

V E T  
TECH

Empowering  
Livestock Health



Empowering Livestock Economies  
Through Health Innovation and Technology

# The role of vaccination in preventing transboundary animal diseases

Esteban Turic, CEO Biogénesis Bagó

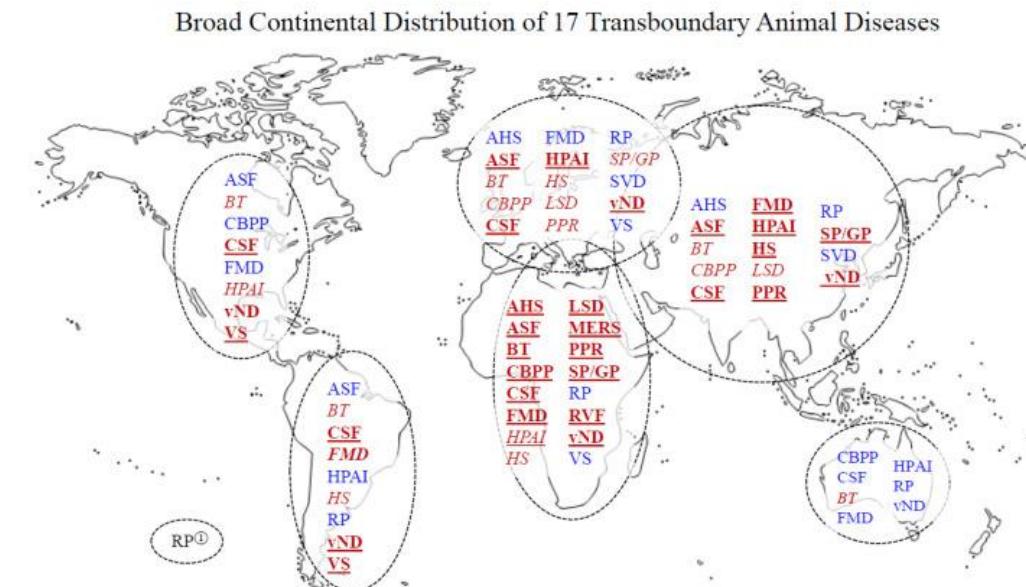
2-3 of December 2025, Riyadh

# Transboundary Animal Diseases

## Definition (FAO)

Diseases that are of significant economic, trade, and/or food security importance for a considerable number of countries; which can easily spread to other countries and reach epidemic proportions; and where control/management, including exclusion, requires cooperation between several countries.

- FMD
- PPR
- HPAI
- CBPP
- Rinderpest
- RVF
- ND
- BT
- LSD
- HS
- Sheep pox/Goat pox
- MERS



Clemmons EA, Alfson KJ, Dutton JW 3rd. Transboundary Animal Diseases, an Overview of 17 Diseases with Potential for Global Spread and Serious Consequences. *Animals* (Basel). 2021;11(7):2039.



# TADs economic impact

- Netherlands: CSF Outbreak 2009

Total cost of £2,3 billion

- China: ASF Outbreak 2019

Estimated cost of \$60,6 billion to \$296,9 billion USD.

- United Kingdom: 2001 FMD Outbreak

Total cost of £8 billion (approximately \$11 billion USD)

- South Korea: 2010 FMD outbreak

Total cost approximately \$2.7 billion USD.

- Indonesia: 2022 FMD outbreak ongoing

Forecast a loss of \$1.4-6.60 billion USD



•South Korean pigs being driven to slaughter after FMD was found on a farm

Meuwissen MP, Horst SH, Huirne RB, Dijkhuizen AA. A model to estimate the financial consequences of classical swine fever outbreaks: principles and outcomes. *Prev vet med*. 1999 Dec 1;42(3-4):249-70. Meuwissen MP, Horst SH, Huirne RB, Dijkhuizen AA. A model to estimate the financial consequences of classical swine fever outbreaks: principles and outcomes. *Prev Vet Med*. 1999;42(3-4):249-70.

