World Organisation for Animal Health
Founded as OIE

Country logo

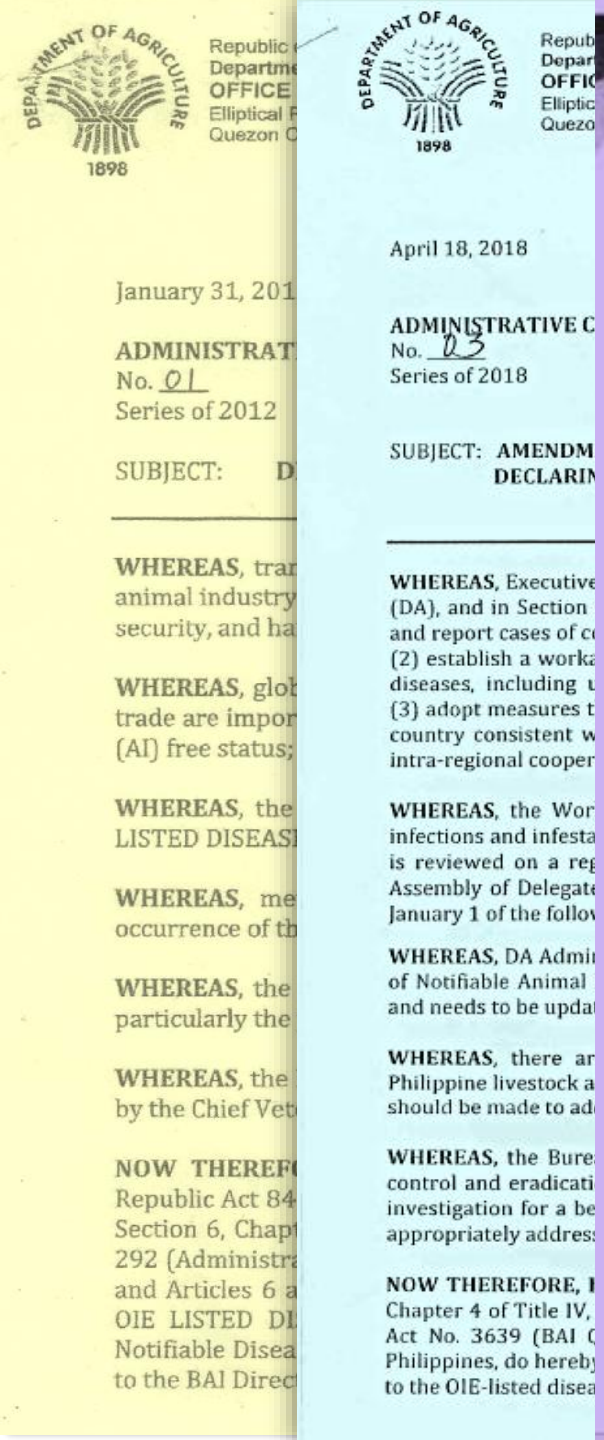
Lumpy skin disease (LSD)

An update on Preparedness for LSD incursion

Country name: PHILIPPINES

Name of Presenter: ANTHONY C. BUCAD, DVM
Position: Head, Animal Disease Control Section, Animal Health and Welfare Division
Affiliation: Bureau of Animal Industry – Department of Agriculture

Fourth LSD Coordination Meeting for South-East Asia
28 – 29 November 2023, Bangkok, Thailand



