FEDERATIVE REPUBLIC OF BRAZIL
Ministry of Agriculture and Livestock
Department of Animal Health

Contingency Plan for Animal Health Emergencies

- Tactical and operational levels -

Animal Health Emergency Statement and Management

National Agricultural Emergency Management System
- SINEAGRO -

Brazilian System of Veterinary Surveillance and Emergencies
- SISBRAVET -

General Part

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ABBREVIATIONS and ACRONYMS

CEPI - Epidemiology Coordination
COEZOO - Animal Health Emergency Operations Center EAD
- Emergency Animal Disease
DSA - Department of Animal Health DSV -
Department of Plant Health
EMBRAPA - Brazilian Agricultural Research Agency PPE -
Personal protective equipment
FAO - UN Food and Agriculture Organization
FN-SUASA - National Force of the Unified Agricultural Health attention System FORM-
COM - Investigation form - complementary
FORM-IN - Investigation form - initial FORM-LAB
- Sample collection form
FORM-VIN - Investigation form of establishment with GEEZ link - State
group for animal health emergency
GPS - Global Positioning System GTA -
Animal Transit Guide
MAPA - Ministry of Agriculture and Livestock
MDR - Ministry of Regional Development MMA
- Ministry of Environment
MS - Ministry of Health
OMSA - World Organization for Animal Health
PGA - Agricultural Management Platform
PNCEA - National Contingency Plan for Agricultural Emergencies PNPDEC
- National Policy for Protection and Civil Defense
SCI - Incident Command System SDA -
Secretariat of Agricultural Protection
SEDEC - National Secretariat for Protection and Civil
Defense SFA - Federal Superintendence of Agriculture
and Livestock GIS - Geographic Information Systems
SIMAF - Fauna Monitoring System
SINEAGRO - National Agricultural Emergency Management System
SINPDEC - National Protection and Civil Defense System
SISBRAVET - Brazilian System of Veterinary Surveillance and
Emergencies SIZ - National Animal Health Information System
SVE - State Veterinary Service
SVO - Official Veterinary Service
UF - Federative Unit
UVL - Local Veterinary Center
WAHIS - World Animal Health Information System

1. INTRODUCTION

The response to an animal health emergency is a complex set of activities distributed in an intricate network of technical, political, economic, and social aspects. Therefore, this action presupposes the planning and definition of all the aspects involved, constituting a control and management system, materialized within the framework of the Ministry of Agriculture and Livestock (MAPA) as the National Agricultural Emergency Management System (SINEAGRO) and established by Normative Instruction No. 15 of March 9, 2018.

SINEAGRO is organized in four levels of coordination, with different roles and responsibilities, to allow an adequate institutional organization:

- Level 1, political-administrative, under the direct responsibility of the Minister of State, with legal acts and institutional guidelines as the main regulatory and organizational documents.
- Level 2, strategic, represented by the Secretariat of Animal Health (SDA), referring to decision-making aimed at the implementation, maintenance, and evaluation of the entire system, with emphasis on the **National Contingency Plan for Agricultural Emergencies** (PNCEA).
- Level 3, tactical, under the responsibility of the Departments of Animal Health (DSA) and Plant Health (DSV), including technical guidelines for the implementation of agricultural emergency actions, according to the type of disease or incident; and
- Level 4, operational, represented by temporary structures set up specifically to respond to agricultural emergencies.

For levels 3 and 4 of SINEAGRO, the need for effective participation of the State Veterinary Services (SVEs) stands out. However, experience shows that it is impossible to limit the response to animal health emergencies to the scope of the structures of the **Brazilian Official Veterinary Service** (SVO), represented by MAPA and SVE, and there is a clear need to count on the support of other governmental (federal, state, and municipal) and non-governmental (productive and agro-industrial sectors) structures.

To improve the necessary institutional relationships, especially with the **National Protection and Civil Defense System**[1](SINPDEC), SINEAGRO, considering the definition of disaster, classifies animal health emergencies, within the parameters of SINPDEC, as a state of emergency or a state of public calamity. This understanding makes it possible to activate the entire governmental system, which aims, among other things, at preventing or minimizing damage, rescuing affected populations, and rehabilitating and reconstructing areas damaged by disasters.

In this sense, the occurrence of an **animal disease emergency** (EAD) in Brazil will lead to the declaration of an animal health emergency by MAPA, considering several factors, especially the sanitary situation of the country or zone, since the occurrence of an exotic disease usually leads to serious economic and social consequences. To deal with these emergencies, the set of activities described in the **Contingency Plans**, which are the main operational documents of SINEAGRO, will be initiated.[2].

[1] - The **National Protection and Civil Defense System (SINPDEC)** is made up of agencies and entities of the Federal Public Administration, the States, the Federal District, and the Municipalities, as well as public and private entities with significant performance in the field of protection and civil defense, under the centralization of the National Secretariat for Protection and Civil Defense (SEDEC), an agency of the Ministry of Regional Development.

[2] - The administrative authorities that should intervene and their respective powers and responsibilities, as well as the channels and procedures for the exchange of information between the governmental and non-governmental structures involved, will be identified, and described in the **National Emergency Plan for Agricultural Emergencies (PNCEA)**, which is under preparation.

It should be noted that due to the geographical, agro-productive, and socio-economic diversity of the country, contingency plans cannot be expected to fully address all needs during an emergency response. Due to the diversity found in the field, there will always be a need for adaptation, and the professionals in charge of managing emergency operations must have the necessary technical knowledge and operational autonomy to make decisions.

Also, within the framework of SINEAGRO, specifically in animal health, the **National Animal Health Information System** (SIZ) and the **Brazilian System of Veterinary Surveillance and Emergencies** (SISBRAVET) are being established, both under the coordination of the DSA/SDA/MAPA. These systems include the flow of information and technical guidelines for the surveillance of animal diseases in all phases of action (prevention, detection, and containment), as summarized in **Figure 01**, with reference to the list of diseases subject to the application of animal health sanitary measures as specified in Normative Instruction No. 50 of September 24, 2013.

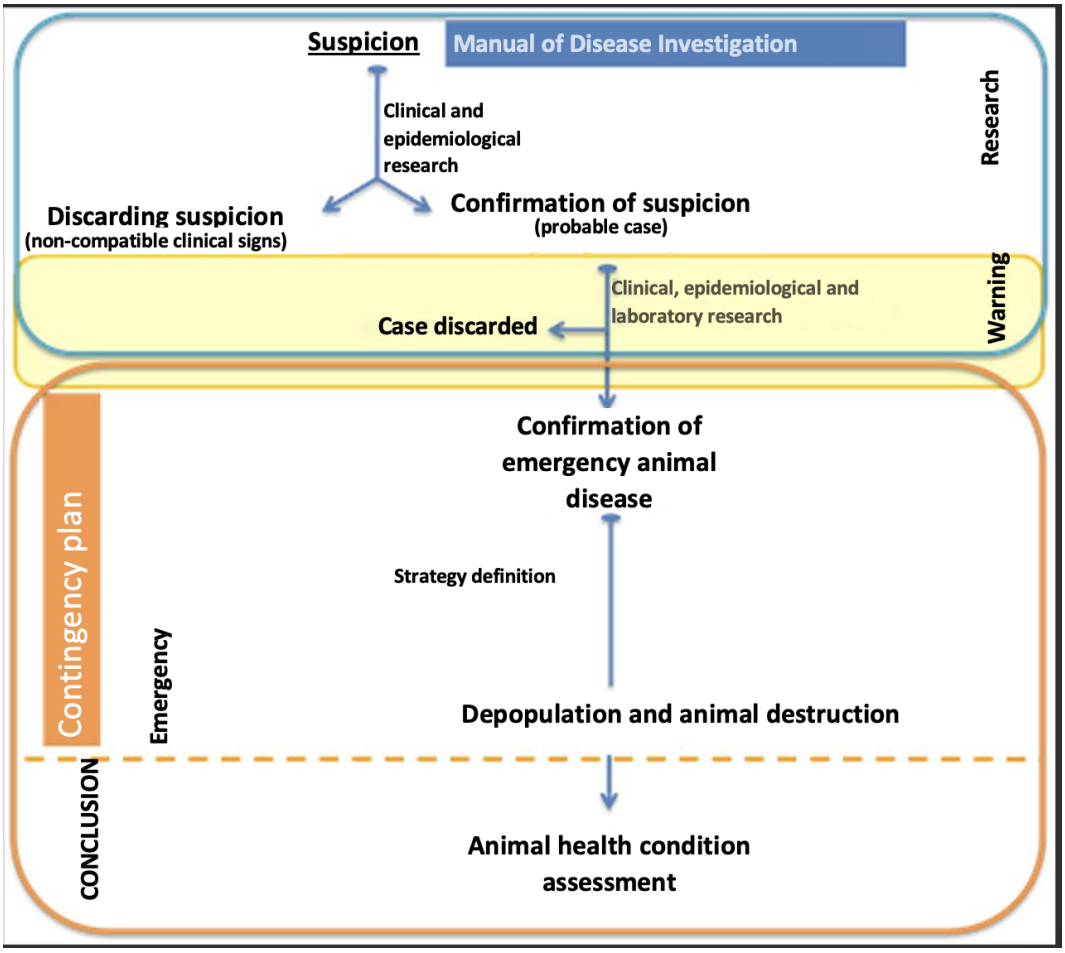

Figure 01. Stages of action from suspicion to animal health emergency

This schematic division underlines the importance of the close dependence and connection between the existing phases, i.e.: the **EMERGENCY** phase starts during the **ALERT** phase, which in turn depends on the quality of the work carried out during the **INVESTIGATION** phase. Finally, the **CONCLUSION** phase of animal health emergency activities will depend directly on the quality and effectiveness of the operations developed in the previous phases.

The procedures for action in the INVESTIGATION and ALERT phases for suspected EAD are described in documents published by the DSA, whereas the procedures for action in the EMERGENCY and CONCLUSION phases for confirmed cases are described in this document and in the respective specific parts for each EAD.

2. PURPOSE AND SCOPE

This contingency plan aims to describe:

a) The objectives, principles, and strategies of emergency response to an EAD.
b) The structures and organization necessary for the implementation and management of field activities.
c) The specific operations for the identification, containment, and elimination of foci of an EAD, with a view to restoring the health status of the country or area.

This document does not include a description of the mechanisms for articulation between governmental and non-governmental structures involved in animal health emergencies, which are established in the **PNCEA** (under development), and the procedures for action in the face of suspected EAD, which are described in documents published by the DSA.

Due to the complexity of the subject and considering the specifics and details of the various activities involved during the emergency response, the preparation of the SVO for the containment and eradication of an EAD should not be limited to this document, and additional reading is recommended, with emphasis on the following.

- ***National Contingency Plan for Agricultural Emergencies*** *(PNCEA) - under development.*
- ***Manual for the management of suspected emergency animal diseases*** *- under development.*
- ***Terrestrial Animals Health Code*** of the World Health Organization for Animals (WOAH), with emphasis on the following chapters:

a) Chapter 1.4 - Animal health surveillance.
b) Chapter 1.5 - Surveillance of arthropod vectors of animal diseases.
c) Chapter 3.5 - Communication.
d) Chapter 4.4 - Zoning and Partitioning.
e) Chapter 4.13 - Disposal of dead animals.
f) Chapter 4.14 - General recommendations for disinfection and pest control.
g) Chapter 4.19 - Official programs for emergency and emerging diseases
h) Chapter 6.5 - Biosecurity procedures in poultry production
i) Chapter 7.6 - Killing animals for disease control purposes.

- ***Incident Command System - Operations Level*****,** manual published by the Military Fire Brigade of the State of Paraná - http://www.defesacivil.pr.gov.br/sites/defesa-civil/arquivos_restritos/files/documento/2018-12/ManualSCI.pdf
- ***Good emergency management practices: the essentials*** a guide to prepare for animal health emergencies from FAO - https://web.archive.org/web/20210610105243/http://www.fao.org/3/cb3833en/cb3833en.pdf
- ***Manual for managing operations during an animal health emergency*** - https://www.fao.org/documents/card/en/c/cc0068en/
- ***Communication manual for Veterinary Services*** - https://www.gov.br/agricultura/pt- br/assuntos/sanidade-animal-e-vegetal/saude-animal/programas-de-saude-animal/raiva-dos-herbivoros-e- eeb/manualemportugues_fevereiro_12_02_2020.pdf
- ***Tripartite Guide to Zoonoses Control in Countries*** - https://www.woah.org/fileadmin/Home/eng/Media_Center/docs/EN_TripartiteZoonosesGuide_webversion.pdf

3. GOALS, PRINCIPLES, STRATEGIES AND LEGAL BASIS

3.1. Goals

In general, regardless of the strategies to be adopted, the initial objectives of the emergency response to an EAD are to know the dimension of the problem, to seek its containment in the smallest possible territorial space, in the shortest possible time interval, with the consequent reduction of the economic and social impact.

Specifically, the objectives of the emergency response are:

a) identify, contain, and eliminate EAD foci.

b) eradicate EAD.

c) implement effective risk management to enable the continuity of farming activities.

Achieving these objectives will allow the normalization of the production chain and the animal health situation of the country as soon as possible, avoiding destabilization of food production and the regional or even national economy.

3.2. Principles

The control and eradication of an EAD is based on the following epidemiological principles:

a) interrupt the production and spread of the disease-causing agent.

b) Prevent contact between susceptible subjects and the EAD-causing agent.

c) reduce the number of susceptible animals at direct risk of infection.

d) interrupt transmission of the pathogen by vectors, where appropriate.

e) prevent the EAD pathogen from becoming established in wildlife populations, where appropriate.

3.3. Strategies

In the absence of vaccines, the main strategy for the control and eradication of EAD in disease-free countries is based on the rapid identification and **elimination of infected animals** and their direct and indirect contacts, coupled with the **restriction of movement** in the emergency area.

The **elimination** strategy should prioritize clinically affected herds within foci to suppress pathogen multiplication and then reach herds known to be exposed or with clear evidence of epidemiological link (of time, place, or exposure).

Due to the possible persistence of the pathogen in the environment, a strategy of **decontamination** and fallow/waiting period of the places (facilities) where there was confirmation of occurrence of the disease, as well as decontamination of vehicles and equipment, should be established to avoid the spread of the pathogen.

Restricting the movement of animals and goods considered to be at risk for an EAD, in accordance with the WOAH Terrestrial Animal Health Code (Terrestrial Code), must be accompanied by effective controls at fixed posts and mobile inspection teams.

The **epidemiological investigation** must trace all properties linked to the focus by direct or indirect contact since at least two incubation periods before the likely onset of the health event. The epidemiological investigation with its ramifications must be carried out immediately to delimit the animal health emergency area, in which the interdiction of all properties with susceptible animals must be established.

Enhancing **biosecurity** is also a high-impact strategy within the emergency area, aimed at reducing the risk of introduction, establishment and spread of animal diseases, infections, or infestations.

Within the **animal health emergency area**, areas of differentiated epidemiological risk (perifocal, surveillance and protection) should be defined and specific surveillance strategies established, considering transit routes, the deployment of fixed posts, the distribution of mobile inspection teams and surveillance teams. The emergency area should evolve to meet the **containment zone** concept established by the WOAH.

Preventive elimination of healthy herds, defined by proximity or epidemiological link, as assessed by the SVO, may be used to reduce the number of susceptible animals in the animal health emergency area and temporarily control the spread of the agent, until measures to destroy likely sources of infection have been able to suppress the agent causing the disease in the area.

Other issues that should be considered when defining intervention strategies include landowner **compensation** issues - and the related availability of compensation funds - and **education and social communication** activities.

In summary, the practical application of the control and eradication principles of an EAD will entail the adoption of a set of strategies and measures that operate simultaneously or consecutively, and which aim to:

a) eliminate the sources of the disease-causing agent by sanitary slaughter:
    i. depopulation of all infected or potentially infected animals.
    ii. disposal of dead animals and disposal or treatment of other potentially contaminated goods and fomites, observing biosecurity rules; and
    iii. cleaning and disinfection and, where appropriate, disinsection of premises and other sites or fomites such as vehicles, materials, and equipment.

b) trace infected and potentially infected animals and contaminated goods or fomites by epidemiological investigation.

c) prevent the spread of the disease, by:
    i. restricting the movement of animals, goods, and fomites.
    ii. enhancing biosecurity.
    iii. vaccination (where available) or selective slaughter of animals at risk.
    iv. control of reservoirs and vectors; and
    v. communication and raising public awareness.

It should be recognized that there may be significant challenges to controlling and eradicating an EAD, depending on the epidemiological characteristics of the epizootic. There are several factors that influence the control and eradication strategies of an EAD, some favorable and several unfavorable:

a) favorable factors:
    i. if there is a single susceptible domestic species.
    ii. whether clinical signs are prominent indicators of its possible presence.
    iii. if humans are not susceptible.

b) unfavorable factors:
    i. if it is a highly contagious disease.
    ii. if there is no vaccine or treatment available.
    iii. whether the disease-causing agent can remain viable for prolonged periods in fomites and tissues of infected animals, meat products, milk, eggs, and processed products.
    iv. whether vectors transmitting the pathogen are present.
    v. whether there are strains of low virulence or infectivity, which may make their clinical detection difficult.
    vi. whether animals are likely to remain carriers after infection.
    vii. whether wildlife populations are susceptible, and whether they may be reservoirs of the disease.
    viii. The biosecurity of farms varies widely, from subsistence to high-tech.

Therefore, the definition of strategies and decisions regarding actions to control and eradicate an EAD must be shared between MAPA and SVE and must consider the following.

a) the characteristics of the livestock activity of the affected establishments.
b) the predominant agricultural production systems in the emergency area.
c) the densities of the domestic and wild species involved.
d) the presence of natural reservoirs or vectors.
e) the speed of detection of the primary case and the expected spread of the disease.
f) the amount of contact of the initially infected animals.
g) the specific characteristics of the pathogen related to the epizootic.
h) the presence of natural physical barriers.
i) estimating the geographical extent and duration of the epizootic.
j) the human and financial resources available for the activities.
k) laboratory capacity for testing.
l) public opinion and social values, including animal welfare issues.
m) Economic factors (cost-benefit of loss of production or market *versus* cost of eradication to restore previous status).

3.3.1. Topics involved in the definition of the strategies.

Three topics directly related to the definition of the strategies to be adopted in the event of an animal health emergency are highlighted below and should be widely mastered by the professionals involved in the decision-making processes: restoration of international animal health status; use of emergency vaccination; and establishment of a containment zone.

Other issues that should be considered when defining intervention strategies include animal owner compensation issues – and the related availability of compensation funds, which will be addressed further in this document.

3.3.1.1. Restoration of international animal health status

If the EAD has its health status officially recognized by the WOAH, the deadlines established for regaining the previous animal health status for the disease in question must be met, depending on the strategies to be used to contain and eradicate the pathogen.

For this purpose, the guidelines applicable to the diseases listed in the WOAH Terrestrial Code should be consulted.

3.3.1.2. Emergency vaccination

The Terrestrial Code defines emergency vaccination as "(…) a vaccination program applied as an immediate response to a focus or increased risk of introduction or emergence of a disease" (Article 4.18.2). It should be noted that the concept of emergency vaccination is different from the concept of routine and preventive vaccination. The term "routine vaccination" refers to the practice of systematic vaccination of all or part of a target population as part of a disease control or eradication program ". "Preventive vaccination", on the other hand, refers to the adoption of vaccination in a disease-free country or zone, when the pathogen has entered an area of proximity, placing the target population in a high-risk situation. These concepts should not be confused with emergency vaccination.

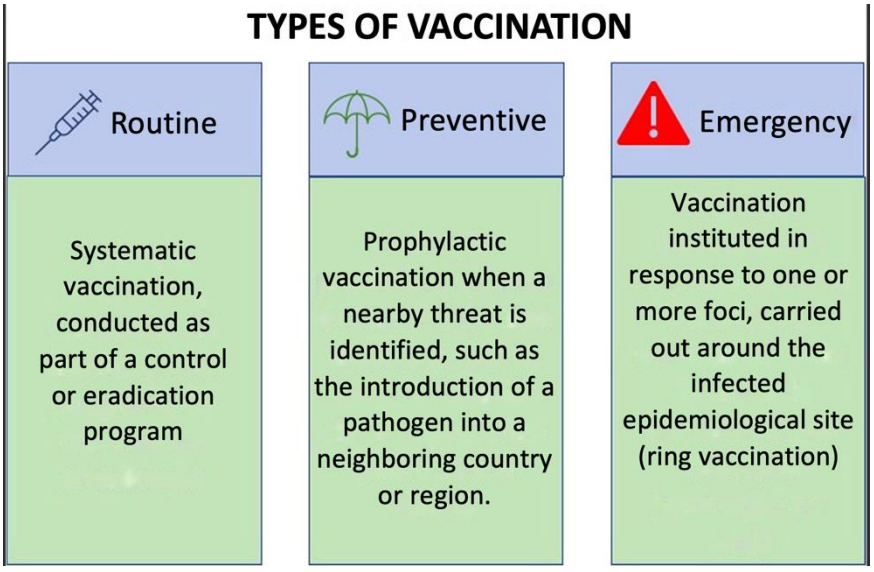

Figure 02. Types of vaccination (Source: FAO, adapted)

The key to deciding whether to use emergency vaccination is the ability to estimate the rate of disease spread and the rate of contact between susceptible animals. When available, emergency vaccination represents an important technical tool to contain the spread of acute and highly transmissible diseases. The decision to use them, however, requires careful assessment of the operational issues involved and their economic implications, which should be considered by state and federal authorities.

Emergency vaccination can be called either protective or suppressive. The term "protective vaccination" is used in herds that are close to a focus or foci but have not yet been exposed to the virus and is related to the goal of "vaccination for life", i.e., vaccinated animals do not have to be earmarked for sanitary slaughter initially. Once vaccinated, animals represent an immunological barrier to the spread of the disease. In the meantime, they should be tested for viral transmission or sent to slaughter, depending on the strategy chosen to restore animal health status.

The term "suppressive vaccination", in turn, is used for vaccination in foci or in herds at high risk of exposure to infection, with the aim of reducing the potential manifestation of the virus, while recognizing that some animals may be incubating the disease. It is expected that by vaccinating all exposed animals, those not yet infected will have the opportunity for partial protection against clinical manifestation. However, it is recognized that an infection may be present and, if time and resources permit, animals should be killed ("vaccination to death").

Regarding the use of vaccination in foci, the following points should be assessed:

- the presence of animals in the incubation phase of the disease may lead to the use of the vaccine being discredited,

since even after vaccination, many animals may manifest the disease.

- In the case of the use of the health killing strategy, the use of the vaccine may represent an unnecessary cost.

- movement of animals for vaccination can exacerbate the spread of the disease; and

- may increase resistance to animal slaughter from owners and the wider community ("the animal is vaccinated and protected, why should it be slaughtered?").

Therefore, decision making regarding the use of vaccination in animal health emergencies is complex and involves several issues, such as the degree of spread of the disease in the region, the level of population immunity to the predominant strain, the species involved, the density of the animal population in the affected region, the operational capacity for vaccine application, the rapid availability of the vaccine, and others. It is important to note that for some diseases with *status* recognized by WOAH, the decision to use the vaccine may affect the deadlines for restoring the previous health status.