You, S., Liu, T., Zhang, M. *et al.* African swine fever outbreaks in China led to gross domestic product and economic losses. *Nat Food* 2, 802-808 (2021). <https://doi.org/10.1038/s43016-021-00362-1>

# Control and eradication by vaccination

## Why do we need a vaccine to control TADs?

### Advantages

- Reduction of virus diffusion
- Improvement of animal welfare
- Higher public acceptance
- Lower impact on the environment

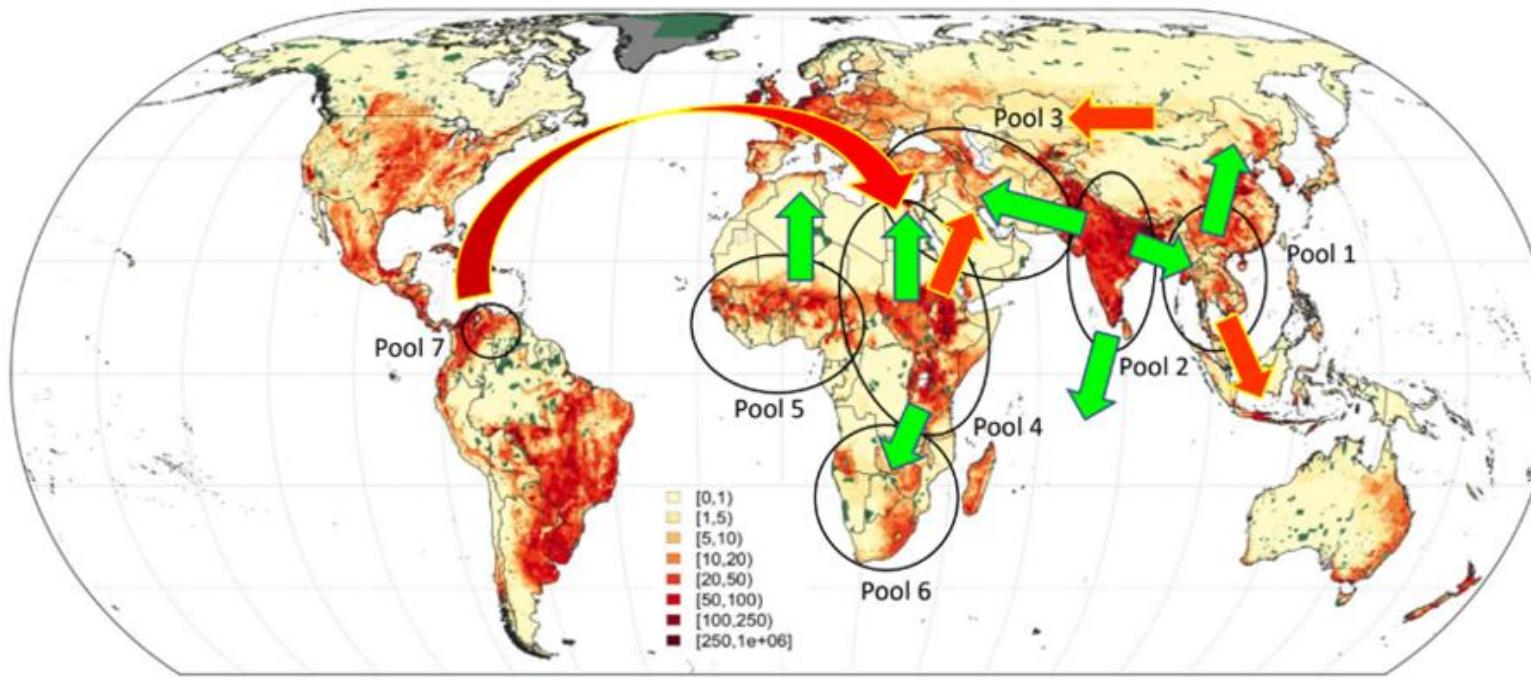
Reduction of time for restitution of WOAH (formerly OIE) status to restart trade of meat and subproducts



