



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded as OIE

Egypt

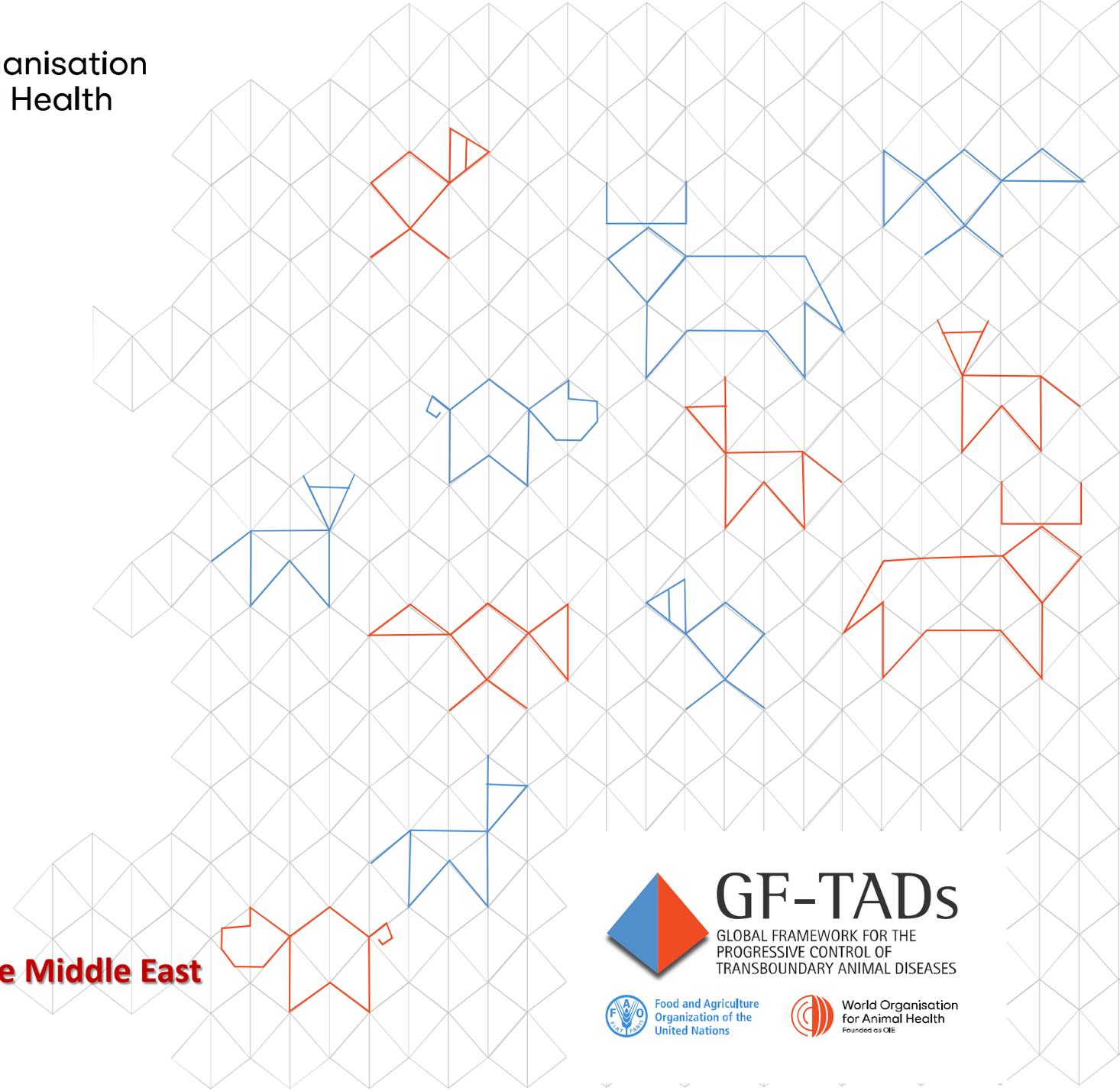


FMD case study

Prof Dr. Abdelhakim Ali

Egypt CVO

President of the WOA Regional Commission for the Middle East



GF-TADS

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded as OIE

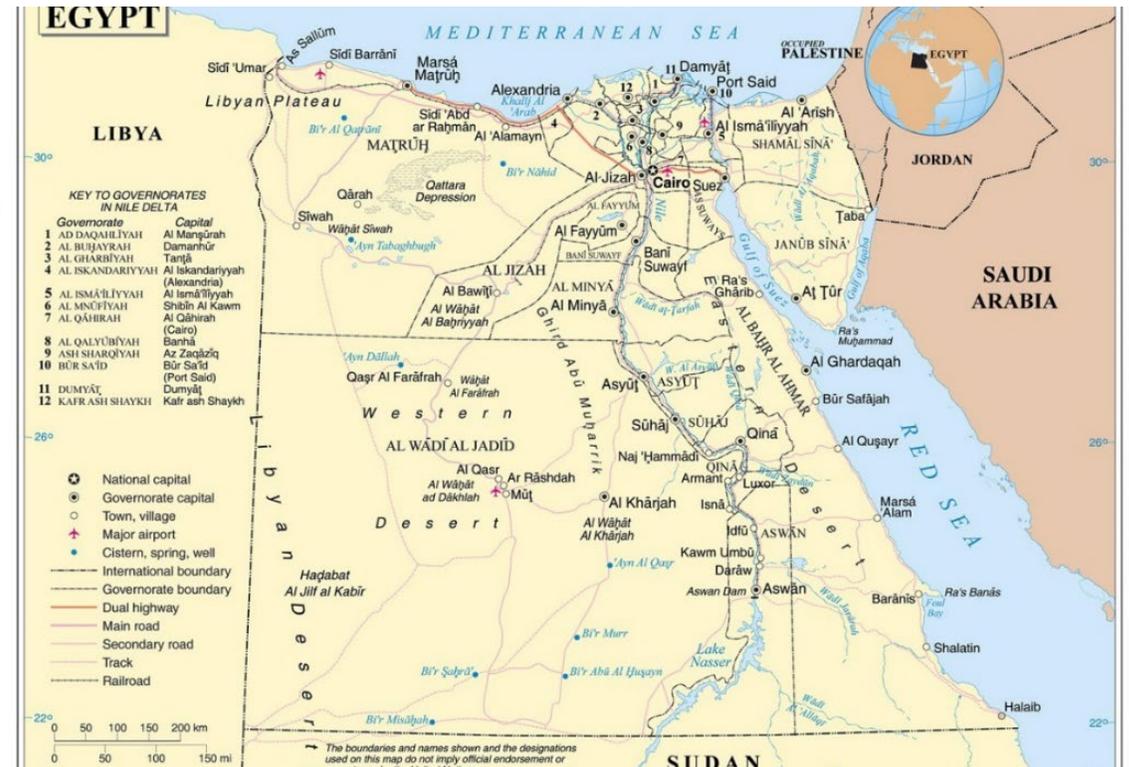
Introduction

- FMD was first recorded in **1950**. It was caused by **(SAT2)** strain.
- In 1952, 1956, 1958 outbreaks were caused by strain **(A)**.
- Several outbreaks were detected in years 1961, 1962, 1964, 1966, 1967, 1968, 1969, 1970, 1987, 1993 and 2009.
- Since **1970**, vaccination started, strain O subtype Manisa (has regular vaccination with locally produced vaccine from the veterinary of serum and vaccines Research Institute).
- In 2006, strain **(A)**, Ethiopian sub type, was detected and vaccination had been regular bivalent strains **(A & O)** vaccine .

Introduction

- In 2012, the first cases caused by **SAT2** strain that was identified in our national laboratories "AHRI" and confirmed on March from Pirbright Lab./ UK (WRL), Started vaccination at **19th of April** with application of strict bio security measures.
- **Since 2012**, Egypt has O, A and SAT2 (Alex and Garb).
- **SAT 2- Libyan strain**, was firstly recorded in **2018** which diagnosed at AHRI and confirmed by Pirbright Lab./ UK (WRL).
- Egypt in **stage two** based on the last virtual Regional Roadmap Meetings in 2021.

Egypt experience after endorsing RBSP in 2017



Egyptian RBSP

- **Goal: Eradication of FMD within 15 - 20 years.**
- **Strategic objective: Reduce FMD impact of clinical disease within 5 years**

**Reduction of FMD incidence at the end of 2020
by 50 % compared with 2014 and 2015**

Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities

Reduce FMD transmission from high risk markets to small farms & small holders

- *Preparation of specific study for high risk markets*
- *Implementation of biosecurity measures after the market day*
- *Enhancement of awareness for stakeholders to reduce the risk related to markets*
- *Defined conditions and measures for establishment and approval of livestock market*
- *Assign a committee for each market for (check health status of each entering animals, application of market vaccination for non-vaccinated animals and I&R of non-identified animals....)*



Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities (Follow)

Reduce FMD transmission in winter season within 3 years.

- *Application of massive vaccination campaigns all over governorates 3 times/year focusing large ruminants one of them at autumn season*
- *preparation of awareness program before and during vaccination campaigns*

Improve biosecurity measures concerning professionals

- *Implementation of biosecurity training programs for professional*
- *Enhancement of awareness for professional periodically concerning bio security measures to reduce the risk of transmission of FMD*
- *implementation of bio security measures concerning professionals to reduce the risk of transmission of FMD*

Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities (Follow)

Understanding the risk of the viral introduction at different border and trials to reduce transmission by smuggling animals from borders

- *Application of massive vaccination of all large ruminants in border governorates three times/year*
- *Implementation of active surveillance programs inside the border governorates and surrounding markets (conduct NSP and clinical active surveillance)*

Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities (Follow)

Understanding the risk of the viral introduction at different border and trials to reduce transmission by smuggling animals from borders

- *Application of massive vaccination of all large ruminants in border governorates three times/year*
- *Implementation of active surveillance programs inside the border governorates and surrounding markets (conduct NSP and clinical active surveillance)*

Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities (Follow)

Establishment of contingency plan in case of new incursion

- Inform and consult all relevant stakeholders involved in contingency plan*
- Explore responsibility for GOVS to attend simulation exercise*

(Held simulation exercise in 2020 supported by EU/FMD and determine of the focal points from different relevant entities)

Currently implemented FMD control measures (concerning main objective of the RBSP) started from 2017

Component objectives / implemented activities (Follow)

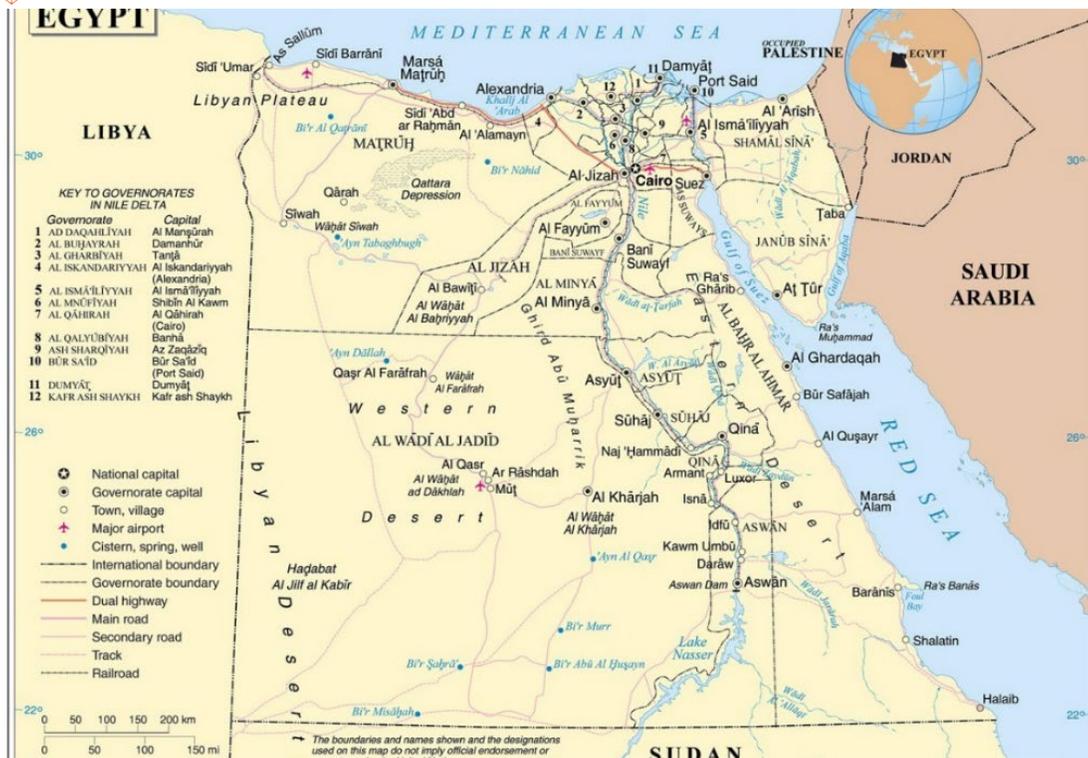
Establish adequate monitoring and evaluation system

