



Republic of Sudan

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Ministry of Animal Resources



Distribution of Livestock population

per states 2017

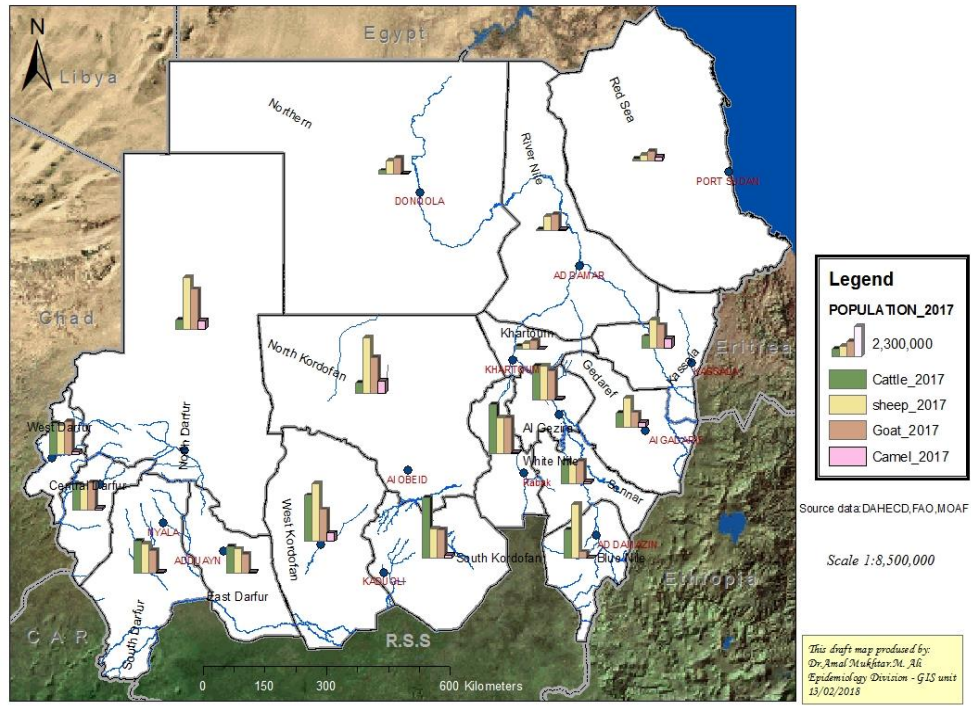
No.	State	Camels	Goats	Sheep	Cattle	Total
1.	North Kordofan	931200	2691015	4197456	773150	8552081
2.	South Kordofan	250260	2152812	2200608	4524474	9064446
3.	West Kordofan	635350	2406084	434008	3463712	10781248
4.	North Darfur	606735	3003315	3912626	720576	8203571
5.	South Darfur	89895	1713385	2200608	2432330	6395531
6.	East Darfur	73550	1401861	1797163	1990088	5229384
7.	Central Darfur	197395	2051503	1833840	1911227	5957147
8.	West Darfour	241045	2510559	2233210	2338006	7277811
9.	Elgadarif	351140	1097452	2221851	1088595	4733438
10.	Kassala	707615	1734245	2102630	884484	5400673
11.	Red sea	293910	745183	433532	142260	1606641
12.	Blue Nile	14550	469691	4064362	2112246	6624105
13.	Sennar	119795	1698115	1430655	1657634	4875484
14.	Gezira	126585	2222001	2574096	2600877	7476975
15.	White Nile	36375	2651046	2655383	3664731	8948518
16.	Northern	50440	1192293	1018800	262871	2511494
17.	River Nile	117370	1251005	1072991	105148	2534311
18.	Khartoum	6790	668407	460628	253593	1381638
Total		4,850,000	31,659,000	40,752,000	30,9260,00	108,187,000



Progress along Stage 1 - Component 1

Livestock density and distribution (maps). Value chain analysis results

Cattle, Camels, Sheep and Goats Population in Sudan States - 2017



- Livestock value chain is in process of development in Sudan (3 VC)
- identifying the points of linkage and collaboration among different actors
- describe the important roles that GOS services play in the livestock sector at the different Admin. levels
- In general, the livestock value chains operate in an enabling environment which is improving over time but is not yet fully studied to facilitate the competitiveness that allows actors to seek and expand opportunities.