If the vaccine is chosen, the SVO will need to be able to mobilize quickly and have the structure in place to carry out the activities in a short time (human resources, vehicles, equipment, immunogen, cold chain, etc.). The strategy to be adopted must consider the geographical and agro-productive characteristics of the region, which in turn requires the availability of up-to-date and reliable information on the registration of rural property.

Particularly at the local and state levels, practitioners should develop activities, including field drills, that will help them answer the following questions.

i) considering the different production systems and geographical realities present in the state, what is the average time required for complete vaccination of a herd?

ii) How are cold chains for receiving and storing large quantities of vaccines available and distributed in the state?

iii) what is the average time for vaccine distribution and displacement of vaccination teams in different locations and realities of the state?

iv) How will the identification of animals or herds be done, and what is the structure and timing for this?

Vaccination activities involve the movement and clustering of animals, people, vehicles, etc., which can increase the risk of disease spread and should therefore be recommended only when necessary. Depending on the vaccine used and to achieve a more effective result, especially in the case of prime-vaccinated animals, it may be necessary to reinforce the vaccination in a short time interval, involving new movements and agglomerations of animals, people, vehicles, etc. Depending on the location of the farms and the risks involved, vaccination teams should adopt appropriate biosecurity measures to move between the different herds to be vaccinated.

The ideal vaccine for emergency use should have sufficient strength to induce rapid antibody formation against the emerging virus strain, be easy to administer, use DIVA (Differentiating Infected from Vaccinated Animals) technology, contain no residual live virus, and produce a short post-vaccination antibody detection period.

Therefore, before deciding to use emergency vaccination, it should be assessed whether the available vaccine meets expectations or whether conditions exist to produce the specific amount of vaccine needed for the task in a short time. The strategy of maintaining vaccine banks for rapid availability of specific vaccines should be foreseen and fully operational. Especially professionals at the federal level should be prepared to answer questions such as:

i) time needed to produce a certain amount of vaccine.

ii) time needed to fill the vaccine in vials of different volumes.

iii) structure and time needed to move large quantities of vaccine to different parts of the country.

When emergency vaccination is agreed, it should be used by starting activities from the outside in (centripetal fashion) in relation to the foci ("ring" vaccination).

Finally, any decision to use emergency vaccination must be communicated and published in advance to avoid speculation or doubts about disease control, especially by countries and markets with which the country in question has trade in animals and animal products. The use of vaccination among the strategies to control and eradicate the occurrence of an EAD, if not properly informed and justified, can create misunderstandings about the control capacity of the SVO.

3.3.1.3. Containment zone

In 2007, the concept of containment zone was incorporated into the 16th edition of the WOAH Terrestrial Code, representing a special feature of the zoning concept, currently and generally defined as: *"A defined infected zone within one or more previously disease-free countries that includes all confirmed or suspected cases that are epidemiologically linked and in which movement control, biosecurity and sanitary measures are applied to prevent the spread and eradicate the infection or infestation.*

This resource reinforces the importance of the geographic approach in responding to animal health emergencies and represents an important strategy to reduce the economic and social impact of suspending recognition of the entire country or zone as EAD-free, as the suspension can be limited to the containment zone.

The WOAH Terrestrial Code provides, in Volume I, Chapter 4.4, general guidelines on zoning and partitioning, and in Volume II, recommendations applicable to WOAH-listed diseases and other diseases of relevance to international trade. Among the types of zones foreseen by the WOAH, the concepts of infected zone, protection zone and containment zone stand out. The **infected zone** is one where an infection or infestation has been confirmed, whereas the **protection zone** aims to preserve the animal health status of an animal subpopulation in a disease-free country or zone. Regarding the **containment zone**, in addition to the general definition already presented, it should be noted that this is a specific case of an infected zone.

According to Article 4.4.7 of the Terrestrial Code, the implementation of a containment zone must be based on a rapid response, provided for in a contingency plan, including:

a) proper control of animal movements and of products and by-products at risk[3] for the specific disease.

b) Epidemiological investigation to demonstrate that all foci are epidemiologically linked and contained within the boundaries of the containment zone.

c) application of sanitary slaughter or other emergency control strategy aimed at eradicating the disease.

d) procedures for identifying the susceptible population in the containment zone to allow their proper separation from the rest of the population.

e) increased passive and specific surveillance (Chapter 1.4 of the Code) in the rest of the country or area in order to demonstrate the absence of infection or infestation.

f) sanitary and biosecurity measures, including continuous surveillance and control of the movement of animals and other hazardous products and by-products in and out of the containment zone, to prevent the spread of infection or infestation to the rest of the country or disease-free zone.

Initially, the disease-free *status* of the country or zone where foci of the disease have occurred is suspended and may be restored once the containment zone is clearly established. Ideally, the initial emergency area described in section 4.2 should evolve into the containment zone as the epidemiological scenario and the spread of the disease are clarified. It should be noted, however, that while the emergency area is flexible and can have its limits adapted according to the evolution of the epidemiological picture, the zone of

3 - **Hazardous products and by-products**: Meat, milk, eggs and meat products, milk, and eggs from infected animals; carcasses, viscera, and other waste from infected animals; wood shavings or other material (sawdust, straw, rice husks, ...) used as flooring; other objects and materials potentially contaminated with the pathogen.

Containment, according to WOAH guidelines, should be static, which requires in-depth epidemiological investigations to understand the degree of spread of the EAD before the zone is implemented.

According to the WOAH, for a containment zone to be considered effectively established, it is necessary to demonstrate one of the following conditions, outlined in **Figure 02**:

a) no new cases of the disease in the containment zone for at least **two incubation periods** from the elimination of the last detected case; or

b) the containment zone consists of an inner zone (infected zone), in which cases may continue to occur, and an outer zone (case-free zone), separating the inner zone from the rest of the country or disease-free zone, and in which no new cases have occurred for at least **two incubation periods** after the implementation of the control measures described above.

If a case of the infection or infestation for which the containment zone was established occurs, either in the containment zone under option "a" or in the case-free zone under option "b", the rest of the country or zone will lose its disease-free status.

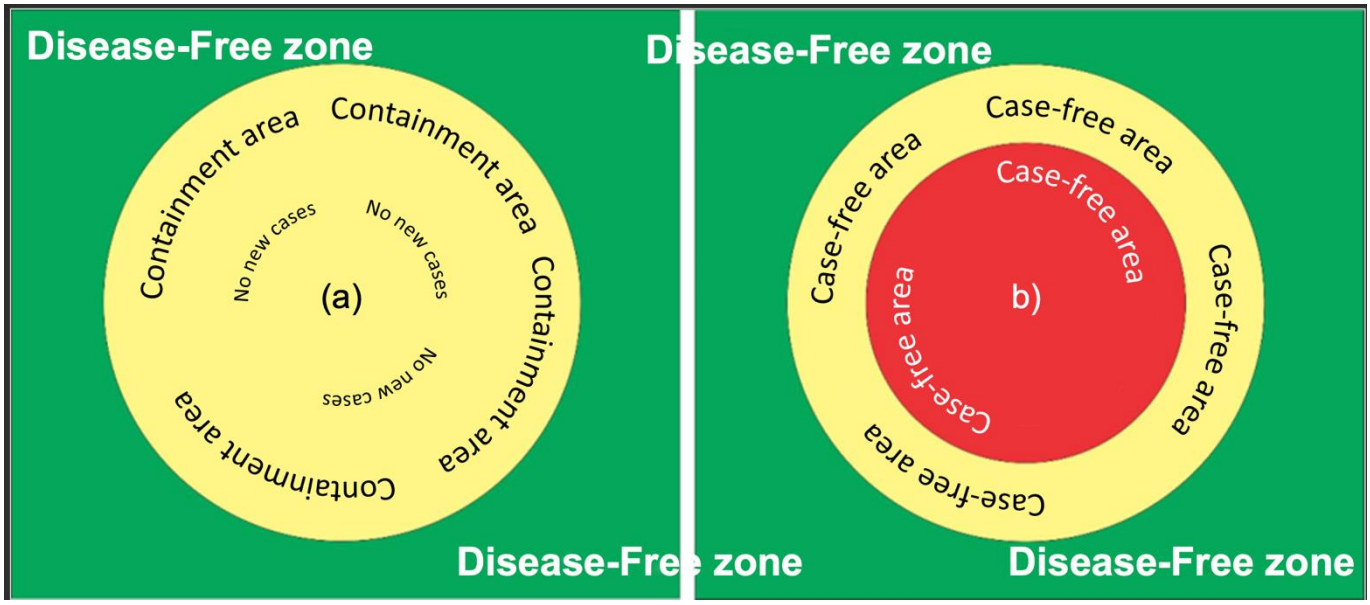

Figure 03. Options for establishing the containment zone.

Measures implemented in the case-free zone include intensified transit surveillance and animal identification and traceability to ensure that animals in the case-free zone are clearly separated from other sub-populations.

In view of the above, in the event of a focus of disease in a disease-free country or zone, those responsible for field intervention should seek the implementation of the containment zone, in one of the two modalities described above ("a" or "b"), to quickly reduce the socioeconomic losses involved. In the case of Brazil, regarding communicable diseases, this is a highly recommended resource, regardless of international or WOAH requirements. Its non-use requires technically based justification since it may demonstrate lack of control of the ongoing animal health situation.

3.4. Legal basis

The implementation of animal health emergency activities requires prior knowledge and mastery of the legislation by the professionals involved. Those in charge of SINEAGRO should keep up to date the normative

apparatus necessary to give validity and legal backing to the health intervention procedures that should be indicated in the PNCEA.

Animal health emergency measures involve principles governing the relationship between the public and the private powers, i.e., between the public and the private interest. It is common for community representatives to have doubts and questions, especially regarding the constitutional guarantee of protection of individual rights and complaints about possible illegality or abuse of power.

Often, these democratic right actions culminate in injunctions or writ of mandamus, requiring specific legal support to ensure the prompt reaction of the SVO in containing the animal health emergency. Thus, legal support must be always available, both at federal and state level, including for the coordination of field activities.

In order to reduce possible legal obstacles, the importance of social communication and animal health education activities aimed at clarifying the community about the technical procedures necessary during an animal health emergency is highlighted, especially those related to the interdiction of properties for the movement of animals, products and by-products of animal origin, sanitary slaughter of animals and destruction of products, items, and buildings.

Although the regulatory framework is dynamic and subject to ongoing adjustments and improvements, **Annex 02** lists the key federal legal documents to be considered in the event of an animal health emergency. In addition to these, other rules in force at the time of the event and the specific legal basis enacted by the Federative Units (UF) should be considered.

4. ORGANIZATION

The SVO, faced with an emergency scenario, must respond to control, and eradicate the disease quickly and effectively, minimizing the socio-economic impact and animal suffering. Both public opinion and those involved in the affected production process, especially rural producers, industries, universities, trade associations, etc., will be able to put pressure on the official structure to act quickly and effectively, even proposing guidelines for when and how to act. In this way, the SVO must be ready to act.

As described in **Figure 01**, from the confirmation of a probable case - which marks the beginning of the alert phase - the **Animal Health Emergency Group** of the UF concerned must be mobilized and take initial measures of prevention, epidemiological investigation and information gathering to facilitate the implementation of animal health emergency measures, if necessary. As work continues, this team will be incorporated into the Animal Health Emergency Operations Center (COEZOO) to be implemented.

To this end, it is essential that all SVEs adapt their own contingency plans in accordance with the PNCEA and this plan, seeking to maintain the minimum necessary structure according to their geographical and agro-productive specificities.

Upon confirmation of an EAD case, the DSA must immediately inform the SDA and the Federal Superintendence of Agriculture and Livestock (SFA) and the SVE of the UF involved, in addition to convening the first animal health emergency coordination meeting.

In parallel with the actions of the federal government, the state and municipal authorities involved must be informed and prepared to declare an emergency or a state of public calamity, if necessary, according to the guidelines and norms of the Ministry of Regional Development. Additional information is available from the PNCEA.

In addition to the initial actions of communicating and declaring the state of the animal health emergency, the DSA should support the implementation of field operations by the animal health authorities in the affected UF, including arrangements that allow for

a) Analysis of the Animal Transit Guide (GTA) to identify properties, municipalities, and UFs with animals entering or leaving the animal health emergency area for a period equal to at least two EAD incubation periods, retroactive to the date of the probable onset of the animal health event.
b) the rapid and controlled deployment of professionals (representatives of the National Force of the Unified Agricultural Health attention System - FN-SUASA) to COEZOO.
c) the implementation of an information system for recording, organizing, and analyzing the information obtained during field activities and allowing for rapid communication and transfer of information between COEZOO and the DSA.
d) the provision of geographic databases and aerial imagery in different formats and at different spatial resolutions to support field activities; and
e) analysis of the database of other agencies involved that can support the control or eradication of the disease in the emergency area.

4.1. Coordination meeting

Upon confirmation of an EAD case, the DSA should convene the first animal health emergency coordination meeting, involving at least representatives of the program for prevention, eradication, or control of the disease, if any; epidemiology and information; emergency; animal transit and quarantine; health education and social communication, in addition to representatives of the SDA and the SFA and SVE of the UF involved.

In areas with records of the presence of wild animal populations of epidemiological importance, a representative of the Ministry of the Environment and, in the case of a zoonosis, a representative of the Ministry of Health must be included in the meeting.

During the first animal health emergency coordination meeting, several actions should be triggered, either simultaneously or consecutively, including:

a) level up knowledge internally and define initial strategies for action.

b) delimit the emergency area, for interdiction and intervention, with a ban on the movement of animals, products and materials considered to be at risk.

c) define the priority field actions, to be adopted in a first moment (24-72 hours).

d) prepare a technical note to support national and international communications and notifications, containing: a brief account of the events; geographical location and description of the focus; topographic and agro-productive characterization of the region; delimitation of the emergency area; and control measures in place and to be implemented.

e) prepare a Circular Letter from the Director of the DSA, addressed to the SFA, SVE and entities representing the private sector, confirming the occurrence of EAD in the country, and informing the delimited animal health emergency area (example in **Annex 03**).

f) prepare a specific Ordinance of the Minister of State for Agriculture and Livestock declaring the state of animal health emergency, containing delimitation of the emergency area; indication of the EAD focus; and term of applicability, which will not exceed one year, in order to comply with Decree No. 8,133, of October 28, 2013 (template in **Annex 04**).

g) prepare a Ministerial Notice addressed to the Ministry of Regional Development, Department of Defense and the Minister and Chief of Staff Office, communicating the occurrence of the EAD in the country and requesting the necessary support (example in **Annex 05**).

h) Provide SDA/MAPA with the field coordinators for appointment.

i) prepare an Ordinance from the Secretary of Animal Health appointing the coordinators of field operations (example in **Annex 06**).

4.2. Initial emergency area outline

Interventions in animal health emergencies require an essentially geographical operational approach, including the economic and social interrelationships between the various players involved in agro-industrial systems or agro-production chains.

Particularly at the local and state levels, it is important to emphasize that prior knowledge of the existing agricultural production systems, including the flows and relationships between the various sectors involved (value chain analysis), coupled with an assessment of the risks of disease emergence and spread among the various elements that make up these production systems (risk-based analysis), is an indispensable measure for adequate efficiency and the definition of initial actions.

Initially, the animal health emergency area should be defined in such a way as to ensure a high probability of including all confirmed or suspected cases that are epidemiologically linked, until better knowledge of the extent and intensity of the problem is available and more specific information is obtained.

In other words, the animal health emergency area initially defined may be modified in the light of the epidemiological investigations and surveillance carried out. For EAD in which wildlife is of epidemiological importance, it should also be considered that the detection of the disease in these animals or their presence in an area close to the focus will affect the demarcation of the animal health emergency area.

Figures 04 and 05 illustrate the areas interdicted at the beginning and throughout the animal health emergency actions for FMD in the states of Rio Grande do Sul (2000) and Mato Grosso do Sul (2005 and 2006), respectively.

This initial demarcation must be carried out immediately, under the MAPA's responsibility and with the knowledge and participation of the SVE(s) involved. It is suggested to adopt as an initial interdiction criterion the **total area of the municipalities affected by the 25 km radius measured from the focus reference point**, associated with the evaluation of issues such as:

a) existence of geographical barriers and road network.

b) predominant livestock production system.

c) environmental factors, including the presence of wildlife populations (where appropriate).

d) ability to rapidly deploy control points.

e) vulnerabilities of the region and economic and social interrelationship with other locations in the country.

This is a practical approach for initial decision making, however it does not apply to all situations. **It is important to emphasize that the initial interdiction area must be feasible**, i.e., allow for adequate and demonstrated separation and control by the SVO from the rest of the country. The suggested 25 km radius is only an imaginary line of support and guidance.

Firstly, the movement of animals and products that pose a risk to an EAD must be stopped throughout the emergency area, including the automatic suspension of the issuance of transit permits. As the measures evolve and the epidemiological picture becomes clearer, the ban may be progressively lifted according to the epidemiological risk areas identified, and it is up to the COEZOO Coordination to define the criteria and procedures and to control the issue of specific documents controlling authorized movements in the interdicted area, which must be adapted to the specific realities and needs identified during the animal health emergency measures.

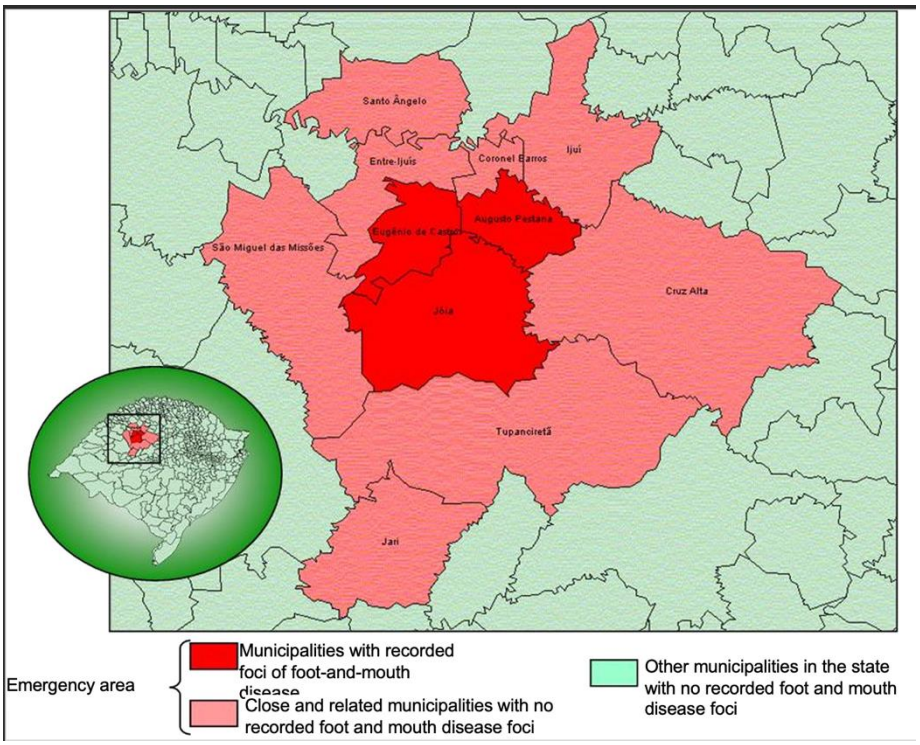

Figure 04. Initial outline of the animal health emergency area for FMD (RS, 2000).

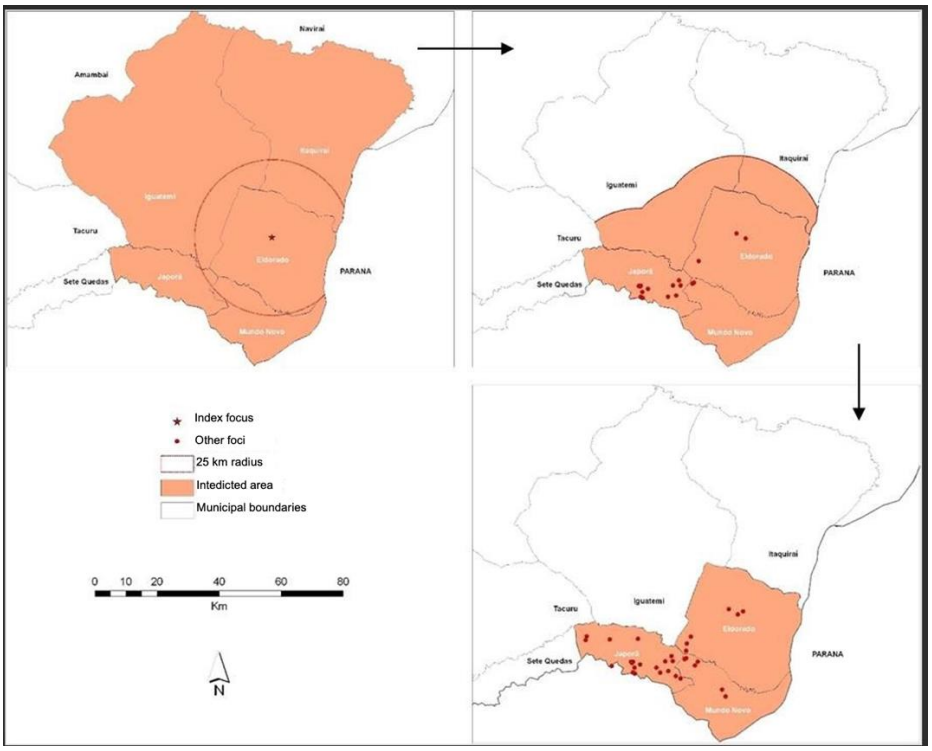

Figure 05. Evolution of areas under interdiction for the containment of FMD foci (MS, 2005 and 2006).

4.3. Declaration of a state of emergency

The declaration of the state of animal health emergency, by means of a specific Ordinance of the Minister of State for Agriculture and Livestock (template in **Annex 04**), according to Decree No. 8,133, of 28/10/2013, represents the recognition of a special animal health condition and the definition of a priority for government action, justifying the need to use public financial resources quickly and the involvement and participation of other institutions and government agencies such as Civil Defense, Military Police, Armed Forces, among others.

In addition, depending on the size of the emergency area and the risks involved, MAPA may request the declaration of a state of emergency or a state of public calamity, in accordance with MDR Normative Instruction No. 02 of 12/20/2016, with the consequent convening of SINPDEC and the establishment of an Inter-Ministerial Office for Crisis Management.

4.4. National and international notifications

The information used for the preparation of the initial technical note of the DSA and the national and international notifications is obtained mainly from the response forms for animal health occurrences (FORM- IN, FORM-COM, FORM-LAB and FORM-VIN), currently found at **e-Sisbravet** (http://sistemasweb.agricultura.gov.br/pages/SISBRAVET.html).

Therefore, the importance of these documents should be emphasized, requiring special attention to their content during the investigation and alert phases, to correct any errors and raise additional information, if necessary.

At the national level, the SFA, the SVE and the bodies representing the private sector (productive and industrial) must be notified of the occurrence of EAD in the country and informed of the animal health emergency area. At the federal and state levels, the competent authorities must be notified, who will be involved in the actions to contain the focus, with special attention to Civil Defense.

