



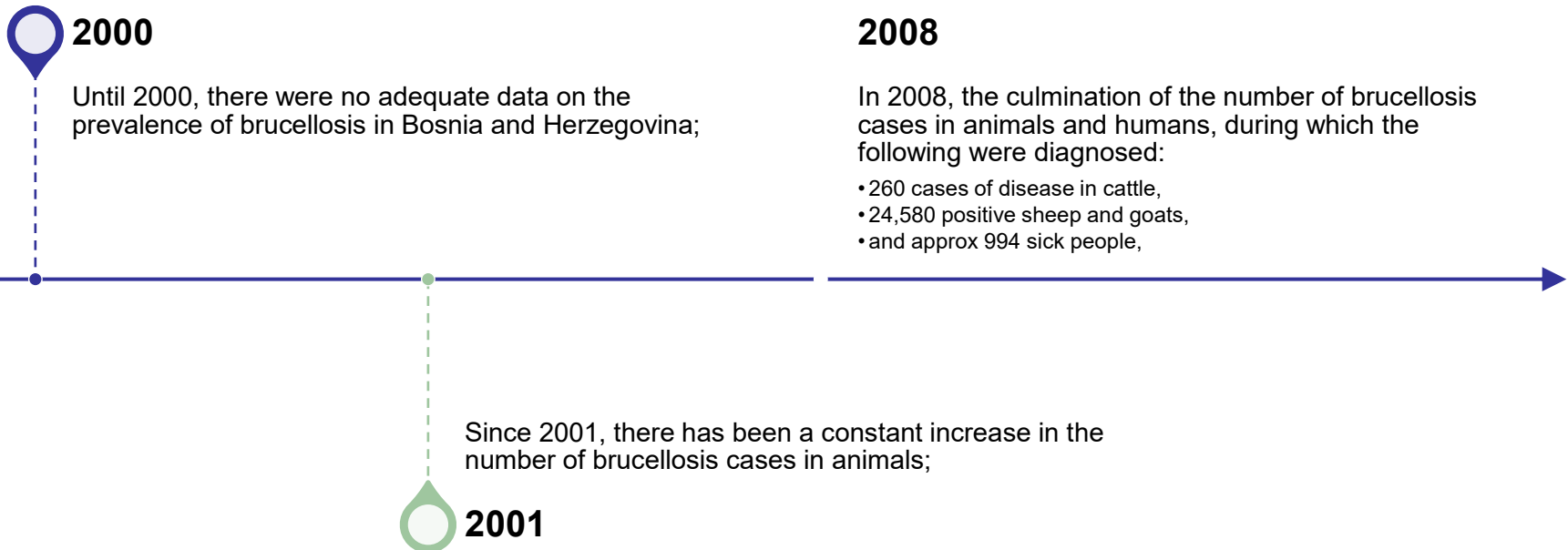
*BOSNIA AND HERZEGOVINA  
Ministry of Foreign Trade  
and Economic Relations  
Veterinary Office of  
Bosnia and Herzegovina*

# **Experience of Bosnia and Herzegovina in control and vaccination of small ruminants against brucellosis in period 2009-2025**

Saša Bošković

27.03.2026.

# History of brucellosis in Bosnia and Herzegovina



# Control measures

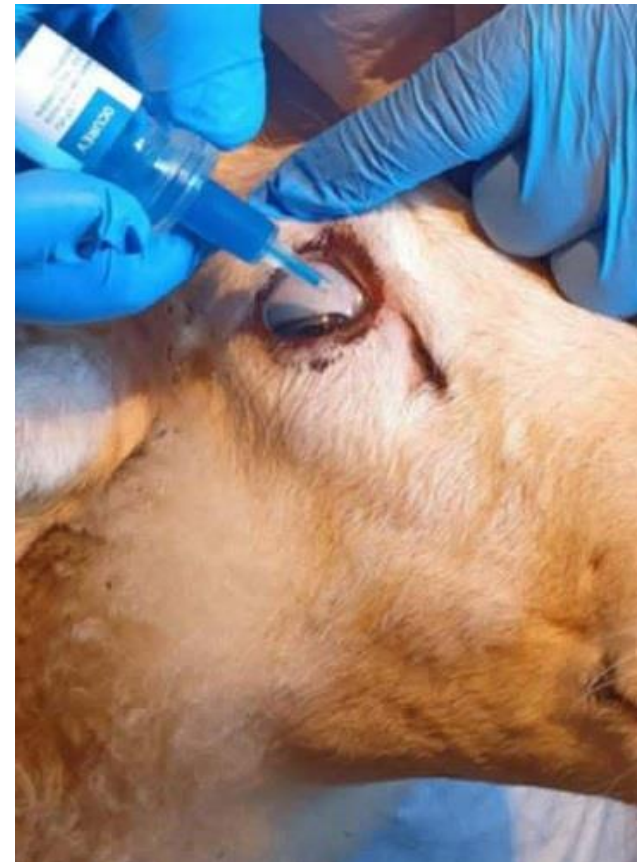
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- Brucellosis control measures in Bosnia and Herzegovina that were implemented in the period 1986-2008 included the implementation of the "test and remove" strategy;
- However, taking into account the huge increase in cases in humans and animals regardless of the measures taken, as well as analyzes based on national and international expert reports, and the experience of EU countries, in early 2009 BiH adopted a new strategy based on **mass vaccination of small ruminants**.

