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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



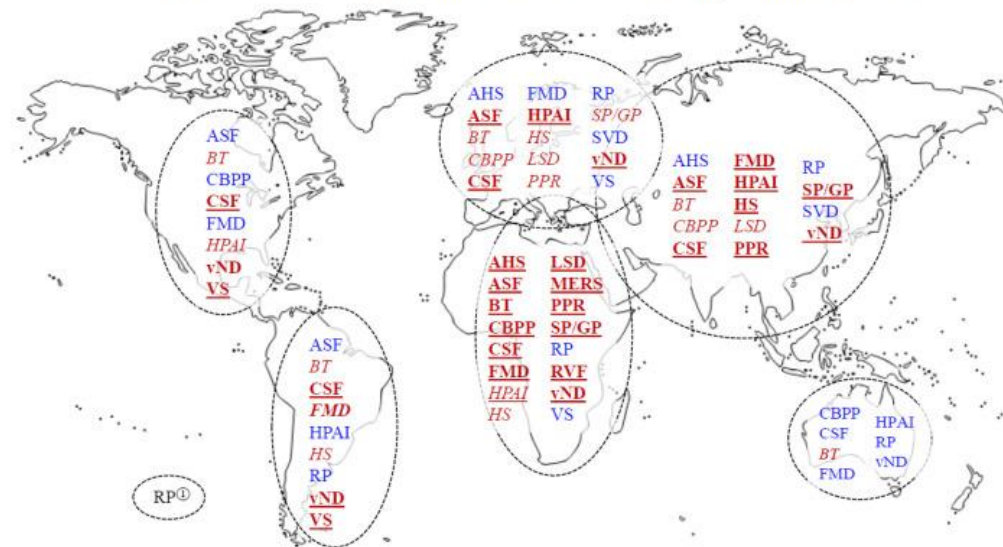
# Transboundary Animal Diseases

## 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

Broad Continental Distribution of 17 Transboundary Animal Diseases



Areas where disease has occurred, but is not currently reported  
Areas where disease or causative agent is currently present  
(endemic/enzootic, recent or sporadic outbreaks)

① Natural RP declared eradicated in 2011, virus remains stored in laboratories.

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

# 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

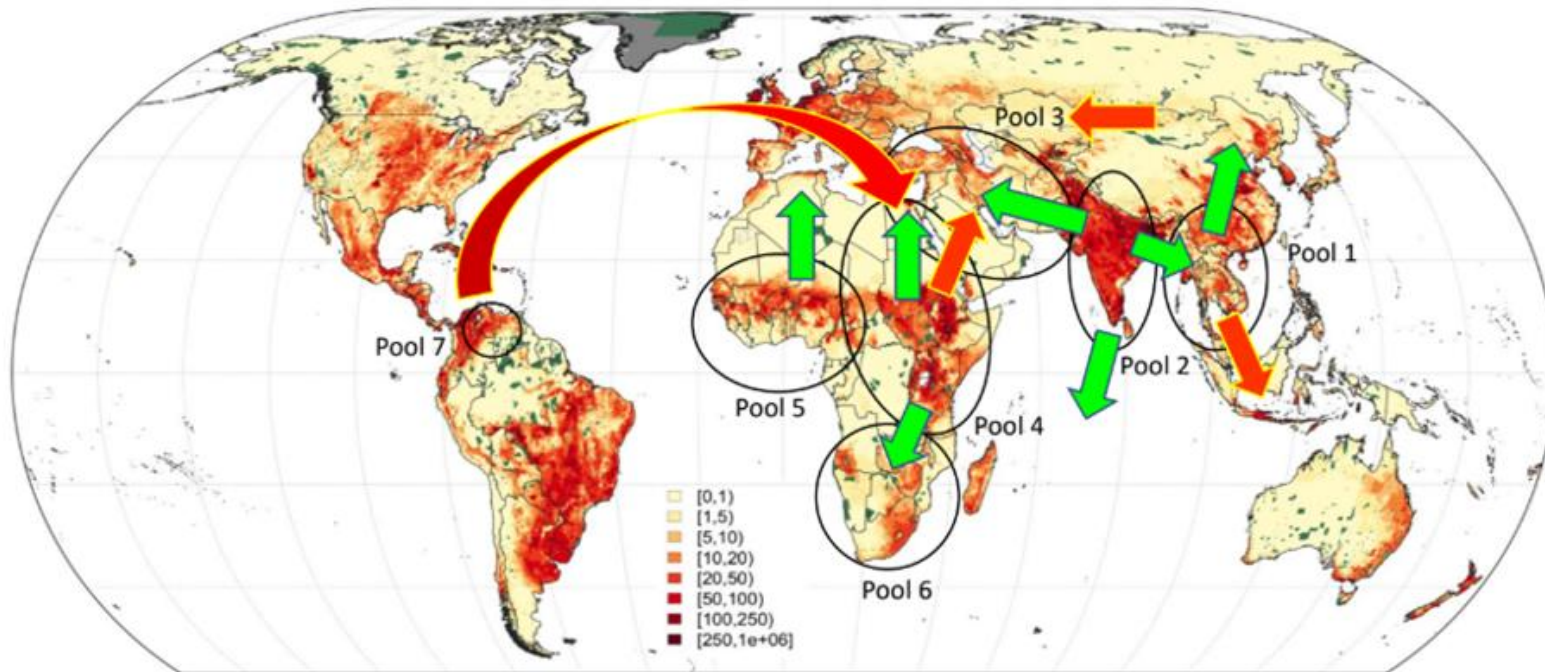
Reduction of time for restitution of  
WOAH (formerly OIE) status to restart  
trade of meat and subproducts