Internationally, notifications should be made to WOAH, the Permanent Veterinary Committee of the Southern Cone (CVP), South American countries and other trading partner countries or blocs.

Regarding the notification of the occurrence to the WOAH, the recommendations contained in the Terrestrial Code and the WAHIS/WOAH system should be followed. The notification of the index case must be made within 24 hours of confirmation of the occurrence of EAD, and, on a weekly basis, reports must be sent regarding the progress of animal health intervention operations.

The immediate report to be sent to the WOAH, in electronic format, requests information such as precise identification of the pathogen; laboratory tests used and laboratory responsible for the result; dates of first confirmation and onset of clinical signs in the focus; clinical signs observed; details of the location of the foci (UF, municipality, geographical location - latitude and longitude, indicated on a map); species affected, indicating the number of susceptible animals, cases and deaths in each focus; description of the affected population; probable source of the focus and origin of the infection; and control measures in place and to be implemented (sanitary slaughter, quarantine, animal movement control, tracking, zoning, vaccination and biosecurity).

4.5. Implementation of the Animal Health Emergency Operations Center (COEZOO)

For the proper implementation of the activities of containment and eradication of foci of an EAD, it is necessary to establish, at the local level of action, a specific and temporary technical coordination, called the Animal Health Emergency Operations Center (COEZOO).

This temporary structure is complementary and **does not replace the existing structures of EVS and MAPA**, which will continue to be involved in all animal health emergencies.

It is important to emphasize that the isolated action of COEZOO is not feasible. There is a need for the participation, mainly at the political-administrative level, of the state government structures involved (with emphasis on the SVE, the Secretariat of Agriculture and the public forces) and of the federal government (especially MAPA and its organizational units such as the Executive Secretariat, SDA, DSA and SFA), including the specific structures provided for in the PNCEA.

In summary, the previously established hierarchical structure of the SVO should be maintained, with its officers and coordinators working harmoniously and interactively to enable and support the actions of the COEZOO. The COEZOO coordination, in turn, must act in close understanding with the hierarchical institutions and organizations, seeking to comply with the established strategies and policies and the defined information flows.

4.5.1. Features and infrastructure

As mentioned above, COEZOO is the nucleus where the group in charge of operations within the animal health emergency area operates, to be composed of coordination and technical-operational and administrative sectors.

In the case of animal health incidents with a wider geographical spread, the feasibility of setting up more than one COEZOO should be examined, i.e., an independent Operations Centre should be set up for each geographical emergency area under the coordination of the DSA.

The establishment of the COEZOO is one of the first tasks of the Coordination Team, remembering that it is the responsibility of the **State Animal Health Emergency Groups (GEEZ)** to carry out prior surveys and studies on possible sites for the implementation of the said Center, based on the registers and the spreadsheet of animal health emergencies maintained in the Local Veterinary Unit (UVL).

COEZOO coordinators should be selected from among the professional members of the FN-SUASA, or another corresponding list. Pending the appointment and relocation of these coordinators, the animal health officers of the SFA and the SVE, or the veterinarians from the SVO appointed by them, should jointly carry out the activities of immediate execution in the event of an animal health emergency.

The General Coordinator of COEZOO, with the support of the state and municipal authorities involved and representatives of the agricultural sector, should define the location for the implementation of the Center, reinforcing the following characteristics.

a) have access to utilities, energy, and water facilities.

b) be located preferably inside the emergency area, but not in the zone of focus and surrounding area, and away from urban centers, as it involves large movement of vehicles and people.

c) have enough space to accommodate at least an independent room for the General Coordination of COEZOO, a room for technical meetings, rooms for the Epidemiological Analysis Sector, a place for assisting the community and a place for storage.

d) have telephone lines, internet, and a structure for installing computers.
e) provide safe conditions.
f) offer biosecurity conditions: allow control of entry into the enclosure and the implementation of wheel disinfection and foot disinfection facilities and have a large yard that allows the parking of the vehicle fleet (it must be a fenced site).
g) have space and facilities for the implementation of a cleaning and disinfection center for clothes and equipment used in field activities (provide for the installation of washing machines and dryers).
h) have space for the implementation of a diagnostic sample reception center, with emphasis on the possible need to collect many serological samples for the evaluation of infection or viral transmission (provide a closed location with the possibility of implementing workbenches, centrifuges, refrigerators, and freezers); and
i) provide a place and appropriate containers for the collection and disposal of any infectious material generated, considering all biosecurity and environmental measures.

If it is not possible to identify a single location to meet all needs, the alternative of distributing the sectors to different locations should be considered.

Special emphasis should be given to the distribution and location of the different units and sectors within the COEZOO, highlighting two main points: biosecurity and accessibility.

Thus, it is necessary to separate or prevent cross-access between "dirty" areas (e.g., sample reception area, cleaning and disinfection areas, vehicle entry and exit sector) and "clean" areas (e.g., control rooms, meeting rooms and administrative sectors), as well as to identify the areas with the greatest flow, such as the warehouse and sample reception sectors, which are located at points of easier access and control. It is also preferable to establish a unidirectional flow of people and vehicles in and out to avoid "cross contamination".

4.5.2. Organization and management

Specifically, regarding the organization of COEZOO, it is proposed to create a general coordination with direct advisory teams (secretariat, legal advice, communication and public relations, control and evaluation, and local representation), four executive and support coordination (field operations, planning, logistics and financial management) with their respective operational sectors.

Considering only the functions of coordinators, advisors, and heads of operational sectors, about 20 professionals are needed, a number that varies according to the stage of the animal health intervention and the action strategies to be used. In any case, the framework should allow for the necessary flexibility and adaptation to different scenarios and circumstances.

A basic proposal for the organization of COEZOO is presented in **Figure 05**. It is a general organizational vision that must be adapted and adjusted to the geographical and agricultural characteristics of the region, considering the phase of attention, the strategies to be adopted, the distribution and number of foci registered and the availability of human, financial and material resources.

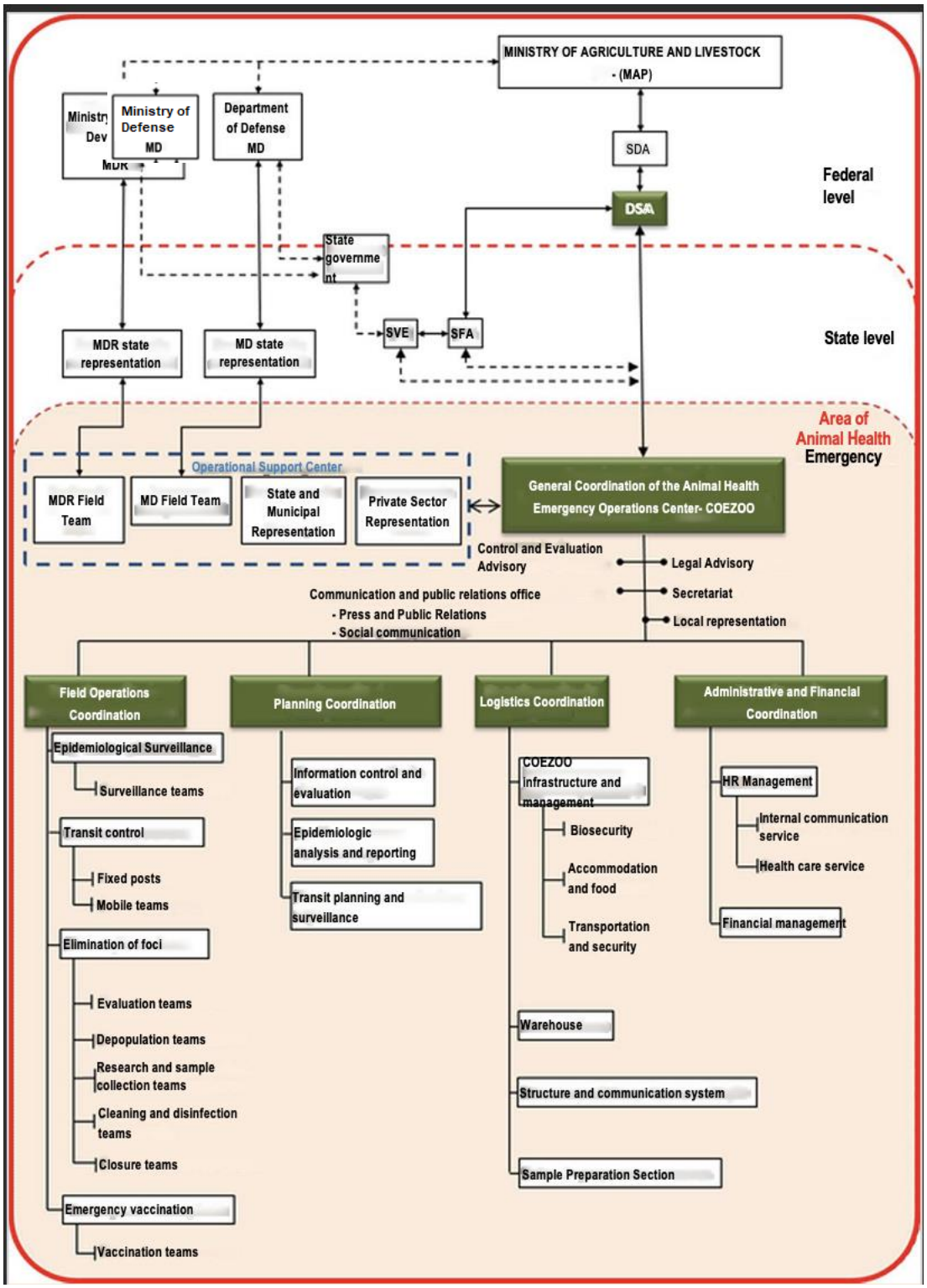

Figure 06. Basic organizational chart for COEZOO.

Thus, the proposed organization represents links and connections between the COEZOO coordination, the federal and state coordination levels, and the support structures of the Ministry of Regional Development and the Department of Defense.

The methods, procedures, and rules for the relationship between the different levels of coordination of an animal health emergency are, as mentioned above, subjects dealt with in the PNCEA.

At the local level, the COEZOO should have an **Operational Support Center** composed of representatives of various federal, state, and municipal institutions and organizations that play a relevant role in the implementation and maintenance of activities necessary for the conduct of emergency operations. The structures and details of these representations at local level are specific to each institution and do not form part of this document. In general, the following should be represented: civil defense, armed forces and public security, private sector, technical assistance and rural extension, public health, and environmental agencies.

The roles, size, and number of personnel for COEZOO will depend on several factors, primarily the nature and scale of the focus, as well as the need for teams to rotate on a weekly or bi-weekly basis. Should activity within a sector grow to the point where more than one coordinator is required, control should be divided and new coordinators appointed, i.e., where demand is high, more than one person may be required to coordinate a specific activity. The opposite can also occur, one professional filling multiple roles or responsibilities.

According to the principles of the **Incident Command System (SCI)**[4] , the organization of the COEZOO is modular and should grow from the bottom up, adding teams as needed, respecting the recommended limit of a maximum of seven and a minimum of three direct reports to the same manager, splitting or joining teams as necessary. When human resources are available, it is possible to work with coordinators and sectors under common management, which favors the continuity of activities in case of staff rotation and a better distribution of tasks.

When changing personnel, a transition period of one or two days should be foreseen, during which the outgoing team will pass on essential information to the incoming team.

When setting up the teams to act in case of an animal health emergency, it is important to emphasize the importance of including in the COEZOO technicians from local and regional veterinary units in the affected area, who will provide knowledge and information about the region and its production system, which is of great value for emergency management. They should also make the information provided in the initial recommendations of the **disease investigation manuals** and the local **animal health emergency worksheet** readily available.

Due to the initial lack of knowledge of the scale of the problem and the difficulties associated with the logistics of implementing COEZOO, the immediate and simultaneous deployment of large numbers of professionals to the animal health emergency area is not recommended.

This shift should be gradual, as the COEZOO is structured and the human resources needs are defined, remembering that there should already be the presence of professionals involved in the activities of the **alert phase**, especially those focused on the surveillance of herds in neighboring properties or linked by the movement of animals, people, materials, and products at risk.

Initially, travel should be limited to the COEZOO coordination team, with the immediate objective of establishing initial contacts with local authorities and representatives to communicate about the work to be done and to identify a location for the implementation of the operations center. Coordination should also

4 - Incident Command System Manual - operations level - Civil Defense of the State of Paraná.

seek alternatives for accommodation and food for the teams of professionals who will work in the field activities.

Once the initial organization phase has been completed, the assignment of professionals to the various technical activities should be arranged, prioritizing the following teams.

a) FOCUS Elimination Sector, with emphasis on the assessment team.

b) Analysis and Epidemiological Reporting Sector, which aims to quickly initiate procedures for organizing and analyzing information to support definitions on the location of fixed posts and the priority of rural properties for surveillance, in addition to estimating the number of teams needed for the work.

c) Traffic Control Sector, especially those directed at fixed checkpoints; and

d) Communication consulting to start the activities of clarification to the local community about the actions to be implemented.

Subsequently, the deployment of complementary epidemiological surveillance and laboratory support teams should be arranged.

For better identification of the teams, vests or armbands with different colors should be worn, as suggested in **Chart 01**.

Chart 01. Identification of COEZOO teams.

COEZOO teams	Colors
Coordinators	Blue
Surveillance teams - with no contact with foci or probable cases	Green
Transit control teams	Yellow
Surveillance teams - with contact with foci or probable cases	Red
Focus elimination teams	Red

Regarding the behavior and general responsibilities of the teams involved in animal health emergency activities, the following stand out:

a) Knowledge of and diligence in following the guidelines contained in the relevant contingency plans and technical manuals, with emphasis on biosecurity measures.

b) Work as a team, avoiding individualistic and disruptive behavior.

c) Quality in recording the activities performed and keeping the required reports and forms up to date; and

d) care and diligence in the conservation of equipment used in emergency activities.

Another specific issue of fundamental importance for the proper execution of the work is the availability at COEZOO of a computerized system for the collection of data and information generated during the activities involved, as well as for the rapid consolidation of data, analysis, and flow of information. As mentioned above, it is the responsibility of the SVO to make this system available, and each operational sector is responsible for entering the data recorded during their activities.

Each operational sector should therefore have access to the system and take responsibility for keeping it up to date. In the specific case of the forms used to record field activities, a centralized process for entering the information into the system can be chosen, providing adequate equipment and data entry operators.

4.5.2.1. General Coordination

The General Coordinator is responsible for the execution of activities in the animal health emergency area, reporting to the DSA and being accountable for all actions. As initially mentioned, he/she must be appointed by the SDA and, eventually, there may be more than one General Coordinator.

The General Coordinator must be a veterinarian of the SVO and have experience in animal health. Pending the appointment of this specialist and his/her deployment to the area of the animal health emergency, the heads of the animal health services of the SFA and the SVE should undertake the initial responsibilities of the general coordination of the COEZOO or designate their representatives.

The responsibilities and duties of the General Coordination include:

- seek to meet operational objectives during the animal health emergency.
- follow the guidelines and strategies defined with national and state authorities, aiming at the rapid containment and eradication of the disease.
- define the extent of the epizootic, based on the investigations and foci identified, establishing the containment zone in accordance with international requirements.
- support investigations to identify the origin of the animal health occurrence.
- coordinate the implementation and management of COEZOO.
- Define the team of professionals that make up the other coordination and operational sectors of COEZOO, giving priority to professionals from SVE, SFA, GEEZ participants and FN-SUASA. The General Coordination may suspend from animal health emergency activities any professional who fails in any way to fulfill the responsibilities and conduct established.
- manage Focus elimination operations.
- maintain integration with other authorities at federal, state, and municipal levels.
- define, within the area of animal health emergency, the criteria, and procedures for issuing specific documents to control the movement of animals and products at risk for EAD, as well as for other sanitary control measures.
- coordinate the activities, with the support of the other institutions and organizations involved.
- evaluate the progress of control and eradication measures and the epidemiological situation in the area of the animal health emergency.
- ensure that surveillance, control, and eradication measures comply with animal welfare requirements.
- Maintain the flow of information to other national and state levels of coordination; and
- request and monitor, in conjunction with the Administrative and Financial Coordinator, the use of contingency funds for small contingent expenses necessary to maintain animal health contingency measures, such as a corporate card.

To carry out its activities, the General Coordination must have a direct advisory team and hold daily, rapid, and objective meetings with its coordination and support team. Meetings should be held from time to time with all parties involved in the animal health emergency.

Meetings should have a start and end time and be held first with coordinators and then with support staff or a specific group that needs to resolve an issue.

The direct advisory structure should cover the legal, communication, control and evaluation, local representation and secretariat areas, whose main characteristics and responsibilities involve:

Legal Advisory

Animal health emergency measures involve principles governing the relationship between the public and the private powers, i.e., between the public and the private interest. It is common for community representatives to have doubts and questions, especially regarding the constitutional guarantee of protection of individual rights and complaints about possible illegality or abuse of power.

Often, these democratic right actions culminate in injunctions or writ of mandamus, requiring specific legal support to ensure the prompt reaction of the SVO in containing the animal health emergency.

Thus, the legal support must be represented by public servant(s) with training in law and specific knowledge in the areas of public law and animal health legislation and must be permanently available for both the federal and state levels, including for the coordination of field activities.

Main responsibilities:

- provide a legal basis for the operations of the field teams during the animal health emergency.
- represent the COEZOO in judicial situations.
- prepare, review, and approve, from a legal point of view, documents necessary for the execution of activities during all stages of the animal health emergency; and
- organize and coordinate the service structure for initiating compensation processes for rural landowners because of animal health emergency activities.

Communication and Public Relations Office

Press and Public Relations Department

Preferably, the sector should be headed by a professional with a background in communication/journalism or a veterinarian with experience in the field.

Main responsibilities:

- coordinate press releases and produce briefing materials related to animal health emergency activities.
- plan, develop and maintain actions for the public dissemination of animal health emergency activities; and
- advise the General Coordination on the communication of the public health, animal health and environmental risks involved.

Animal Health Media Department

Its main objective is to work with the local community to clarify animal health emergency actions and seek support and participation in the activities involved. To reduce possible legal obstacles, the importance of social communication activities aimed at clarifying the community about the technical procedures necessary during an animal health emergency is highlighted, especially those related to the interdiction of properties for the movement of

animals, products and by-products of animal origin, destruction of carcasses, items, and buildings.

The department should include veterinary professionals and educators with experience and expertise in the areas of animal health education and media, with emphasis on the following responsibilities:

- plan engagement with local media and target audience concentration points.
- produce complementary educational material for distribution and use with the local community; and
- encourage and inform the community of the channels they should use to report suspected EAD.

Control and Evaluation Advisory

It should be composed of veterinarians from the SVO with experience in the control or evaluation of animal health programs, knowledge about the clinic, pathology, and epidemiology of EAD, as well as biosecurity, and integrate the national animal health emergency group.

At least two professionals are recommended to act as auditors of the operation, responsible for reviewing and evaluating the emergency activities and reporting them to the COEZOO General Coordinator. They should follow up all meetings and actions in COEZOO, pointing out deficiencies to improve the use of personnel and material and the results of the operation.

Main responsibilities:

- provide technical advice to the COEZOO General Coordinator.
- supervise and evaluate the implementation of the activities of the operational sections and respective field teams, verifying compliance in the execution of the procedures provided for in the Contingency Plan and specific technical manuals, as well as compliance with animal welfare requirements.
- supervise compliance with biosecurity controls (intrinsic activity for all departments).
- validate the perimeters and the structural and isolation conditions for COEZOO security, established by the COEZOO Infrastructure and Management Section of the Logistics Coordination, to ensure that they do not pose a risk to teams and material resources.
- verify, in collaboration with the COEZOO Infrastructure and Management Sector of the Logistics Coordination, the safety and hygiene conditions of the activities of the participants, and to verify that the practices used do not pose a risk to the teams.
- analyze the structural conditions of workplaces and
- verify, in collaboration with the COEZOO Infrastructure and Management Sector, the likelihood of environmental damage in COEZOO activities.

Local representation

It should be composed of local representatives of the affected area, preferably including SVE veterinarians responsible for the UVL directly involved in the animal health emergency. Where possible, veterinarians from municipal agriculture departments should be included.

The role of these professionals is to support the COEZOO General Coordinator and provide support to the other coordination teams, considering their specific knowledge of local realities. It is recommended that these professionals do not undertake coordination or leadership responsibilities in COEZOO, to avoid possible conflicts or difficulties in their day-to-day work with local communities.

Secretariat

It should be in the hands of an experienced SVO professional, remembering that the functions of a secretary are not limited to assisting the general coordinator, but also aim to complement and develop the work of the COEZOO.

Main responsibilities:

- Organize the agenda of the General Coordination.
- Organize meeting rooms and environments and write minutes.
- Prepare and edit documents.
- File incoming and outgoing documents and organize the COEZOO archive and
- Arrange for the reproduction of documents and other materials.

4.5.2.2. Field Operations Coordination

It must be under the responsibility of an SVO veterinarian with experience in animal health. Their duties and responsibilities include:

- support the management of the COEZOO, coordinating and directing the respective operational departments, ensuring, in collaboration with the warehouse section of the Logistics Coordination, the proper conditions and supply of materials for animal health emergency actions, in addition to working in close cooperation with the other COEZOO Coordination.
- ensure compliance with the standards and procedures defined by the General Coordination, regarding the implementation of activities in the health emergency area.
- ensure compliance with contingency plans and technical manuals by subordinate operational sections.
- provide technical advice to the COEZOO General Coordination.
- keep the teams up to date with knowledge of the strategies being implemented and the progress of operations within the different subordinate operational sections.
- ensure that new teams, upon entry into animal health emergency actions, are informed and prepared to carry out the specific activities to which they are assigned; and
- establish the daily routine of the activities of the subdivisions, based on the analysis of the epidemiological research, in articulation with the Planning Coordination.

To carry out its activities, the Field Operations Coordination must have four specific operational sectors according to the phase of the animal health emergency, highlighting below the tasks to be carried out by veterinarians of the official service with experience in animal health.

Focus Elimination Section

Its specific responsibility is to act on the identified foci, seeking the application of the agreed procedures and strategies. It should set up specific teams for assessment and taxation; depopulation; investigation; disposal; decontamination and closing.

The head of this section must have participated in training activities in the event of an animal health emergency and, in particular, the evaluation and taxation team must be appointed by ordinance (**Annex 07**), including veterinarians from the SFA and SVE, as well as representatives of the production sector, according to specific legislation. The tasks of the Sector and its specific areas are highlighted below:

- manage Focus response to rapidly control and eliminate sources of infection, including assessment, depopulation, disposal of carcasses, cleaning/disinfection, fallow/waiting periods, and introduction of sentinels, according to agreed strategies.
- define and inform the demand for human resources, inputs, materials, and equipment needed to perform their activities.
- ensure data and information recording for Focus investigation.
- ensure the performance of clinical inspection and collection of samples for laboratory tests, aiming at better knowledge about the dispersion of the pathogen and the epidemiological characteristics of the disease in each identified Focus.
- ensure audiovisual recording of the activities performed, whenever possible; and
- ensure proper recording of all activities and their inclusion in the information system provided.