# Vaccination

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- In Bosnia and Herzegovina, there is a vaccination program for small ruminants using the Rev 1 vaccine applies since 2009;
- After 2016, which predicted the end of the program, a comprehensive analysis of the results achieved, the incidence of the disease and the readiness of the veterinary service was carried out, after which it was decided that the vaccination program should continue primarily until 2021, and then with the new multi-year program until 2026.
- The continuation of vaccination is necessary in order to create all the preconditions for the transition to the strategy of test and remove as a logical strategic continuation in the eradication of the disease.



# Implementation of program

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- For the necessary effectiveness of the brucellosis control program in Bosnia and Herzegovina, it was necessary to ensure the continuous implementation of all activities in the following years, as provided for in the Operational Program. In this regard, Veterinary Office provided for the continuation of the activities of the mentioned program:
  - Vaccines (Ocurev Rev-1),
  - Protective equipment (masks, gloves and glasses),
  - Vaccination and identification ear tags,
  - Applicators,
  - Mobile refrigerators,
  - Vaccination implementation forms and monitoring forms,
  - Diagnostic equipment (tubes, needles, RB, RVK),
  - Advertising material for the purposes of advertising and information campaigns.



# Financing

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- From 2009 until 2014 vaccination of small ruminants was financed by SIDA
- From 2014 until 2024 vaccination of small ruminants was financed by IPA funds (ear tags and vaccines) supported by B&H budget for implementation



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# Financing after 2025

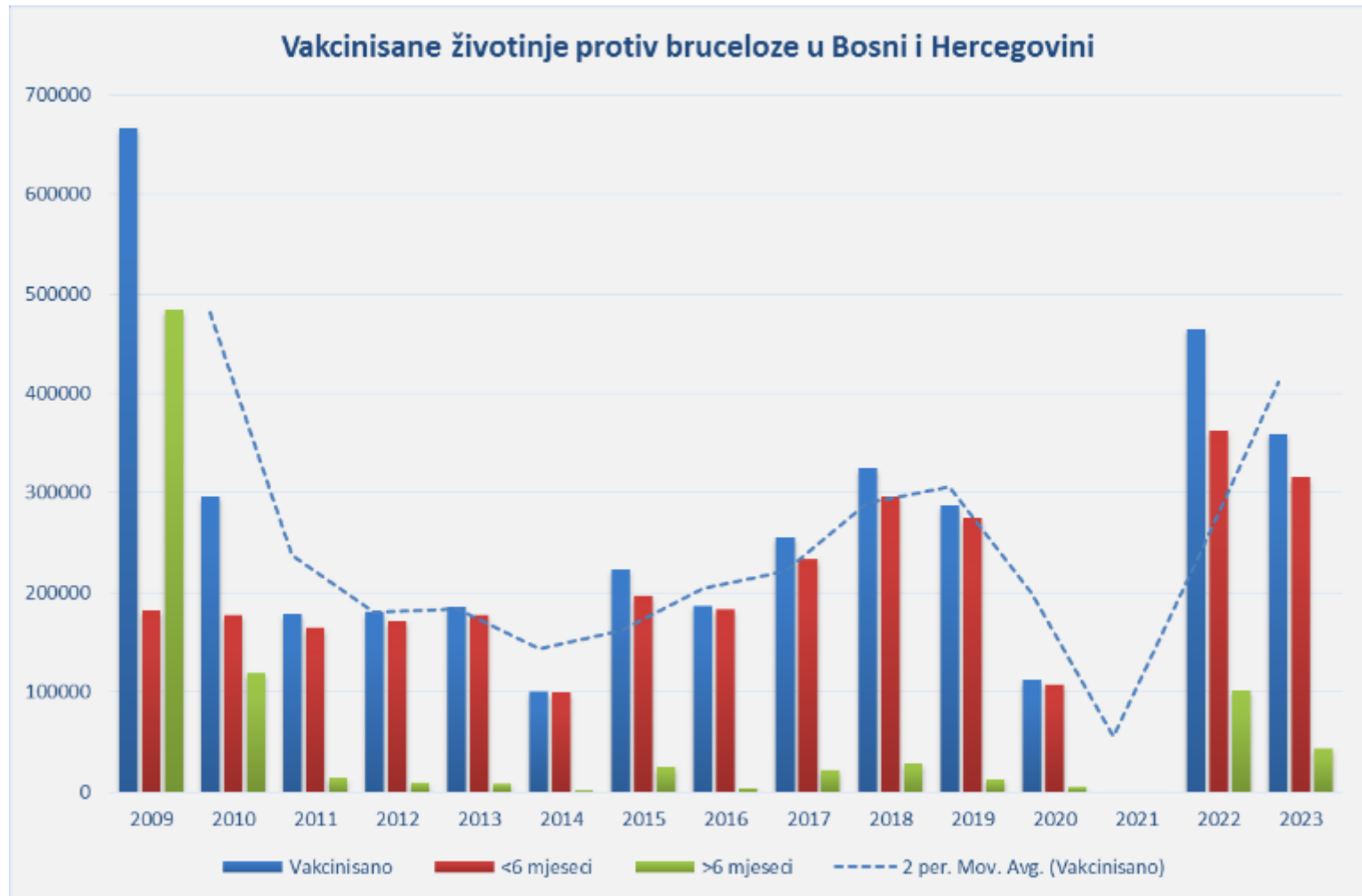
In 2025 vaccination program was fully financed from the budget of Bosnia and Herzegovina, except for vaccines that were already available on field from previous campaigns