*Stamping out UK 2001 epidemic*



# Cattle Density and Trans-pool Movements



Cattle density map

Robinson et al., 2007

➡ New events 2021-23

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

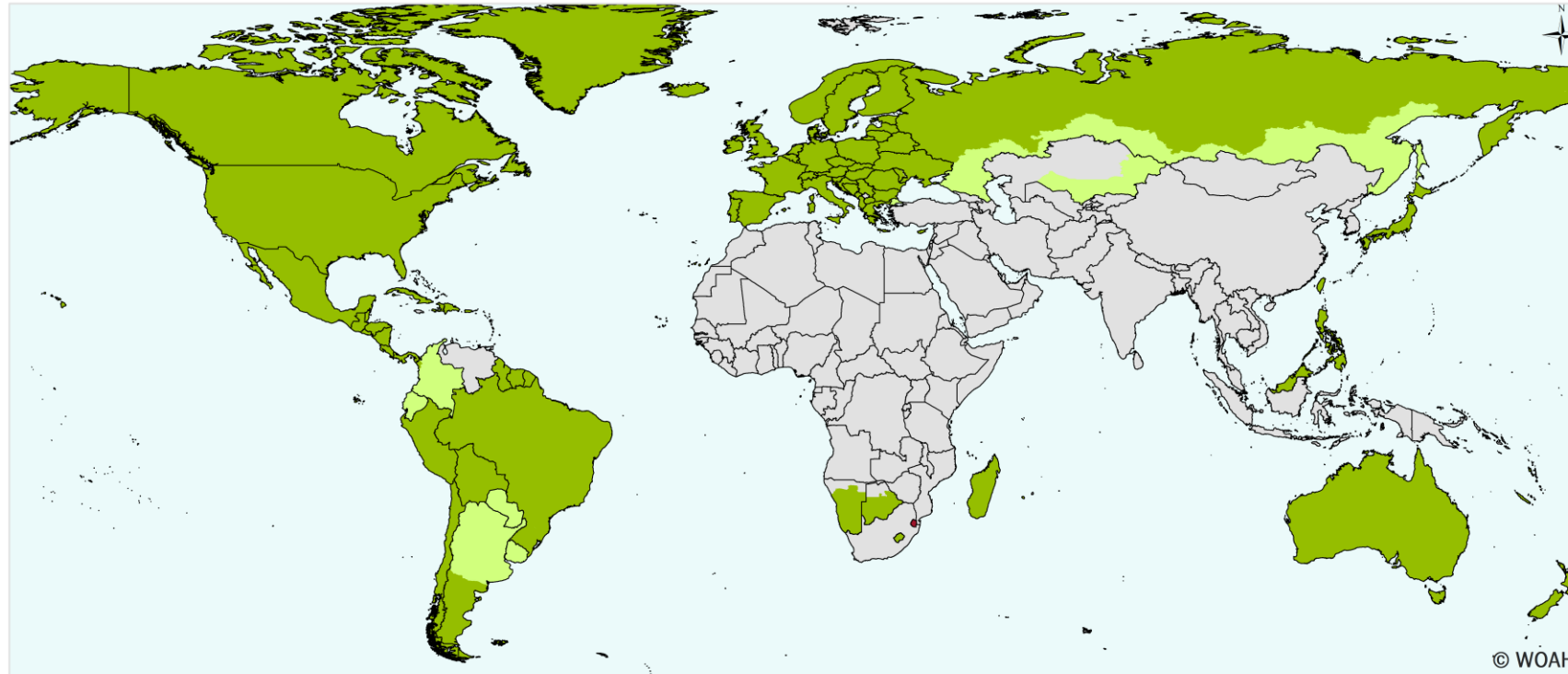
Source: <https://rr-asia.woah.org/en/events/26th-seacfmd-national-coordinators-meeting/>



