Central Asia Regional Economic Cooperation Policy Dialogue on Regional Program for Control and Prevention for Transboundary Animal Diseases Astana, 23-25 April 2019

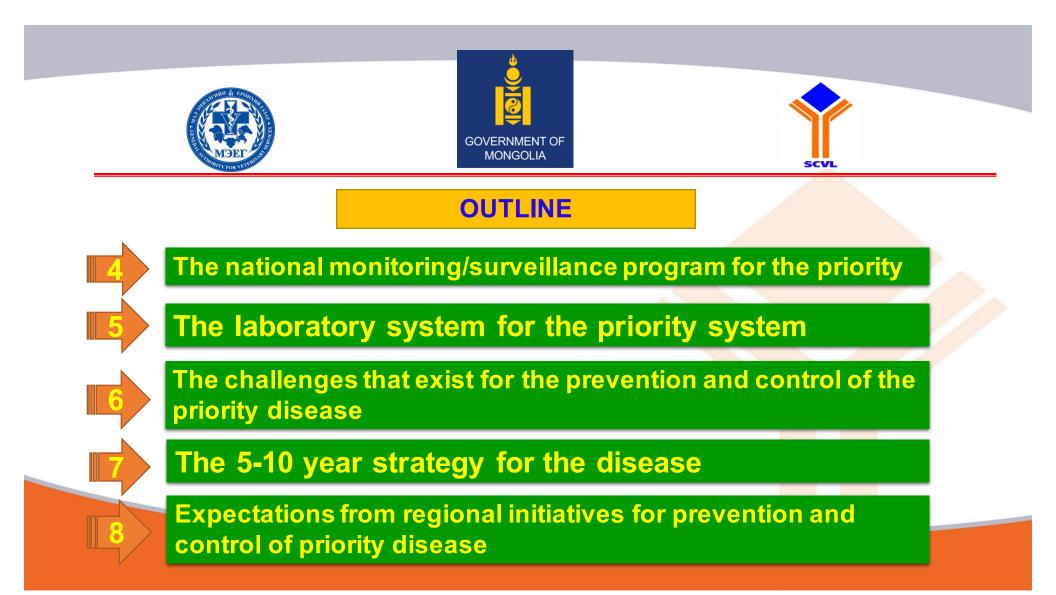
Country Presentation

MONGOLIA

Tumendemberel D. Director General, General Authoriy for Veterinary Services, Ministry of Food, Agriculture and Light Industry

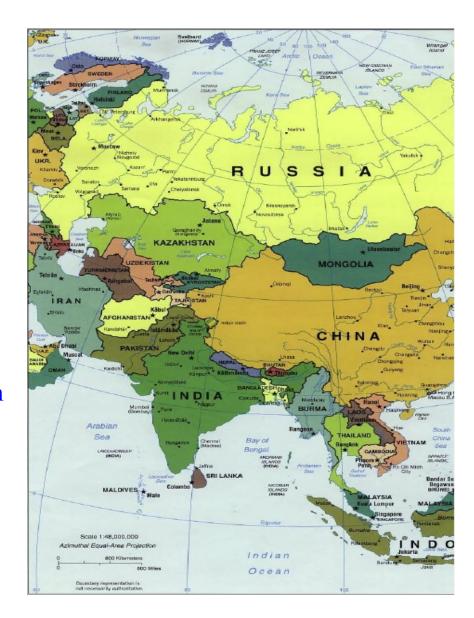
Mr. Ganzorig B. Director General State Central Veterinary Laboratory, GAVS, MOFALI





The Mongolia's headlines

Mongolia is located in the heart of Central Asia, sandwiched between the two superpowers China and Russia. Area: 1.566 thous sq. km Population: 3,061,600 (Dec, 2015 estimate) Capital city: Ulaanbaatar Land boundaries: 8,158 km, with Russia 3,485 km and with China 4,673 km Language(s): Mongolian (90%), Khazakh, Russian Religion (s): Buddhist 96%, Muslim, Christian and shamanism 4%



BRIEF INTRODUCTION OF ANIMAL HUSBANDRY

LIVESTOCK POPULATION:

HORSE CAMEL CATTLE \INCLUDING YAK\ SHEEP GOAT **TOTAL**



3.93 MILLION349.2 THOUSAND4.38 MILLION30.1 MILLION27.3 MILLION66.2 MILLION







General animal disease situation in the country

Date of

These countries have submitted the following immediate notifications to OIE in response to epidemiologically significant events. Click on an event to find more information

Reason for

Disease

Exceptional epidemiological events Year: 2014 •

Exceptional epidemiological events

Year: 2015 •

Summary	Report	Country	Notification	Disease	notification			Date resolved
۲	9	Mongolia	07/07/2014	Classical swine fever	First occurrence	Clinical disease	1	07/08/2014
۲	9	Mongolia	13/11/2014	Classical swine fever	Recurrence	Clinical disease	2	10/12/2014
۲	9	Mongolia	31/01/2014	Foot and mouth disease	Recurrence	Clinical disease	15	04/04/2014
۲	9	Mongolia	03/04/2014	Porcine reproductive/respiratory syndr.	Recurrence	Clinical disease	1	14/04/2014