Transit Control Section

Responsible for the control and inspection of the movement of animals and products at risk, including fixed posts and mobile teams. Duties include:

- develop, in collaboration with the Transit Planning and Surveillance department, and implement an inspection plan, covering the locations, flows and periods of greater risk.
- Identify and communicate the needs for materials, equipment, supplies, and human resources required for transit control.
- enable and coordinate the implementation of fixed inspection posts and the strategic use of mobile inspection teams.
- manage, in liaison with the General Coordination, all procedures and authorizations related to the movement of animals and products at risk for EAD, including the issuance of documents established for animal health emergency area.
- comply with the inspection procedures and, in collaboration with the Logistics Coordination, ensure the uninterrupted operation of the inspection structures, including the availability of human resources, food, accommodation, supplies, structure, equipment and police support.
- evaluate and propose adjustments to the activities and rules for monitoring the movement of animals and products at risk, vehicles, people, and objects that may carry the infectious pathogen; and
- ensure proper recording of all activities and their inclusion in the information system provided.

Epidemiological Surveillance Section

Responsible for investigations in establishments with susceptible animals or products at risk for EAD. Surveillance teams must be assigned to this sector in numbers appropriate to the geographical and agro-productive characteristics of the animal health emergency area.

These surveillance teams must be composed of at least one veterinarian with full knowledge of the **Disease Investigation Manual**, as well as a technical assistant to support the activities. Their duties and responsibilities include:

- coordinate the implementation of epidemiological investigation activities on farms and other establishments with animals susceptible to EAD in the animal health emergency area.
- coordinate the distribution of field teams according to the different epidemiological risk areas.
- manage the achievement of epidemiological investigation targets, including the frequency of farm inspections, according to the different epidemiological risk areas.
- ensure immediate notification of confirmed cases of EAD, as well as compliance with the guidelines of the **Disease Investigation Manual**, foreseen for the case.
- ensure that investigation forms are filled in completely, accurately, and clearly, and that they are promptly entered into the information system.
- Identify and communicate the needs for materials, equipment, inputs, and human resources required for veterinarian investigation activities in the emergency area.
- ensure that surveillance teams comply with the planned epidemiological investigation activities and procedures, including biosecurity measures and guidance to farmers on the prevention and restriction measures imposed in the animal health emergency area.
- evaluate and propose adjustments to research activities in the animal health emergencies; and
- ensure proper recording of all activities and their inclusion in the information system provided.

Emergency Vaccination Section

This section should be implemented when EAD vaccine is available, and the strategy involves its use during the emergency. Their duties and responsibilities include:

- prepare a vaccination operational plan, including the methodology to be used, the expected time for its execution and the demand for human resources, inputs, materials, and equipment necessary to perform its activities.
- ensure adequate conditions for the conservation, distribution, and application of the vaccine against the disease.
- ensure adequate biosecurity conditions in vaccination operations; and
- keep a record system and database of the information produced during its activities.

4.5.2.3. Planning Coordination

It must be under the responsibility of an SVO veterinarian with experience in epidemiology. Their duties and responsibilities include:

- ensure compliance with contingency plans and technical manuals guidelines by subordinate sections.
- provide technical advice to the COEZOO General Coordination.
- liaise with the Field Operations Coordination to define surveillance and transit control activities.
- recommend the definition and adequacy of epidemiological risk areas and surveillance strategies and sites for action.

- define a strategic investigation and surveillance plan, covering locations, flows and periods of greater risk.
- maintain and manage the information system for controlling animal health emergency activities.
- ensure the timely submission of technical reports on the progress of operations; and
- keep the teams up to date with knowledge of the strategies being implemented and the progress of operations within the different subordinate operational sections.

To carry out its activities, the Planning Coordination must rely on three specific sections: Information Control and Evaluation; Epidemiological Analysis and Reporting; and Transit Planning and Surveillance. These three sections should work in close cooperation, as shown in **Figure 07**.

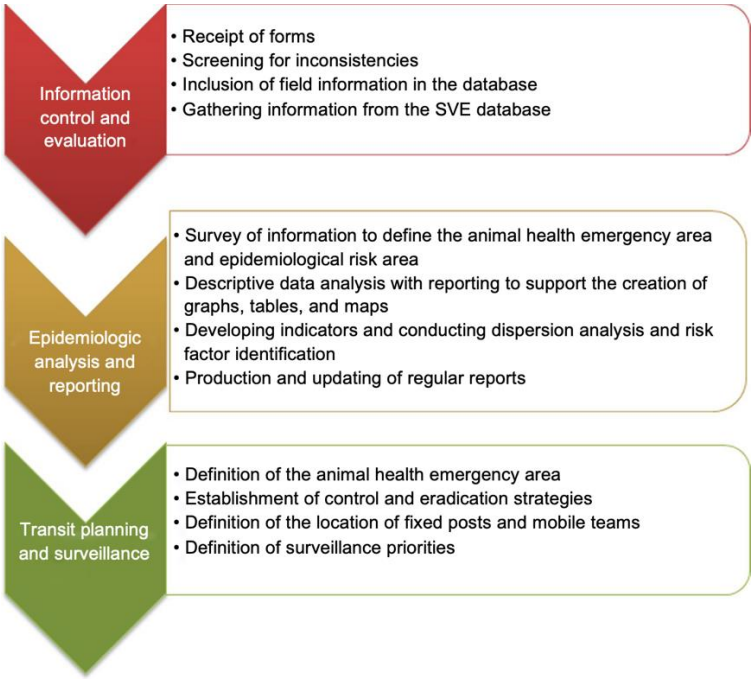

Figure 07. Basic steps and information flows in the Planning Coordination.

In addition to the technical characteristics required to be responsible for each section, the person in charge must have the support of professionals in the field of epidemiology, information systems, including the preparation and analysis of databases, and knowledge in the use of statistical applications and geographic information systems (SIG). The organization of its activities should include information control and evaluation teams, epidemiological analysis, and epidemiological reporting. Their duties and responsibilities include:

- define and inform the demand for human resources materials and equipment needed to perform their activities.
- manage the recording and storage of data related to animal health emergency activities.
- consolidate and analyze data from the forms used in animal health emergency activities.

- provide information to support the definition of the animal health emergency area and establishment of the epidemiological risk areas as well as the containment zone.
- obtain and electronically organize all available data and information on the emergency area, seeking to develop a rapid geographical and agro-productive characterization, in order to support the implementation of other control and surveillance activities.
- carry out analyses and produce epidemiological information necessary for the management of animal health emergency actions, including the establishment of control and eradication strategies, location of fixed posts; distribution of mobile teams; as well as the definition of surveillance priorities.
- perform ongoing assessment of the risk of spread of EAD to support urgent identification and tracking of cases and contacts.
- perform analyses to determine the primary Focus, including probable origin and transmission pattern of EAD pathogen.
- Perform analyses to assist in determining the pattern of disease spread.
- to prepare periodic bulletins and reports on the epidemiological situation in the area of animal health emergencies, with emphasis on the information necessary to support international reporting.
- prepare maps, graphs, tables and other forms of presentation and communication of epidemiological information.
- support the general coordination in holding technical meetings for the management of animal health emergency actions; and
- ensure proper recording of all activities and their inclusion in the information system provided.

Therefore, the Planning Coordination is of strategic importance, acting initially in the delimitation of the animal health emergency area and in the establishment of epidemiological risk areas. Once this phase has been completed, new epidemiological analyses are carried out daily as information is updated, making it possible to estimate indicators and draw up maps that describe the epidemiological profile of the animal health event in progress and guide the direction of epidemiological surveillance and transit control measures.

The Planning Coordination should maintain ongoing assessment of the risk of spread of EAD, to support urgent identification and tracking of cases and their direct and indirect contacts.

All activities of this Coordination must be recorded and summarized by the Epidemiological Analysis and Reporting Section to allow up-to-date communication of the operations carried out and on the epidemiological situation in the animal health emergency area, including the preparation of maps, graphs, tables, etc.

4.5.2.4. Logistics Coordination

It should be filled by a professional, preferably with experience in management and logistics. If resources from private funds are used, it should include a professional appointed by the management group of those funds. Their main duties and responsibilities include:

- support the management of the COEZOO by coordinating the subordinate operational and support sections.

- manage, in collaboration with the Administrative and Financial Coordination, emergency resources for small contingent expenses, necessary for the maintenance of animal health emergency actions, according to procedures and controls defined by the Administrative and Financial Coordination; and
- keep a record system and database on the activities performed.

To carry out its activities, the Logistics Coordination rely on four sections: COEZOO Infrastructure and Management; Warehouse; Communication System Structure; and Sample Preparation, whose activities and responsibilities are highlighted below.

COEZOO infrastructure and management section

The head must be an SVO professional with experience in management and logistics. Professionals with knowledge of biosecurity procedures and the use of disinfectant products should be part of the team.

Its activities are grouped into three sub-sectors (biosecurity; accommodation/food; transportation and security) with emphasis on the following main tasks:

- establish perimeters and structural and isolation conditions for COEZOO security, ensuring that they do not pose risks to teams and material resources.
- verify safety and sanitary conditions in participants' activities, checking that the practices employed do not pose risks to the teams.
- verify the likelihood of environmental damage in COEZOO activities.
- establish the boundaries of clean and dirty areas in the COEZOO, observing established procedures to avoid contamination.
- coordinate the parking of vehicles and their safe operation, observing the principles of biosecurity.
- ensure the proper functioning of COEZOO and support the implementation of animal health emergency actions.
- work closely with the Field Operations Coordination.
- ensure supplementary power supply in case of need (generator set).
- ensure the supply and maintenance of equipment used in animal health emergencies, with emphasis on the availability of vehicles suitable for field conditions.
- maintain the vehicle cleaning and disinfection system in operation, as well as the compliance with biosecurity procedures by field teams when entering COEZOO.
- ensure the washing and disinfection of clothing, footwear and equipment used in animal health emergencies.
- ensure the cleanliness of the COEZOO is maintained, including the correct collection, handling and disposal of waste arising from operations during the animal health emergency.
- provide accommodation and food for the teams involved in the animal health emergency, seeking availability of accommodation near the site of field operations or alternatives within COEZOO itself, including sanitary facilities.
- ensure food, accommodation, and sanitary facilities at outposts, including fixed posts and mobile inspection teams; teams operating in foci and other remote locations.
- monitor vehicle use and fuel availability; and

- ensure the presence of public forces for the security of COEZOO and for field operations during the animal health emergency when requested by the General Coordination, with emphasis on fixed inspection posts, mobile teams, and veterinary surveillance.

Warehouse Section

It should preferably be headed by an SVO professional with experience in warehouse management.

Their main duties and responsibilities include:

- survey the needs and maintain the ready supply of inputs, equipment, and materials necessary for the internal activities of COEZOO and for field operations during the animal health emergency, remembering that it is part of the responsibilities of the GEEZ, to maintain a list of needs of inputs and equipment for action in animal health emergency. As mentioned, the location of the warehouse should allow easy access by field teams and allow for safe storage of the products and materials involved.
- prepare and maintain basic kits for ready use for animal health emergencies; and
- keep a registration system and database for stock control and use of permanent and disposable equipment.

Communication System Structure Section

It should be headed by a professional with experience in the field of telecommunications and information

system. Their main duties and responsibilities include:

- enable telecommunications equipment and structure within COEZOO and for animal health emergency actions, including the installation and management of communication network (telephone, internet, intranet, radio, etc.); and
- put in place and manage backup procedures to ensure data and information security.

Sample Preparation Section

It must be under the direction of a professional with experience in the specific area, including training in sample conditioning and shipping procedures, and have support personnel for the activities of receiving (testing and evaluation), identification, conditioning, storage, shipping, daily record keeping, and file maintenance in an organized and proven manner that allows for traceability. The Section Manager is responsible for the distribution of activities among the support team, considering the experience and profile of each professional. Depending on the demand and the number of people involved, there may be overlapping responsibilities, if there is no damage to the progress of the work. Main duties include:

- organize and manage the structure at COEZOO for receiving, organizing, storing, and preparing samples for shipment to the laboratory.
- sort the material collected in the field, ensuring its conservation, conditioning, and identification.
- define and inform the demand for human resources, inputs, materials, and equipment needed to perform their activities.

- Contribute to the maintenance of inventory in the warehouse of sample materials and supplies for immediate use by field teams.
- maintain materials and equipment necessary for sample preservation and proper disposal of biohazardous material.
- maintain contact with designated diagnostic testing laboratories, including verifying receipt of samples and issuance of results.
- support field teams in the collection, identification, conditioning, and preservation of samples.
- perform or provide rapid tests to field teams when available and if their use is part of the strategy adopted in the emergency area.
- ensure proper recording of all activities and their inclusion in the information system provided.

4.5.2.5. Administrative and Financial Coordination

It should be filled by a public servant with experience in management and finances. Their main duties and responsibilities include:

- support the management of the COEZOO by coordinating the subordinate operational sections.
- manage emergency resources for small contingent expenses, necessary for the maintenance of animal health emergency actions; and
- keep a record system and database on human and financial resources involved in the animal health emergency.

To carry out its activities, the Administrative Coordination rely on two sections: Human Resources Management (HR) and Financial Management.

HR Management Section

It should be led by a public servant with experience in human resources management. The team includes internal communication and health care service departments. For the latter, it is important to have a physician and psychologist involved or available.

Key activities and tasks, including specific areas, include:

- ensure the record and control of human resources participating in the animal health emergency action, keeping an organized list including identification, function, activities, allocation, phone number, e-mail, etc.
- welcome and guide the staff newly joining the animal health emergency action, with regard to administrative aspects and the operation of the COEZOO.
- ensure the internal dissemination of information to motivate, clarify and guide the personnel involved.
- keep specific places for disseminating information, such as murals and bulletin boards.
- prepare administrative bulletins relevant to the teams involved in the animal health emergency and certificates of participation.
- facilitate the exchange of administrative and personal information between animal health emergency teams;
- ensure prompt, full-time medical and psychological care.
- maintain medical care and occupational accident prevention planning during the animal health emergency.
- establish integration and motivation activities for the personnel involved.

- provide guidance on health and safety procedures for professionals during the emergency; and
- keep records and investigate all medical occurrences during the animal health emergency.

Financial Management Section

It should be led by a public servant with experience in public financial resources management. If financial resources from private animal health emergency funds are used, the managers of these funds must appoint a qualified professional to also be part of this sector. Their main duties and responsibilities include:

- organize and control the necessary documentation for recording, accounting, and reporting on public and private resources used.
- maintain an updated budget and financial control spreadsheet and forecast of necessary expenses for prompt use by the teams of the other coordination and sections of the COEZOO; and
- maintain an up-to-date list of material and equipment suppliers.

5. PLANNING AND IMPLEMENTING

5.1. Production and use of information

Acting in an animal health emergency involves an intense flow of data and information, in different formats and quality, and requires rapid compilation and analysis, given the need to support decision-making and provide clarity and transparency to all ongoing actions. Especially in the first weeks, the pressure for information is very intense, both at local and national levels, as well as internationally.

Figure 08 provides a schematic of the structure and flow of animal health emergencies. The first data input is the import of information from the databases of the SVEs or the Agricultural Management Platform (PGA).

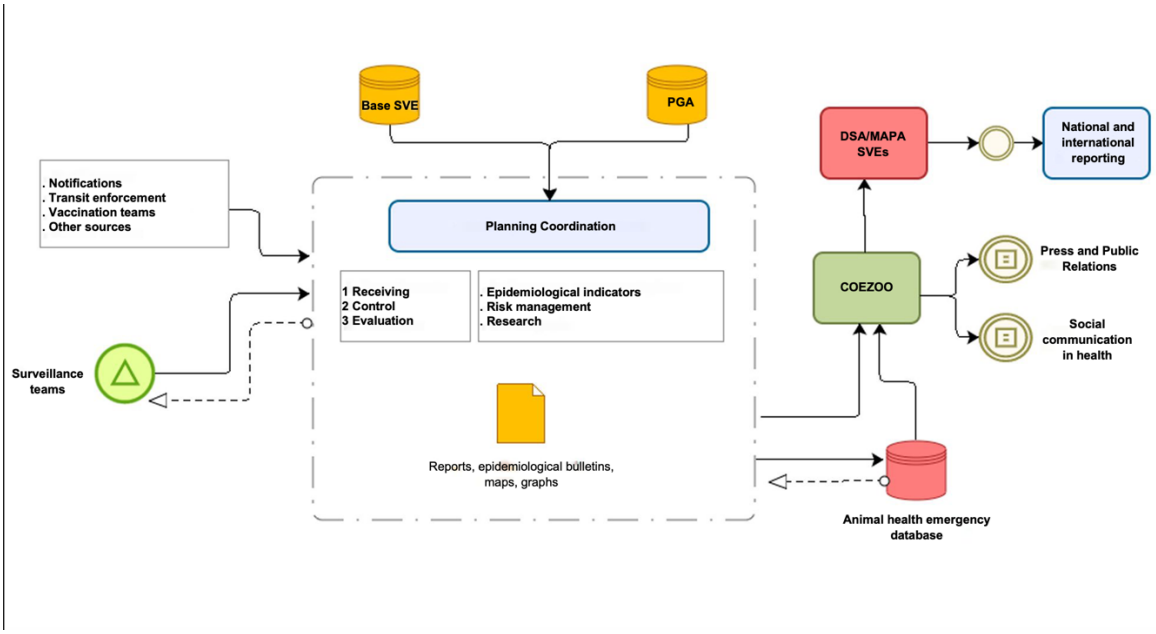

Figure 08. Main flows and bases of the animal health emergency information system.

Once COEZOO is in place, the main sources of data and information for the system are represented by the activities of the surveillance teams, notifications of suspicions presented by the community and actions developed by the inspection teams for the transit of animals and products at risk (fixed posts and mobile teams) and by the emergency vaccination teams (when adopted), among other sources.

All the information produced is shared with the COEZOO sectors, serving as a basis for the activities developed by the Communication and Public Relations Office, as well as for the preparation of briefings and reports to be sent to higher levels of coordination, with emphasis on the DSA.

Chart 02 shows the main types and frequency of reports that should be generated. The main objectives of these reports are:

a) build community confidence in emergency actions.

b) report proactively and voluntarily, with transparency.

c) transmit even incomplete information as quickly as possible to control rumors and set up a reference.

d) answer questions that demonstrate sensitivity to the target audience; and

e) prioritize communications for the most urgent demands during the animal health emergency.

Chart 02. Main types of reports to be developed during animal health emergency actions.

Type of Report	Nature of information	Frequency	Circulation
Follow-up report*	WAHIS Report	Weekly	COEZOO, MAPA, WOAH
Bulletin	Information	Daily	COEZOO, SVE, MAPA
Surveillance roadmap	Operational	Daily	COEZOO, Surveillance Section
Technical note	Description	Weekly	COEZOO, SVE, MAPA
Public note	Press release	Weekly	Press Office/COEZOO

* Report produced by the Epidemiology Coordination (CEPI) of CGVSA/DSA based on information produced by COEZOO.

Follow-up reports to the WOAH should be prepared by CEPI/CGVSA, based on information obtained from the investigation forms, in the case of operations carried out in disease foci, and based on field activity reports. These should contain updated data on the structure and personnel involved in the work; a summary of the progress of the primary focus elimination activities; information on the number of existing and inspected properties in the interdicted area; the total number of susceptible animals; the results of investigations conducted on properties with epidemiological links; and information on the hypotheses about the origin of the animal health occurrence.

Evidently, the implementation and management of an animal health emergency are optimized and facilitated with the availability of a state computerized system containing animal movement data and georeferenced records of establishments, enabling greater agility in defining risk areas and surveillance activities.

In general, the greater the degree of organization and detail of the data and information of the SVE record base, the greater the agility and accuracy of the actions to be taken to control and eradicate the animal health event. According to the available format, the Planning Coordination should adapt the methodology for collecting and analyzing the information necessary for the management of animal health emergency activities.

The number of professionals to work in the sections involved will depend mainly on the availability of a computerized system for information control and management, as well as the quality and format of the data available. In view of the different demands presented and recognizing the immediate need for data and information, **the availability of an information system for emergency action management is essential**.

5.2. Emergency area management

The emergency area has a legal, administrative, and epidemiological expression. From a **legal** standpoint, it must be established by means of an official MAPA act, in which its territorial extension is delimited and the actions to eradicate the disease are defined. In turn, the **administrative** expression of the emergency area is constituted by the territorial extension over which the COEZOO exercises its jurisdiction.

From an **epidemiological** point of view, considering the centrifugal dispersal characteristic of acute communicable diseases with high spreading power, the emergency area can be divided into focus and epidemiological risk areas, classified as in *peripheral, surveillance and protection areas*, as shown in **Figure 09**:

a) **peripheral area**: area immediately surrounding the Focus of EAD, comprising at least the rural properties adjacent to it. A radius of **three** kilometers drawn from the geographical limits of the confirmed Focus can be used to support its delimitation.

b) **surveillance area**: area immediately surrounding the peripheral area. In support of its delimitation, rural properties located up to **seven** kilometers from the boundaries of the peripheral area may be considered; and

c) **protection area**: area immediately surrounding the surveillance area, representing the boundaries of the sanitary protection area. In support of its delimitation, rural properties located up to **15** kilometers from the boundaries of the surveillance area may be considered. This area is of optional implementation.

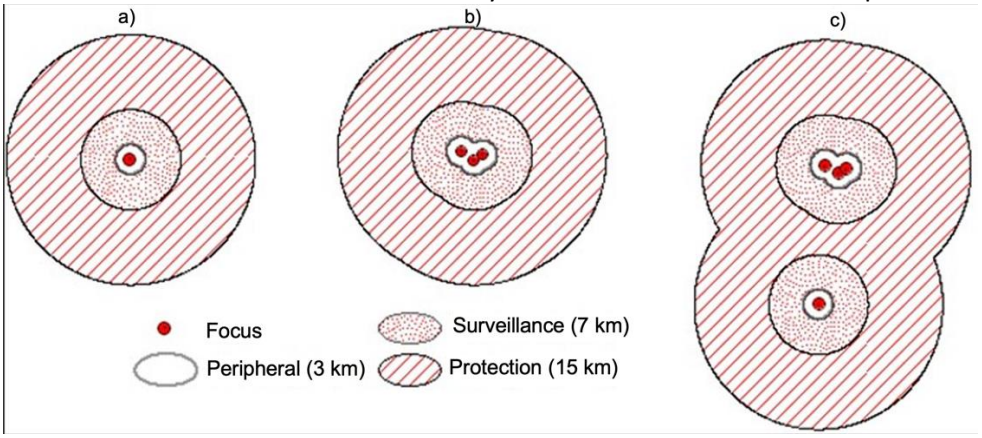

Figure 09. Subdivision of the animal health emergency area into foci and epidemiological risk areas (considering the presence of a Focus (a), close foci (b) and close and distant foci (c)).

However, depending on the geographical and agro-productive characteristics of the area concerned, as well as the spread of the disease, this division may not be appropriate, and alternatives should be adopted.

The identification of areas of differentiated epidemiological risk within the emergency area is an important operational component, as it allows the implementation of specific and differentiated control strategies according to risk. The definition of these risk areas is based on a fundamental principle: the closer to a Focus, the greater the risks of infection and contamination and, consequently, surveillance and eradication actions must be intensified, with the adoption of more restrictive control and inspection activities.