*Stamping out UK 2001 epidemic*



# Cattle Density and Trans-pool Movements



- Long distance (trans-pool) FMDV movements since 2015
- Impact/change regional FMD risks, including FMD-free countries
- Selection of vaccines to control outbreaks

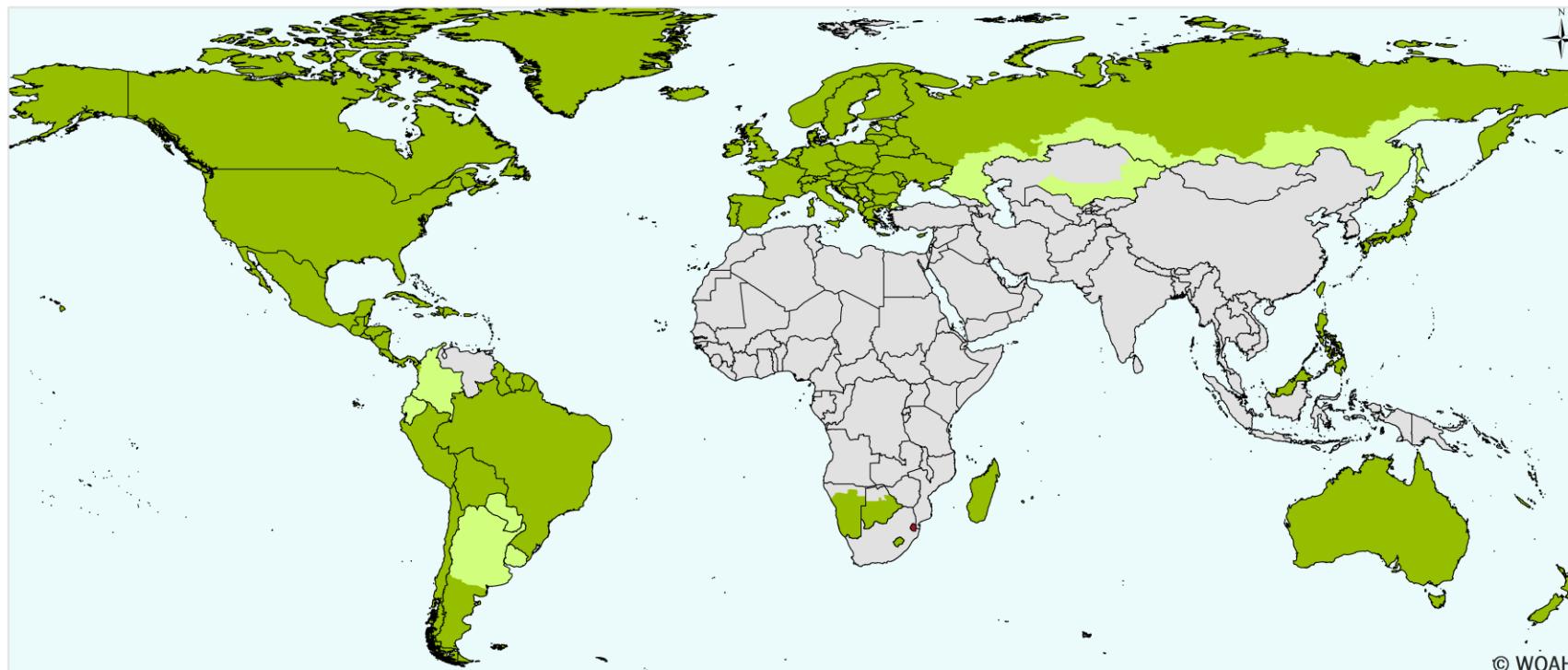
Source. <https://rr-asia.woah.org/en/events/26th-seacfmd-national-coordinators-meeting/>



# Current FMD World Status

WOAH Members' official FMD status map

Last update October 2025



Members and zones recognised as free from FMD without vaccination

Members and zones recognised as free from FMD with vaccination

Suspension of FMD free status

Countries and zones without an official status for FMD



# History of FMD in South America



PANAFTOSA. COSALFA 2024 Situation Report

# FMD in South America

With new technologies and in conjunction with improved veterinary services, 11 out of 12 countries in South America have demonstrated FMD-freedom with safe trade of commodities.