These countries have submitted the following immediate notifications to OIE in response to epidemiologically significant events. Click on an event to find more information

Summary	Report	Country	Date of Notification	Disease	Reason for notification	Disease manifestation	Outbreaks	Date resolved
۲	9	Mongolia	10/04/2015	Classical swine fever	Recurrence	Clinical disease	1	07/05/2015
۲	Q	Mongolia	16/10/2015	Foot and mouth disease	Recurrence	Clinical disease	1	23/11/2015
۲	Q	Mongolia	06/03/2015	Foot and mouth disease	Recurrence	Clinical disease	5	03/06/2015
۲	Q	Mongolia	23/01/2015	Sheep pox and goat pox	Recurrence	Clinical disease	1	09/02/2015
۲	Q	Mongolia	16/02/2015	Sheep pox and goat pox	Recurrence	Clinical disease	116	27/06/2017

These countries have submitted the following immediate notifications to OIE in response to epidemiologically significant events. Click on an event to find more information

	Summary	Summary Report Co		Date of Notification	Disease	Reason for notification	Disease manifestation	Outbreaks	Date resolved
S	۲	9	Mongolia	18/01/2016	Classical swine fever	Recurrence	Clinical disease	3	04/01/2016
	۲	9	Mongolia	25/07/2016	Foot and mouth disease	Recurrence	Clinical disease	1	29/08/2016
	۲	٩	Mongolia	09/09/2016	Peste des petits ruminants	First occurrence in the country		11	15/11/2016

Exceptional epidemiological events Year: 2016 •

General animal disease situation in the country

Exceptional epidemiological events Year: 2017 - 2018

These countries have submitted the following immediate notifications to OIE in response to epidemiologically significant events. Click on an event to find more information

Summary	Report	Country	Date of Notification	Disease	Reason for notification	Disease manifestation	Outbreaks	Date resolved
۲	9	Mongolia	13/02/2017	Foot and mouth disease	Recurrence	Clinical disease	69	30/06/2018
۲	9	Mongolia	18/01/2017	Peste des petits ruminants	Recurrence	Clinical disease	4	15/09/2017

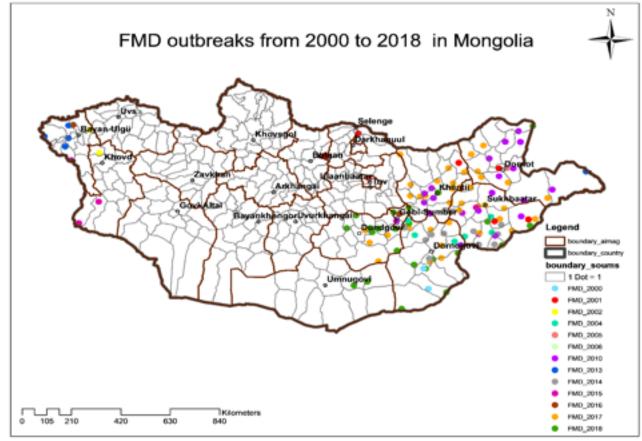
Exceptional epidemiological events Year: 2019 •

These countries have submitted the following immediate notifications to OIE in response to epidemiologically significant events. Click on an event to find more information

Summary	Report	Country	Date of Notification	Disease	Reason for notification	Disease manifestation	Outbreaks	Date resolved
۲	9	Mongolia	15/01/2019	African swine fever	First occurrence in the country		11	Continuing

2

Detailed information about the disease occurrence of the priority disease



Mostly dominated outbreaks O serotype of FMDV, but there were reported 3 cases A serotypes and one case Asia-1 serotype

After 26 years of freedom, an FMD outbreak occurred in the south-eastern region of Mongolia with type O virus in April 2000. The western part of Mongolia had been free from FMD from 2002 until an incursion in 2013. Prior to the 2013 incursion, the western part of the country had been considered by Mongolian authorities to be free from FMD without vaccination. Western region, designated for FMD free zone, has free from **FMD** been incursion since 2015.

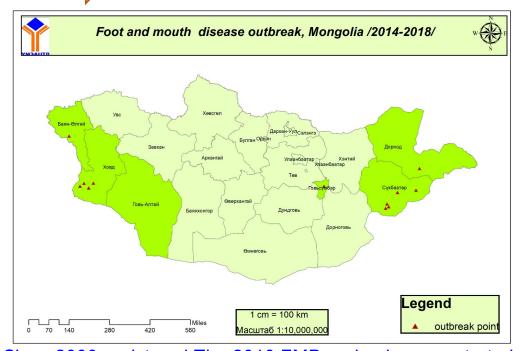
2

Detailed information about the disease occurrence of the priority disease

Outbreak relationships based on genomic sequencing of outbreak viruses

Years	Serotype	Topotype	Genotype/strain	Related viruses
2000	0	ME-SA	Pan-Asia	China 1999
2001	0	ME-SA	Pan-Asia	China 1999
2002	0	ME-SA	Pan-Asia	Mongolia 2000/2001
2004	0	SEA	Mya-98	
2005	Asia-1			Russia, China 2005
2010	0	SEA	Mya-98	Russia 2010
2013	А	ASIA	SEA-97	Kazakstan 2013
2014	0	ME-SA	Pan-Asia	Vietnam 2013
2015	0	ME-SA	Mya-98	Mongolia 2010
2015	0	ME-SA	Pan-Asia	Russia/Prymorskya 2012
2016	А	ASIA	SEA-97	Russia/Zabaikalsky/2013
2017	0	ME-SA	Pan-Asia	China 1999