- *Preparation of organized simple format for different activities related to preventive medicine*
- *Establish overarching system of regular reporting and frequent evaluation*
- *Strengthening passive surveillance system (through establishment of outbreak investigation system)*

Full understanding of animal movement and production a cross Egypt (ongoing project)

- *EUFMD and CIRAD project concerning animal mobility and the involved actors*

In addition, application of biosecurity condition should be full filled before establishment of farm

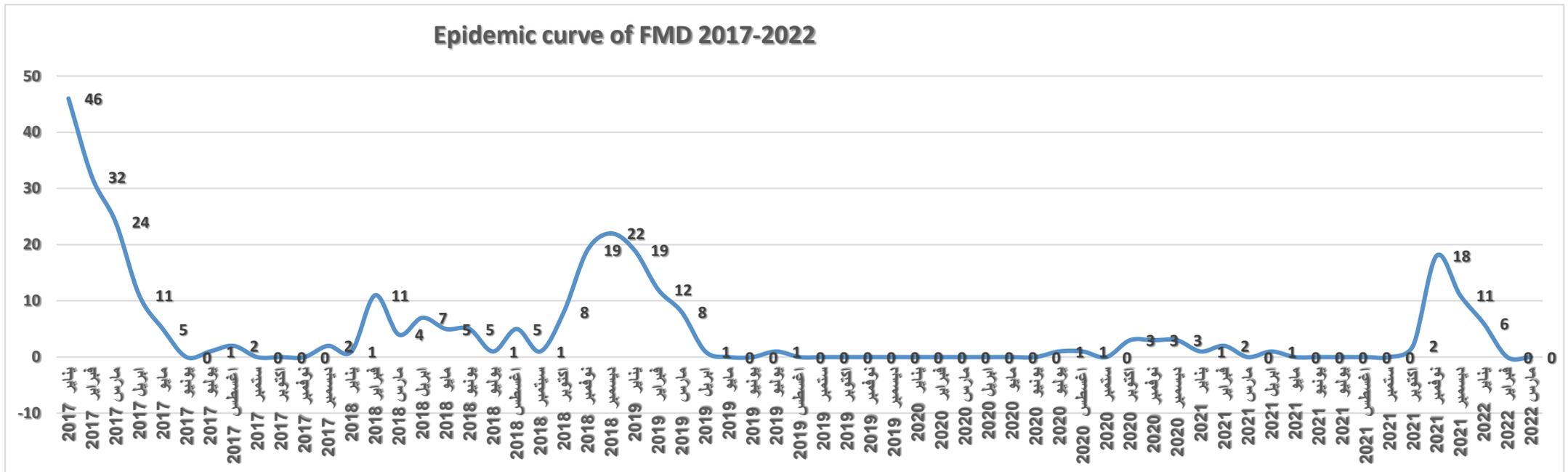


FMD situation in Egypt after RBSP implementation from 2017-2/2022 (component I)

1. Passive and active FMD surveillance from 2017-2/2022

Passive surveillance:

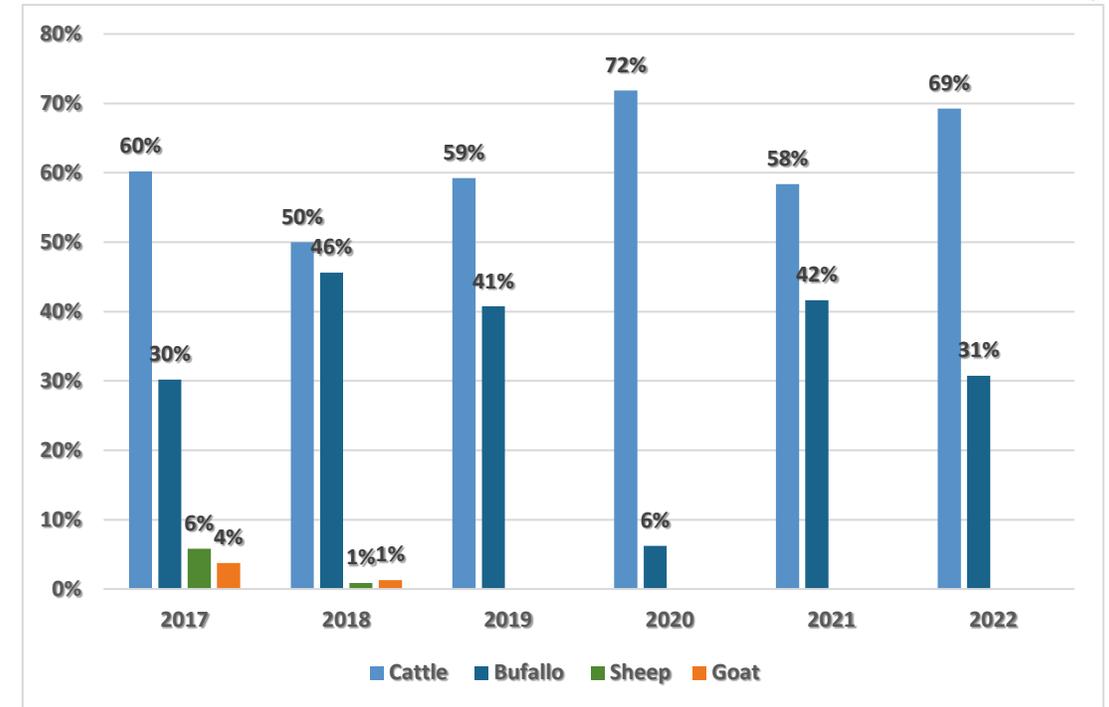
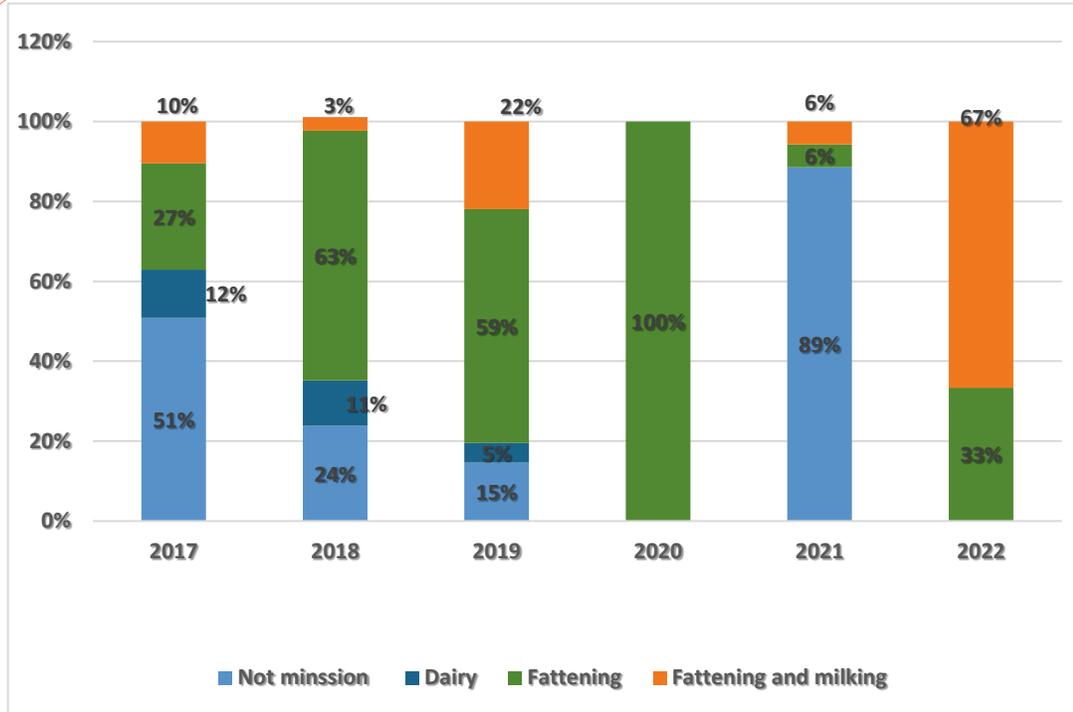
Year	2017	2018	2019	2020	2021	2022 (till February)
No. of suspected reported cases	480	196	108	23	77	8
No. of confirmed outbreaks	124	89	41	9	34	6



The total number of FMD notification shows sharp decline of suspected and confirmed cases when compared with the baseline of RBSP (2014, 2015).

1. Passive and active FMD surveillance from 2017-2/2022

- **Distribution of confirmed FMD outbreaks by production and species (2017-2/2022):**

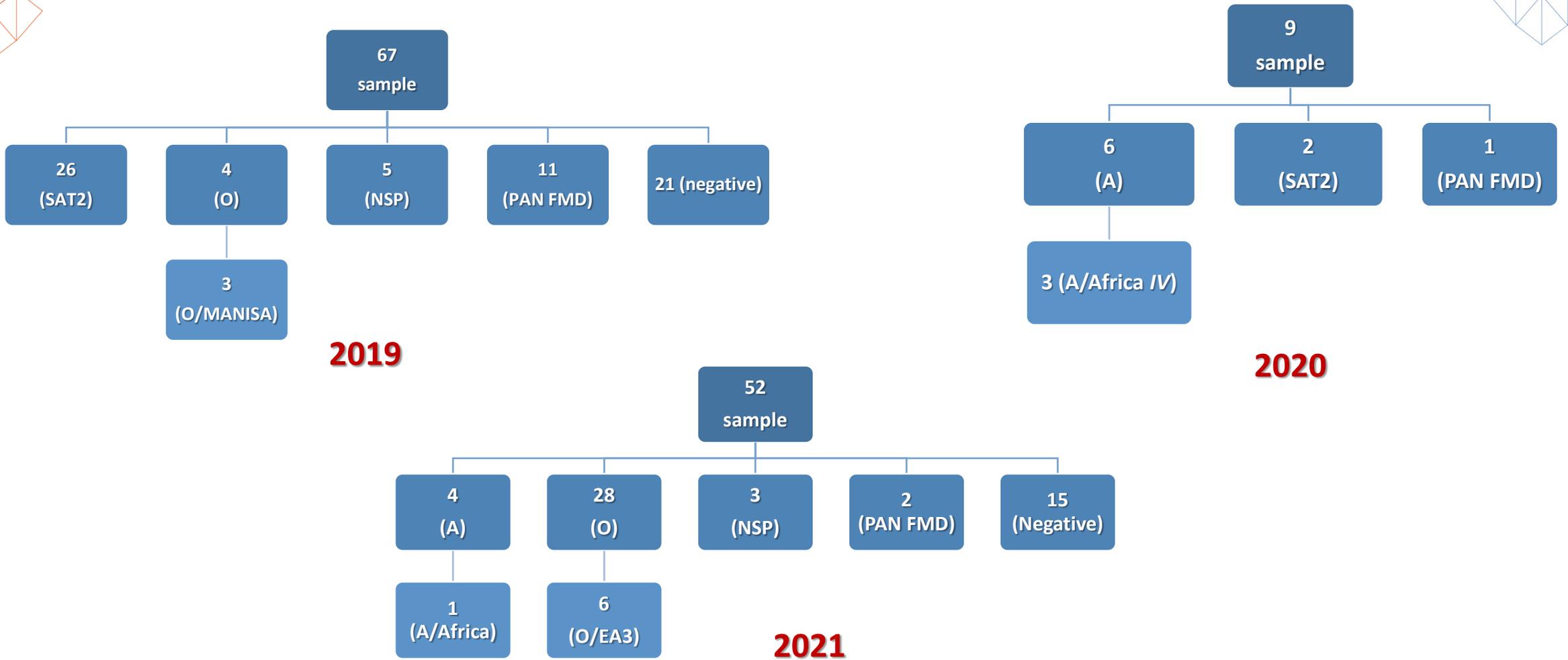


No. of confirmed outbreaks / production sector (2017-2/2022) High incidence of confirmed FMD outbreaks in the fattening sector in 2018, 2019 and 2020

distribution of confirmed FMD outbreaks by species(2017-2/2022) Most affected species are cattle in all years