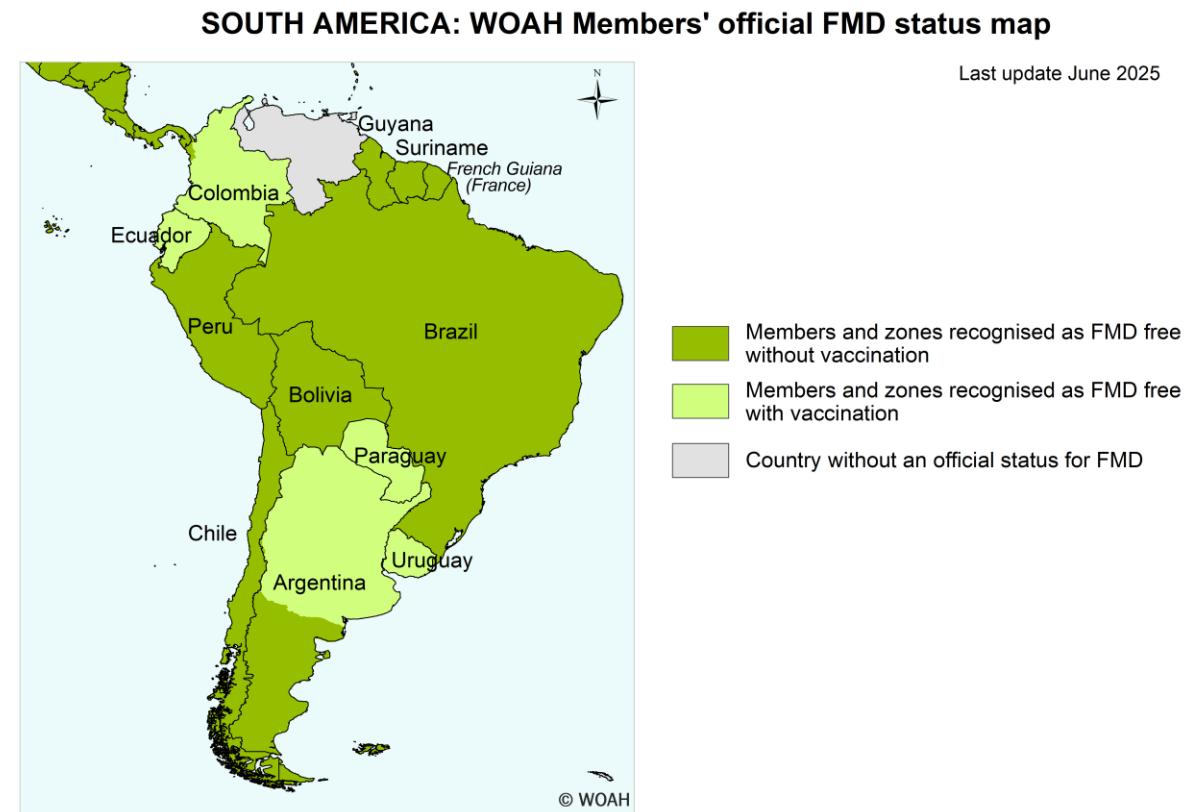
## Improvements

Vaccines: Oil-adjuvant

Vaccination coverage: Annual campaigns