Detailed information about the disease occurrence of the priority disease



Since 2000 registered The 2010 FMD endemic wave started in Dornod Province in the east with type O virus. As of 24 November 2010, the Government reported outbreaks in 24 soums of 5 provinces. In 2015, FMD incursions were reported in March in Bulgan soum of Khovd Province and Uul-Bayan soum, Sukhbaatar Province.

2015 2016 2014 2017-2018 Year/month January 3 11 2 **February** 8 March 3 April 4 2 May June 4 July 5 1 August 9 13 **September** October 11 November 3 December 4 TOTAL 14 3 66 1

Timing and outbreaks of FMD in

2014-2018

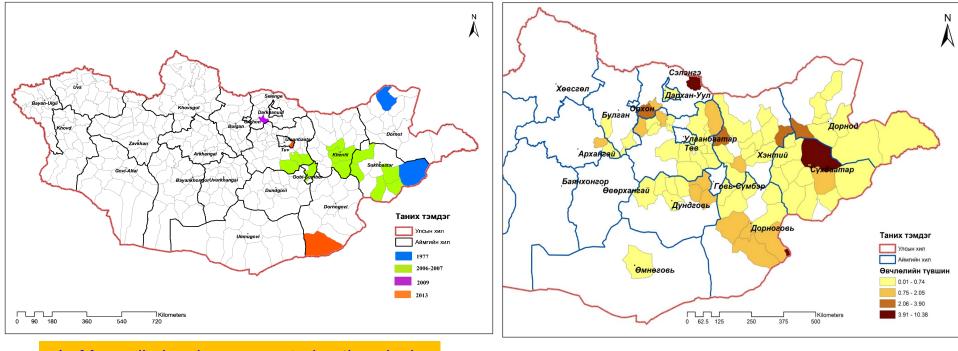


Detailed information about the disease occurrence of the priority disease

Νο	Name of vaccine	Producer	Туре	Registration number
1	Inactivated aluminium hydroxide multi valent vaccine	Russia, ARRIAH	O, A, C, Asia-1, SAT- 1,2,3	89
2	Oil adjuvant trivalent vaccine AFTOVAXPUR	France, Merial	O, A, Asia1	180
3	Bi and trivalent vaccine, AFTOVAX	Kazakstan	O, A and O, A, Asia1	181
4	Inactivated aluminium hydroxide monovalent vaccine	China	0	267
5	Raksha Ovac oil adjuvant trivalent vaccine	Indian Immunologicals	O, A, Asia-1	223
6	Oil adjuvant trivalent vaccine	Russia, ARRIAH	O, A, Asia-1	359
7	Oil adjuvant trivalent vaccine	Russia, Pokrov	O, A, Asia-1	414
8	Foot and Mouth Disease Bibalent vaccine inactivated	Lanzhou Biopharmaceutical Factory of China Animal Husbandry Industry Co.LTD	O, A, Asia-1	426
9	Decivac FMD DOE, Trivalent	"Intervet India Pvt. Ltd" India	A, O, ASIA-1	458
10	FMD and Mouth Disease Trivalent vaccine	"Jin yu bao ling bio-parmac- utical" Co.,LTD, China	A, O, ASIA-1	521
11	Inactivated aluminium hydroxide bivalent vaccine	Russia, Shelkovskii Biocombinat	0, A	522
12	Futvac-foot and mouth disease vaccine	Brillant bio pharma limited, India	Ο, Α	577