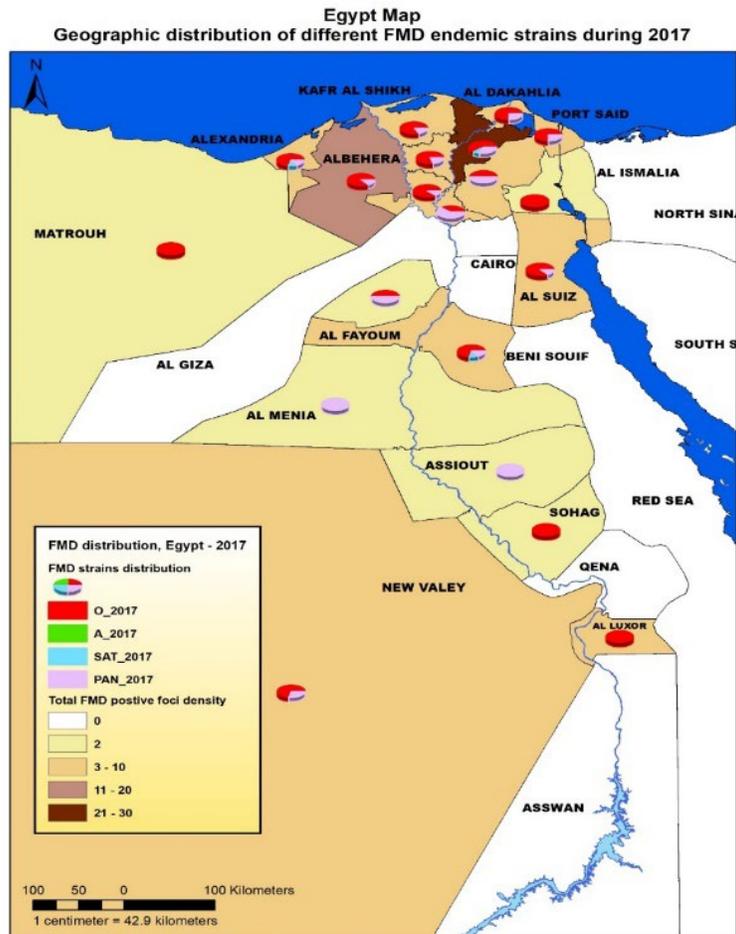
1. Passive and active FMD surveillance from 2017-2/2022

Examined samples in the national laboratory (AHRI)

