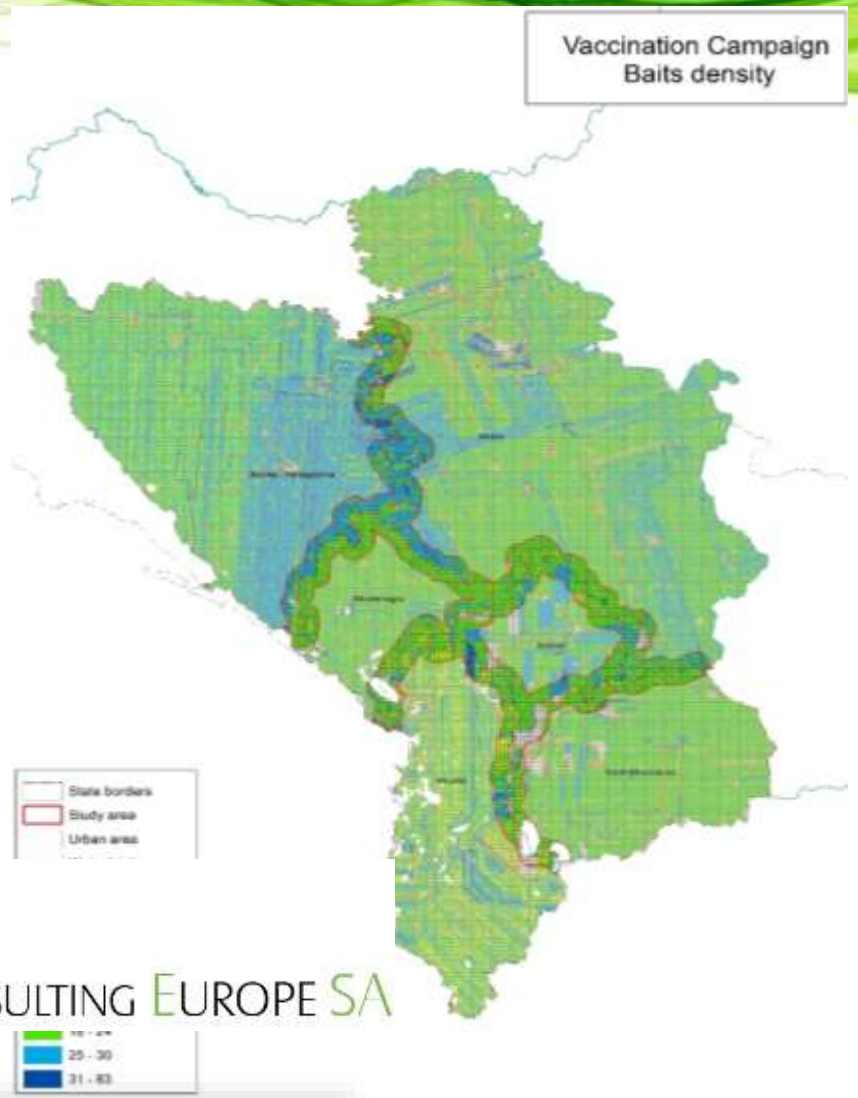
- Flight lines needs to be assessed and approved by the veterinary competent authorities prior to the start of the vaccination campaigns.
- If flight lines are correctly plotted, and an increased number of vaccine baits are distributed along the borders, there will be no need for flying across the borders as good coverage will be assured.

Recommendations

- Veterinary competent authorities shall check if the areas that were noted with this assessment as untreated remained as such also in the other vaccination campaigns. If so, the untreated area shall be further assessed if it is suitable as a fox habitat. If this is also confirmed, the veterinary competent authority shall:
  - Include the untreated area as a target area in the forthcoming vaccination campaigns including in the post vaccination monitoring and assess the immune status of the target population
  - Focus and strengthen surveillance in the untreated area to investigate potential virus circulation

Recommendations

- Vaccination campaigns shall be coordinated. This could apply to the timing of the implementation, but more importantly, the neighboring countries shall regularly arrange coordination meetings to discuss relevant aspects and exchange of information on the flight lines, coverage, achieved bait density, gaps and shortcomings in vaccination, results of the post vaccination monitoring. Such coordination meetings may extend to the neighboring EU Member states with similar risk for rabies re-emergence.



Thank you for your attention

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