**2025**

**2026**

In 2026 vaccination program will be fully financed from the budget of Bosnia and Herzegovina

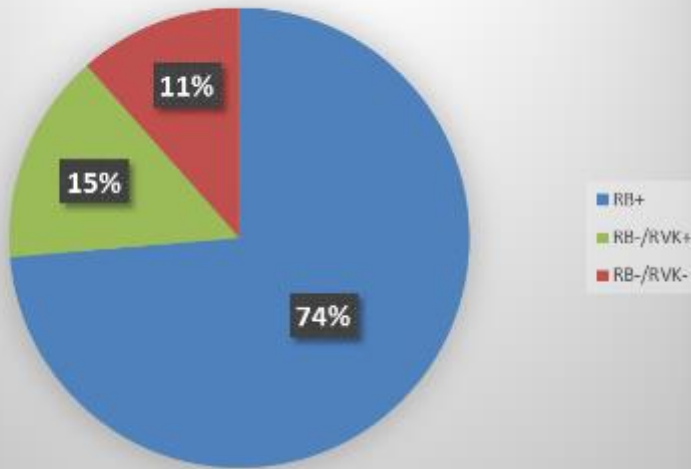
# Vaccination by year



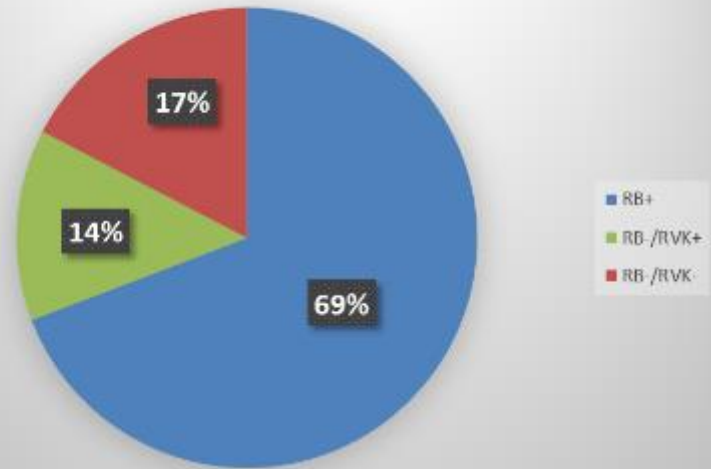


# Postvaccination monitoring

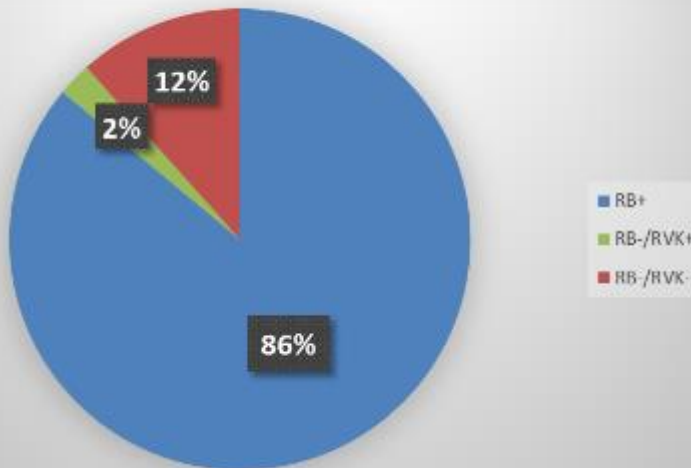
### Postvaccinal monitoring in 2017/2018



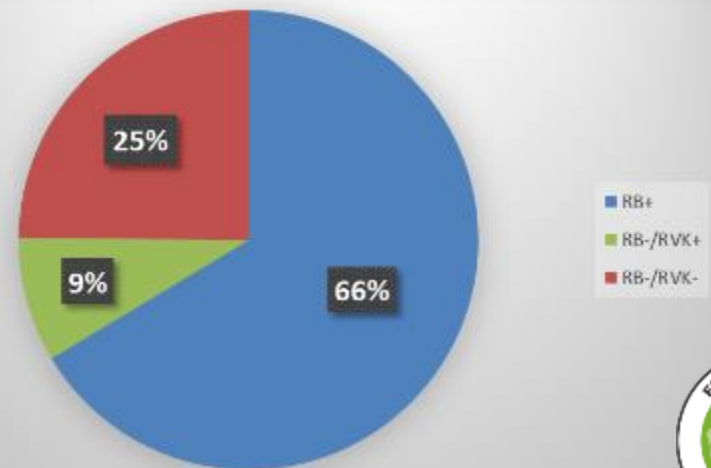
### Postvaccinal monitoring in 2018/2019