THE OUTBREAK CASES OF SHEEP AND GOAT POX IN MONGOLIA

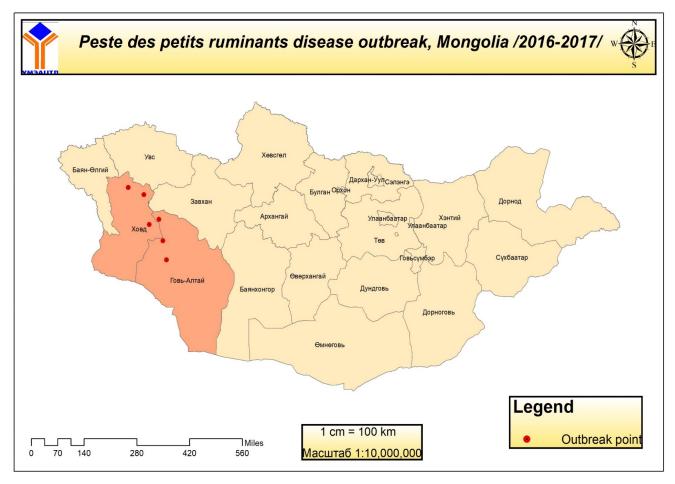
OUTBREAKS OF SHEEP AND GOAT POX IN 2015-2017

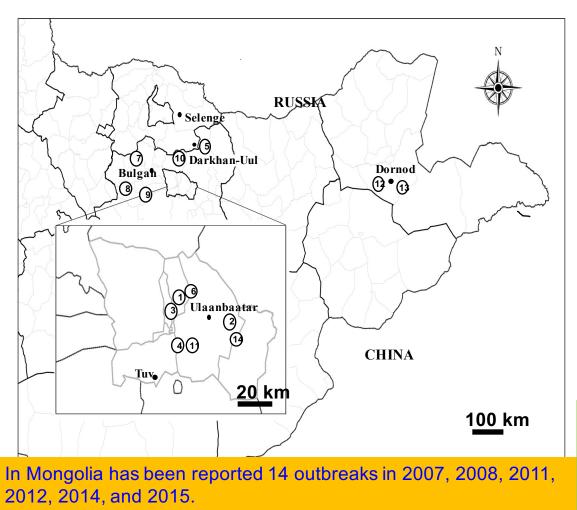


In Mongolia has been reported outbreaks in 1977, 2006-2007, 2009, 2013, and 2015

It has been reported 116 outbreaks in 2015-2017

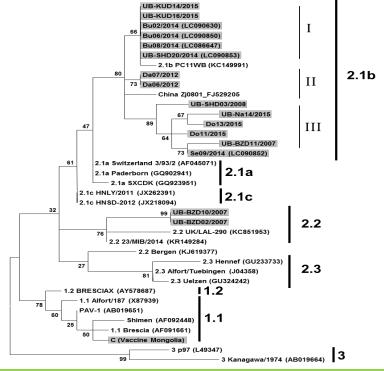
OUTBREAKS AND SURVEILLANCE OF PPR





Current situation of classical swine fever

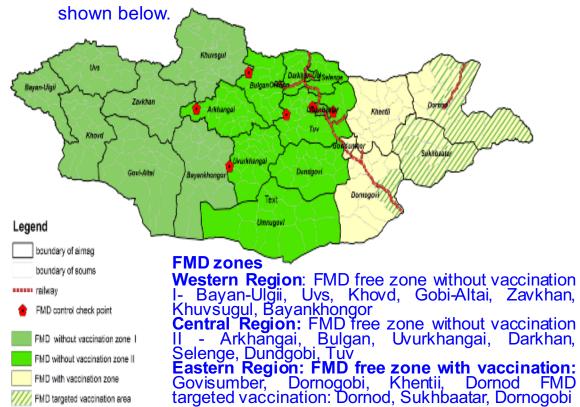
Molecular characterization of CSFV in Mongolia



Sequences of the 14 CSFV Mongolian isolates (2007–2015) and vaccine C-strain are indicated with gray highlights. The 13 sub-genotype 2.1b isolates were further classified into three clusters (I–III) followed by bootstrap values of phylogenetic analysis. Country name of each Mongolian CSFV isolate was omitted from strain name

The national control program for the priority disease

For implementation of the mid-term FMD control strategy, decree A/124 of 2014 of the Minister of food Agriculture and Light Industry the territory of Mongolia will be divided into three regions,



Each of these zones is epidemiologically distinct; therefore the risks of an FMD outbreak are dissimilar and require policies to implement unique activities. For example, control on movement of individuals. livestock and transportation arriving from the Eastern and Central regions to the Western region, implementation of quarantine conducting measures. surveillance for identification of nonstructural proteins, guaranteeing an FMD-free situation, increasing public awareness and implementing early warning and response.

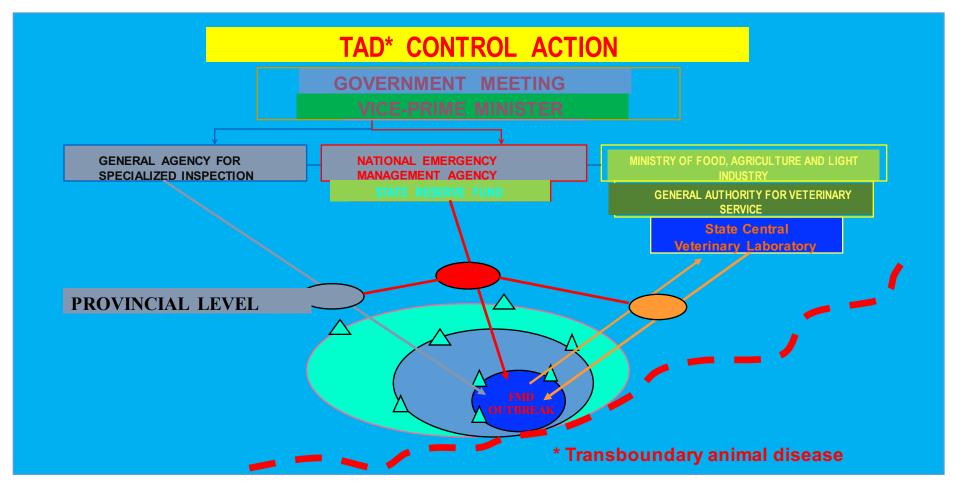
The national monitoring/surveillance program for the priority