# 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

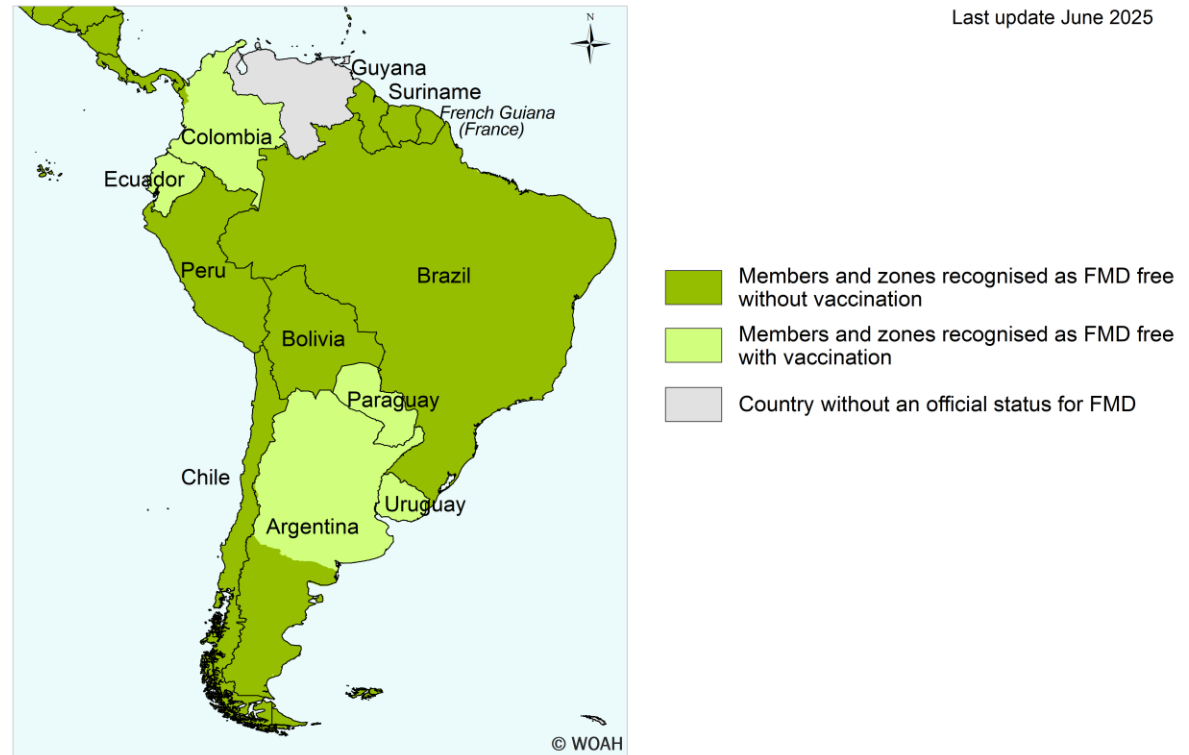
Vaccination coverage: Annual campaigns

Diagnostics: NSP surveillance, vaccine monitoring

Veterinary services: training, PPP