The delimitation and management of the emergency area and its epidemiological risk areas are the responsibility of the SVO, and must be defined by the General Coordination of COEZOO, based on the analyzes carried out by the

Planning Coordination, being constantly updated based on the data collected by the Epidemiological Surveillance and Transit Control Sections of the Field Operations Coordination.

For this definition, existing databases (SVO, Rural Extension, Civil Defense, Health, among others) should be used and considered as:

a) diagnosis of the epidemiological situation.

b) geographical aspects, with emphasis on existing natural barriers.

c) feasibility of installing control and inspection posts.

d) administrative limits.

e) road network.

f) animal movement flows.

g) predominant livestock production system in the region.

h) animal demographics.

i) present susceptible species.

j) availability of slaughterhouses and waste processing facilities; and

k) economic and social interrelationships with other regions of the country and borders.

An optimistic but unrealistic picture is that the Focus of an EAD has been limited to a single or adjacent rural establishment. However, it is likely that cases of the disease will be identified in different rural facilities and in different locations in the emergency area, making the identification of epidemiologic risk areas a complex and highly variable process.

The strategy of progressively establishing risk areas around foci of acute communicable diseases is well known and, in the case of Brazil, should be aligned with the SINEAGRO guidelines and updated based on the WOAH recommendations published mainly through the Terrestrial Animal Health Code.

Regardless of the terminology used, the importance of the geographical issue in the management of EAD foci is emphasized, highlighting the need for support from professionals who master knowledge in the field of geoprocessing and SIG, and the availability in COEZOO of equipment, software, data, and digital images to carry out the work. All these resources should be added to the availability of a geolocated register updated by SVE.

The technology and tools available at SIG today are very extensive and essential for carrying out an emergency operation. Trained professionals, computers with good data processing capacity, fast Internet connection, appropriate software and quality printers represent the minimum structure required. The team must have appropriate digital data, such as road networks, natural features (forests, rivers, lakes, terrain relief), and others (in both vector and matrix formats) that can support surveillance activities and the deployment of fixed posts.

In addition to digital devices, printed maps at larger scales, such as 1:50,000, 1:30,000, or 1:25,000, are very useful for analyzing strategies during command team meetings, and it is important to have tables, boards, multimedia projectors, murals, or panels for handling and displaying these printed or digitized maps.

It should be clear that the radii and their limits proposed in the technical standards are theoretical and operational support elements. The risk areas are initially defined based on radii represented by imaginary lines that must be adapted to the geographical and agro-productive realities of the region, considering, in addition to the disease spread scenario, the presence of natural barriers such as forests, rivers, agricultural plantation areas, as well as the feasibility of installing fixed inspection posts.

It is therefore a guideline that can and should be adapted to each ongoing epidemiological context. The dimensions and boundaries of the areas should be appropriate to the EAD and the geographical realities involved, and for each defined area and specific disease, specific surveillance activities will be identified and carried out by different technical teams.

A schematic representation of the use of geographic radii to support the definition of epidemiologic risk areas is shown in **Figure 09**. However, these imaginary and schematic lines, after the above-mentioned evaluations and adjustments, lose their initial circumferential format and adapt to the geographical and agro-productive reality found. As an example, **Figure 10** shows a geographical representation of the emergency and epidemiological risk areas established in FMD occurrences in the country.

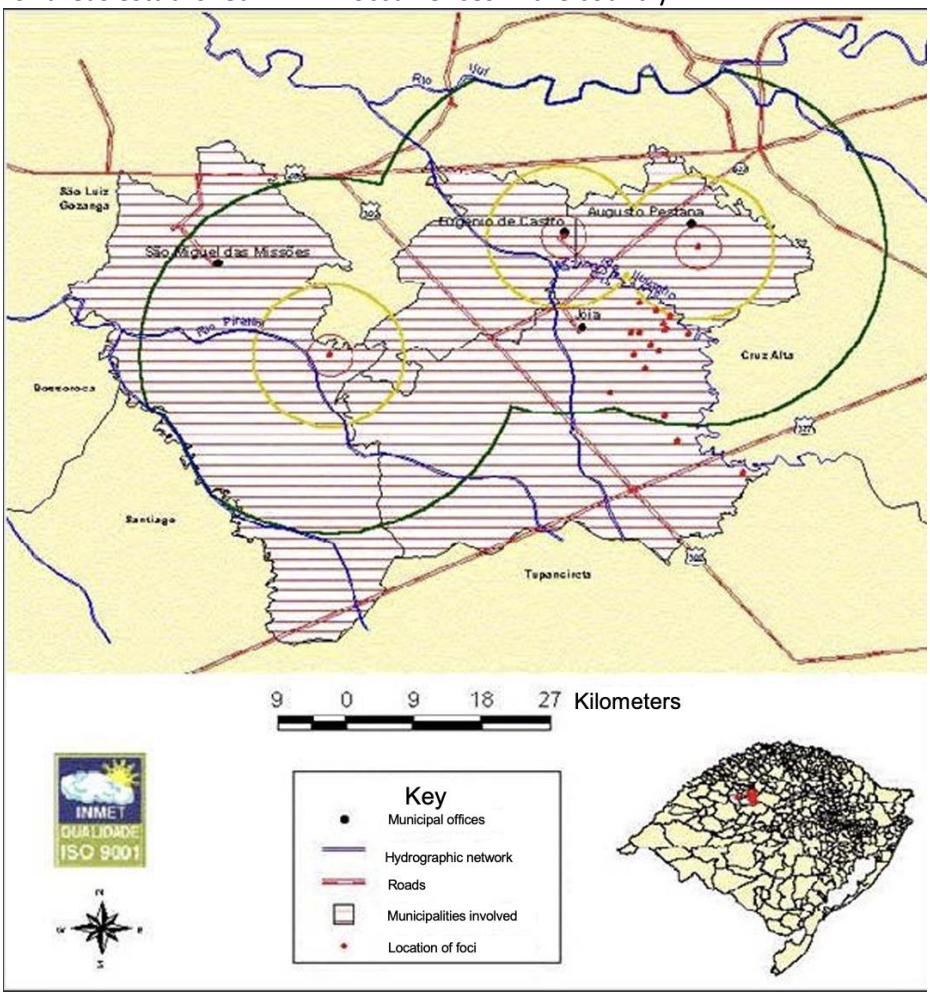

Figure 10. Geographical representation of the areas of emergency and epidemiological risk established around the foci of foot-and-mouth disease located in the municipalities of Augusto Pestana, Eugênio de Castro, and São Miguel das Missões, RS, 2000.

Once the epidemiological risk areas around the foci have been defined, the procedures for restricting, controlling, and supervising the movement of animals and products at risk must be implemented, including the installation of checkpoints. Signage at access points to the emergency area is recommended to warn of an animal health risk.

Initially, the movement of animals and products at risk of EAD should be halted throughout the emergency area. For some diseases involving wild animals in the emergency area, slaughter for control should be suspended until new management guidelines are determined by the SVO.

As actions are implemented and the epidemiological picture becomes clearer, gradual suspensions of the ban can be implemented, according to the established epidemiological risk areas, and it is up to the COEZOO General Coordination to define the criteria and procedures and control the issuance of documents.

specific for the control of authorized movements in the interdiction area, which must be adapted to the specific realities and needs identified during animal health emergency actions.

The movement of animals and products at risk may be prohibited, permitted with restrictions, or authorized depending on the nature/characteristics of the disease, animal or product, the risk assessment, the effectiveness of treatments or procedures used to reduce or eliminate the risk, the destination, animal welfare considerations and the health status of the places of origin and destination. Controls should at least meet the requirements of the WOAH Terrestrial Code and may be more restrictive in certain areas in the initial phase and relaxed in others, depending on the risk assessment and analysis of the evolution of the emergency.

Common examples in the management of FMD occurrences in the country refer to problems of shortage of feed for animals, which require decision-making by the COEZOO General Coordination, which must seek solutions within the area of animal health emergency. If the movement of animals is possible, it must be accompanied by the SVO and limited to the animal health emergency area, preferably within areas of the same epidemiological risk or, if this is not possible, from areas of lower risk to those of higher risk.

In addition to proximity to the foci, another factor that should be considered in determining the level and stringency of the restrictions to be implemented is the work phase in which the Focus activities are taking place. Therefore, if the presence of sick animals and their direct contacts persists, restrictions should be tightened.

The need for surveillance and early case detection should be assessed against the risk of pathogen introduction by field teams. Thus, biosecurity measures must be strict to prevent the spread of the disease. More detailed instructions on the biosecurity procedures to be followed when monitoring properties are provided in **Annex 08** of this Plan.

The action in foci and in the different areas of epidemiological risk should be carried out by different teams. Professionals working in foci, especially in the phase with the presence of sick animals, must remain for at least **24 hours**, depending on the disease, without visiting another property with susceptible animals, **provided that all the biosecurity conditions** recommended in this Plan are met when leaving the property. Teams working in the infected area should wait one day and take all biosecurity precautions before participating in activities in the surveillance area. When transferring teams from a lower risk area to a higher risk area, there is no need to perform the procedures mentioned.

The distribution of teams within the respective epidemiological risk areas should be sectorized, according to the number of teams available. Each team must consist of at least one veterinarian and one field assistant. The geographical area allocated to each team should take into account the characteristics of livestock production, the size of properties and herds, the predominant types of farming, the geography and topography of the area, the means of transport used, the distances, the human and material resources available and the classification of the risk area, bearing in mind that the frequency of inspections will be higher in areas of higher epidemiological risk.

Among the work to be carried out, the need to inspect and update the registration of all properties located in the animal health emergency area stands out. This work should be carried out considering the epidemiologic subdivisions, with separate teams for each. In all investigated properties, guidance and clarifications must be made on signs of the disease, mandatory immediate notification of suspicions, prevention, and biosecurity measures to be established, restrictions imposed, and actions related to the emergency implemented in the area.

The main activities for management in epidemiological risk areas are highlighted below, bearing in mind that the higher the risk, the greater the restrictions and the more intensive the surveillance activities should be:

a) installation of warning signs on the perimeter of the animal health emergency area.

b) installation of 24-hour movement checkpoints at strategic locations, in access to the animal health emergency area and between epidemiological risk areas.

c) periodic inspection of all rural holdings with susceptible animals in the animal health emergency area, with clinical inspection of susceptible animals to rapidly detect the occurrence of clinical signs of EAD, and collection and updating of records. The frequency of inspection should occur at shorter intervals in areas of higher epidemiological risk. As a general recommendation, an interval of **3 days** is suggested for the peripheral area, **7 days** for the surveillance area, and **15 days** for the protection area. Personnel should be adapted to the need to inspect rural establishments, starting with a higher frequency, especially in the infected area, which can be reduced as the animal health situation is controlled and foci are eliminated.

d) increased levels of biosecurity on farms, and cleaning and disinfection of incoming and outgoing vehicles, people, and equipment.

e) animal health education activities aimed at people passing through the emergency area.

f) Install disinfection barriers at exit points of infected properties and at movement control points.

g) ban on animal gathering events.

h) restrictions on the movement of non-susceptible animals and agricultural products.

i) definition on the destination of livestock products at risk.

j) preventive disposal of clinically healthy animals to reduce the susceptible population in the area, provided there are slaughterhouses in or near the animal health emergency area; and

k) release for slaughter of animals for domestic consumption (in slaughterhouses located in the emergency area or nearby), after clinical inspection of all susceptible animals, epidemiological evaluation, and use of biosecurity measures (slaughter, when authorized, must be accompanied by the SVO).

The emergency area should evolve to meet the containment zone concept established by the WOAH. Considering the options offered by the WOAH, discussed in section **3.3.1.3**, from a legal and administrative standpoint, a choice should be made to use one of the following strategies for emergency area **management**:

a) establishment of a **containment zone** as a delimited geographical area recognized by the WOAH after the absence of new cases has been demonstrated for at least two incubation periods of the disease, counted from the last case recorded, or

b) establishment of a **containment zone** consisting of an **infected zone**, where foci may be active, surrounded by a **case-free zone**, in which no new cases must have been reported for at least two incubation periods of the disease.

5.3. Social communication

The success of animal health emergencies depends on the support of the public. It is therefore imperative that the community is engaged, co-responsible and participatory in the work developed with the support of the private sector and under the coordination of the public sector.

Involving the community as soon as possible is a key element in implementing the animal health emergency. This will not only help gain local trust and support but will provide important insights into the concerns and perspectives of the region. It cannot be disregarded that the community is par excellence aware of the local reality, of the facts that may have caused the Focus of the animal health event and of the risk elements involved in its spread.

Given the importance of quickly engaging and educating the local community, the animal health social communication team should comprise the group of professionals who initiate animal health emergency activities. Therefore, the SVO should maintain training programs for multipliers to be involved in risk communication activities during animal health emergencies.

Of course, there is no single and universal model of action because an effective communication process must not only inform, but also create a proactive attitude in the target audience to face the problem. Therefore, the information conveyed must be understandable, easy to assimilate and remember, adapted to the level of education and the cultural environment, mainly rural. Too much information can be an obstacle, confusing the local community, especially the rural producer.

At this point, it is essential that the Animal Health Media team has a broad grasp of the content of the **Manual de Comunicação para o Serviço Veterinário**, published by WOAH. [Veterinarian Service Communication Manual]

Social media communication activities in the emergency area should consider the following points:

- the social communication team is the main link between COEZOO and the community. This team must be informed of all decisions, guidelines, technical notes, and emergency procedures issued during the course of the health event and must maintain daily contact with the most diverse segments of society, keeping them informed and involved.
- the technical sectors in charge of the sanitary programs in the States and in the DSA must prepare in advance and have available for immediate use specific educational materials, in simple and didactic language, to be used during animal health events. Preferably, the material should be timeless and free of government and political party logos.
- information posters or infographics are resources for places where there is a large movement of people (they can be seen in the streets, hospitals, bus stops, neighborhood associations, religious temples, etc.) Summary posters with good visual balance (infographics) allow the message to be quickly understood. Flyers are the easier way to reach the public and can be delivered directly to interested parties. It can be an ideal complement to a lecture, and its wording should have an informative-persuasive style and a clear educational focus. It is advisable to choose words carefully so that there are no ambiguous meanings or double meanings.
- prior availability of audiovisual materials is also very helpful. The regional television activity has an efficient development in the journalistic spaces presenting local, regional, and international news, which arouses the interest of the community. Risk communication messages can be inserted in this context. Materials aimed at television audiences should be prepared with extreme care.

and always consider mass communication, broadcast times and whether they are broadcast on open or closed channels.

- Video is another interesting medium for disseminating information to specific audiences. The usefulness of this educational modality is important because it allows visual expression and has the sound support necessary for any type of educational dissemination that complements the presence of technical staff. The screening of a video can enrich other communicative actions, such as dialogues with a specific audience, debates, distribution of leaflets/flyers, repetition of scenes that need to be fixed, etc.
- the COEZOO structure provides for a communication office for daily contact with the mass media, an activity that should be assigned to the press and public relations team. An animal health emergency represents an event of great interest to national and even international media. This interest has several implications for the control of the sanitary event. On the positive side, the media can be used very effectively to inform the public, especially at the beginning of the sanitary event, provided that the stories translate technical information into everyday language. Conversely, sensationalist reporting can raise public anxiety to levels that are disproportionate to the reality of the situation.
- planning is key to the success of an education and media program during an animal health emergency. The success or failure of communication activities may depend largely on the definition of clear goals, which vary according to the action strategy defined by the Coordination team. Even when working in an animal health emergency, when there is no time to develop a full media plan, sometime should be devoted to drafting an outline of the strategy. The basic communication plan, during an animal health emergency, should be based on knowledge about the epidemiology of the disease; be centered on the technical issues and guidelines of the Contingency Plan; and be flexible, considering the evolution of the animal health situation and the progress of emergency activities. Professionals involved in education and social communication activities should consider and record all points of interest to be prepared in case they need to consult data or redefine strategies.
- to develop a Risk Communication Plan, it is necessary to consider the following main elements:
    - Source (origin): It has been shown that the success of messages disseminated during an animal health emergency is strongly related to the trust or credibility that the recipient of the message attributes to the communicator of the risk. It must be understood that trust is an important factor for the acceptance and effectiveness of messages during an animal health event.
    - Message: despite the complexity of the actions involved in an animal health emergency, most of the information about the procedures used can be easily understood if it is communicated in simple terms, in terms that are accessible to every citizen, so that they understand what the risk is and how they can participate; and
    - Media: Media play an important role in risk communication as they represent the mechanism through which the message reaches the public. Therefore, it is essential to objectively decide on the type of media to be involved in a risk communication plan. Radio is the broadcasting method closest to the people, especially in the rural environment. It represents synthesis, conciseness, immediacy, simultaneity, and speed. Through it you can reach a heterogeneous audience, with different levels of understanding, and for that reason it is

needed to ensure that radio messages can reach everyone. Talking on the radio means explaining, telling, and dialoguing with the listener, and messages can be conveyed through interviews, features and special reports. Today, even in rural areas, the importance and power of TV, the Internet and especially **social media** should not be overlooked. Thus, establishing forms of communication through TV, web, and social media, should represent an important point in the communication plan.

- it is of fundamental importance to interrelate with other organizations and institutional groups, as well as to build bridges with offices and organizations that support the activities. Especially at the local level, it is important to connect with facilitators and leaders who have a long-standing relationship with the community and are recognized as local references. In this way, all elements that influence communities, whether political or religious, must be contacted, sensitized, and called to assume the responsibility of the position they hold. Potential target groups include:

  ✓ local people and elected authorities (municipal officials from secretariats, mayor, administrator or commissioner and authorities from the animal health council, local committees, and planning board);
  ✓ representatives of organized citizens' groups.
  ✓ representatives of religious organizations.
  ✓ professionals in the production chain (veterinarians, agronomists, zootechnicians, agricultural technicians, among others);
  ✓ wildlife management officers.
  ✓ associations and cooperatives operating in the region.
  ✓ educational institutions and their educators.
  ✓ local, regional, and state media.
  ✓ other government institutions; and
  ✓ members of professional organizations.

- important factors such as the number of people who will develop the social communication activities is fundamental to define the strategy of action and the distribution of the teams according to the areas of epidemiological risk, where the meetings, lectures and meetings will take place simultaneously with the other actions to control and eradicate the foci.

- in local communication actions, avoid excessively technical language, seeking to be sensitive to local habits, such as the way of speaking and dressing. Use concrete and familiar images that allow communication on a personal level. Use examples to make technical data more vivid and accessible, jargon and technical language create barriers to successful communication with the public; and

- education and social communication activities should be systematically evaluated during the animal health emergency, as there is a need to know if the objective is being achieved, if the messages are being communicated effectively and if there has been a change in behavior. In educational institutions, an interesting contact can be made to assess the perception of the community through the elaboration of essays and drawings, among other forms of expression. A very interesting and proven working method.

5.4. Elimination of foci

This is a critical point in any eradication effort. It involves a set of complementary and sequential activities that must therefore be carried out in a programmed and independent manner in each identified Focus: evaluation and taxation; depopulation; destruction of carcasses, items, and buildings; cleaning and disinfection of facilities and equipment; fallowing/waiting period; introduction of sentinel animals and repopulation.

Epidemiological investigation activities should also be included, considering clinical and serological evaluation, to better understand the dispersion of the EAD pathogen, providing parameters for future intervention work and infection/transmission investigation.

A schematic representation of the flow of activities considered in the elimination of foci is available in **Figure 11**, highlighting that the introduction of sentinels is not a mandatory activity and its use should be defined by the COEZOO General Coordination.

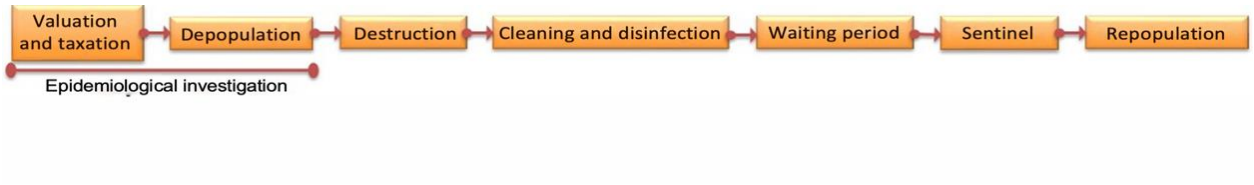

Figure 11. Flow of the main activities for the elimination of foci

Teams responsible for these activities must carefully follow the biosecurity recommendations (**Annex 08**) and comply with the minimum 24-hour interval of fallow/waiting period for contact with other herds of susceptible animals free of the disease.

Depending on the epidemiological scenario and the disease, the need to create a vector and wildlife control group should be assessed, within the mitigation activities of the risks of spreading the disease, from the identified foci.

Recommendations on each of the main activities involved in eliminating foci are summarized below. Emphasize that supplemental readings, such as those listed in section 1.1 of this contingency plan, are fundamental to the preparation of work teams.

5.4.1. Valuation and taxation

It aims to establish the values of animals, their products and by-products and other goods destroyed because of animal health emergency actions, to support the legal process of indemnification of the producer.

A key rule is that the disposal of animals or destruction of property must be accompanied by an adequate compensation program, which must be clearly communicated from the beginning of Focus eradication activities to avoid rumors and mistrust.

Adequate compensation is essential to encourage producers to notify suspected disease to the SVO early, facilitating epidemiological investigations and disease containment, and to discourage inappropriate attitudes, such as hiding or moving animals to other properties, slaughtering animals for own consumption or sale. While an indemnity program may seem costly, it will save money by encouraging early reporting.

The work must be carried out by a commission appointed by decree of the Federal Superintendent of Agriculture, Livestock and Supply of the respective UF (**Annex 07**), composed of a veterinarian from the federal service, a representative of the state government and a representative of the productive sector. The head of the work

of each commission is the responsibility of the veterinarian of the federal official service, as established by Law No 569 of December 21, 1948 (amended by Law No 11,515 of August 28, 2007, and regulated by Decree No 27,932 of March 28, 1950).

Animal disposal activities and destruction of property can only be carried out after evaluation by the Commission, and it is of fundamental importance that the professionals involved are ready to carry out the work at any time. To avoid damage and delays in the work of eliminating the sources of infection, an adequate number of evaluation committees, with their respective alternates, should be appointed from the declaration of an animal health emergency.

The evaluation should follow the values, standards, and criteria agreed upon by the Fieldwork Committee, and should cite sources and references. All members of the committees established shall be knowledgeable of the legal procedures involved and shall have experience and familiarity with the activity.

The valuation of the animals should preferably be made at the place where they are located, based on market values (published by institutions in the sector) in relation to racial characteristics, genetics, economic purpose, sex, age, and other elements at the discretion of the Commission. The physical condition of the animals due to the disease should not be considered.

For items or buildings, the valuation is made by estimating the expenses (market value) which, at the discretion of the commission, are necessary for the replacement of objects or reconstruction of facilities.

Once the values have been determined, the Valuation Commission must prepare Valuation Reports (**Annex 09** for animals and **Annex 10** for items and buildings) containing the amount to be compensated and the criteria applied, which will serve as the basis for the legal process of compensating the owner.