1 slide



Progress along Stage 1 - Component 1

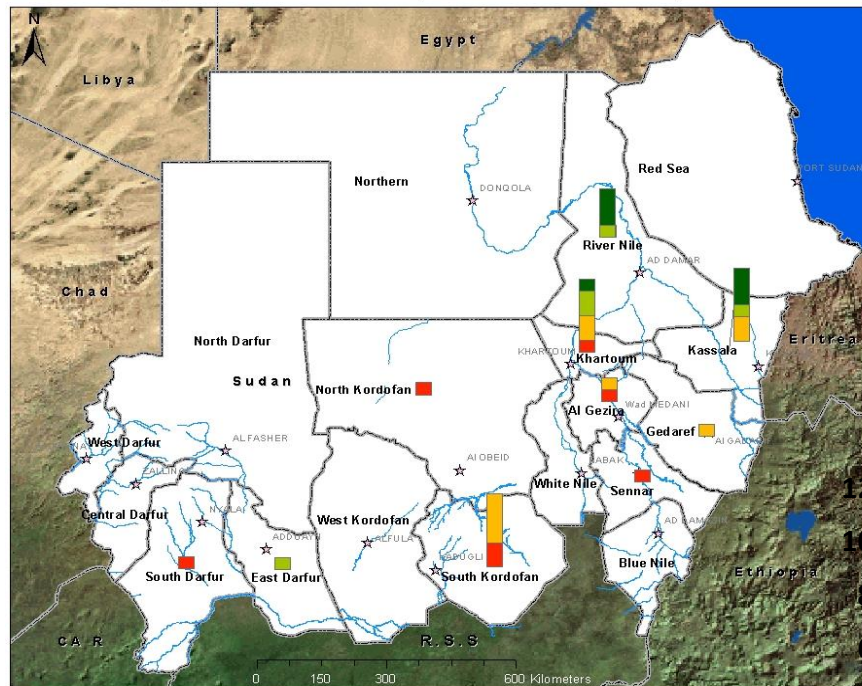
FMD outbreaks

- Use table and maps to indicate the outbreaks by species
- Strain(s) identified
- Number of submissions to reference laboratories for full characterization
- Response to outbreaks

1 slide

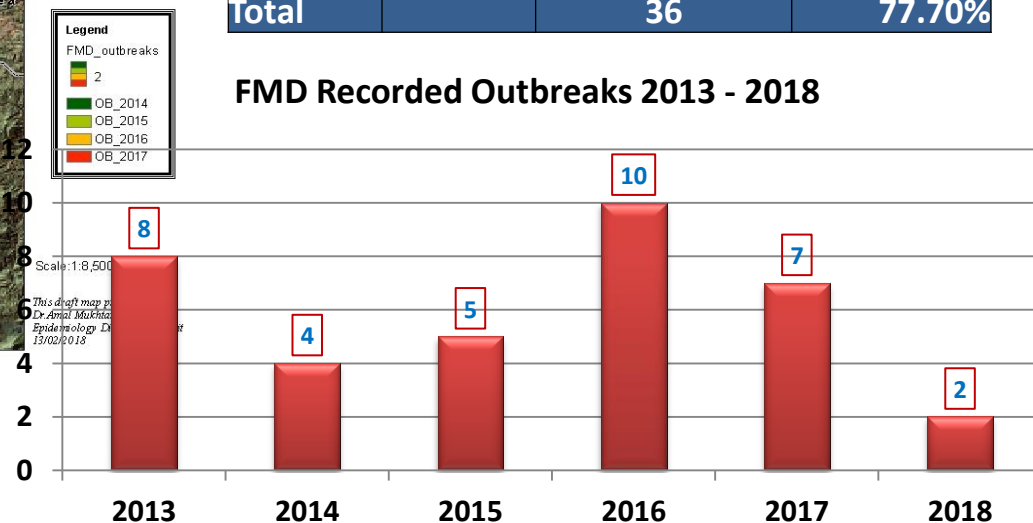


FMD Outbreaks from 2014 - 2017



Year	Species	No. Outbreak	Serotype
2013	Cattle	8	O & SAT2 (5)
2014	Cattle	4	O (2)
2015	Cattle	5	Not typed
2016	Cattle	10	O (1)
2017	Cattle	7	Not typed
2018	Cattle	2	Not typed
Total		36	77.70%