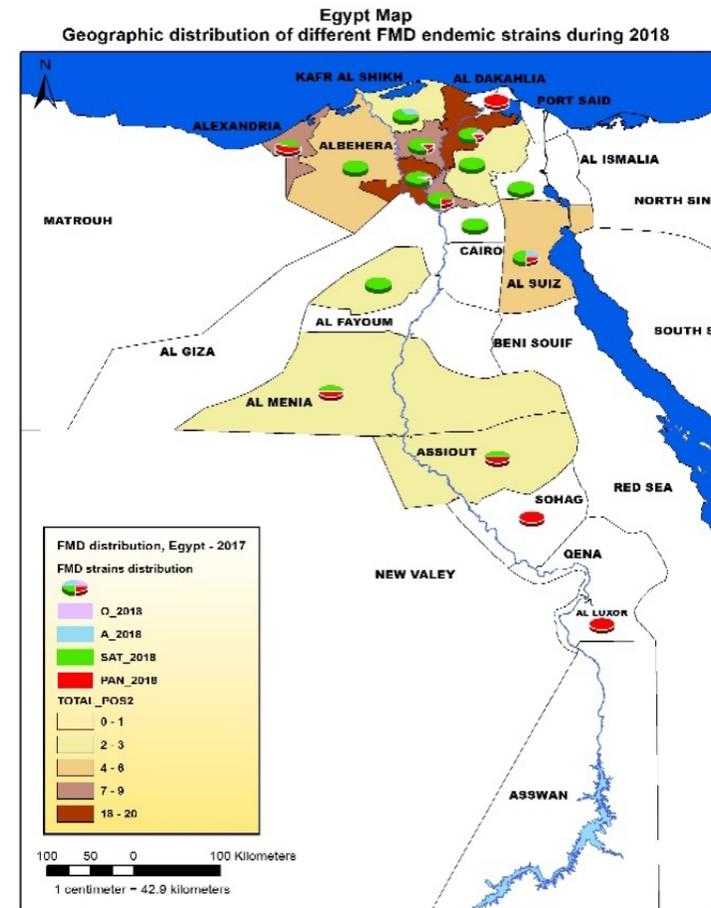


1. Passive and active FMD surveillance from 2017-2/2022

Geographical distribution of confirmed FMD outbreaks / serotypes



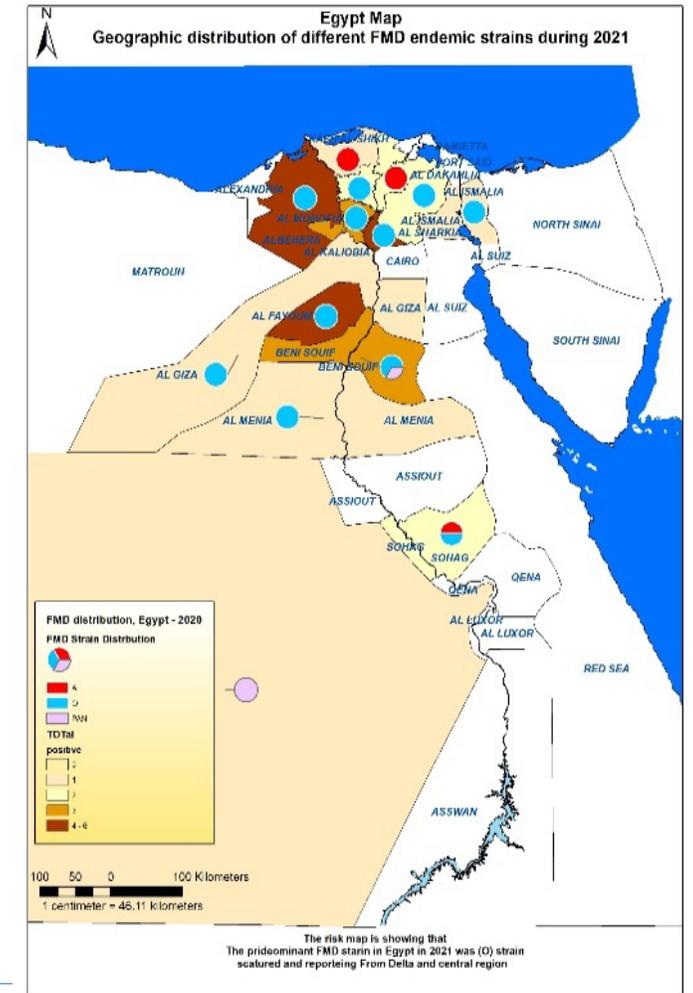
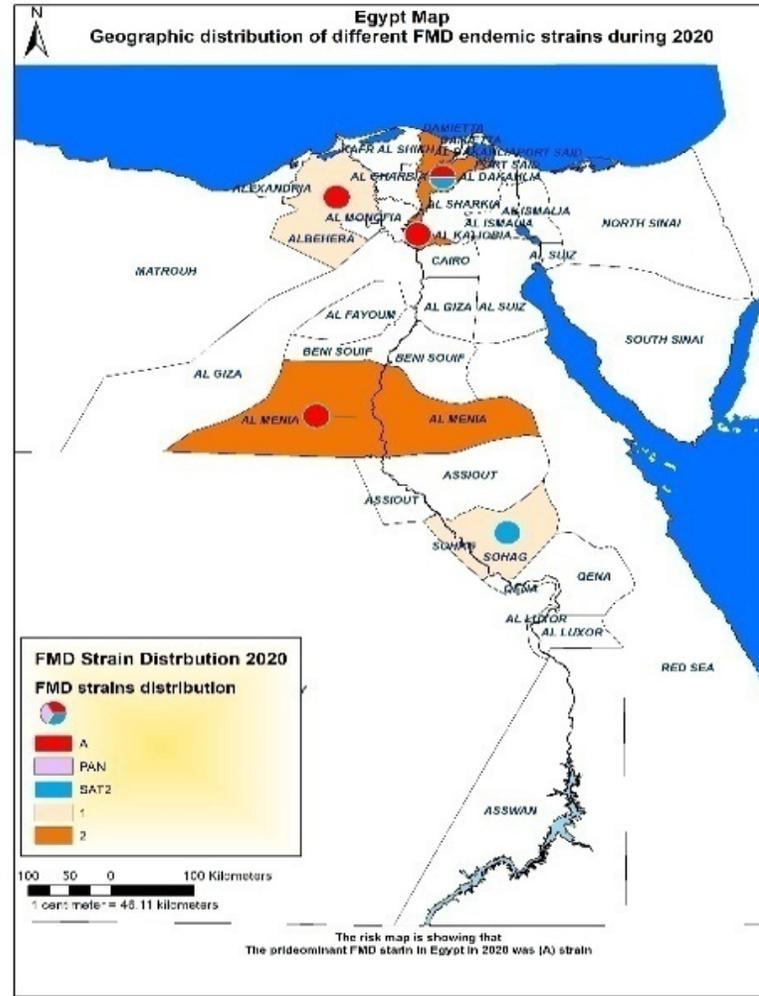
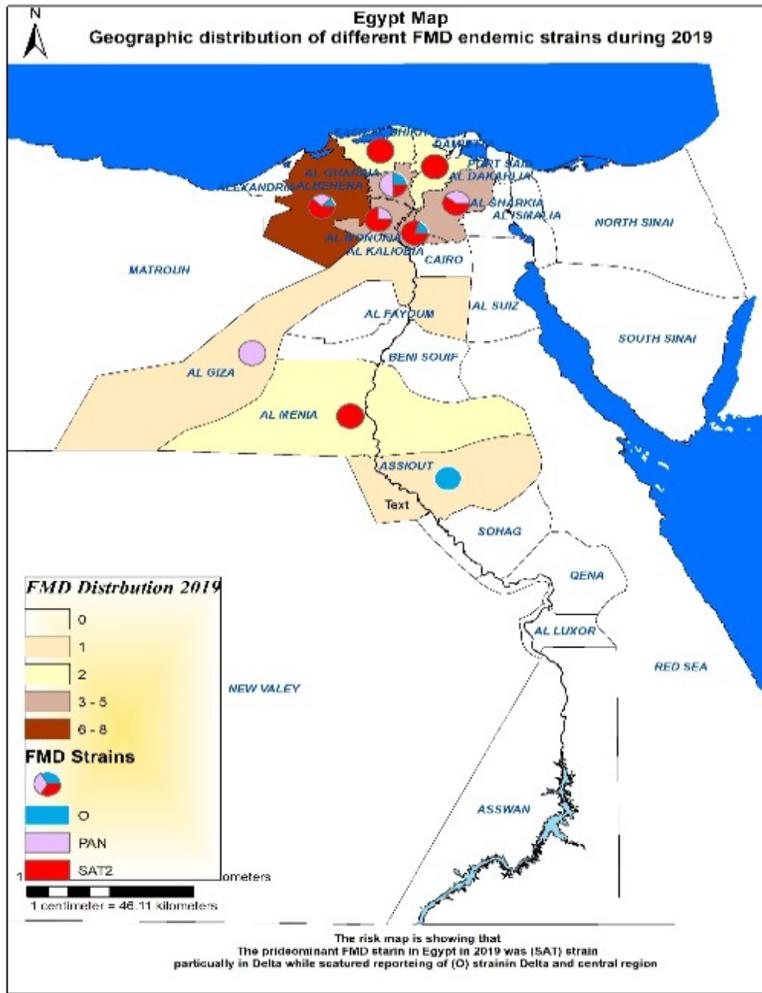
The risk map is showing that
The predominant FMD strain in Egypt in 2017 was (O) strain particularly in Delta region