4

Province	Species	2015	2016	2017
	Total	55,576,100	61,110,800	66,218,989
	Horse	3,258,600	3,590,300	3,939,813
Total number of livestock (by species)	Cattle	3,694,400	3,990,900	4,388,455
Total number of trestock (by species)	Sheep	24,780,700	27,679,900	30,109,888
	Goat	23,474,500	25,448,600	27,346,707
	Camel	367,900	401,100	433,093
	Total	21,881,000	24,461,600	26,081,062
	Horse	871,400	989,700	1,237,367
FMD free zone without vaccination I Bayan Ulgii, Khovd, Gobi- altai, Uvs, Zabkhan,	Cattle	1,256,400	1,392,600	1,685,088
Bayankhongor Khuvsgul)	Sheep	8,964,800	10,151,500	11,129,404
bayankhongor kitavsgarj	Goat	10,653,300	11,779,800	11,869,566
	Camel	135,100	148,000	159,637
	Total	23,337,400	25,841,400	27,272,603
FMD free zone without vaccination II [Horse	1,533,400	1,681,200	1,766,054
Arkhangai, Bulgan, Uvurkhangai,	Cattle	1,707,000	1,840,600	1,914,547
UmnuGobi,Tuv, DundGobi, Darkhan Uul,	Sheep	10,899,600	12,272,400	12,961,858
Orkhon, Selenge, Ulaanbaatar)	Goat	9,018,900	9,850,000	10,416,509
	Camel	178,500	197,200	213,635
	Total	10,357,700	10,807,800	12,435,588
	Horse	853,800	919,400	1,033,851
FMD with vaccinetion zone (Govisumber,	Cattle	731,000	757,700	867,471
Dornod, Dornogovi, Khentii and Sukhbaatar)	Sheep	4,916,300	5,256,000	6,096,051
	Goat	3,802,300	3,818,800	4,378,460
	Camel	54,300	55,900	59,755

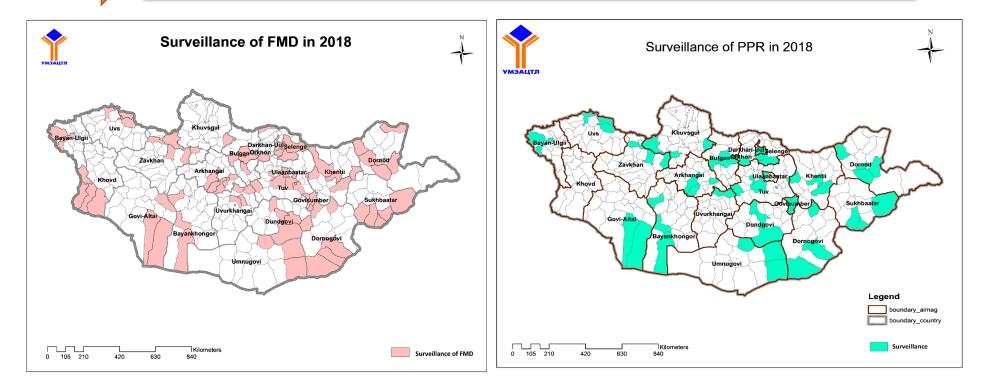
The main components of the current national FMD control and eradication strategy in place are:

- Outbreak investigation Team must be sent from Central level consisting of an epidemiologist, laboratory staff and other relevant authorities
- Quarantine in the outbreak and surrounding area with animal and transport movement control, according to the Law on State boundary quarantine control of animals, plants, raw materials and products of animal and plant origin, 2003 and the guideline to control FMD. Ministerial Decree, No. A/67, 2010 and has been updated in 2014.
- Vaccination, including emergency and routine vaccination in outbreak and suspected zones identified
- Modified stamping out of infected animals
- Serological and clinical surveillance in domestic animal herds according to OIE Guidance and observation over movement of Gazelle populations in outbreak and surrounding areas
- Public awareness campaign

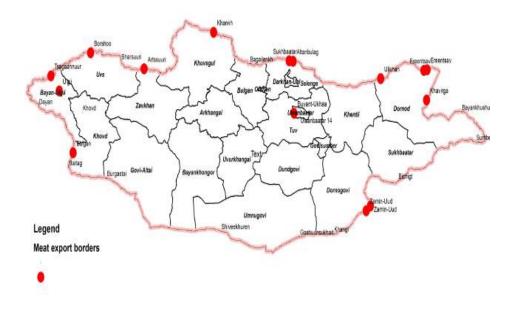


TAD laboratory diagnosis is carried out in Mongolia, both at central level (in the SCVL) and at provincial level. In case of an initial positive or suspect result, further confirmatory testing is conducted at the SCVL using OIE recommended tests.