FMD Recorded Outbreaks 2013 - 2018



✓ Number of samples prepared to be sent to WRL are: 30 – 40

- ✓ In response to limit the spread of FMDV
- ✓ the animal are Quarantined
- ✓ Restriction of movement will be imposed
- ✓ Implementing bio-security measure



Progress along Stage 1 - Component 1 Active and Passive Surveillance in 2016-2017

1- description of surveillance activities:

Passive Surveillance, Notification received from:

- States at different levels from **livestock owners/ producers, veterinarians** in the field, **slaughterhouse/abattoir** inspection or a diagnostic **laboratory**
- Data collated in a monthly report (18 states) and send to the AH department through a notification network, where they compiled in one comprehensive epidemiological report reflecting the monthly Health status in the country, and will be used for further investigation, scanning and re-planning at AH department with the relevant stakeholders and to CVO for decision and to other departments for planning

Active surveillance:

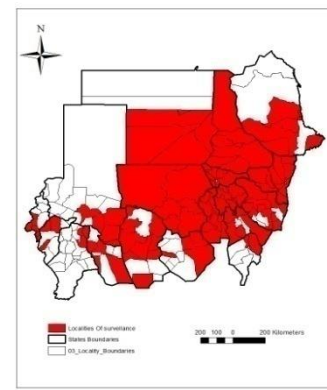
- Clinical and serological surveillance are routinely activities conducted in some areas in the country;
- Regular sero-surveillance been done on yearly bases in the whole country depending upon availability of funds, may be a risk –based; PDS
- The data obtained are used to: update the epidemiological knowledge of the disease



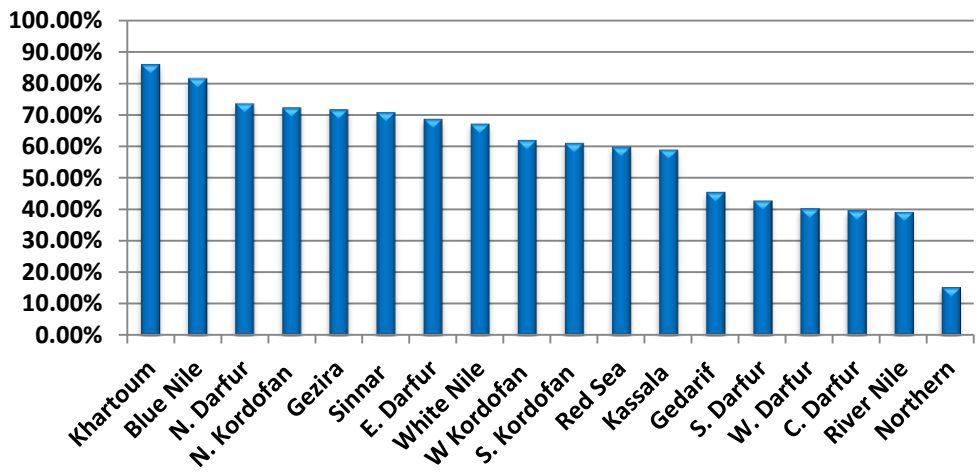
2.Results of the surveillance

Progress along Stage 1 - Component 1 Active and Passive Surveillance in 2016-2017