January 31, 201

ADMINISTRAT
No. 01
Series of 2012

SUBJECT: D

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April 18, 2018

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No. 03
Series of 2018

SUBJECT: AMENDM
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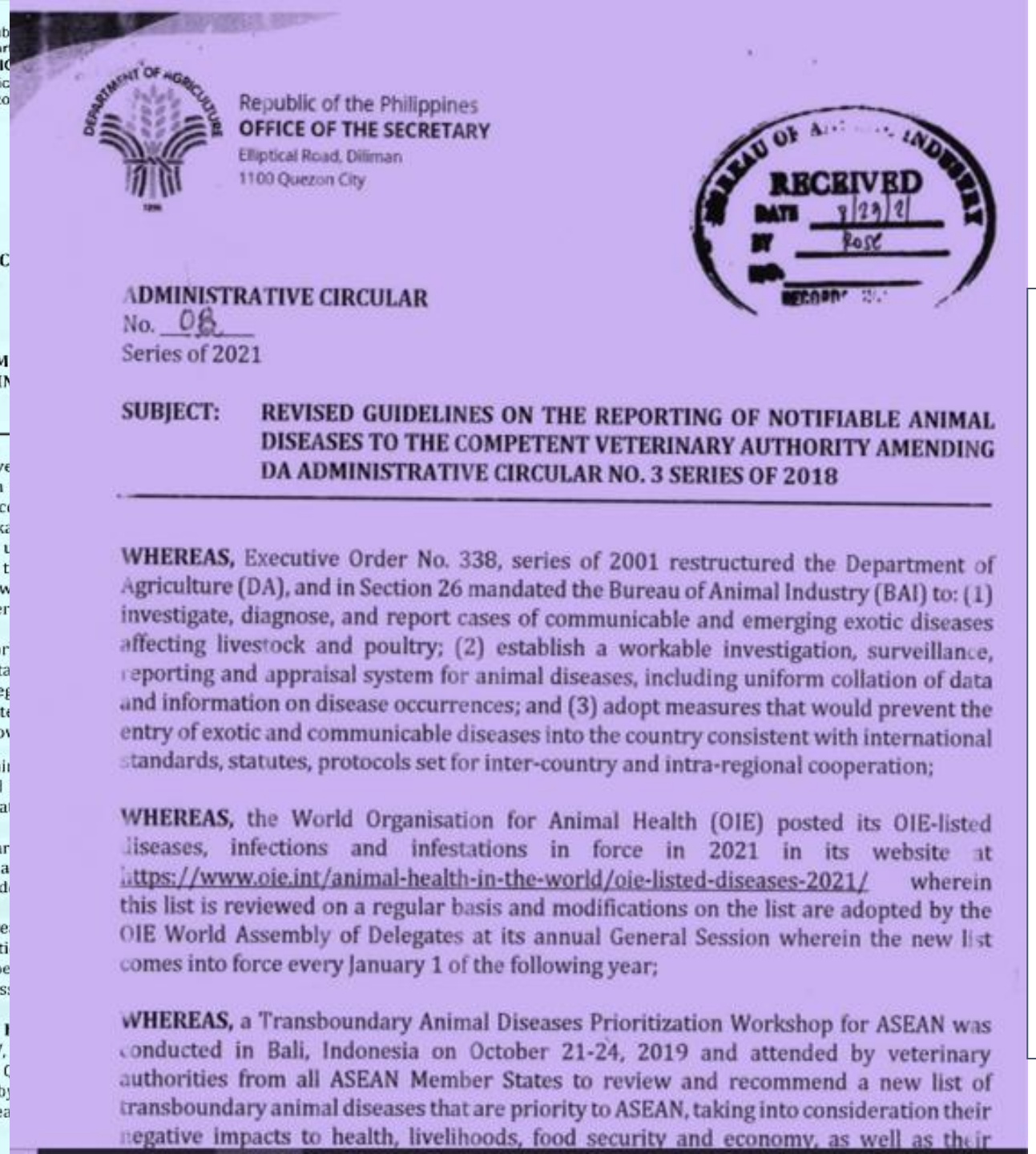

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1100 Quezon City

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DATE 9/29/21
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ADMINISTRATIVE CIRCULAR
No. 08
Series of 2021

SUBJECT: REVISED GUIDELINES ON THE REPORTING OF NOTIFIABLE ANIMAL DISEASES TO THE COMPETENT VETERINARY AUTHORITY AMENDING DA ADMINISTRATIVE CIRCULAR NO. 3 SERIES OF 2018