The national monitoring/surveillance program for the priority



Location Checking points meat export

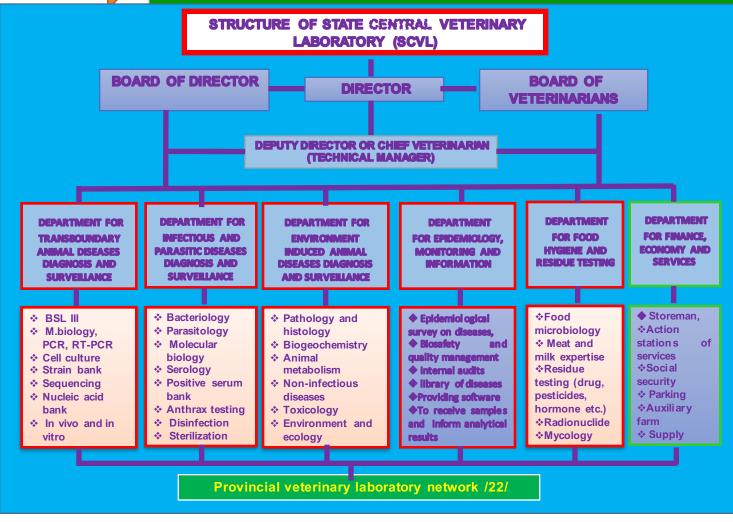


Location Checking points import and export live animals



Legend animal for slaughter

The laboratory system for the priority system



The SCVL is the hea d institution of the Veterinary Laboratory Network, which includes 22 pr ovincial laboratories, is supplied with ELISA equipment and can diagnose FMD and other diseases. It conducts routine and emergency diagnostic and surveillance tasks for FMD, using ELISA (LPB-ELISA -Pirbright, UK, SPC-ELISA -Prionics, Lelvstad, NSP- ELISA (3AB - Jenobiotech, Korea and 3ABC - IDEXX, USA), RT-PCR and Real-time PCR, Gene Sequencing and Virus isolation based on cell culture system for FMDV detection. SCVL is now capable of obtaining a result from FMD diagnostic tests within 48 hours and informs the result to upper and lower standing institutions within 2 hours according to the rule on TAD diagnosis and confirmation.

Governmental Regulatory Agency National Center for Metrology and Standardization is responsible for the accreditation of all diagnostic and food security laboratories in Mongolia. Each laboratory should apply request for accreditation to above mentioned agency and the agency will be appointed independent expert-working group. At the first stage, a working group will be revised according to ISO/MNS 17025 all documents, submitted by requested laboratories.

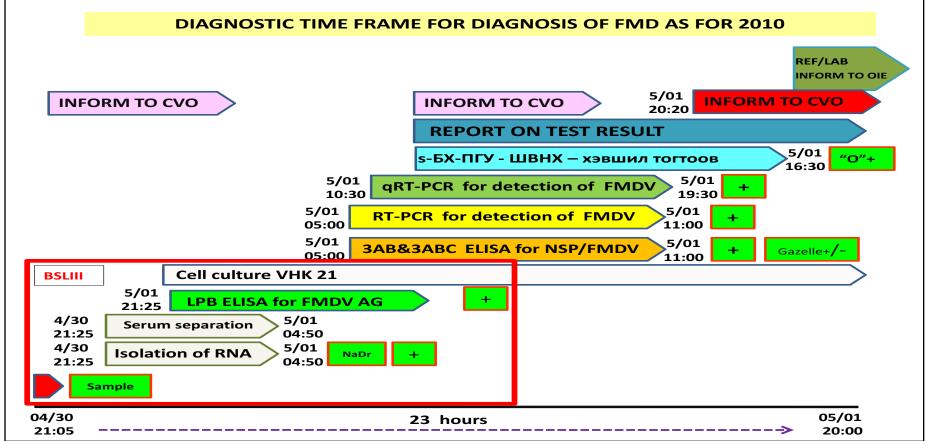
The SCVL was accredited by MASM under existing standards of Mongolia in 1999, 2001, 2003, 2005, 2007, 2011, 2015 and 2017. As required in an accredited laboratory, the SCVL applies an internal quality management system, which is managed by its own Quality Assurance Manager. Also provincial veterinary laboratories are accredited by MASM every 4 years.

SCVL employees assigned to FMD diagnosis and surveillance have been trained in the use of conventional serological and molecular techniques in Russia (Regional FMD Reference Center, ARRIAH, and Vladimir), the Netherlands (CIDC, Central Veterinary Institute, Lelystad), USA (Foreign Animal Disease Diagnostic Center, Plum Island, New York) and Korea (National Veterinary Research and Quarantine Service, Anyang). More than 30 local and laboratory trainings for practicing veterinarians and provincial veterinary laboratory staff on clinical and serological surveillance diagnosis of FMD and serological surveillance were performed by SCVL during the last 18 years.