State	Total No. of sample	Total No. +ve	% positive
Khartoum	420	360	86.1
Blue Nile	140	112	81.75
N. Darfur	350	243	73.8
N. Kordofan	490	243	72.32
Gezira	560	398	71.71
Sinnar	490	341	70.89
E. Darfur	280	190	68.8
White Nile	630	409	67.26
W Kordofan	560	339	62.08
S. Kordofan	490	290	61.18
Red Sea	490	247	59.95
Kassala	700	381	59.06
Gedarif	770	329	45.56
S. Darfur	350	146	42.9
W. Darfur	350	137	40.4
C. Darfur	280	107	39.7
River Nile	420	161	39.36
Northern	350	53	15.45
OSP	8120	4486	58.72



Seroprevalence 2015 - 2016

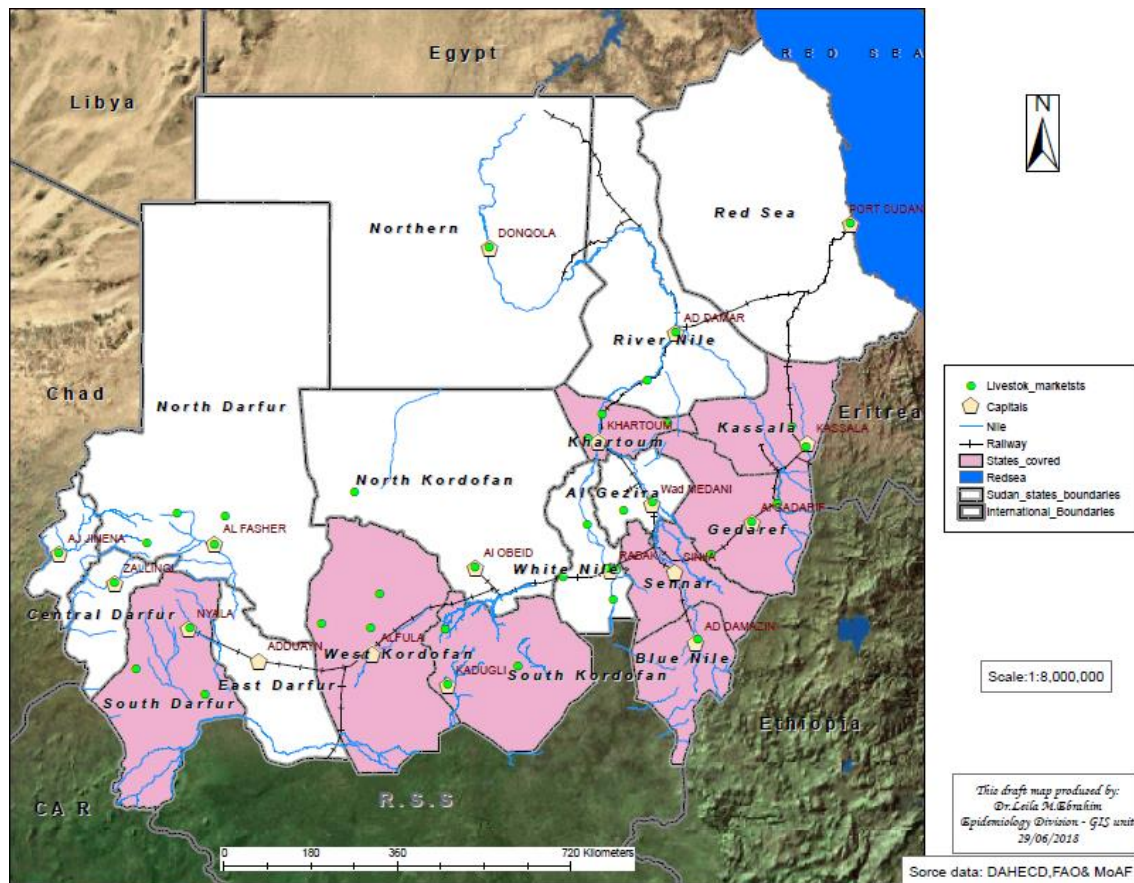




Progress along Stage 1 - Component 1

Identification of risk hotspots

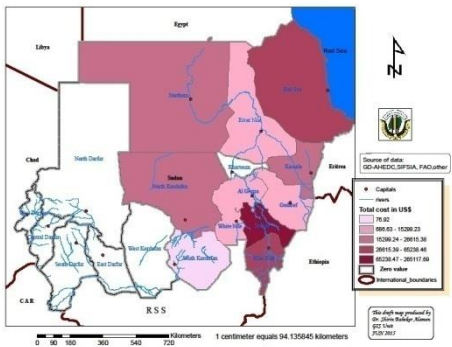
- ✓ **Blue Nile state bordering RSS and Ethiopia For mainly serotype O and SAT2**
- ✓ **Eastern border namely from East North down to east South: Kassala, Gedarif & sennar states (serotype A)**
- ✓ **Almuwailih Livestock market (KHT)**



The impact estimated does not include the losses due to trade restrictions which are large at both local and international levels, but are difficult to estimate.



Progress along Stage 1 - Component 1 Socio-economic impact



- ✓ The impact estimated does not include:
- ✓ the losses due to trade restrictions which are large at both local and international levels,
- ✓ It also does not take into account that the development of the livestock sector tends to be restricted by the present of FMD in terms of production system technology and breed advancement and investment slaughter, processing and marketing systems.

State	Direct losses	Costs of control	Total SDG	Total Cost in US\$	% of Cost Unit
Blue Nile	321168	3116.000	324284	49,889.85	10.35