It should be emphasized that the speed with which producers are compensated for destroyed animals and other property is one of the determining factors in the success of the animal health measures adopted. The delay or suspension of the depopulation or destruction of goods due to possible discrepancies between the values contained in the valuation records and the values desired by the producer, who is guaranteed the right to appeal later in court if he considers the value to be lower than expected, as well as the state and federal governments if he considers the value to be higher.

After the sanitary slaughter and the destruction of items and buildings, the teams responsible must draw up the slaughter and destruction records (**Annex 11** for animals and **Annex 12** for items and buildings), which will serve as the basis for the legal process of compensating the owners.

Specific attention should be paid to compensation and indemnification procedures, since they involve federal or state government or private resources, the use of which needs to be duly proven.

As highlighted, the availability of resources for compensation and the procedures for its realization are important elements for defining the intervention strategy to be adopted in the animal health emergency. There are several elements and different normative acts, from the Federal and State Governments, that must be considered.

Some possibilities, based on current legislation and considering agreements and partnerships between the federal and state governments, are summarized in the flow chart presented in **Figure 12**, although it should be noted that the model presented does not exclude the possibility of compensation being provided exclusively by funds (private or public), if available and with sufficient resources to absorb the costs.

For diseases with a high mortality rate, the possibility for private funds to indemnify according to the number of animals present in the epidemiological unit at the time of notification, recorded on the Form-In opening form, should be checked.

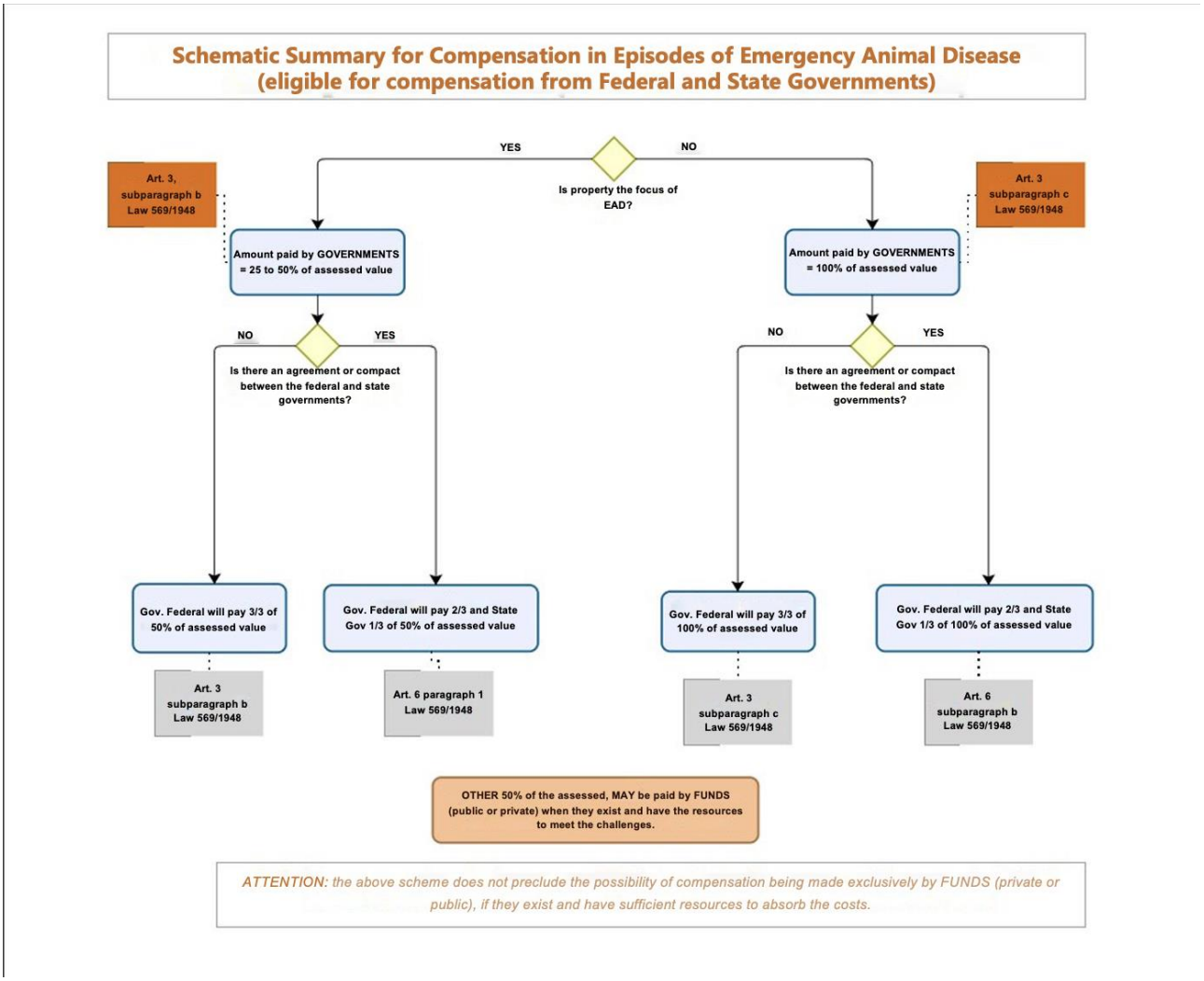

Figure 12. Alternatives provided by normative acts for indemnification in EAD events, subject to indemnification by the federal and state governments.

All procedures must be properly recorded and documented. In each UF, the procedural protocol must be established with a description of all necessary steps and documentation, based on federal or state legislation, depending on the origin of the resources used.

The document templates used in each phase of the activity should be available to the teams responsible for implementation (**Annexes 09 to 12**). Therefore, documents proving the diagnosis of the disease and the declaration of the state of emergency must be attached to the slaughter/destruction and assessment files to compile the individual compensation files.

In case the indemnification involves federal resources, the whole process is already computerized and the interested rural producer or their legal representative can obtain the information at the link https://www.gov.br/pt- br/servicos/habilitar-produtor-rural-para-recebimento-de-indenizacao-do-governo-federal-em-virtude-de- sacrificio-de-animais-acometidos-por-doenca

It is necessary that the applicant is Brazilian or naturalized, has a livestock farm registered with the SVE and has proof that the animals in their possession have been affected by diseases that can be

compensated by the Federal Government Upon request (access here) and document verification, if approved, the interested party will be informed on the platform and by electronic message that the resource has been decentralized for payment of the amount to which they are entitled.

5.4.2. Depopulation

This activity must be coordinated by a veterinarian from the SVO.

The main references for conducting this activity are Chapter 7.6 of the WOAH Terrestrial Code; CFMV Resolution No. 1,000, of May 11, 2012, considering the provisions of Article 11 of Chapter II; CFMV Resolution No. 1,509, of March 15, 2023; and MAPA publications on the subject, such as the Euthanasia of Swine on Farms booklet (MAPA, 2019).

Depopulation of animals in each epidemiological unit can only be initiated after the assessment by the Evaluation Committee has been completed. Its realization must also be preceded by the definition of the method and place of destination and destruction of carcasses, viscera, and other remains, with all the necessary structure for the removal of this material.

The work should also be coordinated with epidemiological investigation activities, which involve clinical inspection and sample collection, according to the disease.

The choice of depopulation method should consider the references presented above and, if possible, be made in the following order:

- animals showing clinical signs of disease.
- animals that have had direct contact with clinically affected animals; and
- other animals.

The depopulation shall be carried out as close as possible to the location of the animals and as close as possible to the place where the carcasses, viscera and other remains are to be destroyed, taking into account the geographical and terrain conditions of the area, the effort required to move the animals or carcasses and the risks of spreading the disease, always with the opinion and, where available, the supervision of the environmental authorities.

When, **in the animal health emergency area**, slaughterhouses or processing plants for inedible products (rendering plants) are available, one option to be considered by emergency managers is to send the animals for disposal and destruction in these establishments, under the supervision of the SVO. To this end, it is important to have prior information on the capacity and conditions of the establishments located in the interdicted region and to ensure adequate transportation and disinfection conditions to prevent the spread of the disease.

In cases where depopulation involves the use of firearms, the process should be supported by trained professionals, with an emphasis on public security or defense agencies. Given the impact of the activities to be carried out, the team must be made up of personnel with adequate skills and psychological preparation and must be supported by the Health Service of the Administrative and Financial Coordination. For safety reasons, only authorized personnel whose presence is essential may accompany or be present at the depopulation site, and only persons authorized by the veterinarian in charge of the work whose presence is essential.

Once the animals have been destroyed, the team must complete a health certificate (**Annex 11**), which will serve as the basis for the legal process of compensating the producer.

In the case of animals of proven zootechnical value, differentiated procedures may be used as an alternative to sanitary slaughter, depending on the epidemiological assessment and the biosecurity conditions of the holding, if they are not infected animals or present a high risk of spreading or maintaining the disease.

It is noteworthy that the execution of depopulation procedures should be shared between SVO and private initiative, regarding human, material, and financial resources. The definition of responsibilities will consider, among other things, the production chain involved, the existence of private funds, the size of the foci, the production characteristics, the population density involved, the logistical aspects of the operation, and the availability of public resources.

5.4.3. Epidemiological investigation in foci

The work must be carried out jointly by the Focus Elimination and Analysis and Epidemiological Reporting sections, members of the Field Operations and Planning Coordination, respectively.

The investigation team is responsible for obtaining data and information to better investigate the Focus, including clinical inspection of slaughtered animals, the presence of ticks or other vectors (if epidemiologically relevant), and the collection of samples for laboratory testing to gain a better understanding of the spread of the disease. To optimize animal management, work should preferably be associated with evaluation or depopulation activities.

Ideally, all susceptible animals should be examined, and blood serum and other samples defined by COEZOO should be taken, according to the EAD involved. If the epidemiology of the disease involves vectors (such as ticks in the case of African swine fever), these should also be collected. Where it is not practicable to examine and sample all animals in the Focus, the work may be carried out by random sampling of animals representing all lots or other animal segregation structures according to parameters to be defined by the planning coordination.

This work will allow us to know more precisely the clinical and seropositive incidence in affected herds. Especially in sick animals, a significant amount of blood serum should be collected to establish a sample bank of seropositive animals to be used by reference laboratories for the preparation of control sera and for sensitivity and specificity studies of diagnostic tests.

Standardization of activities is very important for obtaining results, so the team must have scripts and examination forms, as well as adequate materials for sample collection and conditioning.

The information generated is for the exclusive use of the SVO to better understand the epidemiology of the disease and cannot be used to question the occurrence of the disease or for compensation purposes.

5.4.4. Disposal of carcasses and hazardous materials

Disposing of the carcasses of many animals will be an expensive operation, where costs will vary depending on the method chosen. Each method used will also result in indirect costs to the environment, the local economy, producers, and the livestock industry. Therefore, in addition to biosecurity considerations, decision makers need to be aware of the economic, social, environmental, and aesthetic impacts of different disposal methods.

The choice of disposal method(s) should be based on local conditions, the capacity and speed of result required, and the conditions necessary for pathogen inactivation. Regardless of the method chosen, it is very important to follow biosecurity rules when handling, transporting, and processing dead animals to avoid facilitating the spread of the disease. It is noteworthy that the execution of disposal procedures should be shared between SVO and private initiative, regarding human, material, and financial resources.

Methods of disposal of dead animal carcasses provided for in Article 4.13.6 of the WOAH Terrestrial Code include:

a) **Burial**: In this method, whole dead animals are buried and covered with soil. It can be done on the property or at another approved site (landfill). It may not inactivate all pathogens, but it is relatively fast, effective, and avoids moving animals or carcasses.

b) **Cremation**: This open system of burning dead animals can be done on site without the need to transport the carcasses. However, it takes a long time, there is no way to verify the inactivation of pathogens, and there may be a spread of particles due to incomplete combustion. Also, as a process anyone can view it, there may be a lack of public acceptance.

c) **Composting**: is a natural process of biological decomposition that occurs in the presence of oxygen. In the first phase, the temperature of the compost pile increases, organic materials break down into relatively small compounds, soft tissues also decompose, and bones partially soften. In the second phase, the remaining materials, mainly bones, fully decompose into a dark brown or black humus containing mainly non-pathogenic bacteria and plant nutrients. It may not inactivate all pathogens, and it is time-consuming and requires greater access control to the site.

d) **Recycling**: this is a closed system for mechanical and thermal treatment of animal tissues leading to sterile and stable products such as animal fat and dried animal protein (meal). The technology exists in dedicated facilities, registered as processing plants for inedible products (rendering plants). It produces effective inactivation of all pathogens except **prions**. Even so, the resulting material cannot be used as animal feed. The feasibility of transporting carcasses without risk of virus spread to other locations should be assessed.

e) **Incineration at dedicated sites**: animal parts can be completely burned and reduced to ashes, often together with other substances (such as municipal waste or hospital waste). Effective inactivation of pathogens, including spores, occurs. Incineration in stationary plants is fully contained and has some advantages from an environmental standpoint, as the exhausts can be equipped with afterburner chambers to completely burn off the hydrocarbon and particulate gases from the main combustion chamber. The feasibility of transporting carcasses without risk of virus spread to other locations should be assessed.

In Brazil, the main options for disposal of carcasses of animals slaughtered in animal health emergencies have historically been burial or cremation, or a combination of the two.

In the case of burial, proper sanitary pits must be available, and in the case of cremation, the site must be properly prepared and the material to be used as fuel must be available. **The determination of the destination of carcasses and hazardous materials must be based on the opinion of the environmental authorities**, and it is recommended that the state plans include the possible destinations according to the classification of the waste.

The sanitary pit is the place where the carcasses are buried and may also be the place where the animals are disposed of. It generally consists of two parts: the access ramp and the sanitary pit. The access ramp is a slope of about 10 meters, which allows the entry of the mechanical shovel and the animals. The sanitary pit is the deepest place intended for disposal and subsequent sanitary burial.

Based on experiences from the animal health emergency in Mato Grosso do Sul, 2005, it is recommended that the pit should not contain more than 700 animal units (1 animal unit = 450 kg).

The pit should be excavated in the form of a slope (sloping walls). This will prevent possible landslides. Demarcation stakes are driven considering that to obtain a trench width of 3.0 m, excavated on a slope, the surface width must be 5.0 m. The floor of the trench must have a slope that reaches a depth of 4 m in the final 10 m, and it is advisable to mark the point from which the floor of the trench must reach 4 m in depth. The soil should be placed at least 1.5 m from the edges of the pit to facilitate the movement of the shooters.

The option of depopulation within the sanitary pit will depend very much on the animal's docile nature, considering the WOAH and CFMV references cited above.

A basic equipment consisting of a 3.0 m cubic excavator and a 2.0 m cubic backhoe loader is the most recommended. It takes about 14 hours (one and a half days) to dig a 50 m pit, depending mainly on the characteristics of the soil. It should be considered that from the 50 m length of the pit, the speed of the excavation progress slows down, since the backhoe must back up to throw the earth outside.

The most appropriate place to dispose of carcasses of slaughtered animals is on the premises where the animals are located, in the sector where sick animals and contacts are housed. However, the location must meet certain conditions:

- distance from populated centers (safety and discretion).
- away from the permanent facilities of the establishment (houses, stables, sheds, toilets, hoses, etc.).
- easy access for vehicles and heavy machinery.
- terrain without major difficulties for excavation.
- groundwater deeper than 8 meters.
- distance from surface water courses (rivers, ponds, streams, etc.).
- underground without aqueducts, gas, and oil pipelines; and
- have an area proportional to the number of animals at risk in the emergency.

If burial elsewhere is necessary, it is advisable to dispose of the remains on site and then move them (adopting strict biosecurity measures) to a place that meets the conditions required for sanitary burial. Carcasses should be transported to the burial site in a dump truck, using procedures to prevent leakage of fluids.

Depending on the location available for opening the sanitary pits, it should be evaluated with the experts of the environmental agencies, the convenience of applying waterproofing blankets, aiming at the protection of groundwater.

In the case of pigs and ruminants, the carcasses must be eviscerated, and the thoracic cavity opened at the intercostal space in order to avoid the formation of gases that would cause the sanitary pit to swell/increase in volume after burial of the carcasses. The procedure must be carried out inside the pit by staff appointed by the SVO.

To make better use of the physical space of the pit, the carcasses should be accommodated with the use of the mechanical shovel after opening the cavities of the disposed animals. The pit must also be used to dispose of organic materials and waste from cleaning animal enclosures (stalls, paddocks, etc.) in accordance with environmental agency standards and recommendations.

Lime and other chemicals that may slow the natural decomposition process that favors inactivation of the pathogen should not be used. Once all the animals and materials at risk of the disease have been eliminated, burial is completed, avoiding excessive compaction as this favors the formation of cracks or crevices through which gases can emerge because of organic decomposition.

The center of the pit should be at least 0.50 m higher than the edge, facilitating water runoff and avoiding puddles. **Once the pits have been covered, it is recommended to surround the area with nets or wire mesh, going at least 30 cm into the ground, to prevent animals from approaching and starting to dig the site.**

If **cremation** is chosen, the site should be chosen carefully, considering prevailing winds, proximity to other facilities and crops, and isolation to avoid the presence of onlookers. Every effort should be made to keep odors to a minimum for neighbors and the community at large.

The **cremation** pit should be about 1.0 m deep and 3.0 m wide. The length will depend on the number of animals. It must be ensured that all the carcasses, placed side by side, fit into the pit to be burned at once. It is advisable to make every 2.0 m a crosswise “sanitary channel”, 0.70 m wide, which starts at ground level and descends until it reaches the same depth as the main ditch. A bed of firewood or coarse wood is placed across the pit, which should be filled with straw, fine wood, or charcoal, soaked in kerosene or diesel oil. Old tires promote combustion and should be kept in reserve to stimulate the fire.

Animal carcasses are lined up above the bed, alternating head, and legs. You should try to keep the “sanitary channels” open so that you can use them to load wood or coal and maintain a good fire. After cremation is complete, the pit should be covered with soil in accordance with the recommendations for the use of burial pits.

It is recommended to check, at least weekly, the state of the sanitary pit for a period to be defined by COEZOO. Action should be taken if anomalies are found, such as

breakage of protective fencing, the presence of cracks, or the presence of rodents and dogs, among other possible problems. The geographical coordinates of the locations of the sanitary or cremation pits should be collected.

After work, the rules for cleaning and disinfecting vehicles, materials and personnel must be strictly observed.

5.4.5. Decontamination

The work starts after the elimination of the animals, with the cleaning and disinfection of all facilities, vehicles, materials, and equipment that had contact with the animals.

The disinfection procedure depends in each case on a variety of circumstances, such as the structure of the establishments, the places to which the sick animals have had access, the amount of waste, the nature of the products that are considered contaminated, among others.

It is important to remember that the presence of organic matter reduces or eliminates the effectiveness of disinfectants and should be removed as much as possible, including by scraping the premises, before disinfection procedures. The removed organic waste must be destroyed by incineration or composting or buried.

The most important factor in ensuring the inactivation of a pathogen in an infected property is to carry out preliminary disinfection, followed by thorough cleaning and washing and then definitive disinfection.

It is important to remember that virtually all substances used in disinfection are toxic to a greater or lesser degree. Therefore, appropriate health protection measures must be taken, such as the use of personal protective equipment appropriate to the task, including masks that prevent inhalation of the chemicals.

Special attention should be paid to all equipment and machinery used in the work of opening the ditches and slaughtering the animals. Cleaning and disinfection must be thorough, as these items have been in direct contact with sick animals and can mechanically transmit the disease. Therefore, before leaving the place where depopulation and burial/cremation took place, the vehicles and machinery used must be properly sanitized and disinfected.

In the case of clothing, when disposable, it must be incinerated on site, with the remains buried in sanitary pits. Non-disposable garments must be properly bagged for transport to the place of washing, disinfection, and sterilization.

The list of the main disinfectants recommended for each disease and general guidance on disinfection work are available in the specific parts for each EAD.

If effective and rapid disinfection is not possible, contaminated material, equipment and facilities should be destroyed. Animal secretions and excretions should be buried, incinerated, or composted.

5.4.6. Closing

The work must be carried out under the responsibility of a veterinarian from the SVO and includes the phases of fallowing/waiting period, introduction of sentinel animals and repopulation of the sanitized area.

The **fallow/waiting period** begins after the cleaning and disinfection of facilities and equipment has been completed. It should last for at least 30 days.

During this period, the epidemiological unit should be subject to special surveillance to ensure the absence of animals susceptible to EAD. It is important to survey all boundaries of the epidemiological unit to assess the condition of the fence. Any irregularities must be corrected to prevent animals from entering from neighboring properties.

After the end of the fallow/waiting period, and at the discretion of COEZOO, **sentinel animals** may be introduced into the epidemiological unit.

The animals must come from properties free of the disease and, before entering the epidemiologic unit, they must be evaluated clinically and for the presence of antibodies to EAD, only participating seronegative animals and without any evidence of disease.

In addition to the health characteristics of the sentinel animals, other important issues should be considered: origin of the animals; those responsible for the costs of acquiring and treating the animals; those responsible for transporting the animals; and the destination of the animals after the activity has ended. The decision to use sentinel animals should be made soon after the start of the Focus elimination work, so that there is time to select and prepare them.

The number of sentinel animals will depend on the size, management, topography, and number of animals normally kept in the epidemiological unit. The general recommendation, as a guide, is that the number of sentinel animals be equal to 5% of the usual population of the epidemiological unit, with a minimum of five animals. In the specific case of poultry, the recommendation is one bird for every $10m^2$.

In the case of ruminants, pigs or other species that allow individual identification, all sentinel animals must be identified with a double ear tag or electronic chip. They should remain in the epidemiological unit for at least two incubation periods of EAD and be inspected daily, with blood serum samples taken at 15 and 30 days of introduction. **Animals should have free access to areas exposed to contamination by the EAD pathogen.**

If sentinel animals are proven to be infected by the EAD in question, the case must be duly notified and all animals must be eliminated, restarting the process of eliminating the Focus.

At the end of the work, if the laboratory and clinical inspection results do not indicate the presence of the EAD pathogen, the sentinel animals may form part of the population of the epidemiological unit or proceed to slaughter with official inspection and for domestic consumption, according to the definition agreed at the beginning of the work.

Under these conditions, and provided that the minimum biosecurity aspects are met, **repopulation** of the epidemiological unit with 20% of its original population may be allowed. These animals will be monitored for 60 days, with weekly inspections by the SVO, and at the end of the period, the site will be cleared for full restocking.

5.5. Movement control

The work involves the management of fixed posts and mobile inspection teams with the aim of controlling the transit of animals, products, and by-products at risk, including the movement of people and vehicles that may carry the disease, thus seeking to prevent the spread of the pathogen to other areas without a Focus of the disease.

The implementation of the fixed posts and the action strategies of the mobile teams is a dynamic process that must be carried out in agreement with the COEZOO General Coordination and the Planning Coordination, based on previous analyses of the flow of animal movements, maps or geographical maps of the region, including the road network, hydrography, topography, conservation units, among other elements that may represent physical or natural barriers. At any time, the placement of fixed posts and the direction of mobile teams may be modified based on more accurate analysis of the region or the identification of new foci.

Due to the complexity and specificity of the implementation and management of fixed inspection posts, it is important that the managers of contingency plans within MAPA and the UFs prepare and publish in advance the "Standard Operating Procedure (SOP) for Fixed Posts and Mobile Teams in Animal Health Emergencies".