The risk map is showing that
The predominant FMD strain in Egypt in 2018 was (SAT) strain as it report from many governorates from Delta and central region

1. Passive and active FMD surveillance from 2017-2/2022

Geographical distribution of confirmed FMD outbreaks / serotypes



1. *Passive and active FMD surveillance from 2017-2/2022*

Active surveillance

- ✓ **Active clinical surveillance (epi teams all over governorates investigate the animal health status).**

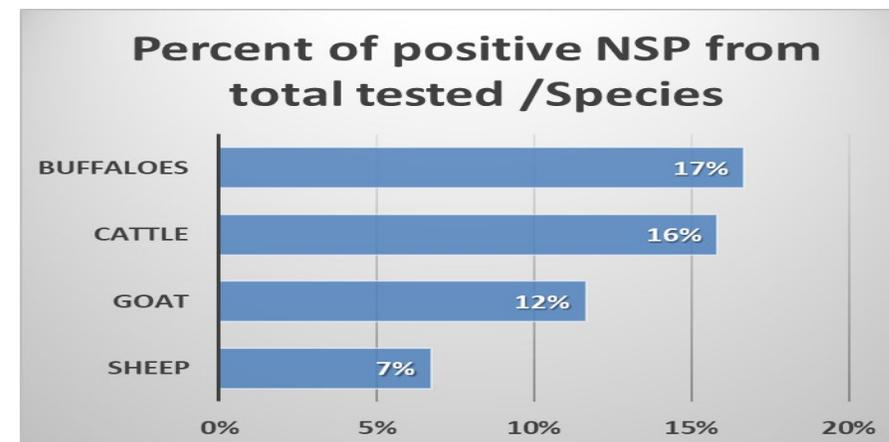
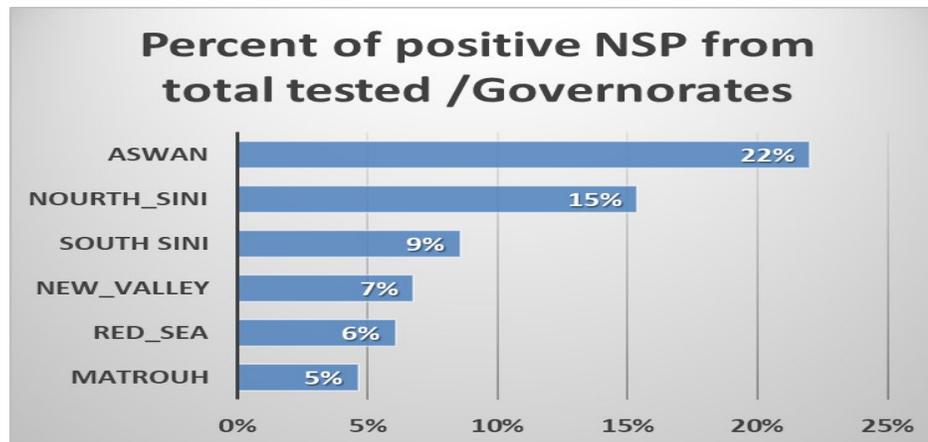
No.	Items	Total no. (8/2020 till 2021)
1	Total no. of visited villages	4602
2	Total no. of visited houses	70458
3	Total no. of investigated animals	281688
4	Total no. of suspected cases for FMD based on clinical signs	7

GOVS starts to implement active clinical surveillance in 2022.

1. Passive and active FMD surveillance from 2017-2/2022

NSP-Antibody sero-survey: 1/11-1/12/2020

- **Objective:** Estimate % of NSP in 6 border governorates which considers as a high risk area for introduction of new strains or sub strains for FMD and other diseases, detection of circulating serotypes and subtypes if active clinical cases were found
- **Methodology:** Collect of 1682 serum samples from different species in 6 governorates, detect clinically active cases
- **Result:** **11%** of serum samples was positive for NSP with no active clinical cases



2. Vaccination

Vaccination strategy: 3 times/year all over the country

Vaccine serotypes (formulation): A, O, SAT2

Target population: focusing on large ruminant

Year	2019	2020	2021
	Large	Large	Large
% of coverage (Average/year)	78.2%	66.13%	64.1%

*Population level immune study : **ongoing***

3. Awareness

Focuses on sending key message to owners which aimed to increase awareness about :

- **Importance of Vaccination, Identification and Registration (I&R)**
- **Symptoms and Economic losses of disease**
- **Reporting to authorized clinic**
- **Basic of biosecurity and how to deal with diseased animal**



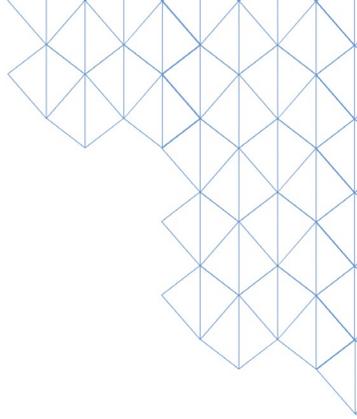
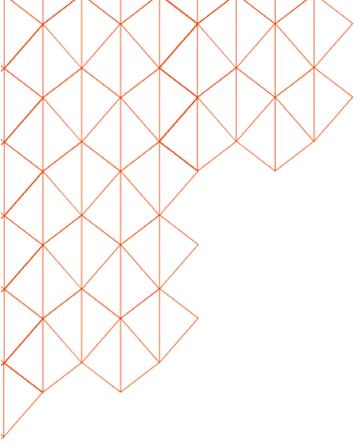
4. Biosecurity measures