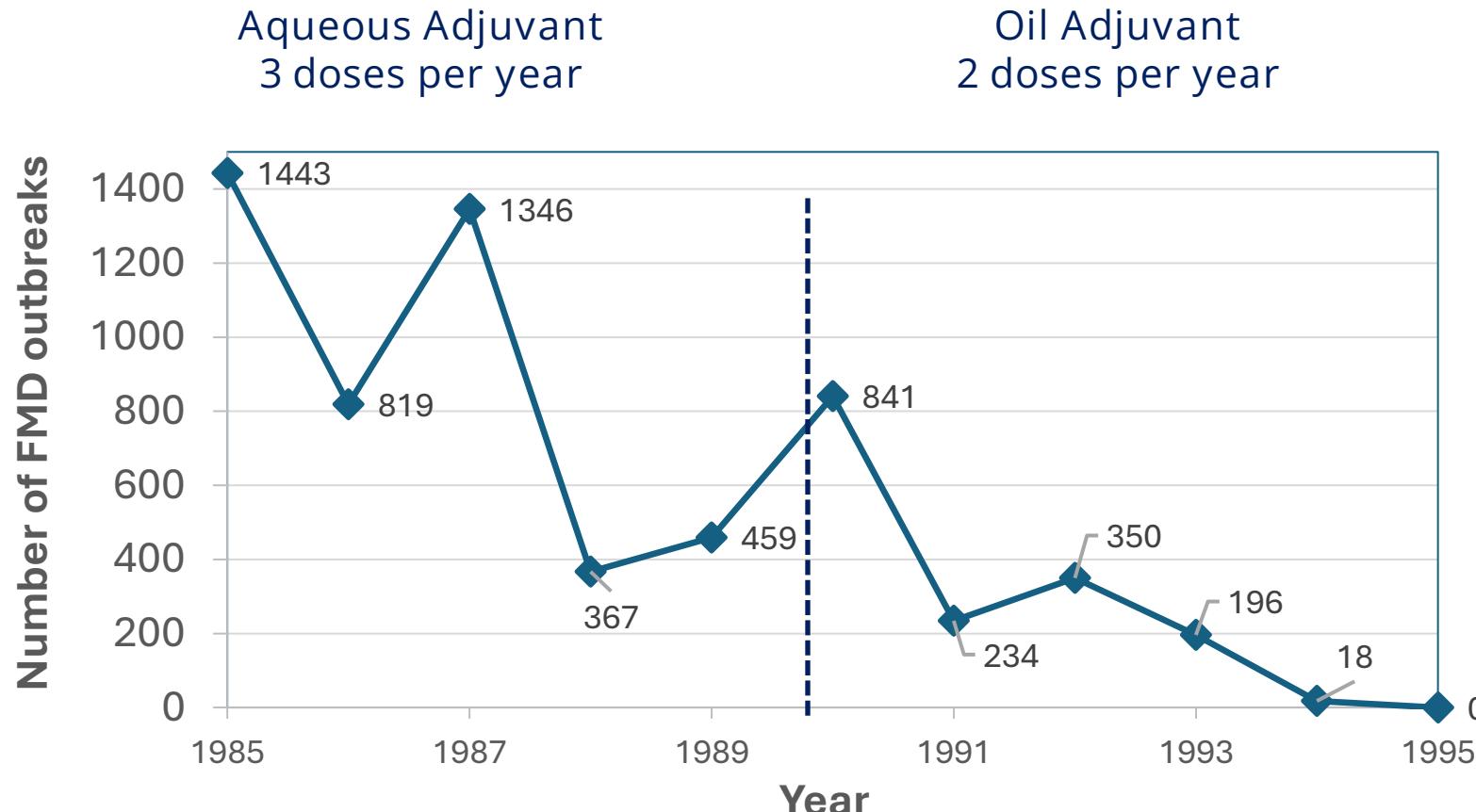
Diagnostics: NSP surveillance, vaccine monitoring