These SOPs should include information and guidelines on the minimum structure required for the implementation of a checkpoint (infrastructure, human resources and documentation); guidelines on the monitoring of the transit of animals, people, products, vehicles, food, equipment, grains, crops, etc. (it should be specified and detailed what is allowed, taking into account different levels of risk of spreading the pathogen, and tables with the list of products and materials at risk of disease, with corresponding procedures at checkpoints). Guidance should also be provided on the role, presentation and conduct of the duty officer in various situations (e.g., approaches and procedures when seizing products and when confronted with a vehicle fleeing an inspection).

Mobile structures such as vans and trailers, as well as materials for tents and their complementary structures, must be available for ready use in the Federation units, as well as equipment used for cleaning and disinfection, such as spray pumps, tanks, and power generators.

In general terms, the mobile inspection teams will act as a complement to the surveillance operations, with the main objective of assisting the fixed posts in controlling irregular movements and transit through little used points or paths, as well as curbing transit between rural properties without prior authorization.

The mobile teams may be requested at any time to escort the transport of vehicles of live animals for slaughter in slaughterhouses or transport of any other type of product or by-product duly authorized by the SVO. Specific teams should be provided to cover all fixed posts, providing necessary support, and supplying materials, equipment, and supplies, including food and water to those on duty. This distribution must have enough teams so that the food arrives with quality and at times consistent with the daily meals.

As for fixed posts, once the location is defined, the responsible section must register the following information: date of implementation; name/code to be given to the post, usually by association with a location; brief description of its location (eg: Road "A", Km "xx", junction with Road "B"); and geographic coordinates. When fixed posts are closed, records should be updated with information on the date and reason for the closing.

It is imperative that all established checkpoints have warning signs visible.
for at least 150 meters in both directions with words such as "HEALTH SURVEILLANCE
- MANDATORY STOP". Similarly, mobile teams must have the minimum equipment needed to
operate, such as cones, signs, tents, tables, chairs, etc.

If fixed posts involving disinfection must be placed on highways or roads with a high flow of vehicle traffic, arrangements should be made for the installation of wheel disinfection facility, or other means that ensure perfect disinfection of vehicles with the least possible impact on car traffic. In these cases, it is important to consult the environmental agency regarding the disposal of effluents resulting from this process.

It is recommended that both fixed and mobile teams consist of at least two SVO staff and two police officers. These activities may be carried out by trained mid-level technicians.

Once the fixed posts are in place, the service should operate uninterruptedly with the mandatory presence of police officers. Officials will work on a 24-hour on-call basis. Any change of shift/duty officer must be recorded on the appropriate forms and entered the animal health emergency database. Before being assigned to their fixed posts, on-call staff should be given specific instructions on how to carry out their activities and should be constantly supervised, and it is important to have an SOP that all on-call staff must read for quick reference.

The logistics of the change of duty officers must be carried out jointly by the Movement Control Section and the COEZOO Infrastructure and Management Section. The latter should be notified about the demand for inputs, such as disinfectants, water supplies, food, forms, fuel, equipment maintenance, among others.

If it is not possible to deploy all fixed posts at the same time, priority should be given to foci and the boundary between the perimeter and the surveillance area, especially on roads and highways with the highest traffic volumes. Over time, and with other more detailed assessments (information from epidemiological surveillance teams), the location of the posts can be re-evaluated until the best possible blockade of the region is achieved. The placement of fixed posts on federal or state highways must be coordinated in advance with the appropriate highway patrol.

In the specific case of fixed posts placed at the access to foci, their main function is to ensure compliance with the established ban. At these sites, biosecurity measures for cleaning and disinfecting vehicles, personnel, and equipment should be reinforced.

Provision should be made for the use of mobile teams to permanently visit the barriers installed within a territorial extension, with the function of supervising the procedures carried out, assisting in communication and supply, especially those that are difficult to access, in addition to assisting in the mobilization and demobilization of the barriers, whenever there is a review of the strategic blocking points.

To ensure smooth communication in the most varied situations, it is important to install means of communication by voice or SMS between fixed posts, mobile teams, and the coordination of the traffic control section. These can even help speed up the arrival of information to COEZOO, as well as decision making, including in a situation where new foci are registered.

The entire community must be clearly and objectively informed of the animal health emergency, the risks of spreading the disease, and the measures to prohibit or restrict the movement of animals, people, materials, and equipment between the different defined areas. To this end, it is essential that the Social Communication Section acts quickly to explain to society what action should be taken.

Clarification of the risks posed by different products should be disseminated in a variety of ways and through a variety of media, with the aim of supporting the control of fixed posts and mobile teams. As an example, the following table attempts to classify and group the most important objects, products, or animals by type of risk of African Swine Fever (ASF) virus transmission, assigning them a risk (low, medium, or high) according to their innate ability to contain, sustain and transmit the disease.

This table should be complemented and detailed in the SOP for Fixed and Mobile Posts in Animal Health Emergencies and be presented as a source of information for the preparation of communication material with the affected locations.

Chart 03. Examples of risk categories for PSA and related products.

Risk category	Product description
High risk	• swine • Swine products and by-products (domestic and wild) • genetic material from swine
Medium risk	• non-susceptible animals • fomites in general who have direct contact with susceptible animals. • vehicles servicing/transiting between farms • agricultural products from foci or establishments close to foci. • personnel providing services /transiting between farms. • Population management agents and their respective fomites
Low risk	• people not connected with the farms. • processed and packaged products of animal origin • agricultural products not originating from foci or establishments close to foci. • vehicles not connected with the farms

The teams that make up the fixed posts should be instructed to record all movement and traffic that occurs while they are on site. These forms must be included in the SOPs for fixed posts and mobile teams and will be used to enter data into the computerized control system of the animal health emergency database.

As outputs, it is expected that reports will be produced that include, as a minimum, the following information for a given period and post:

- number of vehicles inspected.
- total seizures and destruction of products and by-products.
- total occurrences of irregular animal transit.
- destination of animals, products and by-products caught in transit without prior authorization.
- the average amount of disinfectant and other supplies used per day; and
- total products, by-products, and animals (by species) that were handled by the fixed posts.

Upon return from duty, depending on work needs and staff availability, officers may assist with administrative activities, such as entering data into the computerized system, if employee rights are not compromised.

Risk mitigation measures for the transit of animals, products, by-products, vehicles, and people should always be sought to allow agricultural activity to continue in the affected area.

5.6. Epidemiological Surveillance

Actions of fundamental importance in animal health emergencies, as the basic objective of all work is to identify risks early and eliminate potential sources of infection.

Many professionals participate in these activities and must conduct surveillance and inspections of all rural facilities that may house animals susceptible to EAD in the emergency area. Managing the significant number of professionals involved in these activities is one of the major challenges in managing animal health emergencies, requiring strict control by the coordinating sections. Professionals need to be oriented on work priorities and organized according to epidemiological risk areas.

In addition to the descriptions already presented in this document, the specific objectives of the veterinary surveillance section are:

- conduct tracing and investigation in establishments with an epidemiological link (by transit, proximity, or fomites) to EAD foci to rapidly contain the disease.
- carry out the clinical and epidemiological investigation in establishments with animals or products at risk for EAD located in the emergency area.
- ensure early detection, adequate care for suspected cases of the disease and appropriate collection of material for laboratory diagnosis.
- seek elements that lead to the identification of the primary case and the origin of the focus or foci; the definition of the degree of spread of the disease; and assist in the definition of disease control and elimination strategies.
- demonstrate, through records and maps, the effectiveness of surveillance actions during disease eradication; and
- carry out education and communication actions in the inspected properties, aiming to ensure the cooperation and participation of the community to prevent the spread of the disease and achieve rapid eradication.

The duties and responsibilities of the head of the epidemiological surveillance section include:

- coordinate the distribution of field teams according to the different epidemiological risk areas.

- manage the achievement of epidemiological investigation targets, including the frequency of farm inspections, according to the different epidemiological risk areas.
- seek to identify probable or confirmed cases of the disease.
- ensure that research forms are complete, accurate and clear.
- ensure proper recording of all activities and their inclusion in the information system.
- ensure that surveillance teams comply with the planned clinical and epidemiological investigation activities and procedures, including biosecurity measures and guidance to farmers on the prevention and restriction measures imposed in the animal health emergency area; and
- evaluate and propose adjustments to research activities in the interdicted area.

In view of the duties described above, the Surveillance Section depends on adequate human and material resources for the proper performance of its activities. If possible, the head of the section should have one or more advisors, mainly dedicated to the logistic support of the surveillance teams, allowing the head to analyze the results of the work, to liaise with the other sections of the COEZOO and to define strategies according to the evolution of the emergency. The section must prepare the daily work routes of the teams in advance and keep them available at the COEZOO base.

As highlighted in previous items, the composition of surveillance teams should include at least one veterinarian from the SVO and one or more technical assistants, preferably with good knowledge of the region (assess the possibility of hiring local professionals). Teams must have vehicles suitable for the region (ordinary cars, ordinary or four-wheel drive pickup trucks, speedboats, among others), GPS devices, materials to support the containment and examination of animals and communication equipment (cell phones, radio communicators, satellite communication equipment, etc.). Provisions should be made for refueling procedures, lubricant changes, and basic maintenance.

It is important that teams are numbered at the beginning of operations and remain with the same number until the end, even if there are changes in their composition.

The strategy for the sizing and distribution of surveillance teams should consider operational, geographical, environmental, and agro-productive aspects of the region involved, such as:

- available resources (staff, vehicles, facilities, equipment, and materials).
- number of initially infected herds and their respective contacts.
- number and size of farms and herds located in the different epidemiological risk areas.
- intervals between inspections and surveys of establishments.
- the predominant agricultural production systems in the emergency area.
- intensity of movement and the degree of technification and concentration of the animals.
- estimating the geographical extent and duration of the focus.
- the specific characteristics of the pathogen related to the focus.
- the presence of natural physical barriers.
- weather and season.
- conditions for the movement of teams.
- presence of wild animals, where relevant.

Therefore, the head of epidemiologic surveillance should seek to be quickly equipped with the data and information mentioned above to define the requirements for teams and resources to meet the needs.

The distribution of teams within the epidemiological risk areas should be divided into sectors according to the definition of the planning coordination and the number of teams available, considering the characteristics of the region and the emergency. Keep in mind that the frequency of inspections will be higher in higher risk areas.

The intervals between inspections and surveys of the establishments have a direct impact on the sizing and should be defined soon by the General Coordination of the COEZOO with the support of the Planning Coordination. In general, they depend on the assessment of the behavior of the health emergency and the characteristics of the disease (attack rate, morbidity, number of herds, incubation period of EAD, production characteristic, etc.) and the available resources.

As a general rule, in an emergency for an EAD, the examination of peripheral properties should provide for inspections at least every **three days** to detect early onset of clinical signs of the disease. The same surveillance team may inspect more than one property, if they are in the same area and that there are no clinical signs compatible with EAD in the animals inspected, and that preventive and biosecurity measures are taken.

The inspections in the **peripheral area** will start with the properties adjacent to the foci and should be detailed, mainly aimed at the inspection and clinical examination of animals, investigation of possible movements of animals, products, by-products, fomites, vehicles, and persons associated with the detected foci.

In all investigated properties, guidance and clarifications must be made on signs of the disease, mandatory immediate notification of suspicions to SVE, prevention and biosecurity measures to be established, restrictions imposed, and actions related to the animal health emergency condition.

Among the tasks to be carried out, the need for a clinical inspection of the herds, including the presence of vectors, if applicable, and a census of all the properties surveyed, stands out. This work should be carried out considering the subdivisions of the emergency area (periphery, surveillance, and protection), with separate teams for each. The inspection work must be organized in such a way as to reconcile the needs for quality and speed in an emergency action and avoid risks of spreading the disease.

Surveillance in properties in the peripheral area should continue until at least 15 days after the completion of cleaning and disinfection activities in the last infected property in the area.

In the surveillance area, surveys should be carried out at least every seven days on properties with herds, with shorter intervals between surveys being more appropriate. All communication materials and presentations to the community should emphasize the means of contact with COEZOO (telephone, Internet, etc.) and the need to report and denounce herds with signs compatible with EAD and producers who commit irregularities in the movement of animals, as well as the sighting of dead wild animals without apparent cause, with injuries suggestive of EAD, or with unusual behavior. As a result, the Veterinary Surveillance Section must maintain a full-time service to these media, provide staff availability for service, evaluate the origin, and prioritize the response to complaints and notifications.

It is highly likely that the index focus is not the primary focus, so tracking information, movements of animals, products, by-products, and people should help to locate the primary case.

Personnel who have been exposed to probable or confirmed cases of EAD must remain for at least **24 hours** without visiting another property with susceptible and unaffected animals **if all biosecurity precautions have been strictly followed**. If procedural failures have been identified, this interval should not be less than **48 hours**. This same procedure should be carried out for changes of teams from higher to lower risk areas, which is not necessary in the reverse situation. Ideally, professionals from veterinary surveillance teams that identify probable cases of EAD should be dedicated to investigation and action on the property in question and, if the disease is confirmed, participate in the work to eliminate the focus.

In abandoned properties, without the presence of a responsible person or locked with padlocks, located in the peripheral or surveillance areas, the owners must be sought and if they are not found, the COEZOO General Coordination must be consulted to authorize access and carry out the necessary inspections.

In many cases, it will be necessary to hire assistants (trained and equipped), guides and materials or vehicles from the locations involved to make the activities feasible, and resources must be foreseen by the Administrative and Financial Coordination for the payment of these expenses.

In the **protection zone**, when this modality is used, the activities should include a general inspection of susceptible animals, with periodic inspection of herds at an interval that depends on the characteristics of the region and the operational capacity, but which is sufficient to certify the absence of cases. As a general recommendation, it is suggested that this interval should not be less than **15 days**.

To prepare the surveillance teams for the activities, before the beginning of the work, the head of the surveillance section should gather the members of the teams to give guidelines on the work system in order to avoid mistakes and standardize the procedures, confirming that the procedures of this activity are represented in the documents published by the DSA on the investigation of diseases in animals.

Departure and arrival times for the teams should be established, to ensure the good performance of the work, as well as the safety of the participants and the daily and timely transfer of surveillance information to the Planning Coordination.

It is recommended that teams be ready for departure from the COEZOO base as early as possible, including refueling vehicles and checking materials the day before leaving for the field.

For the return, the teams must schedule to be at COEZOO until 18:00, when they must present the surveillance forms to the information control and evaluation section for the initial check and then, if necessary, the entry of the information into the computerized system.

The technical assistant of the team must arrange the requests for materials and inputs, to ensure their availability and departure from the base at the established time the following day.

The head of the epidemiologic surveillance section, with the support of the planning coordination, should provide maps, as detailed as possible, on hard copy and in electronic geographic information systems, showing access routes in the region, natural barriers, and the geographic location of properties, facilities, and risk areas, as well as possible support points for the teams.

The list of properties to be inspected daily by the epidemiological surveillance teams must be prepared by the section head in consultation with the epidemiological analysis and reporting section, based on the dynamics of the emergency, the analysis of the property registers and the geolocation provided by the SVE.

In areas with the presence of wild animals, if epidemiologically important for the EAD in question, inspection should include properties where the handling of these animals takes place. It is recommended that the SVE request access to SIMAF/IBAMA and keep records of the properties where the handling of these wild animals occurs, regardless of the animal health emergency.

It should consider the priorities for epidemiological surveillance, defined in agreement with other COEZOO sections, and the best travel logistics, seeking to achieve the highest surveillance coverage in the areas of greatest risk and in the shortest possible time.

The teams, having the list of properties to be inspected, must determine the route that best meets the needs of the activities and include a place and time for lunch. Data on the existing herds on each property to be inspected must be available for consultation. The trips must be carried out following the recommended precautions for transit on the roads to be traveled and always with georeferencing (GPS on) to avoid getting lost and delays and to record the routes traveled.

As for procedures during epidemiological surveillance actions, professionals should follow the biosecurity measures presented in **Annex 08** of this document.

Depending on the size and area of the property to be inspected, different procedures may be chosen upon arrival at the rural location. For smaller properties, the property office is located within walking distance of the front gate. In such cases vehicles should not enter the property. On large properties, the main office or house is often a considerable distance from the entrance, and it is necessary to drive in. In such cases, you should go directly to the headquarters, office, or other location to contact and conduct the interview/anamnesis with the person(s) responsible for the care of the animals and avoid entering the breeding facilities with the vehicle.

The documents published by the DSA include the procedures and criteria to be followed in the epidemiologic investigation and management of suspected diseases in properties with animals, which should be reviewed and followed by the surveillance teams.

The investigation should include all items listed in the appropriate manual and other relevant information to establish possible epidemiologic links. Information should be obtained on the existing animal populations by species and their location within the property, as well as on the inflows and outflows (regular or not) of susceptible animals or people for the time corresponding to two EAD incubation periods.

The anamnesis is fundamental for the rapid containment of the health emergency and early detection of linked foci and must be thorough, considering all possible risk factors and possibilities of links with existing foci.

In cases where the anamnesis indicates the possibility of animals with clinical signs compatible with EAD or links to already confirmed foci, biosecurity measures should be increased before the animals are examined. In such cases, inspection and clinical examination should be carried out directly on animals located in places where suspected cases have been observed by those responsible for the herd, preferably in the same place where they are located. To achieve this objective, the cooperation of the minimum necessary official or private personnel shall be requested, avoiding the movement, and mixing of susceptible animals.

If clinical signs or injuries compatible with EAD are observed, the procedures described in the disease data sheet, disease investigation manuals, and other documents published by the DSA should be followed, prioritizing actions to collect samples for diagnosis and to reinforce measures for interdiction and

biosecurity. After proper sampling and biosecurity procedures, the team must complete the procedures on the affected lot and return directly to COEZOO to deliver the samples and records to the appropriate departments and must not go to any other property with susceptible animals for at least 24 hours.

The intensity of the inspection should be determined by the Head of the Surveillance Section in consultation with the Planning Coordination Section. In small herds, even if the initial interview reveals no evidence of clinical signs of EAD, it is recommended to perform a clinical examination of all animals.

On holdings with many animals and where the initial interview did not reveal any elements indicating the occurrence of clinical signs compatible with EAD or an epidemiological link with the foci, a general inspection of the animals on the holding should be carried out and a detailed clinical examination should be performed on a representative sample of the herd. Preference should be given, when sampling animals, to more susceptible categories, according to the EAD, or to animals housed in the " Sick Room ", when available. The number of animals to be inspected, to be determined by the Planning Coordination, should consider statistical parameters such as the level of confidence, the minimum expected prevalence of sick animals on farms and the sensitivity of clinical inspection. The veterinarian of the surveillance team should also make a general analysis, considering the size and characteristics of each property, the type of management, the number of lots and their distribution, in order to optimize the selection of animals for clinical examination.

For large and medium-sized animals (cattle, goats, sheep, pigs, etc.), in cases where it is not possible to restrain the animals, it may be necessary to examine and sample loose animals by using snares and other containment measures. In cases where recapture later is difficult, sampled animals should be identified and segregated from the herd until laboratory test results are received.

During the general inspection, all animals showing any change in health or behavior should be prioritized for clinical examination and sampling.

At the end of the activities on the property, clarifications, and guidance to those responsible for the herds on the animal health emergency, the procedures for reporting suspicions, biosecurity measures and the forecast of the next inspection on the property should be completed. Leave contact telephone numbers and addresses, as well as educational leaflets about the EAD, where available.

Surveillance should also include other establishments, such as event venues with animal gatherings and cold storage facilities.

Events with animal gatherings (exhibitions and fairs) represent a great risk for the spread of EAD and their realization in areas close to the health emergency must be canceled as soon as the first case of the disease is confirmed (interdiction of those already in progress).

Surveillance in these establishments should include obtaining data (entry and exit cards) and inspection reports of the events that occurred during the period corresponding to two EAD incubation periods, counted retroactively from the probable beginning of the animal health episode, in addition to conducting interviews with those responsible for organizing, conducting, and supervising the events.

In slaughterhouses, surveillance should collect information and reports from *ante*- and *post-mortem* inspection for a period equivalent to two EAD incubation periods, counted retrospectively from the probable onset of the animal health episode. It is also essential to interview the technical manager and those responsible for inspection. Tracking of shipments of products and

by-products considered at risk should be carried out to avoid the risk of spreading the disease and possible entry into the international market of products from areas close to foci.

Other important locations are those represented by preservation areas and forest areas, both public and private, or others that keep wild animals, when these have epidemiological importance for EAD. The SVO does not have direct jurisdiction over some of these areas, so the institutions responsible for controlling them should be quickly communicated and requested to collaborate and act jointly in surveillance activities.

For a better risk analysis, information on existing species, density, habits, distribution, and possible contacts with domestic species should be collected from those responsible for the area. In the event of confirmation of cases in wildlife, a careful assessment should be made with the technicians responsible for the area to analyze the potential risks of spreading the disease and to take measures.

An important aspect of veterinary surveillance is the recording of surveillance activities. The activities of the surveillance teams and the information resulting from the investigations must be duly recorded on forms and in computerized systems to quickly demonstrate the surveillance coverage of the establishments and enable the COEZOO to make decisions.

In the field, records should be made on individual assistance forms that contain only the information strictly necessary to avoid wasting time. During the first inspection of the farm, a form should be filled out with more detailed information about the property and the producers to update the registration information, detect possible irregular movements and subsidize possible compensation actions.

For follow-up inspections, simplified forms should be used to record the date and time of entry, the inspection number, and the animal health status of the herd, in addition to any other information considered relevant by the epidemiological surveillance team. The information control system should provide for the preparation, identification, and availability of forms for surveillance teams.

In cases where the inspection results in a probable or confirmed case of EAD, records of the clinical and epidemiological investigation should be made in the applicable animal health incident management documents in accordance with the instructions in the relevant SIZ manual.

The epidemiological surveillance section should organize to produce the following reports and materials for the COEZOO General Coordination:

- Summary report of activities and their results.
- maps of sites surveyed, and routes taken by surveillance teams.
- daily report evaluating the results of epidemiological surveillance; and
- technical presentations for use during meetings.

5.7. Receiving, preparing, and shipping samples

An important structure for COEZOO is the section for the preparation of samples - including blood serum, whole blood, organs, and vectors, if applicable - and their shipment to the laboratory, which is subordinate to the Logistics Coordination. Separate structures should be provided according to the phase of animal health emergency actions.

In the initial phase, the section should be prepared to receive samples from probable cases identified by veterinary surveillance teams because of focus elimination efforts.

Once the foci have been eliminated and there are no new foci, activities to demonstrate the absence of infection or transmission of the pathogen begin, including the conduct of epidemiologic studies, which usually involve many blood serum samples. For each of these phases there will be different needs for structure and human resources.

Considering the attributions of the section, the team leader should be responsible for monitoring and supervising the procedures, as well as for maintaining and making available the materials and supplies to meet the installed demand. The director will also designate the work support team and its functions, including assistants for receiving, testing, evaluating, preparing, packing, storing, and shipping samples; and for keeping daily records and maintaining files in an organized and auditable manner.

An example of organization and workflow for the section is summarized in the **Figure 13**
This flow follows a biosecurity hierarchy from dirty areas to clean areas.