- **Implementation of biosecurity measures concerning professionals to reduce risk of FMD transmission especially during vaccination campaigns and any suspicious cases.**
- **At farm level, a ministerial decree has been issued to organize registration of any farm with applying biosecurity measures.**



5. Response measures to FMD outbreaks

- **Rapid response teams for any suspicious cases**
- **Increase awareness regarding (isolation of infected animals, movement control and quarantine measures)**
- **Target surveillance around the foci.**
- **Closure of livestock markets during outbreaks.**
- **Symptomatic treatment to prevent secondary bacterial infection and subsequently reduce the losses.**
- **Ring vaccination in area of radius 10 km around the suspected foci.**
- **Quarantine of infected premises until 21 days from the last death or last cured case.**



Other activities (component II & III)

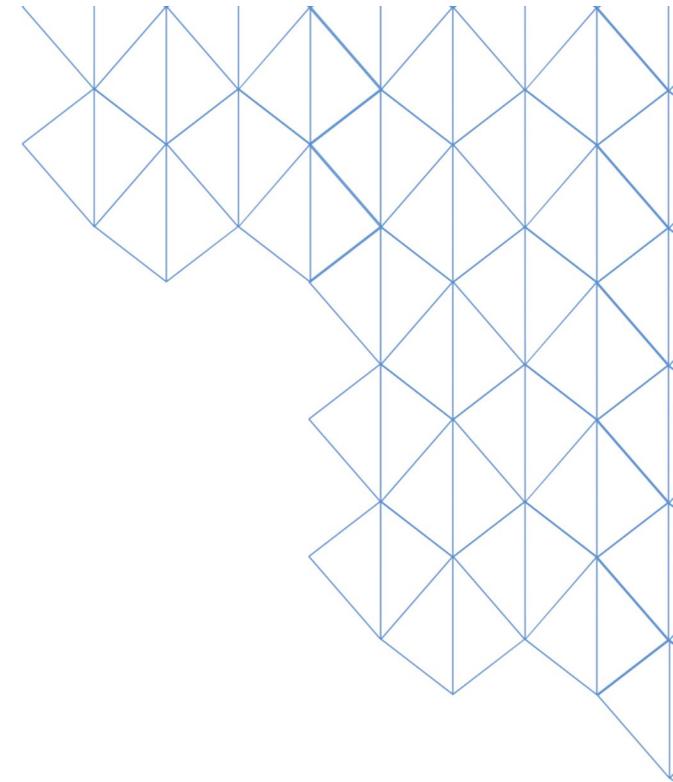
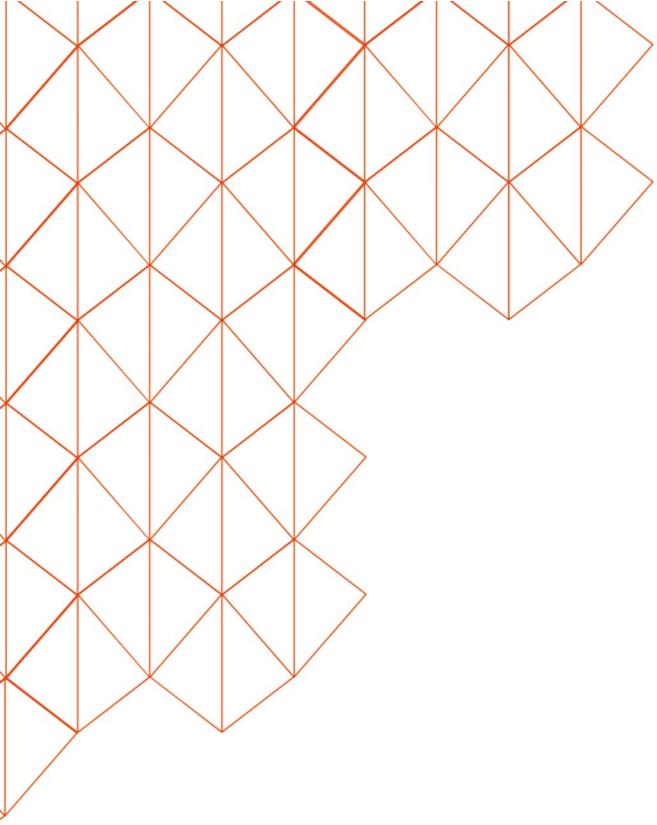
Other activities, component II

(Activities to strengthen the Veterinary Services' capacities)

- 1. National epidemio-surveillance network and early warning system involving development and management of epidemiological data**
- 2. There is harmonization of training programs and most training programs were based on the needs expressed by the field veterinarians**
- 3. There is a clear chain of command for emergency response concerning some disease as (HPAI, some Equids' diseases including AHS, RVF and FMD).**
- 4. technical decisions are based on scientific evidence as in the case of disease control and prevention or quarantine procedures taking into account scientific considerations**
- 5. There is a clear legislation to implement different control measures as (vaccination, I&R,.....)**
- 6. There is a clear legislation to implement different control measures as (vaccination, I&R,.....)**
- 7. The national laboratory has the capacity for differential diagnosis between FMD and other pathogens concerning large and small ruminant as (RVF, PPR, SGP, Brucellosis,.....) and accredited with ISO 9001 and ISO 17025, and applied the basic bio-containment (biosafety and biosecurity) requirements.**

Other activities, component III
(Synergies to control other transboundary animal diseases (TADs))

- 1. Implementation of biosecurity measures especially for professional**
- 2. Building capacity of the cold chain**
- 3. Integrated surveillance program**
 - **Active surveillance as border sero surveillance for detection of NSP-FMD and IgM-RVF**
 - **Active clinical surveillance**
- 4. Reporting system**
- 5. Vaccination programs (FMD and RVF)**
- 6. Awareness campaigns concerning importance of; vaccination, notification, animal I&R, response in present of any outbreaks**
- 7. Training programs ; sampling, outbreak investigation, biosecurity**
- 8. Implementation of the biosecurity measures at farm level and markets**



Thanks for your attention