WHEREAS, Executive Order No. 338, series of 2001 restructured the Department of Agriculture (DA), and in Section 26 mandated the Bureau of Animal Industry (BAI) to: (1) investigate, diagnose, and report cases of communicable and emerging exotic diseases affecting livestock and poultry; (2) establish a workable investigation, surveillance, reporting and appraisal system for animal diseases, including uniform collation of data and information on disease occurrences; and (3) adopt measures that would prevent the entry of exotic and communicable diseases into the country consistent with international standards, statutes, protocols set for inter-country and intra-regional cooperation;

WHEREAS, the World Organisation for Animal Health (OIE) posted its OIE-listed diseases, infections and infestations in force in 2021 in its website at https://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2021/ wherein this list is reviewed on a regular basis and modifications on the list are adopted by the OIE World Assembly of Delegates at its annual General Session wherein the new list comes into force every January 1 of the following year;

WHEREAS, a Transboundary Animal Diseases Prioritization Workshop for ASEAN was conducted in Bali, Indonesia on October 21-24, 2019 and attended by veterinary authorities from all ASEAN Member States to review and recommend a new list of transboundary animal diseases that are priority to ASEAN, taking into consideration their negative impacts to health, livelihoods, food security and economy, as well as their

Department of Agriculture Administrative Circular No. 08, Series of 2021.

"Reporting of Notifiable Animal Diseases to the Competent Veterinary Authority"

Briefer for the DA Secretary on LSD

Republic of the Philippines
Department of Agriculture
BUREAU OF ANIMAL INDUSTRY
Visayas Ave., Diliman Quezon City 1101
(+632)8528-2240 director@bai.gov.ph www.bai.gov.ph @bai.gov.ph

26 October 2022

MEMORANDUM FOR THE SECRETARY

THRU : **MERCEDITA A. SOMBILLA, PhD.**
Undersecretary for Policy, Planning and Regulations

FROM : **PAUL C. LIMSON, DVM**
OIC - Director

SUBJECT : **BRIEFER ON LUMPY SKIN DISEASE**

BACKGROUND

1. Lumpy Skin Disease (LSD) is an economically devastating emerging viral disease cattle and water buffaloes caused by Capripoxvirus. LSD is a vector-borne, non-zoonotic and transboundary animal disease with limited host range (viz. cattle and water buffaloes).
2. The disease is endemic in most African and Middle East countries but has started spreading to Asian and other countries. The World Organisation for Animal Health (WOAH) has recently reported outbreaks of LSD in China, Sri Lanka, Cambodia, Indonesia, Vietnam, Afghanistan, Malaysia, Mongolia, India, Thailand. Latest outbreak of the disease started in Russia (WAHIS WOAH) last 19 September 2022.
3. Based on the report of India to WOAH last 02 September 2022, an on-going outbreak of Lumpy Skin Disease was detected in Himachal Pradesh, India which started on 18 June 2022. Cases of LSD have been reported in 13 states and Union territories (Outlook) and have already infected over 2.4 million animals, leading to over 110,000 cattle deaths in India (BBC News). Indian Buffalo Meat (IBM)[1] is considered as a critical component in the manufacture of processed foods in our country such as corned beef, beef patties and hotdogs. Importation of this commodity is limited and is strictly monitored through allocation of importable volumes to licensed meat importers, and is limited only to the use of processors.

[1]Indian Buffalo Meat (IBM) is defined as fresh frozen, deboned and deglanded edible part of carcass, excluding offals derived from buffalo in India intended for export to the Philippines

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INFORMATION ON LUMPY SKIN DISEASE

