



# ***Ministry of Agriculture and Livestock***

"Sustainable food system and natural resources for the equitable social and economic well-being"

## ***LUMPY SKIN DISEASE VACCINATION STRATEGY AND IMPLEMENTATION PLAN***



Presentation by:

**National Centre for Animal Health,**

**Department of Livestock**



# ***PRESENTATION OUTLINE***



***Current Situation of LSD in Bhutan***



***Vaccine Procurement***



***The Strategy***



***HR Deployment***



***About the Vaccine***



***Vaccine Distribution***



***Data Management, Progress Assessment and Monitoring***



***Adverse Reactions***



***Reference Materials***





# CURRENT SITUATION



S.N Dzongkhag Name	Live Cases:		Death Cases:		Total Live Cases	Total Death Cases	Apparent CFR
	Young (<1yr)	Live cases: Adult (>1yr)	Young (<yr)	Death Cases: Adult (>1yr)			
1 Bumthang	16	126	7	33	142	40	21.98%
2 Chhukha	30	484	15	33	514	48	8.54%
3 Dagana	188	796	18	41	984	59	5.66%
4 Gasa	1	71	0	6	72	6	7.69%
5 Haa	177	650	16	58	827	74	8.21%
6 Lhuentse	176	632	0	38	808	38	4.49%
7 Monggar	180	1,003	17	108	1,183	125	9.56%
8 Paro	167	1,348	17	193	1,515	210	12.17%
9 Pema Gatshel	92	480	5	31	572	36	5.92%
10 Punakha	175	605	11	23	780	34	4.18%
11 Samdrup Jongkhar	184	383	21	38	567	59	9.42%
12 Samtse	261	815	32	37	1,076	69	6.03%
13 Sarpang	406	668	50	85	1,074	135	11.17%
14 Thimphu	82	1,082	17	247	1,164	264	18.49%
15 Trashigang	73	703	4	60	776	64	7.62%
16 Trashi Yangtse	42	239	3	8	281	11	3.77%
17 Trongsa	58	423	1	11	481	12	2.43%
18 Tsirang	558	1,439	115	88	1,997	203	9.23%
19 Wangdue Phodrang	112	477	9	35	589	44	6.95%
20 Zhemgang	35	171	1	5	206	6	2.83%
Total/ Average	3,013	12,595	359	1,178	15,608	1,537	8.32%





# VACCINE PROCUREMENT



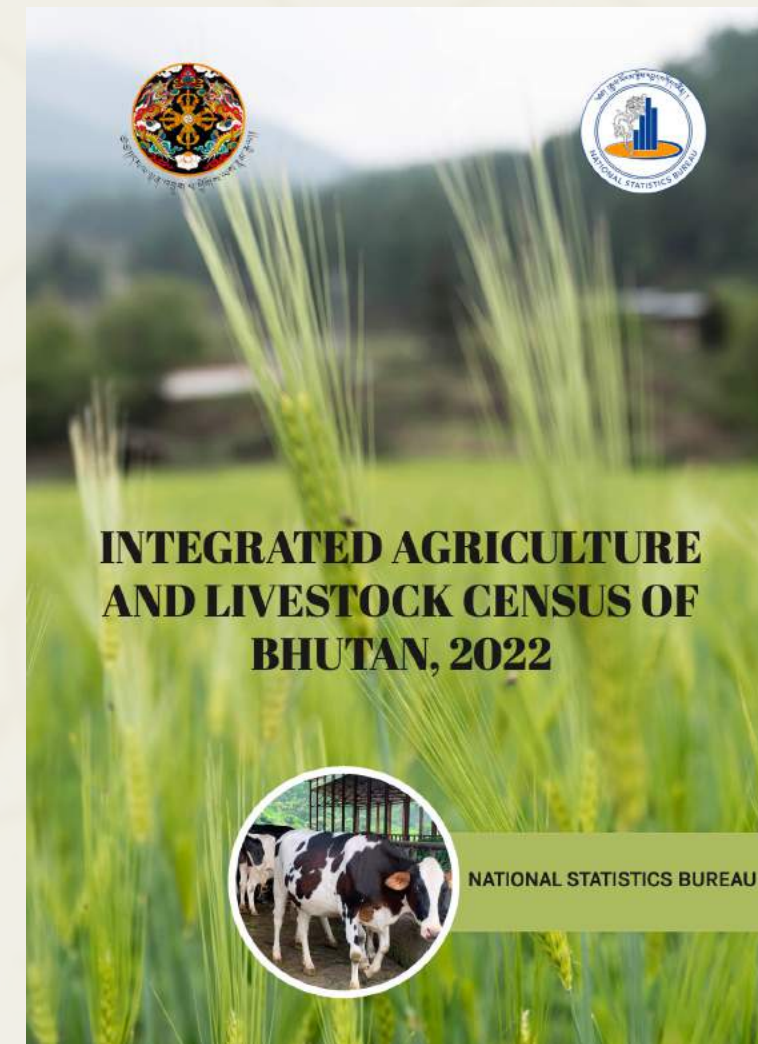
Particulars	Value (Nos.)	Remarks
Total eligible population	293291	Cattle - 254897, Mithun - 300, Yak - 30328, Zo-zom - 7435, Buffalo - 331
Buffer stock	45460	15.5 % of the total population
Total no. of doses required	338751	
No. of doses per vial	50	50 doses per vial preferred over other presentations
Total no. of vials required	6775	