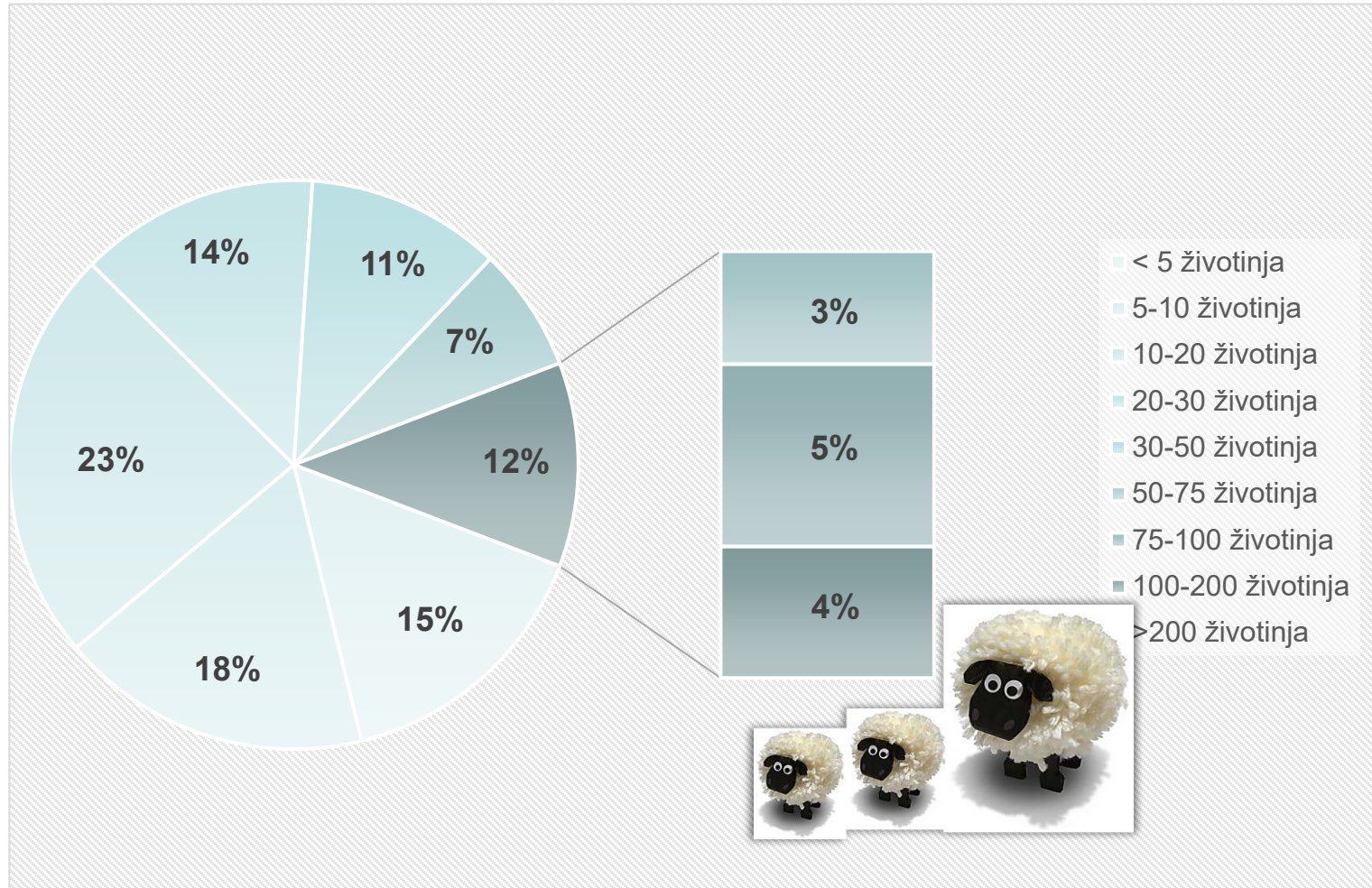
### Postvaccinal monitoring in 2019/2020