1. **Skeletal muscle[2] meat**, casings, gelatine and collagen, tallow, hooves and horns are considered **safe commodities** (no LSD-related conditions required) according to the current Terrestrial Animal Health Code Article 11.9.2.
2. There is a relatively low risk for the spread of LSD through hides, meat and milk from cattle and buffaloes.
   - The likelihood of entry of LSDV via meat and meat products derived from the skeletal muscle devoid of lymph nodes (LNs) or other tissues (blood, offal, tendons and bone) is assessed to be negligible.
   - The likelihood of entry of LSDV via meat and meat products derived from skeletal muscle contaminated with parts of LNs and other tissues (blood, offal, tendons and bone), and via bone of infected cattle/buffaloes is assessed as very low.
   - The likelihood of entry of LSDV via meat and meat products derived from offal of infected cattle is assessed as medium.
   - The likelihood of entry of LSDV via bone and its products is assessed as very low.
3. To date, there are few published reports on the potential of the virus to survive in meat, however, LSD virus was found to be inconsistently present in organs of experimentally infected cattle, though in significantly lower titers compared to skin lesions. Also, cattle and buffalo meat that is processed at high temperatures results in virus inactivation.
4. Lumpy Skin Disease (LSD) is associated with high morbidity with low mortality in cattle and buffaloes. The WOAH categorizes LSD as a notifiable disease because of the economic impact of an outbreak. The disease affects milk production, growth rate, hide quality, draft power and reproductive efficiency (*e.g.* abortion and infertility) of these animals. Temporary or permanent infertility may also occur in cows or bulls.
5. Lumpy Skin Disease (LSD) virus is transmitted mechanically via arthropod vectors such biting flies (*Stomoxys* sp.). Recent evidence has shown the possible role of hard ticks (*Rhipicephalus* sp.) in the transmission of LSD virus. Other modes of transmission are through direct contact (cutaneous, saliva, respiratory secretions, milk, semen, etc.) and through the use of contaminated needles.

[2] The three main types of muscle tissue are skeletal, cardiac, and smooth muscle groups. Skeletal muscle attaches to the bone by tendons, and together they produce all the movements of the body. The skeletal muscle fibres are crossed with a regular pattern of fine and white lines, giving the muscle a distinctive striated appearance. Hence, they are also known as striated muscles.

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6. Natural infection with LSD has mainly been reported in cattle. Natural infections have also been reported in Asian Water Buffalo, but the morbidity is significantly lower in buffaloes (1.6%) than in cattle (30%). LSDV has a limited host range and does not complete its replication cycle in non-ruminant hosts.
7. Based on the available scientific evidence on the transmission of LSDV, in the event of entry on contaminated skeletal muscle, offal or bone into the country, the exposure of cattle and buffaloes to LSDV via these commodities that are intended for human and animal consumption is assessed as negligible.
8. Currently, there is no available treatment for the disease. However, a live attenuated vaccine is being used for LSD. Commercially available vaccines are either based on Neethling strain like LSD Vaccine for Cattle Vet Res Commun (Onderstepoort Biological Products; OBP, South Africa) or Bovivax (MCI Sante Animale, Morocco), or based on SIS Neethling type (Lumpyvax, MSD Animal Health-Intervet, South Africa). As LSD is closely related to sheeppox and goatpox virus, vaccine against sheep pox and goat pox can be used for LSD.
9. The diagnosis of LSD relies on diagnosis through clinical signs and symptoms. Confirmatory diagnosis by using conventional PCR or real-time PCR is recommended. Electron microscopy examination and Serum/ Virus Neutralization Test (VNT) is still widely used as the gold standard method. Attempts to develop an enzyme-linked immunosorbent assay (ELISA) have been unsuccessful due to difficulties in producing inactivated whole virus in sufficient volumes and instability of recombinant antigens.

POSSIBLE ENTRY OF THE VIRUS TO THE PHILIPPINE BORDERS

1. The reason for the disease spread in other countries has been implicated as due to the livestock movement across international borders or may have been due to vectors' movement from neighboring countries. As such, stringent border control measures such as testing regimes for imported live animals should be in place.
2. Higher temperatures and heavy seasonal rains and the presence of water bodies which favors the increase in population of blood-feeding arthropods may enhance the likelihood of transmission of vector-borne diseases such as LSD. Vector movement due to prevailing winds have also been implicated in the spread of the disease.