Gedarif	40117	1760.000	41877	6,442.62	1.34
Kassala	133910	3515.000	137425	21,142.31	4.39
Gazera	40507.5	4305.000	44812.5	6,894.23	1.43
River Nile	4308	1338.000	5646	868.62	0.18
Northern	167300	5700.000	173000	26,615.38	5.52
Red Sea	420350	3700.000	424050	65,238.46	13.53
Sennar	1723264.5	0.000	1723265	265,117.69	55.00
White Nile	99290	155.000	99445	15,299.23	3.17
S.Kordofan	0	500.000	500	76.92	0.02
N. Kordofan	154052.5	4800.000	158852.5	24,438.85	5.07
Total	310,4267.5	28,889	3,133,157	482,024.15	100.00

- ✓ Finally, there was no estimate in these calculations in terms of the **costs of diagnostics and surveillance required to prevent and control FMD.**
- ✓ Therefore **US\$ 482 thousands** are likely to be a **very conservative estimate** of the national (eleven states in the study area) FMD annual impacts



Progress along Stage 1 - Component 1

Control measures, if implemented

Implemented control measures: Vaccination, the vaccine is:

Purified Oil Based Inactivated Foot and Mouth Disease Vaccine **“FOTIFAX™”**

Kenya Veterinary Vaccine Production Institute

Vaccine Name	Composition “Strains”	species	Dosage & administration	STORAGE	Preservation
FOTIFAX™	O, A & SAT2	Cattle, sheep, goats & pigs	Cattle 3 ml >3M Sheep, goats & pigs 2 ml	2°C – 8°C	15, 30, 80 dose vials

✓ Vaccination mainly practiced in large scale dairy farms in Khartoum state and other states where high potential for dairy production is present

1-2 slides



✓ Movement Monitoring and controls,

✓ Check points in place at border and interstates

✓ Motorbikes one day missions are routine activities for monitoring cross borders movement