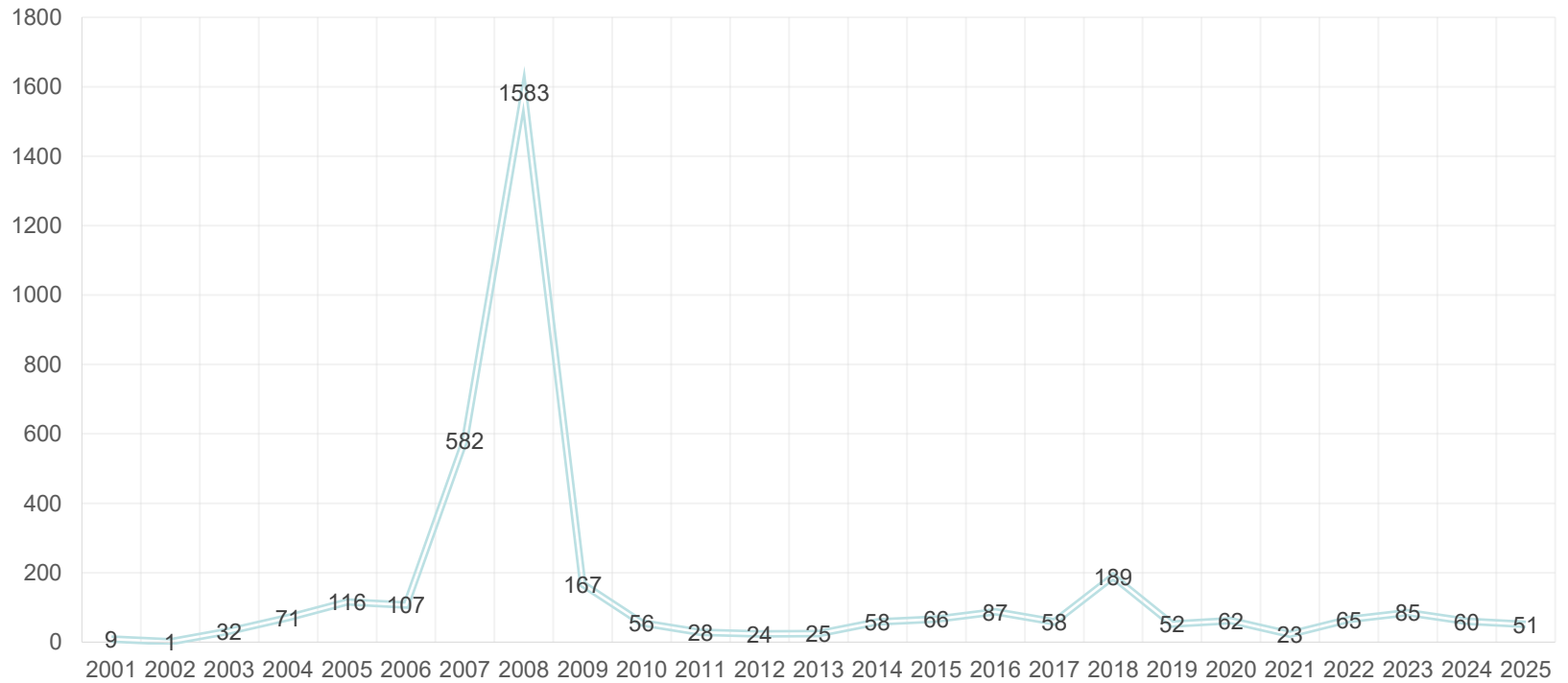
### Postvaccinal monitoring in 2022



# Herd size



# BRUCELLOSIS OUTBREAKS IN SMALL RUMINANTS

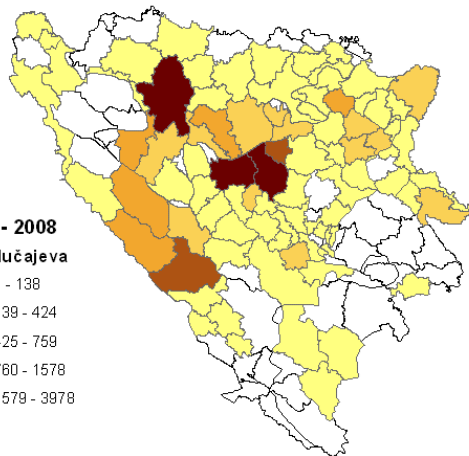
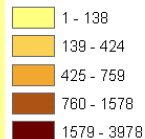




# Brucellosis distribution (2008-2012)

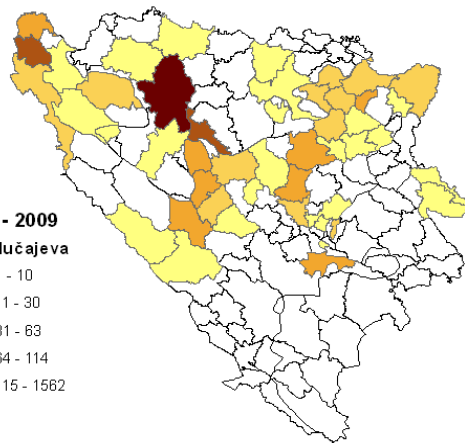
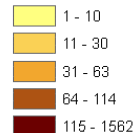
**B 152 - 2008**

Broj Slučajeva



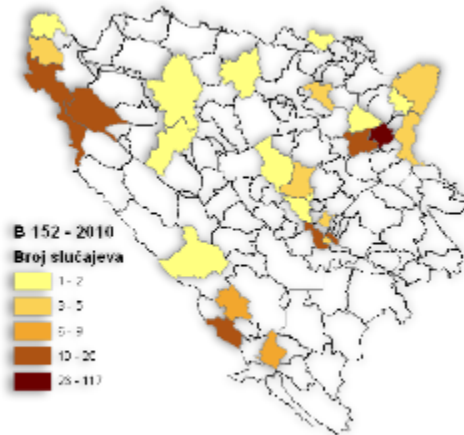
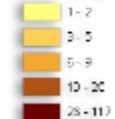
**B 152 - 2009**

Broj Slučajeva



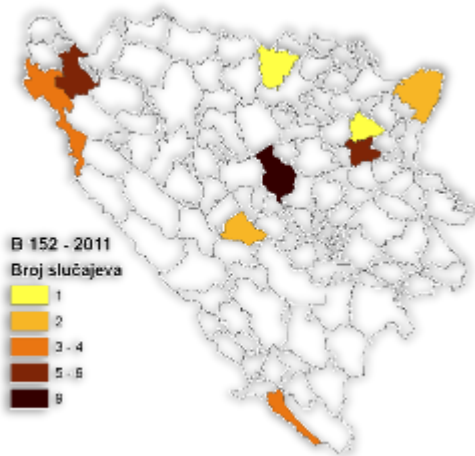
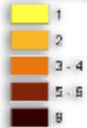
**B 152 - 2010**