OIE twinning programme on FMD diagnosis between SCVL, Mongolia and NIAH, Japan has been successfully conducted in 2016- 2018.

Since 2013, the 22 laboratories of city and provinces are able to diagnose for FMD by ELISA and PCR. From the SCVL was conducted proficiency test for aimag level laboratory to do NSP-ELISA for detection antibody of FMD. As a result, all participation had good effective (88-100 %) for NSP ELISA tests.





Tests used for TAD diagnosis and surveillance in SCVL

No	Disease name	Test name	Diagnostic kits					
		RAPID TEST	Ag detection-SVANOVA, Sweden Ag detection and serotype O, A, Asia-1 detection-Japan and Korea					
		NSP-ELISA	3ABC Ab - NS ELISA, Priocheck, Swiss, IDVET France, Median Korea					
		SP-ELISA	Ag detection ELISA and LPB-ELISA, Pribright, UK For: O, A, Asia-1 and SP ELISA, IZLER, Italy					
1	Foot and mouth disease	RT – PCR (O, A, Asia-1)	Invitrogen kit, primer design from OIE manual for : common, O, A, Asia-1					
		REAL-TIME RT-PCR	BioRad, Takara machine, kit ABI, Qiagen, Invitrogen					
		CFT	ARIAH, Russia					
		Gene-Sequence	Applied Byosistems ABI-3130, USA					
		Cell culture system	BHK-21, IBRS-2 cell line, ZZR and LFBK					
		Virus isolation	Established cell lines					
		VNT	Standart AB from Pirbright, UK					
2	Rinderpest	ELISA	Ab ELISA and Ag AGID, Pribright, UK,					
3	Contagious bovine pleuropneumonia	ELISA	Ab ELISA-Institute Pourquier, France					
4	Classical swine fever	ELISA	Ab& Ag ELISA-IDEXX, USA					
		ELISA	Ab& Ag ELISA- Jenobiotech, Korea					
	Highly pathogenic avian	AGID, HA, HI, RT – PCR, Inocul. in	Rapid test-Synbiotics, USA and Anigen, Korea					
5	influenza	embryonated eggs	HA-HVRI, China, IZP, Italy and NVSL, USA					
			HI- NVSL, USA					
		ELISA	Sheep pox antibody detection ELISA from IDVET, France					
	Sheep/goats pox	PCR	IAH, UK designed primers from OIE					
6		Gen Sequence	IAH, UK designed primers from OIE, ABI kit for 3130					

The challenges that exist for the prevention and control of the priority disease

In Mongolia, compensation of 90% of the livestock market value is paid following the destruction of diseased animals due to any TAD, according to Law on Animal Health. A total of 7.1 billion MNT (appro 3.0 million USD cumulative) were paid by Government to livestock owners in 2000-2017.

Number of culled livestock, by species in FMD outbreaks of 2000-2017

	Years	Camel	Cattle	Sheep	Goat	Pig	Total
1	2000	54	552	152	158	-	916
2	2001	4	1	16	20	2	43
3	2002	-	435	46	4	-	485
5	2004	-	2	157	88	-	247
6	2005	-	186	28	21		235
7	2006	-	4	20	-	-	24
8	2010	10	7	14	6	-	37
9	2013	-	765	411	179	-	1,355
9	2013	-	32			-	32
10	2014	-	3	49	18	-	70
11	2015	-	-	-	-	-	948 *
12	2016	-	173				173
13	2017	-	7525	1215	712	231	9,683
Т	otal	68	9,685	2,108	1,206	233	13,300

Total compensation for destroyed affected animals by FMD (2000-2017)

No	Year	Number of provinces	Number of soums	Total number of destroyed animal	Componsati o n (thousand tugrug)
1	2000	1	2	916	48,456
2	2001	6	16	1,201	96,720
3	2002	2	3	485	36,804
4	2004	3	8	2 317	254,325
5	2005	1	1	235	17,700
6	2006	1	1	24	774
7	2010	5	25	25,933	2,894,200
8	2013	3	4	1,387	568,165
9	2014	3	13	3,454	1,719,000
10	2016	1	1	173*	
11	2017	8	42	9,683	1,484,000
То	tal	34	116	43,491.00	7,120,144

1USD=2630 MNT (Mongolian tugrik)



The challenges that exist for the prevention and control of the priority disease

Current FMD Finding

	Activities of		2010	2011	20)12		2013		20	14	2	015
Νο	FMD prevention and control	Unit			Spring	Autumn	Spring	Summer	Autumn	Spring	Autumn	Spring	Autumn
1	Vaccine	million MNT	1034,0	0 *	0 *	0 *	0 *	0 *	0 *	5 642		3 000	
2	Service for vac	million MNT	2 413	1 627	1 915	1 348	1 563	1 076	1 374	1 116	1 150	545	
3	Lab diagnosis	million MNT	50	70		70						70	
4	Diagnosing device (government)	million MNT	30	30	50	30			100	135		166	
5	Diagnosing device (project, other)	million MNT							**				
5	Quarantine	million MNT				360							
6	Salary	million MNT					520			520		520	
7	Compensation	million MNT										1 719	Compe nsation 2014
	Total		2 493	1727	1 965	1 808	2 083	1 076	1 474	7 412	1 150	6	020

1USD=2630 MNT (Mongolian tugrik)

The 5-10 year strategy for the disease

- The Government of Mongolia updated the FMD Control strategy in 2014 and approved "FMD Control Program-Midterm from "2014-2018". The control program aims to control and eradicate FMD outbreaks in Mongolia.
- The control strategy is focused on preventing FMD incursion across the border and will establish an FMD free zone in Western part of Mongolia that can be recognized by neighboring countries and OIE in 2020.