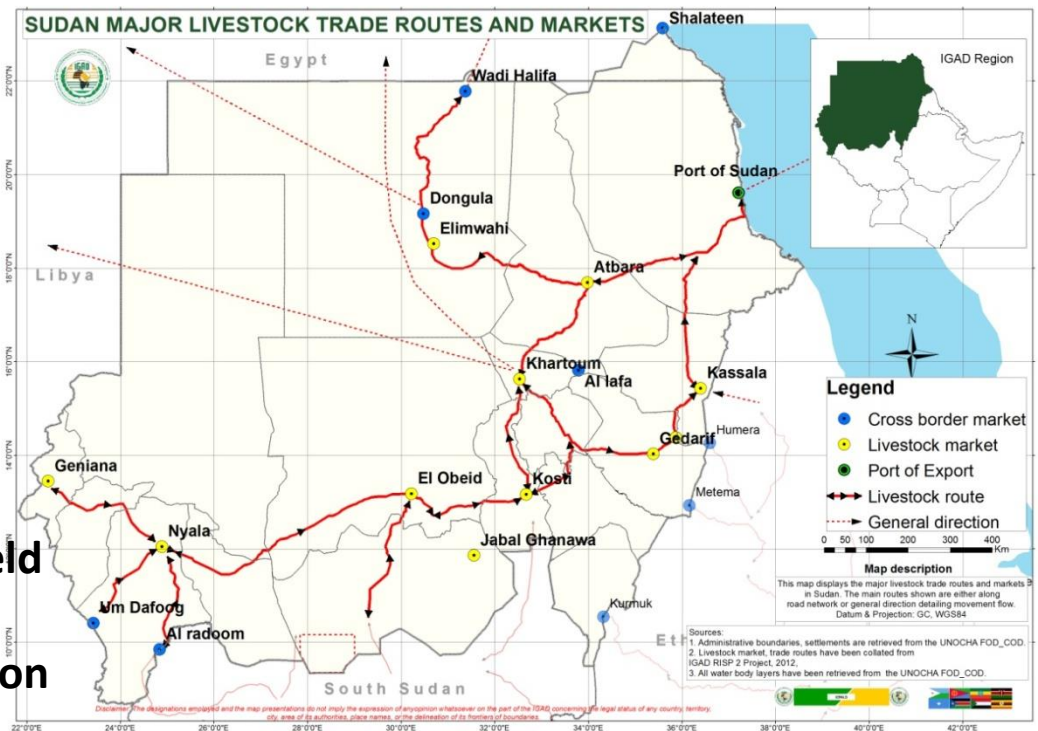
✓ Bio-security,

✓ A guide for bio-security implementation is in place

✓ Awareness campaigns:

✓ Are routine activities joint to all field mission on: disease recognition & notification, importance of vaccination & implementation of bio-security measures (TV and Radio programmes, booklets & leaflets , posters,

✓ 6784 beneficiaries been targeted





Progress along Stage 1 - Component 2

Activities to strengthen the veterinary services

Include a description of compliance with the OIE PVS Critical competencies (could be the format of a table or graph) – Indicate the date of the PVS mission

Critical competencies relevant to PCP-FMD Stage 1	Score required	Current score (OIE evaluation or self-evaluation)	Comments (if any)
I.2.A. Professional competencies of veterinarians	3	3	
I.3. Continuing education	3	2	
I.6.B. External coordination	3	3	
II.3 Risk analysis	3	2	
III.1 Communications	4	3	
III.2 Consultation with stakeholders	3	3	
IV.1 Preparation of legislation and regulations	3	2	



« **Treatment** »
Capacity Building,
Specific Activities
Projects and Program

7th – 11th
August
2016

7th – 20th
September
2013

PVS
Evaluation

11th – 28th
November
2014

PVS
Gap Analysis

including
Veterinary Services’
Strategic Priorities

Veterinary
Legislation

Public / Private
Partnerships

Veterinary
Education

Laboratory

PVS Pathway
Follow-Up
Missions

November
2015

*The OIE collaborates with
 governments, donors and other
 stakeholders*



Progress along Stage 1 - Component 3

Synergies to control other TADs

1. FMD-related activities that contribute to control other major TADs:

joint surveillance with CBPP, new check points for monitoring animal movement & control, guidelines for bio-security, training on epidemiology, disease investigation and PVM, identification of FMD vaccinated animal (same animal tested for brucellosis and a programme to test them against TB)

- **Strong veterinary services contribution to the control of other major diseases:**
- Well structured LPH facilitating collaboration and maximize synergies among stakeholders addressing Animal Health issues;
- adequate governance of Veterinary Services at state levels in accordance with OIE standards through capacity building programmes and alliances between the public and private sectors including farmers and private veterinarians (3Ps) (Reinforced the links between the state and the federal governance);
- 5 priority TADs control strategies enhanced through coordination and harmonization of surveillance and laboratory testing procedures ; (e. g PPR aligned to the regional strategy and the global PPR pathway);
- A 5 year programme to reform the gaps in veterinary services in place (LESP-SLSP & 3Ps).