Broj slučajeva



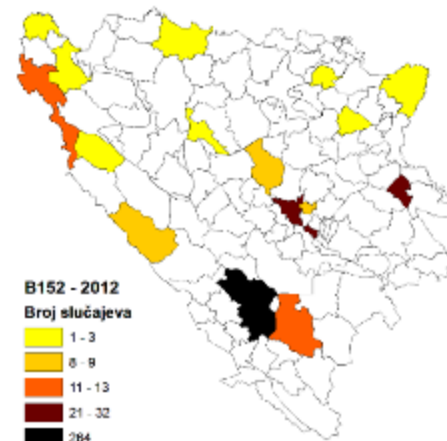
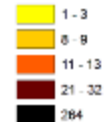
**B 152 - 2011**

Broj slučajeva



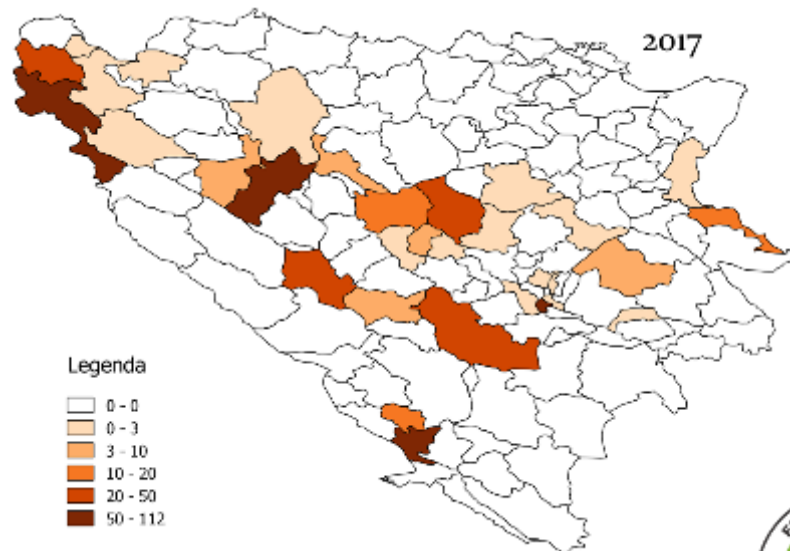
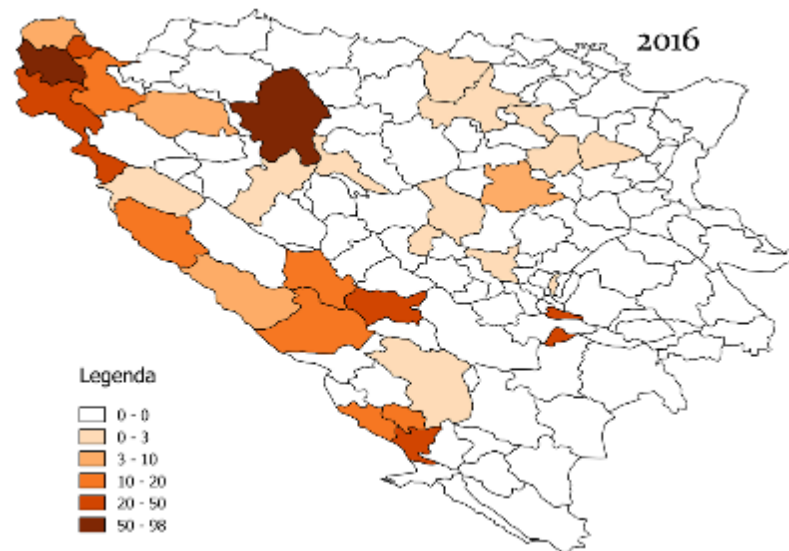
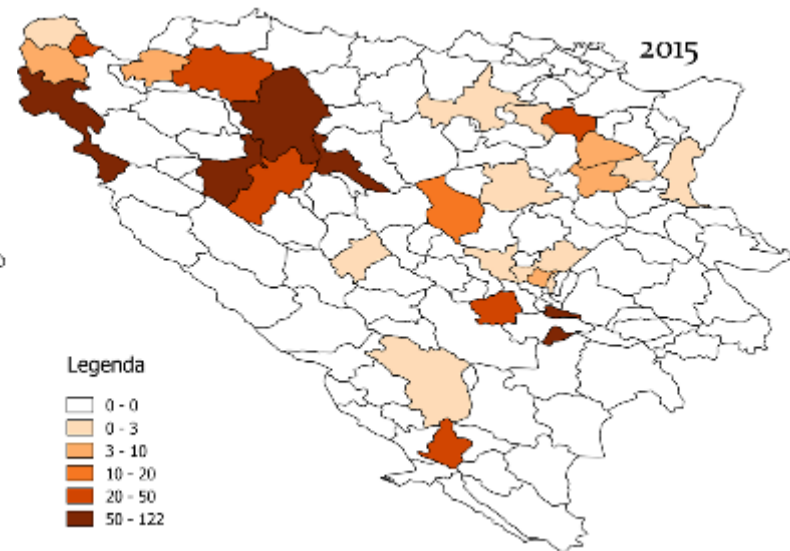
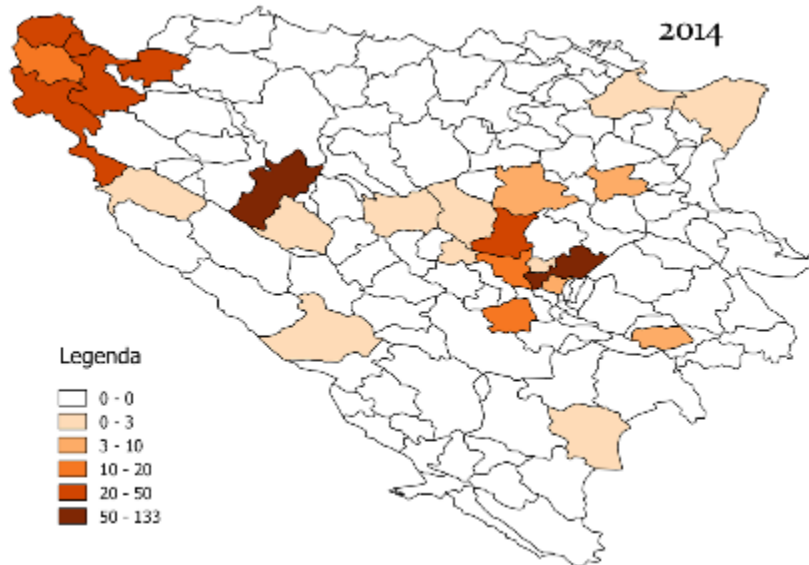
**B152 - 2012**