## QUANTITY PROCURED

Cost per dose inclusive of shipping charge and other miscellaneous cost = **Nu. 61 per dose**

## COST INCURRED

Particulars	USD	BTN
Total cost for vaccine	237125	19735913.75
Total cost for transshipping	9056.92	753807.4516
Bank charges (BoB) for vaccine purchase	-	41220.45
Bank charges (BoB) for transshipping	-	3253.45
Import Authorization	-	300
Total Cost (BTN)	-	20534495







# THE STRATEGY



## Mass vaccination using homologous vaccine

Same dose of 2ml

**Susceptible species:** cattle (all breeds), mithun, buffalo, yak and zo-zom

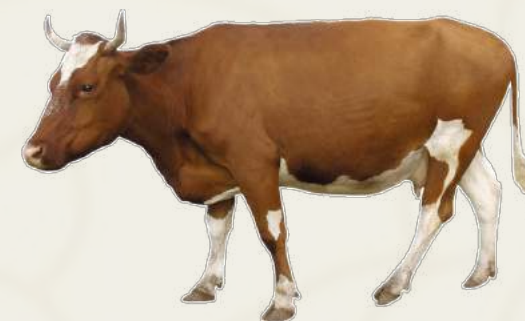
**Animals of all age groups (except calves < 1 month)**

**No restriction in vaccinating pregnant or lactating cows**

**However, following categories of animals are not eligible for vaccination:**

- Calves below one month of age\*
- Animals currently infected or showing clinical signs and symptoms of LSD
- Clinically sick animals due to any other disease

*\*Calves below one month of age at the time of mass vaccination must get vaccinated once they attain the age of one month.*



Vaccination must be performed as per the SOP for LSD or LSD-FMD vaccination





## THE STRATEGY...



**Vaccination coverage of at least 80 %**

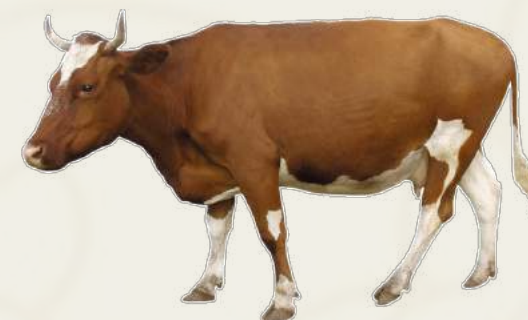
**Non-infected gewogs, villages or farms to vaccinate first (moving from clean to infected farms)**

**Vaccination must be completed within a timeframe of one month or less:**

- Uniform vaccine-induced protection
- Risk of disease spread is minimized
- Preventing localized outbreaks
- Simplifies monitoring
- Enhances community engagement

### **Why homologous vaccine?**

- Proven Effectiveness: The most effective tool
- Ease of Implementation and Effectiveness: Simpler and efficient than stamping out and vector control
- Reduction of Susceptible Animals: Reduction in no. of susceptible animals combat the incursion and dissemination of the LSD virus



Vaccination must be performed as per the SOP for LSD or LSD-FMD vaccination





## ***HR DEPLOYMENT***



**Comprehensive HR capacity assessment and mobilization planning must be undertaken by the regions and dzongkhags**

**Assess current personnel capacity within their specific agencies, in conjunction with the human resource capabilities found across various central agencies**

**Key agencies within the Department from which human resource mobilization could be effectively initiated:**

- National Centre for Animal Health
- Regional Livestock Development Centre
- Regional Veterinary Hospital and Epidemiology Centres
- Satellite Veterinary Laboratory
- Dzongkhag Livestock Sector (DVHs and LECs)
- Government Farms (other than cattle farms)
- Other Central Agencies

**To solicit human resource and other required support, the Department will engage in formal communication with these identified agencies.**