Objectives at different stages:

FMD Control strategy aims to achieve:

- Establish a proper legislation framework that can prevent and control FMD and revise the strategy based on scientific studies and proper knowledge.
- Establish technical and financial resources to function as an early warning and early detection system in animal health and to harmonize laboratory diagnostic capacity with international standards;
- Improve information flows from the lowest administration unit up to headquarters during the outbreak, including feedback, regular FMD monitoring and evaluation system prevention and control activities.
- Establish a proper mechanism sharing information and collaboration with neighboring countries and harmonize control strategy with neighboring countries' strategy;
- To achieve an FMD-free zone without vaccination in the Western part of Mongolia namely Bayan-Ulgii, Khovd, Uvs, Gobi-Altai, Zavkhan, Khuvsgul and Bayankhongor provinces;
- 1. <u>National level</u>: A proper national legislation framework and policy will be established for FMD control, the National veterinary service will be harmonized with international standards and a command chain;
- 2. <u>Western region</u>: Bayan-Ulgii, Uvs, Khovd, Gobi-Altai, Zavkhan, Khuvsgul and Bayankhongor will be achieve status as an FMD-free zone without vaccination, recognized by neighboring countries and OIE;
- 3. <u>Central region</u>: Epidemiological studies have been conducted on FMD in order to better understand free status and remain free from FMD;
- 4. Eastern region : Epidemiological study and risk assessment have been conducted and FMD outbreaks have been controlled;

Expectations from regional initiatives for prevention and control of priority disease

According to the new animal health law, General Authority for Veterinary Services (GAVS) is planning to introduce new veterinary certificate to improve animal movement control, improve animal health assurance and trace-ability system of animal and animal products. Draft of new veterinary certificate system was initiated in 2017 and successfully conducted in 15 soums of 4 provinces by the end of 2018. The new veterinary certificate system was developed based on the concept of Chapter 4.1 of the OIE Terrestrial animal health code. New veterinary certificate system will be introduced throughout the country from beginning of 2019 as stated in the decree of Director General of GAVS, CVO and OIE Delegate of Mongolia.

Secondary laws and by-laws in relation to the "Animal health" law are being re-developed and approved. We are currently developing an emergency preparedness plan of the highly contagious diseases and as planned, it will be approved by the Minister for Food, Agriculture and Light Industry in the first quarter of 2019.

In order to prevent from unexpected risks in near future, FMD vaccination is being done in the sensitive animals of the eastern region with high risky and central region.



Expectations from regional initiatives for prevention and control of priority disease

VETERINARY LABORATORY SERVICES - SUMMARY

- IMPROVE CAPACITY DIAGNOSTIC TESTING (DETECTION AND CONFIRMATION)
- **IMPROVE SURVEILLANCE FOR PREVALENCE** (Brucellosis, FMD and etc)
- CONFIRM TESTING FOR ERADICATON PURPOSES (EIA, LEUC., BRUC.)
- APPLY TESTING FOR DISEASE FREEDOM CONFIRMATION TO OIE (RINDERPEST, CBPP, FMD, BSE-country, regional) AND OTHER CHRONIC INFECTION – provincial or aimag or farm level)
- CONFIRM TESTING FOR VACCINATION COVERAGE AND IMMUNE RESPONSE (FMD, PPR, Rabies, ANTHRAX AND ETC)
- JOINT RESEARCH ON PRIORITIZED FIELD
- ESTABLISHMENT NEW VETERINARY REGIONAL LABORATORY



PROPOSAL ACTIONS FOR REGIONAL INITIATIVES

- To exchange instantly the information on transboundary animal diseases through neighboring and bordering countries
- The countries in the region need to improve movement control and, if necessary, establish a control and disinfectant facility along the border
- To create an equal joint requirement from the General Authority for Veterinary Service of the participating countries for private businesses and enterprises engaged through the state border.
 - To share the information on vaccine strain and serotype for prevention against transboundary animal diseases
- Regular meetings and discussions for exchange of information at the level of bordering and neighboring countries
 - ✤ To exchange specialist and workshop and training program for trainee
 - To submit regularly the report of the outbreak of TAD to the OIE
 - ✤ To exchange and transfer the advanced laboratory diagnostic methods and technologies
- To create the technical promotion program of diagnostic and surveillance of priority disease for improving the trade of regional countries.