Broj slučajeva





# Brucellosis distribution (2014-2017)



# Movement control

- In accordance with legislation in Bosnia and Herzegovina, all farms where sheep and goats are kept must be entered in central state database. All sheep and goats must be identified with an identification ear tag that starts with letters BA (ISO code for Bosnia and Herzegovina) followed by 10 numbers. First number marks species of animal (sheep or goat) and second number marks geographical entity in Bosnia and Herzegovina. Last eight numbers are unique for each animal. Colors of ear tags are yellow for sheep and light blue for goats.
- Each movement of sheep and goats is registered in central database managed by Animal Identification Agency of Bosnia and Herzegovina.

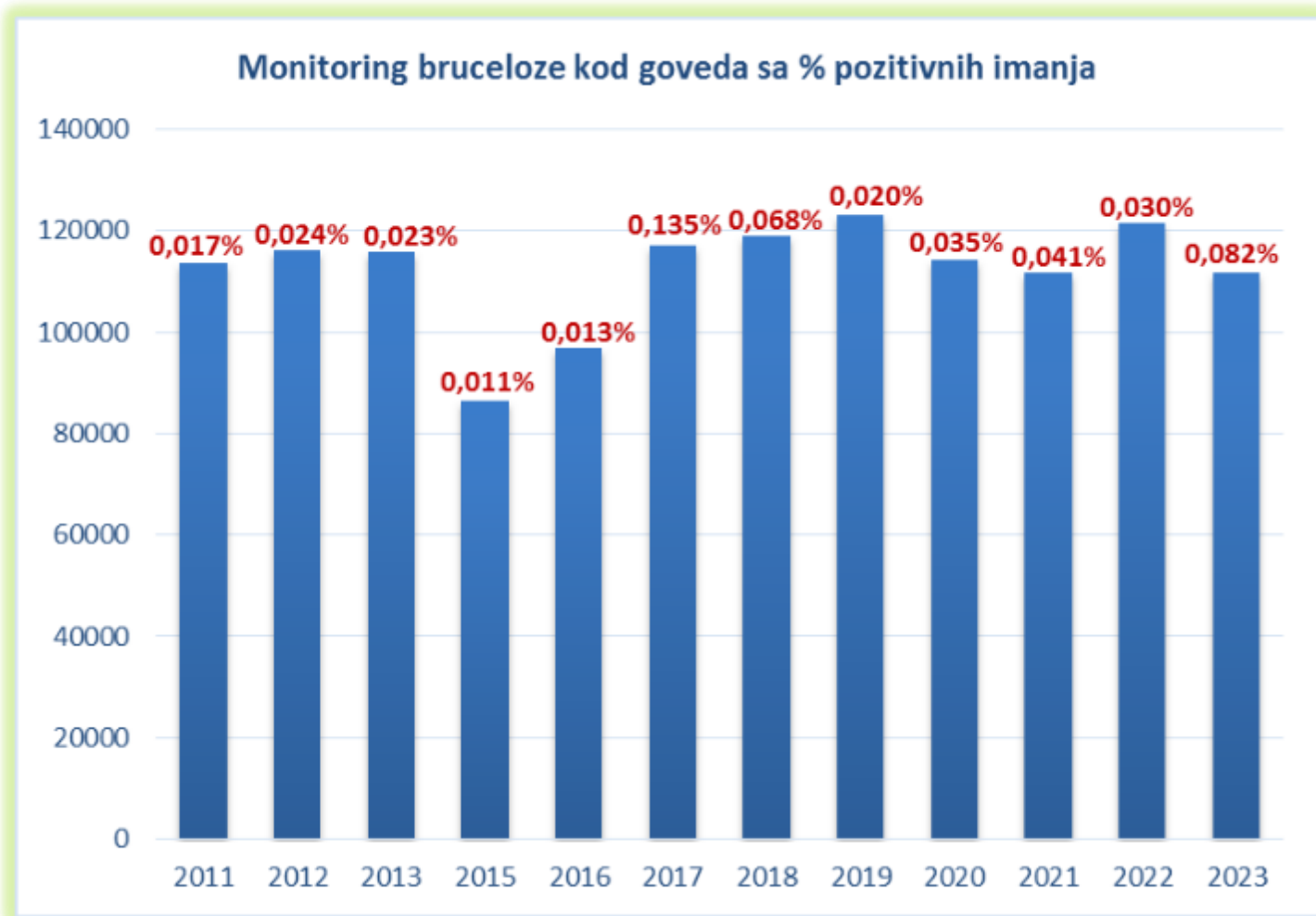


# Measures on outbreaks

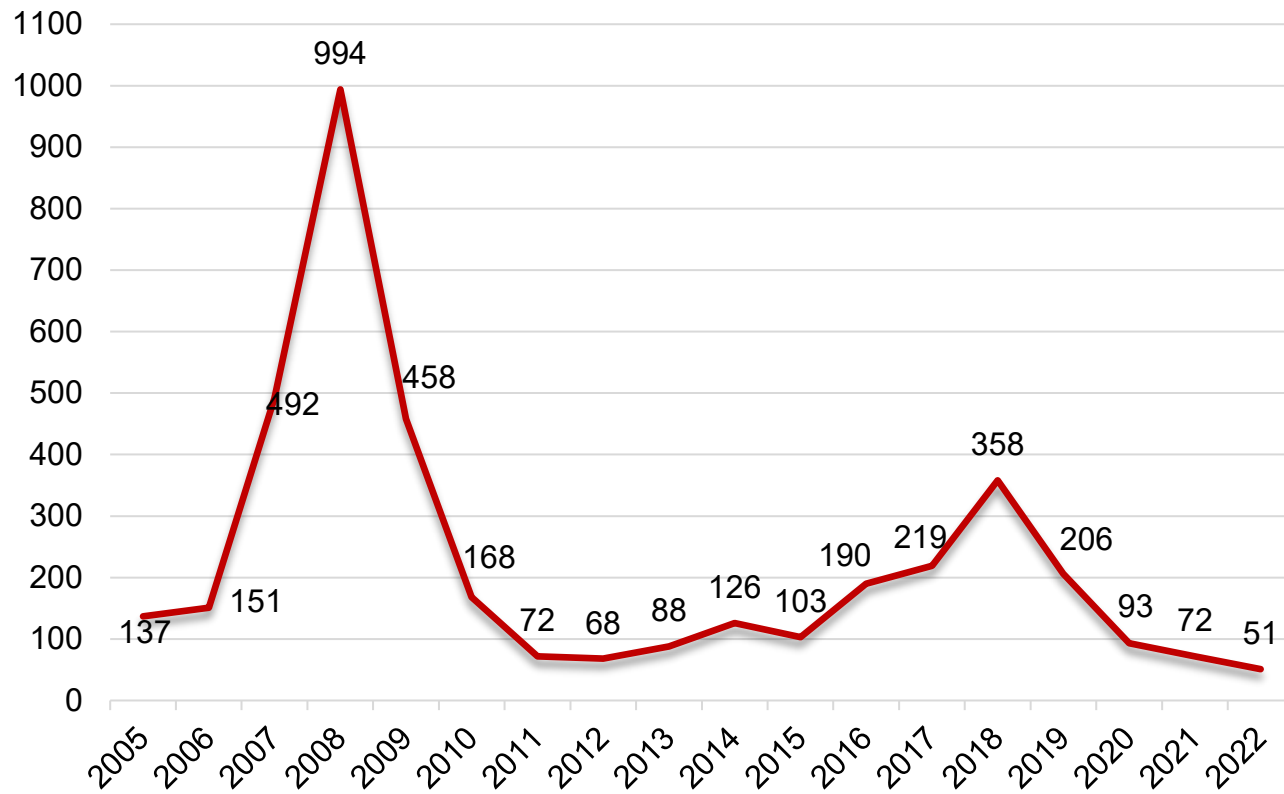
Since Bosnia and Herzegovina doesn't have rendering plant, all dead and killed animals are buried

Implementation of measures on outbreaks including financial compensation for farmers are conducted on entity level

# Monitoring of cattle for brucellosis



# Human cases





# One Health approach

Legislation framework in veterinary sector in Bosnia and Herzegovina prescribes control of zoonoses:

- Brucellosis
- Campylobacteriosis
- Listeriosis
- Salmonellosis
- Trichinellosis
- Echinococcosis
- Tuberculosis
- E.coli
- Rabies
- Q fever
- Anthrax
- Other zoonoses in accordance with epidemiological situation

- Cooperation with human sector is mostly incorporated in implementation programmes including mutual reporting of zoonoses
- Programs for control of zoonoses are either annual or multiannual depending on risk assesment

# Shortcomings

- At the beginning of the implementation, there was some resistance, which is why vaccination was not carried out in some herds
- At the beginning of mass vaccination in 2009, due to ignorance of the actual situation in terms of the total number of animals in certain areas, there was a certain scattering of material
- The period of vaccine procurement significantly affects the degree of program implementation

# Conclusions

- Brucellosis represents a serious regional problem and requires much greater cooperation between countries, especially Mediterranean countries.
- The mass vaccination program implemented in Bosnia and Herzegovina is a model that is applied throughout the world and based on internationally recognized experiences and recommendations, is the best model that can be applied in the situation in Bosnia and Herzegovina.
- Through the implementation of a media campaign that is an integral part of the program, citizens' awareness of brucellosis was raised.

# Future challenges

- Based on the indicators established during the implementation of vaccination programs in other EU member states, for the effectiveness of the brucellosis control program in Bosnia and Herzegovina, it is necessary to ensure the continuous implementation of all activities in the following years, as provided for in the Operational Program.
- New multi-annual program is currently in preparation phase