- 1. Laboratory capability contribution to the control of other diseases:**
Capacity building at different levels and in different aspects addressing the diagnosis of TADs been implemented. A programme to improve diagnostic laboratory capacity and performance at national level and regional levels formulated (TCPs on process for the reforming process).



Gaps and request for support

The main gaps that need to be addressed :

- ✓ Value chain analysis study
- ✓ RBCS to be completed by the end of 2018, validated and endorsed.
- ✓ Expand the vaccination coverage in zone A
- ✓ Design a sero-monitoring programme in zone A
- ✓ Risk analysis
- ✓ Bio-safety and lab managements
- ✓ Laboratory Quality assurance.

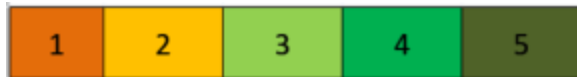
Needs for support from development partners to address the mentioned gaps:

- ✓ To finalize our RBCS
- ✓ Risk assessment
- ✓ Value chain analysis
- ✓ Survey data management and analysis
- ✓ Establishing Lab. Quality assurance S.
- ✓ Risk Mapping
- ✓ Training on:
 - ✓ diagnostic
 - ✓ Survey design
 - ✓ M & E



Provisional PCP-FMD Roadmap for Sudan 2017-2025

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Estimation in 2012	1	2	2	2	2	2	3	3	3	3	4			
Estimation in 2017	1	2	2	2	2	2	2	2	2	3	3	3	4	4





Progress along Stage 2 - Component 1

Implementation of risk-based control measures

Main **strategic** objective of the RBSP

- ✓ **Achieving Country PCP-FMD stage 3 in 2021**
- ✓ **Finalize RBCS by December 2018**

Description of vaccination plans (if in place) - Maps, tables

- Species, coverage, locations
- Vaccine(s) used

Detail on other control measures (movement controls, biosecurity, awareness campaigns....)

2-3 slides



Progress along Stage 2 - Component 1

Control measures, if implemented

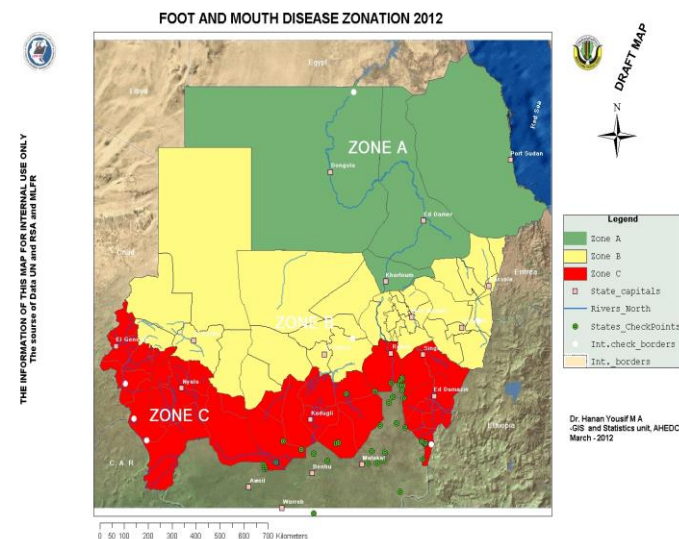
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1-2 slides