Veterinary services: training, PPP



# Experience of FMDV in Argentina

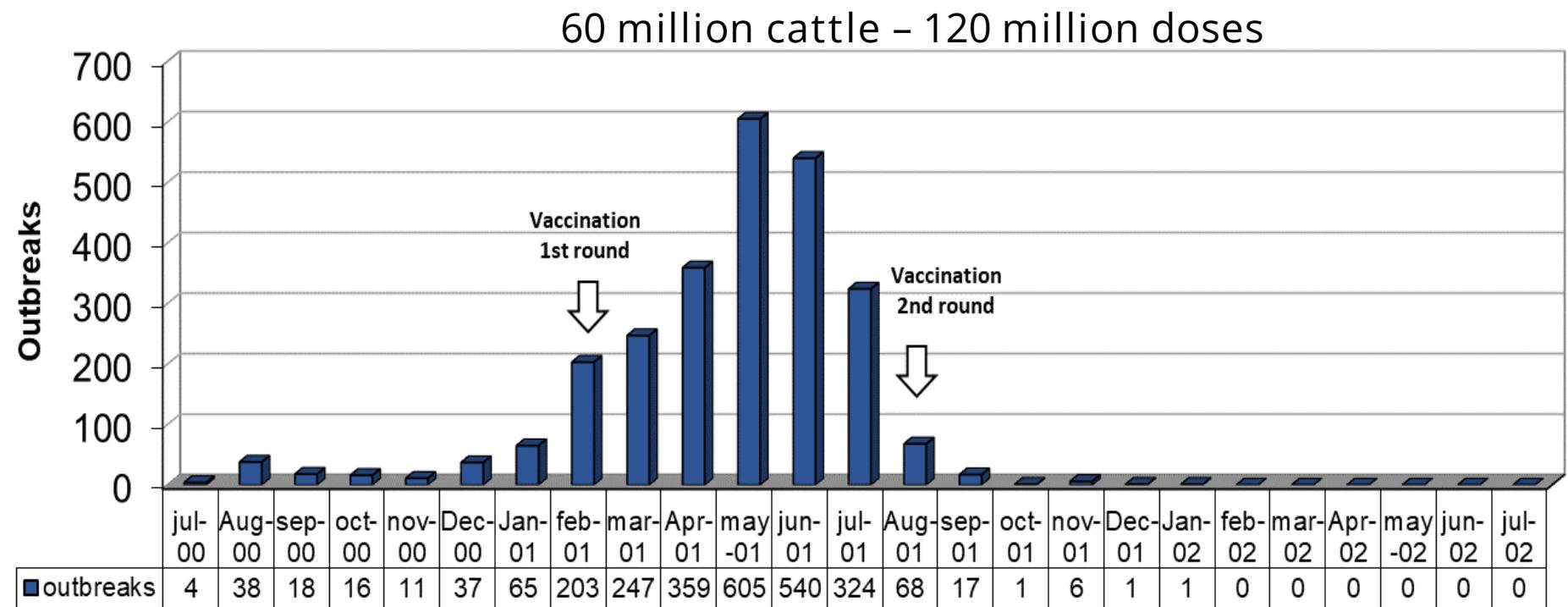
The Evolution To a World Class Vaccine  
Argentina 80-90's



# Experience of FMDV in Argentina

Biogénesis Bagó FMD Vaccine  
Emergency Attendance - Argentina 2000-2001

OUTBREAK  
CONTROLLED IN  
11 MONTHS



- In 2001 Biogenesis Bagó became the first Antigen and Vaccine Bank with primary vaccine production in America.