**SOUTH AMERICA: WOA Members' official FMD status map**

Last update June 2025



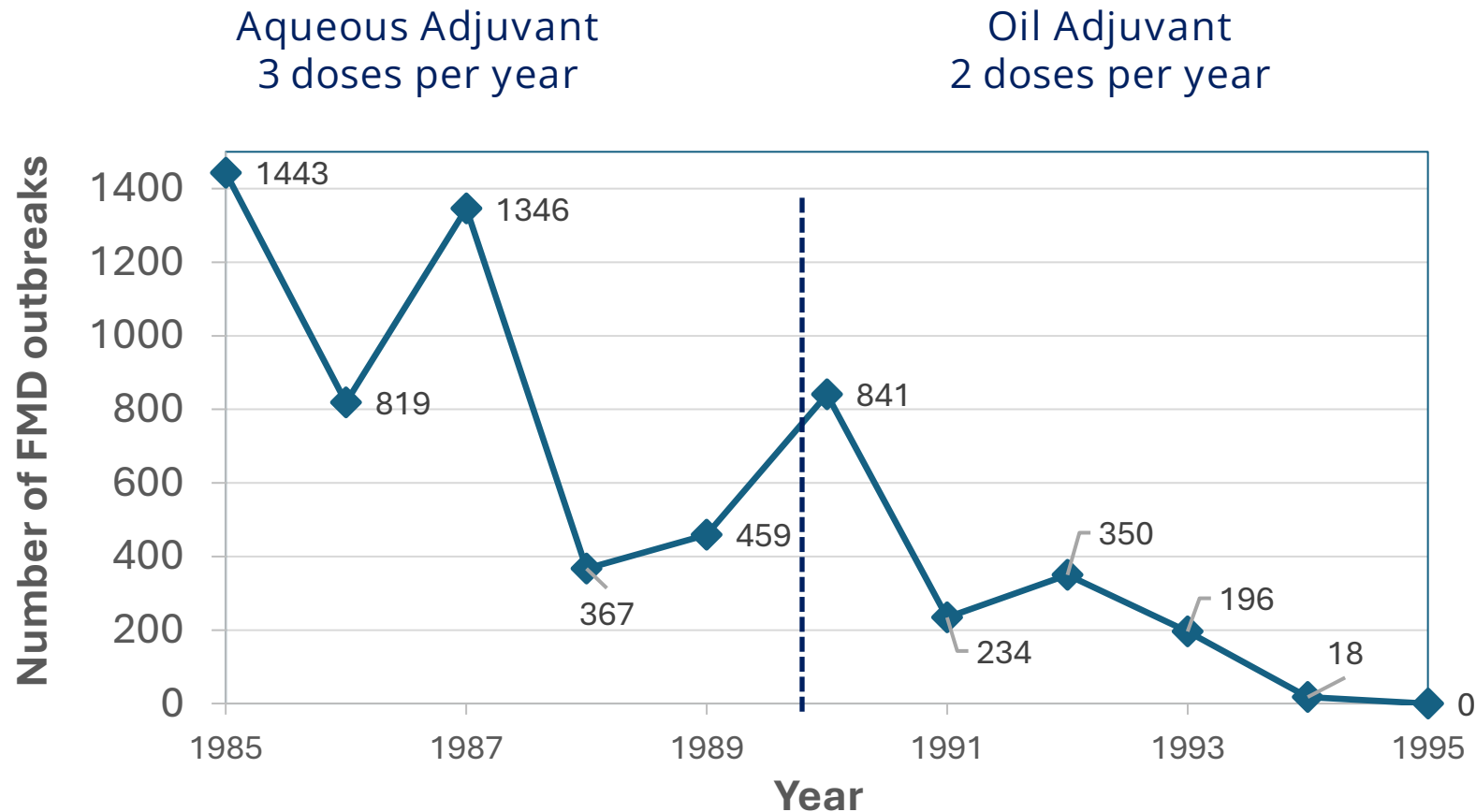
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# Experience of FMDV in Argentina