**There is no centralized budget support for this vaccination program**





# ABOUT THE VACCINE



Parameter	Description/ Value
Name of the product	LUMPYVAC <sup>®</sup> , (Lumpy Skin Disease Virus Vaccine)
Pharmaceutical Form	Attenuated live vaccine in lyophilized form
Volume for 1 dose	2 ml
Amount of virus contained in one dose	At least 10 <sup>4</sup> TCID <sub>50</sub>
Quantitative Composition	Neethling virus strain, not less than 10 <sup>4</sup> TCID <sub>50</sub> / dose Lactalbumin hydrolysate: 0.25 mg Sucrose: 0.50 mg
Presentation	50 doses per vial
Storage temperature	+2 to +8°C
Recommended dose per animal	2ml
Duration of immunity	At least 1 year
Shelf life	24 months
Vial utilization after opening	2 – 6 hrs after opening, however, it can be used for longer duration if stored at the required temperature







# VACCINE DISTRIBUTION



Freeze Van	Region	Date	Dzongkhag	Vaccine quantity for Dzongkhag (vials)	Farms on the way and vaccine quantity (vials)
Van 1	West	21-Aug-23	Thimphu	260	NDDC, Yusipang = 1 vial; Royal Soebam, Ramtokto = 1 vial; Royal Soebam = 1 vial)
		21-Aug-23	Paro	215	
		21-Aug-23	Haa	159	IYF, Chanadophu = 4 vials
		22-Aug-23	Chhukha	324	RCBC, Wangkha = 1 vial
		23-Aug-23	Samtse	750	
Van 2	West Central	21-Aug-23	Punakha	167	
		21-Aug-23	Gasa	114	
		21-Aug-23	Wangdue Phodrang	448	
		22-Aug-23	Tsirang	247	
		23-Aug-23	Dagana	369	
Van 3	East Central	21-Aug-23	Trongsa	165	
		21-Aug-23	Bumthang	232	NCBC, Bumthang = 3 vials
		22-Aug-23	Zhemgang	179	Royal Soebam, Wangdigang = 3 vials
		23-Aug-23	Sarpang	328	
Van 4	East	22-Aug-23	Monggar	460	
		22-Aug-23	Lhuentse	203	NHBC, Sertsham = 3 vials
		23-Aug-23	Trashigang	667	NNBF, Tashiyangphu = 4 vials
		23-Aug-23	Trashi Yangtse	172	
		24-Aug-23	Pema Gatshel	137	
		25-Aug-23	Samdrup Jongkhar	261	NMBC, Arong = 3 vials; BLDC, Samrang = 3 vials

*\*Respective Dzongkhags must plan and distribute the required vaccine doses to the LECs as per the vaccination schedule*





# DATA MANAGEMENT, PROGRESS ASSESSMENT AND MONITORING



**Vaccination Data Recording**  
**Adverse Reactions Recording**

NCAH  
Migration



**RVOs and DLOs, or their designated representatives, are entrusted to oversee the execution of the vaccination program.**

**A particular emphasis should be placed on monitoring the maintenance of the cold chain**

**NCAH shall conduct daily progress assessment and evaluation at the national level in reference to the EpiCollect data and share with the Department and the Ministry.**

**The responsibility for monitoring and evaluation to ensure vaccination coverage of at least 80% lies with the RVOs, DLOs, and DVH In-charge in their respective area.**

**Vaccination coverage of a gewog (%) = (Number of animals vaccinated in that gewog / Total eligible livestock population in that gewog) x 100.**





# ADVERSE REACTIONS



## Temporary probable adverse reactions observed following LSD vaccine administration:

- **Slight fever:** a slight increase in body temperature (usually up to 102°F) and a decreased appetite. It usually resolves within 2-3 days.
- **Decreased feed intake:** This is usually due to the slight fever or due to the local skin reaction or the nodular lesions. The decreased feed intake usually resolves within 1-2 weeks.
- **Temporary decrease in milk production:** This is usually due to the slight fever or due to the local skin reaction or the nodular lesions. The decreased milk production usually resolves within 2-3 weeks.
- **Local skin reaction and nodular lesions (neethling response):** It is rare and characterized by the formation of small, raised nodules on the skin. The nodules usually appear 7-10 days after vaccination and resolve within 2-3 weeks.

Farmers should be advised to contact the nearest livestock extension office if they notice any adverse reactions in their animals after vaccination, especially if the reactions are severe or do not resolve within a few days.



Record





## ***REFERENCE MATERIALS***



**SOP for vaccination of bovines against LSD**

**SOP for vaccination of bovines against LSD and FMD together**

**Infographic on LSD clinical diagnosis**

**Frequently Asked Questions**

**Infographic on LSD vaccination strategy: eligibility and adverse reactions**

**Vaccine quantity distribution worksheet**

**The presentation on the LSD vaccination strategy**





***TRASHI DELEK!***