# Taiwan outbreak 1997

Biogénesis Bagó supplied vaccines and was the first licensed FMD Vaccine



*“FMD can be controlled by vaccines. After many comparative trials we concluded that the best vaccine is the one manufactured in Argentina with O1 Campos”*

**Dr. Shih-Ping Chen DVM,  
PhD.**

Conclusions of lecture. APVS 2019.  
Tech. Res. Inst. Taiwan



✓ FMD OIE status in 2017-  
Free with vaccination

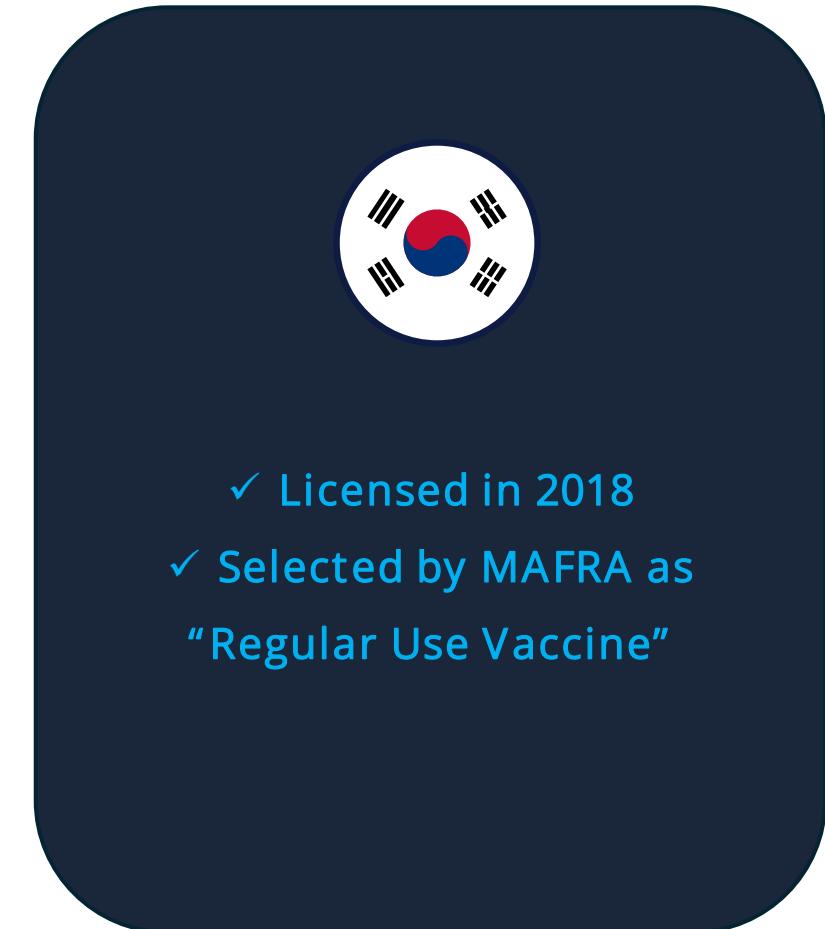
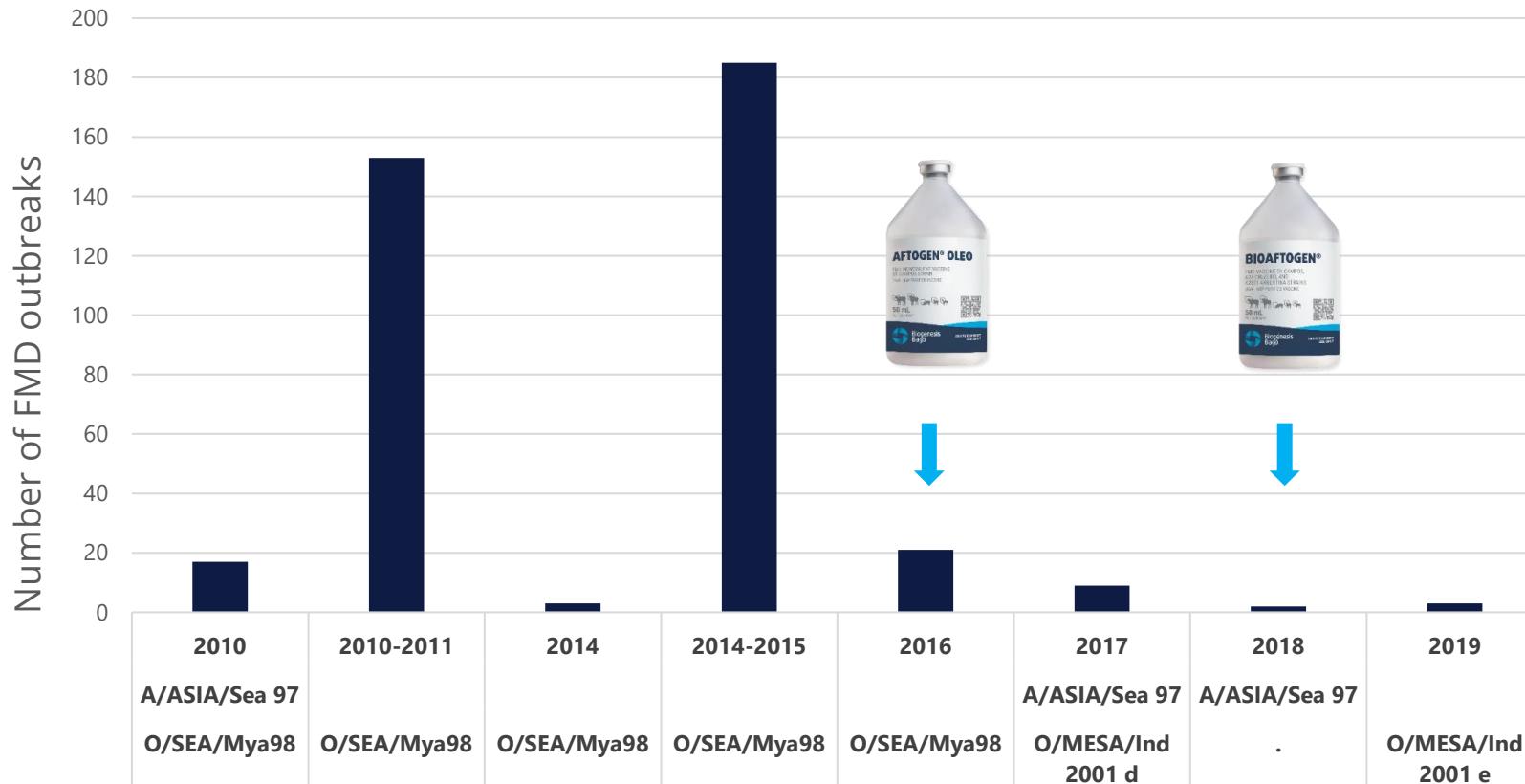