STATUS OF LSD IN THE PHILIPPINES

1. LSDV has never been reported in the Philippines. As per DA AC 03 Series 2018, the disease is included in the "List of Notifiable Diseases" of Cattle and Buffaloes

World Organisation for Animal Health
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Laboratory Preparedness

Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Biotech Program Office
2nd Floor, East Wing, DA-OSEC Building,
Elliptical Road, Diliman, Quezon City
Telephone: (02)8927-0426/8922-0057 | Email: bpo@da.gov.ph
Website: www.bpo.da.gov.ph

A. BASIC INFORMATION

1. Project Title	**Development of a Prototype for Loop-Mediated Isothermal Amplification (LAMP) Assay for the Detection or Screening of Lumpy Skin Disease (LSD)**
2. Short Project Title	Prepare PH for LSD
3. Project Type	Biotechnology Research and Development
4. Priority Area *(Refer to the Call for Proposal)*	Animal Health
5. Proponent/Proposing Institution Head of Agency Designation	Philippine Carabao Center Dr. Liza G. Battad Executive Director

Department of Agriculture
PHILIPPINE CARABAO CENTER
CERTIFIED:ISO 9001 I ISO 14001 I ISO 45001

June 2, 2023

Dr. PAUL C. LIMSON
Director
Bureau of Animal Industry
Department of Agriculture
Diliman, Quezon City

Attention: **Dr. RACHEL R. AZUL**
Head, *Animal Disease Diagnosis and Reference Laboratory*

Dear **Dr. Limson**,

We hope this letter finds you in good health and high spirits.

On behalf of the DA – Livestock Biotechnology Center, we are writing to extend a formal invitation to you to attend the inception meeting for the research project entitled "***Development of a Prototype Loop-Mediated Isothermal Amplification (LAMP) Assay for the Detection or Screening of Lumpy Skin Disease (LSD) as part of the LSD Preparedness Plan of the Philippines***".

This inception meeting is a crucial event where we aim to gather key stakeholders and experts in the field of livestock research to discuss and establish the groundwork for this significant project. We highly value your expertise and contributions to the field, making your presence vital to the success of the meeting.

We kindly request your active participation in the meeting, as your insights and expertise will greatly contribute to shaping the research project's direction and ensure the translation of these goals into reality.

The inception meeting will be scheduled to be held at **Pampanga** on the **23rd of June, 2023** from **9:00 AM to 3:00 PM**. The agenda for the inception meeting includes the introduction of the research project and its objectives, presentation of the research methodology and timeline, discussion on roles and collaboration opportunities, and Q&A session as well as open floor for suggestions and recommendations.

Collaboration with the Bureau of Animal Industry (BAI) and various Department of Agriculture Regional Field Offices (DARFOs)