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

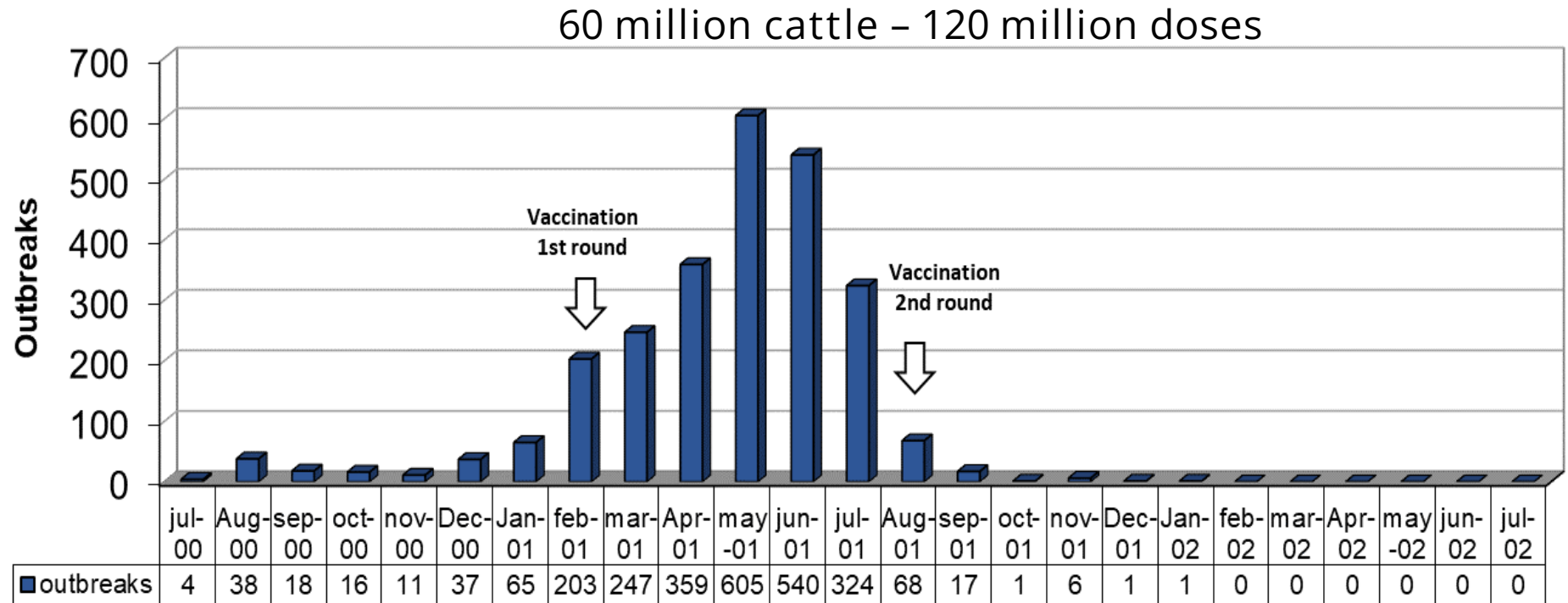


# Experience of FMDV in Argentina

Biogénesis Bagó FMD Vaccine

Emergency Attendance - Argentina 2000-2001

OUTBREAK  
CONTROLLED IN  
11 MONTHS



- In 2001 Biogenesis Bago 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



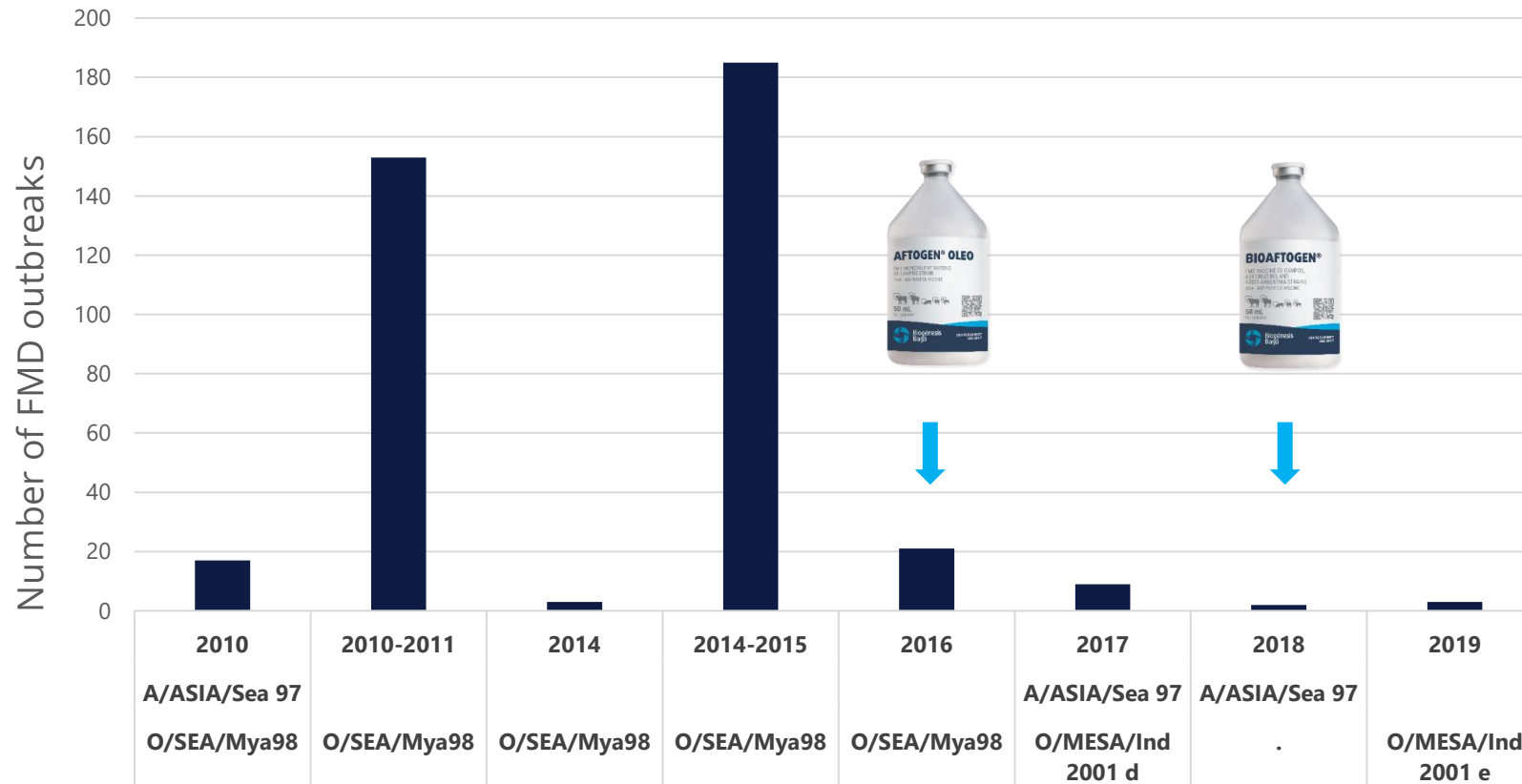
✓ FMD OIE status in 2020-  
Free without vaccination

WOAH-Resolution No. 22, May 2017

WOAH-Resolution No. 7, June 2020



# South Korea FMD Outbreaks 2016 - 2019



- ✓ Licensed in 2018
- ✓ Selected by MAFRA as "Regular Use Vaccine"



# 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 Range available in MENA region

# BIOAFTOGEN®

### WORLD-CLASS VACCINE



#### BIOAFTOGEN® LINEUP

##### Monovalent Vaccines

Serotype O  
Serotype Asia1  
Serotype SAT1  
Serotype SAT2

##### Bi/Trivalent Vaccines

Serotype O+A

##### Tetraivalent 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

## OUR PRESENCE

*In the Middle East, Africa & Central Asia*



## Vaccinate to control, vaccinate to prevent!!!

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Muchas gracias  
Thank you  
Muito obrigado  
謝謝  
شكرا