✓ FMD OIE status in 2020-  
Free without vaccination

WOAH-Resolution No. 22, May 2017  
WOAH-Resolution No. 7, June 2020



# South Korea FMD Outbreaks 2016 - 2019



# Key in the Success of Vaccination Programs

- Availability of High-Quality Vaccines:  
High potency, safe, DIVA, and Long-lasting duration of immunity
- Broad antigenic reactivity
- Effective vaccination programs
- Commitment of livestock production sector
- Robust veterinary service





# BIOAFTOGEN®

WORLD-CLASS VACCINE

## BIOAFTOGEN® LINEUP

### Monovalent Vaccines

- Serotype O
- Serotype Asia1
- Serotype SAT1
- Serotype SAT2

### Bi/Trivalent Vaccines

- Serotype O+A

### Tetravalent Vaccines

- Serotypes O+A+SAT2
- Serotypes O+A+ASIA1
- Serotypes O+A+C

### Pentavalent Vaccines

- Serotype O+A+ASIA1+SAT2
- Serotype O+A+SAT1+SAT2

### Hexavalent Vaccine

- O+A+ASIA1+SAT1+SAT2

BIOAFTOGEN Range available in MENA region

## OUR PRESENCE

*In the Middle East, Africa & Central Asia*



**Vaccinate to control, vaccinate to prevent!!!**

**V E T  
T E C H**

Empowering  
Livestock Health



Muchas gracias  
Thank you  
Muito obrigado  
謝謝  
شكرا