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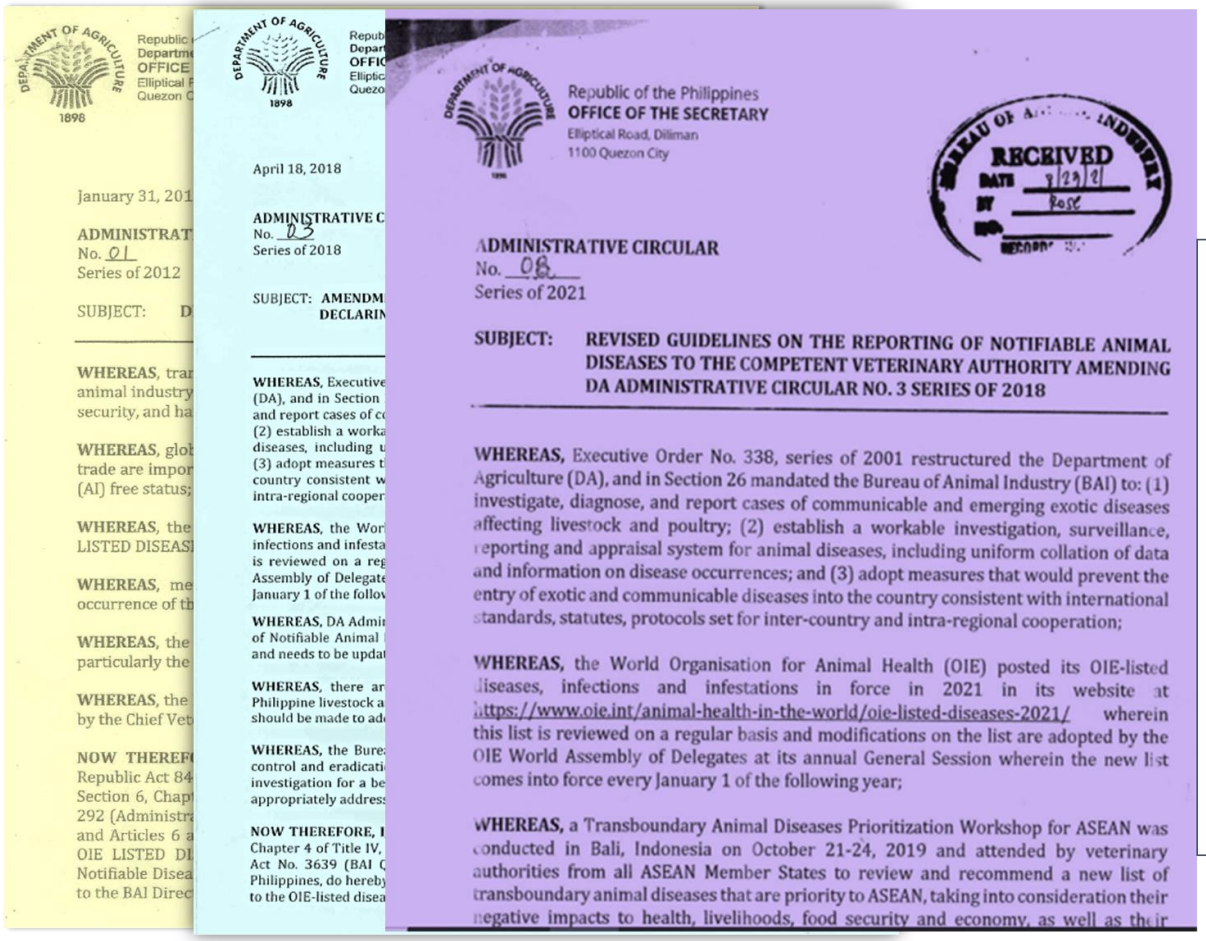
Contingency Planning and Response



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- Initial Stages of development of LSD Prevention and Control Program
  - Attendance in technical fora (i.e. webinars, consultation meetings, trainings)
- LSD Biosecurity Advisory Forum (June 9, 2022)
  - Hybrid session; initiated by the Philippine Carabao Center (PCC)

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DISEASE INVESTIGATION FOR SUSPECT CASE (2 May 2022)

Location	Maybancal, Morong, Rizal
Lesion	Cauliflower-like lesions in neck, face, snout, lower forelimb, etc.
Samples collected	Whole blood – for 3 other bovine in the area Bovine with lesion – whole blood, scabs in snout, left forelimb and eyes and nasal swab

Main challenges and recommended solution

Main challenges

- Need for technical expert assistance for capacity/capability building and program development
  - Field surveillance
  - Laboratory diagnosis
  - Disease management
  - Risk analysis
- No indemnification scheme for affected animals

Recommended solution

- Collaboration with technical expert groups (e.g. WOAH, FAO, Academe, etc.)
- Strengthened public awareness esp. targeting veterinary services and farmers/stakeholders
- Inclusion of LSD as priority TAD in budget allocation
  - Indemnification
  - Vaccine procurement
  - Program development and implementation

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THANK YOU

4th LSD Coordination Meeting
28 – 29 November 2023, Bangkok, Thailand