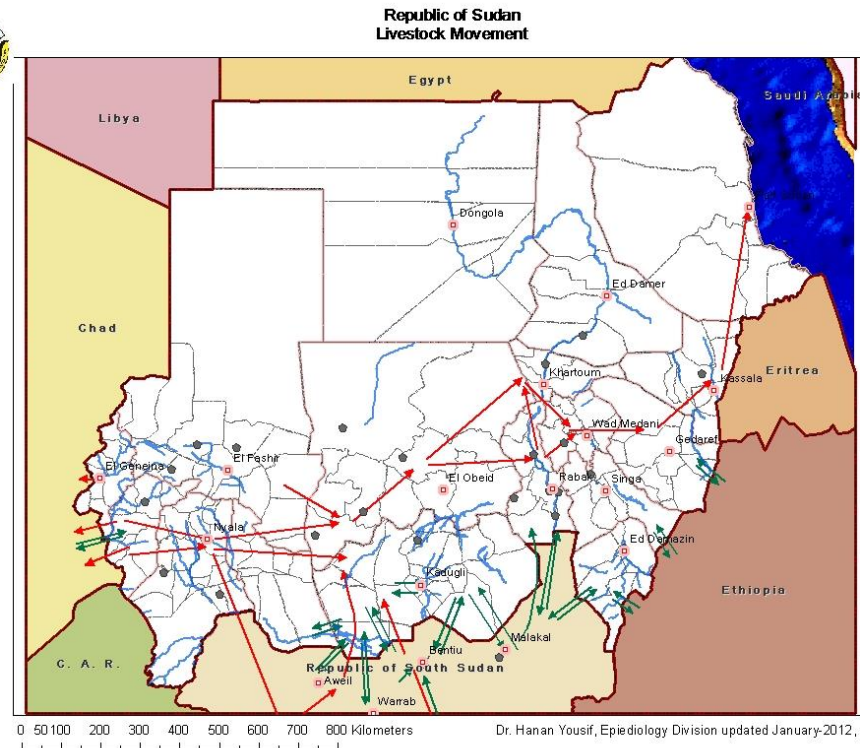


- ✓ **Species targeted are mainly:**
- ✓ **dairy cattle in 4 states in the most northern part of the country namely: Red Sea, River Nile, Northern and Khartoum states (in Green)**
- ✓ **Dairy cattle in neighboring parts to zone A “yellow”**
- ✓ **Strategic vaccination for cattle Exports upon request from importing countries**
- ✓ **Vaccination Strategy:**
- ✓ **Zone A “Green” vaccination coverage should be 75%**
- ✓ **Zone B “Yellow” vaccination coverage should be 50%**
- ✓ **Zone C “Red” vaccination coverage should be 25%**
- ✓ **cattle below 2 yrs of age twice a year,**
- ✓ **above 2 yrs once a year**
- ✓ **For Naïve animal booster dose administered 3 weeks a part from first dose**





- ✓ **Animal movement**
- Monitoring and control:**
- ✓ **Interstates monitoring and control check points installed and coordinated among neighbor states**
- ✓ **Cross borders check points for monitoring movement across border (Ethiopia, Eretria , RSS, Chad & CAR**
- ✓ **Bio-security measures and communication been implemented more aggressively implemented stage 2 specially for Zone A**



Legend

- Trade Routes
- Grazing Routes
- State_capitals
- livestockmarkets04
- Locality_Bound.
- State_Bound.
- Int_bound.

The information on the map is for internal use only



Progress along Stage 2 - Component 2

Activities to strengthen the veterinary services

Include a description of compliance with the OIE PVS Critical competencies (could be the format of a table or graph) – Indicate the PVS

Critical competencies relevant to PCP-FMD Stage 1	Score required	Current score (OIE evaluation or self-evaluation)	Comments (if any)
I.2.B. Competencies of veterinary para-professionals	3	2	
III.3 Official representation	3	3	
III.6 Participation of producers and stakeholders in joint programs	3	3	
IV.2 Implementation of legislation & stakeholder compliance	3	2	
II.5.A. Passive epidemiological surveillance	3	2	
II.1 Veterinary laboratory diagnosis	3	2	
II.2. Laboratory quality assurance	3	1	Implemented but no documentation
IV.6 Transparency	3	3	
I.1.A. Veterinarians and other professionals	3	2	
I.1.B. Veterinary para-professionals and other technical staff	3	2	



Summary

In conclusion

- ✓ The country is progressing along the PCP-FMD
- ✓ The risk assessment been done successfully
- ✓ The risk management is stepping towards a success
- ✓ Technical and financial support to achive stage 2 outcomes is highly appreciated in the areas mentioned in this presentation
- ✓ And event based control and population risk management is the ultimate goat we are targeting by 2024