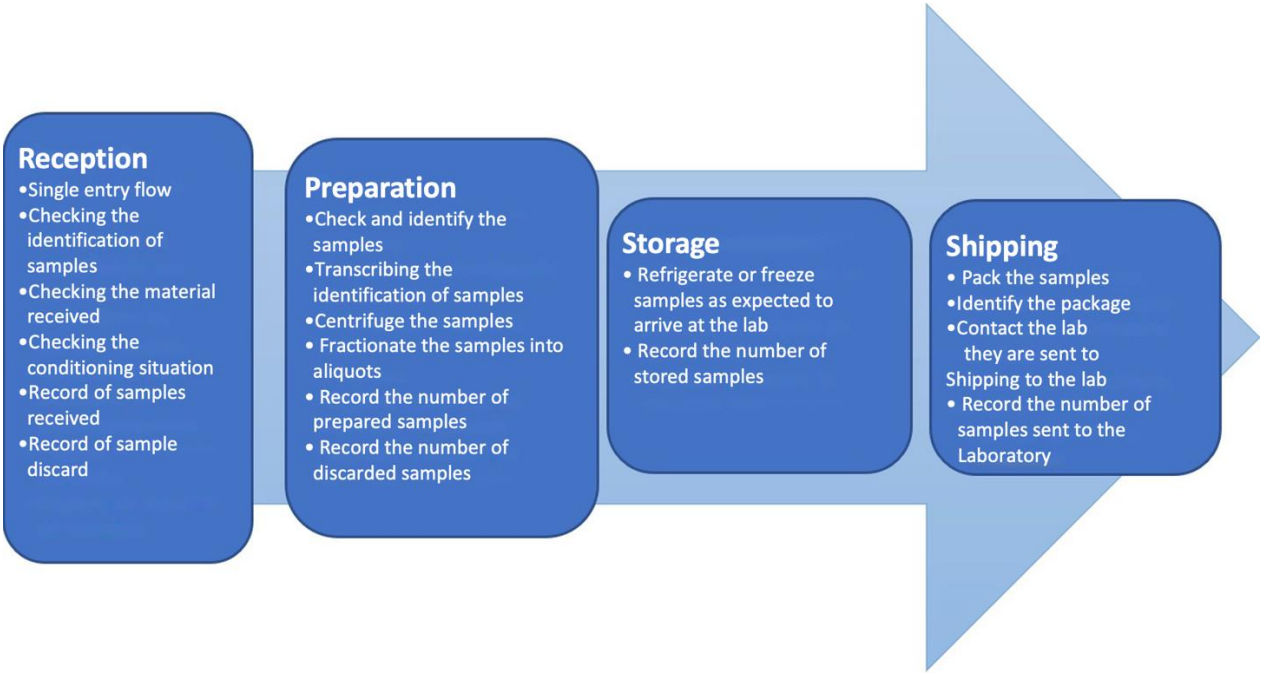

Figure 13. Workflow for sample reception and preparation section

The leader will be responsible for assigning responsibilities within the support team, considering the experience and profile of each person, and depending on the number of people involved, some actions may overlap, if it does not harm the progress of the work.

Considering the conditions of collection and preparation of samples in the field, specific resources, materials, and inputs are required, as preservation media. The responsible section should maintain constant interaction with the warehouse section to ensure the availability of necessary materials and supplies.

With respect to the physical area, the location should provide an appropriate environment for the receipt and preparation of samples that minimizes the risk of contamination or the spread of pathogens. A single entrance and differentiated flow should be provided for the reception of samples. Preference should be given to masonry structures with floors that can be sanitized. The site chosen to house the section should be shaded, covered with flat, dry ground, have adequate lighting, especially for night-time.

sample preparation and have sufficient power outlets for handling the equipment.

It is essential to have sinks with a continuous flow of water to sanitize materials, hands, and equipment, as well as containers to collect contaminated waste for safe disposal. The team responsible for the section should define the list of specific materials and supplies for use during the emergency.

For each of the steps described in **Figure 13**, there are specific guidelines and procedures, noting that all samples should be prepared and stored, for possible situations where samples are lost or misplaced. Procedures for sample preparation, packaging and shipping should follow those set out in documents published by the DSA.

Every sample must be accompanied by a collection form, as established in the information system developed for the management of animal health emergency actions. For large and medium-sized animals (cattle, goats, sheep, pigs, etc.), every individual subjected to sampling must have permanent or long-term, unique, and unambiguous individual identification, which must be used to identify the vials containing the samples.

The person in charge of the section shall keep a daily record of all activities performed under his/her supervision, or shall designate an official to do so, and such records shall include a summary of the daily activities performed, with notes on any irregularities detected or occurred; number of samples received; conditions in which they were received; type of samples received and prepared; number of samples stored or sent and description of shipment (day, time, sender, carrier, contact person); the number of samples prepared; the number of samples discarded; the number of samples stored or shipped and a description of the shipment (date, time, shipping record number, recipient's data, sender's identification, means of transport, identification of the person responsible for contacting the recipient, type of material shipped, forms of preservation) and any other information that may be relevant. All phases involved from the receipt of the sample to its shipment must be available in a logbook, report, or electronic equivalent.

6. CONCLUSION

The final stage of the animal health emergency measures is the SVO's presentation of all the work carried out, the results obtained and the effectiveness of these measures. This demonstration shall be made in an official and scientific manner, by means of a detailed technical report, ensuring that all information provided, and actions taken can be properly substantiated or audited by means of properly recorded documents.

It is therefore necessary to start planning this report at the beginning of the activities, by organizing and compiling the information resulting from each action of the animal health emergency phase. The responsibility for its development should be shared mainly between the COEZOO General Coordination and the Planning Coordination, with the support of the DSA.

If the country is interested in implementing a containment zone according to the standards established by the WOAH, a preliminary report should be prepared considering the recommendations contained in the Terrestrial Code, with emphasis on Articles 4.4.7 and 15.1.6.

As mentioned above, the recognition of the containment zone has great potential to reduce losses due to export restrictions, especially for countries with significant meat production surpluses, such as Brazil. Thus, once the containment zone has been established in one of the specified manners, the veterinary authorities must submit to the WOAH a report describing compliance with the established conditions for official recognition.

After eradication of the disease from the affected area, the said detailed technical report shall be made available and shall cover at least the following points.

- geographical and agro-productive characterization of the emergency area, with a detailed description of its boundaries and of the control measures adopted to ensure its separation from the non-interdicted area.
- general information on surveillance activities carried out in the emergency area for at least the last two years to demonstrate the introduction of the disease.
- chronology of events from the time of suspicion, considering the confirmation of the disease (including details of the diagnosis made) and the initial intervention measures.
- details of the work to eliminate all recorded foci.
- the results of the epidemiological investigation on the probable origin of the disease, the epidemiological links between the registered foci and the analysis of the spread of the disease, with particular emphasis on the evaluation of animal movements, considering the whole emergency area.
- description of all the structure and human and financial resources used in the containment and elimination of the disease; especially detailing the surveillance strategy and activities conducted in the emergency area (total and frequency of inspection of rural properties, workforce, among other items); and
- **a detailed description of the epidemiological investigation carried out to assess the evidence of infection or transmission of the EAD pathogen in the emergency area, indicating the scientific standards and laboratory tests used, with particular emphasis on demonstrating the level of sensitivity achieved by the surveillance system in place.**

7. IMPROVEMENT

At the end of the animal health emergency, the DSA will promote a careful evaluation of the actions developed, involving all participating institutions, to identify opportunities for improvement.

Based on the conclusive report of the entire emergency process, the DSA should develop a corrective action plan, aiming at planning and implementing improvement activities necessary to enhance the results.

The proposed actions should be detailed in stages, which will be evaluated periodically so that the level of implementation can be monitored until their completion. The action plan should also clearly state the timeframes for initiating and completing corrective actions, considering the availability of resources and the identification of those responsible for the actions.

Finally, the DSA will be responsible for evaluating and updating this contingency plan and will coordinate a review every five years or, if necessary, after an emergency, in collaboration with the other stakeholders.

8. ANNEXES

ANNEX 01 - Glossary

FOR THE IMPLEMENTATION OF THIS CONTINGENCY PLAN, THE FOLLOWING DEFINITIONS SHALL APPLY:

- **Biosecurity**: A set of physical and management measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections, or pests to, from and within an animal population (WOAH). It should be clarified that the term biosecurity has several definitions and uses. In the English language, it is common for the terms biosecurity and biosecurity to be used with different meanings. Although there is some disagreement on definitions, most international bodies use the term biosecurity to describe the principles and practices for preventing the **unintentional** release of biological materials, and the term biosecurity to describe the principles and practices for preventing **intentional** release, such as theft, misuse, unauthorized access, or bioterrorism. In Brazil, the translations of these terms were also used with different meanings. Some institutions have adopted the translations biosecurity and biosecurity, but with different meanings from the English language, using the term biosecurity to protect humans from exposure to pathogens and biosecurity to protect animals from such exposure. Other currents adopt different definitions. For the purposes of this Contingency Plan, the term standardized by other federal and state government regulatory agencies - biosecurity - will be used.

- **Population Handling Agent (Controller)**: individual previously registered in the Federal Technical Register of Potentially Polluting Activities and/or Utilizers of Environmental Resources, in the category "Use of Natural Resources", description " Handling of invasive exotic fauna" at IBAMA and controlled by the Brazilian Army regarding the handling and use of a firearm.

- **Animal Health Emergency Area**: Area designated by the SVO for interdiction and intervention in response to the occurrence of an EAD.

- **Perifocal/peripheral area**: area immediately surrounding the focus of EAD, comprising at least the rural properties adjacent to it. A radius of three kilometers drawn from the geographical limits of the confirmed focus can be used to support its delimitation.

- **Protection area**: area immediately surrounding the surveillance area, representing the boundaries of the sanitary protection area. In support of its delimitation, rural properties located up to 15 kilometers from the boundaries of the surveillance area may be considered. This area is of optional implementation.

- **Surveillance area**: area immediately surrounding the peripheral area. In support of its delimitation, rural properties located up to seven kilometers from the boundaries of the peripheral area may be considered.

- **Depopulation**: the systematic elimination of animals from a defined epidemiological unit or area by a technically acceptable and scientifically proven method.

- **Disaster**: situation resulting from adverse natural or man-made events in a fragile ecosystem, causing human, material and environmental damage and consequent economic and social losses (Decree No. 7.257, of 4/8/2010).

- **Emergency Animal Disease (EAD)**: a communicable disease, exotic or eradicated in the country or parts of the country, with the potential for rapid spread, significant economic impact, or risk of a public health or wildlife crisis that requires immediate action by the SVO to contain or eradicate.

- **Transit inspection mobile team**: a team of SVO professionals, duly equipped, dedicated to the transit inspection of animals and products in mobile units (vehicles).

- **State of public calamity**: abnormal situation, caused by disasters, causing damage and losses that imply the substantial impairment of the response capacity of the public power of the affected entity (Decree No. 7.257, of 4/8/2010).

- **State of emergency**: abnormal situation, caused by disasters, causing damage and losses that imply the partial impairment of the response capacity of the public power of the affected entity (Decree No. 7.257, of 4/8/2010).

- **State of animal health emergency**: epidemiological situation that indicates an imminent risk of introduction of exotic disease in the country, or there is a risk of focus or epidemic of an existing disease (Decree No. 8,133, of 28/10/2013).

- **E-Sisbravet:** electronic support tool, within the scope of the National Animal Health Information System (SIZ) and the Brazilian System of Veterinary Surveillance and Emergencies (SISBRAVET), which deals with the management of epidemiological information on animal health occurrences and investigations carried out by the Official Veterinary Service.
- **Focus:** Epidemiological unit where at least one case of EAD was found
- **Index focus**: first detected focus of EAD detected by the SVO.
- **Primary focus**: epidemiological unit where the EAD pathogen first entered. It is the first focus in chronological order.
- **Transit inspection fixed post**: physical structure intended for the control of animal and product transit, where SVO professionals work on a 24-hour basis, with police support.
- **National Protection and Civil Defense System (SINPDEC)** is made up of agencies and entities of the Federal Public Administration, the States, the Federal District, and the Municipalities, as well as public and private entities with significant performance in the field of civil protection and defense, under the centralization of the National Secretariat for Protection and Civil Defense (SEDEC), an agency of the Ministry of Regional Development.
- **Epidemiological Unit**: a group of animals with a defined epidemiological relationship and similar probabilities of exposure to a given pathogen, as characterized by the Official Veterinary Service. It may consist of one or more adjacent farms, part of a farm or a group of animals susceptible to the disease sharing the same environment or under common handling practices and biosecurity conditions.
- **Emergency vaccination:** vaccination program applied as an immediate response to a focus or increased risk of introduction or emergence of a disease".
- **Epidemiologic link**: evidence of exposure to or contact with probable or confirmed cases of a disease, indicating the possibility of transmission between susceptible animals, identified, and established by the Official Veterinary Service. Animal health measures carried out by the Official Veterinary Service apply to all establishments forming part of an epidemiological link.
- **Sanitary Slaughter**: represents the strategy for the elimination of a focus, carried out under the control of the Official Veterinary Service, which consists in performing the following activities.

  a) depopulation of infected or suspected infected animals in the herd and, if necessary, in other herds exposed to the infection through direct contact with these animals or indirect contact with the pathogen.

  b) disposal of the dead animals or products of animal origin, as appropriate, by processing, cremation, burial, or any other method accepted by the veterinary authority; and

  c) cleaning and disinfection of equipment, materials, and facilities where animals have had contact using procedures defined and accepted by the veterinary authority.
- **Containment zone:** A defined infected zone within one or more previously disease-free countries that includes all confirmed or suspected cases that are epidemiologically linked and in which movement control, biosecurity and sanitary measures are applied to prevent the spread and eradicate the infection or infestation.

ANNEX 02 - Legal basis related to animal health emergency.

The implementation of animal health emergency activities requires prior knowledge and mastery of the legislation by the professionals involved. MAPA authorities in charge of SINEAGRO and SISBRAVET should keep up to date the normative apparatus necessary to give validity and legal backing to the health intervention procedures that should be indicated in the PNCEA.

Although the regulatory framework is dynamic and subject to ongoing adjustments and improvements, below you will find a list of the key federal legal documents to be considered in the event of an animal health emergency. In addition to these, other rules in force at the time of the event and the specific legal basis enacted by the Federative Units should be considered.

Decree No 24.548, dated July 3, 1934

Approves the Regulations of the Animal Health Service. Special mention should be made of Chapter VI, which deals with the prevention of communicable diseases, and Article 83, which guarantees officials free access to places where there is a risk of the diseases, with the possibility of requesting the assistance of public forces if necessary.

Decree No 2.848, dated December 7, 1940 (Criminal Code), including related Decrees and Laws

With emphasis on article 259 of Title VIII, "Crimes against public health", Chapter I, "Crimes of common danger": *Spread disease or pest that can cause damage to forest, crops, or economically useful animals*. It carries a penalty of two to five years' imprisonment and a fine, which may be reduced to one to six months' imprisonment or a fine if the offender is found guilty.

Law No 569 of December 21, 1948, as amended by Law No 11.515 of August 28, 2007, and regulated by Decree No 27.932 of March 28, 1950.

It deals with matters relating to the slaughter of animals, destruction of things or rural buildings, valuation, and compensation to the respective owners. Amendment in 2007 included in the Law paragraph 2, in Article 6, opening the possibility of compensation resulting from the sanitary slaughter of animals to be fully borne by the Union, provided that the rural properties involved are in the border strip (150 km wide along land borders) and that the slaughtering results from the application of sanitary measures to combat or eradicate foot-and-mouth disease. Article 7 has also been amended to read as follows: "The right to claim compensation shall expire in 180 (one hundred and eighty) days from the date on which the animal is slaughtered or the thing is destroyed".

Law No. 9.605, of February 2, 1998 (Environmental Crimes Law)

Provides for criminal and administrative sanctions arising from conduct and activities harmful to the environment. Emphasis on Article 61, which refers to the spread of diseases or pests or species that may cause damage to agriculture, livestock, fauna, flora, or ecosystems, which carries a penalty of imprisonment from one to four years and a fine.

Decree No. 5.741, of March 30, 2006, which regulates Law No. 8.171, of January 17, 1991, amended by Law No. 9.712, of November 20, 1998.

A set of legal documents defining the Unified System of Agricultural Health attention, with a broad description of the duties and responsibilities of the various bodies and sectors involved. In the case of the animal health emergency,

Special attention should be paid to Sections I and II of Chapter III of Decree 5.741, which refer to the eradication and control of pests and diseases. Some points related to animal health, based on this Decree, are highlighted below:

- The containment and eradication of foci of EAD must involve official services and institutions, producers and rural workers, their associations and the technicians who assist them, inspection bodies of professional categories directly linked to agricultural health, and fund management bodies organized by the private sector to complement public action in the field of agricultural protection (§ 1 and 2, art. 1).
- The application of official controls in accordance with the Regulation does not relieve the operators in the production chain of their legal and primary responsibility for ensuring animal health, nor does it prevent the application of new controls or exempt them from civil or criminal liability arising from failure to comply with their obligations (§ 4, Art. 2).
- All participants in the production chain are obliged to notify the SVO of the names and characteristics of the establishments under their control that are involved in any of the stages of animal production, processing, distribution, and veterinary services. The information must be updated whenever there is a significant change in the activities or their eventual closure, as well as any change in the sanitary conditions registered in their establishments, production units or property (Art. 5).
- Responsibilities and attributions for the preparation of contingency plans and for the coordination, composition, and training of specific technical teams for the establishment of national groups for animal or plant health emergencies (Articles 33 to 36).
- MAPA will adopt emergency and temporary assistance measures in the event of non-compliance by intermediate bodies with the obligations established in the regulations and agricultural health legislation and will take measures that will enable them to resolve the situation without jeopardizing the objectives of the Unified Agricultural Health attention System (§ 1, Art. 112).
- The assistance referred to above may include one or more of the following measures (§ 3 of Art. 112)
  1. adoption of sanitary procedures or any other measures deemed necessary to ensure the safety of animals, plants, inputs, including feed, products of animal and plant origin, and animal health standards.
  2. restricting or prohibiting the marketing of products.
  3. monitoring and, if necessary, ordering the recall, withdrawal, or destruction of products.
  4. authorization to use inputs, including feed, animal, and plant products, for purposes other than those for which they were originally intended.
  5. suspension of operation or closure of all or part of production or business activities.
  6. suspension or termination of the accreditation granted; and
  7. any other measures deemed appropriate by MAPA's competent authority.
- The burden resulting from the above actions will be the responsibility of the producers of animals, plants, inputs, including animal feed, and products of animal and plant origin, with an appeal in the manner regulated by the MAPA (§ 4, Art. 112).
- Sanctions for violations related to agricultural health will be applied in the manner defined in specific legislation, at the federal, state, and municipal levels (Art. 113).
- All procedures must be documented (Art. 114).

- In the event of non-compliance with agricultural health standards, producers of animals, plants, inputs, including animal feed, products of animal and plant origin, will be formally notified by the competent authority (Art. 115).
- The Intermediate Bodies shall provide mutual assistance, upon request or on their own initiative, whenever the results of official controls require the adoption of emergency measures in more than one Intermediate Body (Art. 118).
- Mutual assistance between SVEs may include, where appropriate, participation in on-the-spot checks carried out by the competent authority of other Intermediate Bodies (Sole Paragraph, Art. 118).
- Whenever an SVE authority becomes aware of a case of non-compliance and this case may have implications for the agricultural health of another state, it will immediately transmit this information to the MAP and the SVEs of the other state, without the need for a prior request (Art. 119).
- The EVSs receiving such information shall carry out investigations and inform the body which provided the information of the results of the investigations and, where appropriate, the measures taken, in particular the application of assistance, without prior request (§ 1, Art. 119).
- If the competent authorities of the SVEs of the states concerned have reason to believe that these measures are not adequate, they must jointly seek ways and means to remedy the non-compliance (§ 2, Art. 119).
- The SVEs shall inform MAPA if they cannot agree on appropriate measures and if the non-compliance affects the animal health system (§ 3, Art. 119).
- If it is found that the non-compliance may affect agricultural health at regional or national level, MAPA will help, without prior request, in the identified area (§ 4, Art. 119).
- MAPA will suspend the application of unjustified sanitary or phytosanitary measures, or contrary to agricultural health legislation, between States by adopting appropriate measures (Art. 120).

Decree No. 10.593, of December 24, 2020.

Provides for the organization and functioning of the National Protection and Civil Defense System and the National Council for Protection and Civil Defense and on the National Protection and Civil Defense Plan and the National Disaster Information System. This Decree regulates Law No. 12,340 of December 1, 2010, and Law No. 12,608 of April 10, 2012.

Decree No. 12.608, of April 10, 2012.

Establishes the National Protection and Civil Defense Policy (PNPDEC); provides for the National Protection and Civil Defense System (SINPDEC) and the National Council for Protection and Civil Defense (CONPDEC), among other provisions.

Normative Instruction No. 50 of September 24, 2013

Amends the list of diseases subject to the application of animal health measures, provided for in art. 61 of the Regulations of the Animal Health Service, published by Decree No. 24.548, of July 3, 1934.

Law No. 12.873, of October 24, 2013, and corresponding Decree No. 8.133, of October 28, 2013.

Provides for the declaration of a state of phytosanitary or animal health emergency, with emphasis on art. 52 of Law 12,873. In addition to several aspects related to the procedures for declaring a state of animal health emergency, art. 6 of Decree 8.133 stands out, which provides: "Once the state of phytosanitary or animal health emergency has been declared, the Ministry of Agriculture, Livestock and Supply, as the central and superior body of the Unified System for Attention to Agricultural Health, is authorized to import or consent to import and grant emergency authorization.

the temporary production, distribution, marketing, and use of unauthorized products, pursuant to art. 53 of Law 12,873 of 2013, provided that the indication of guidelines and measures pursuant to item I of the caput of art. 2 and the request for prioritization pursuant to art. 5 are not sufficient to combat the epidemiological situation".

Decree No. 8.762, of May 10, 2016.

Provides for the creation of the National Force of the Unified System of Agricultural Health Attention - FN-SUASA, which may be deployed whenever a phytosanitary or animal health emergency is declared, as regulated by Decree No. 8,133 of October 28, 2013, or in other cases of proven technical necessity. The FN-SUASA will be formed by a team of duly qualified professionals with specific training, representing the different bodies of SUASA, who will work together in the implementation of measures for prevention, surveillance, assistance and control of epidemiological risk situations and phytosanitary and animal health disasters affecting crops and livestock.

Normative Instruction No. 02 of December 20, 2016

Normative act of the Ministry of Regional Development that establishes procedures and criteria for the declaration of states of emergency or public calamity by municipalities, states, and the Federal District, and for the federal recognition of abnormal situations declared by federal entities and makes other provisions.

Normative Instruction No. 15 of March 9, 2018

Establishes the National System of Agricultural Emergencies - SINEAGRO, which comprises the set of bodies, activities, standards, and procedures, with permanent and coordinated action for the preparation and response to agricultural emergencies. It establishes four levels of action in its organization: I - political-administrative level; II - strategic level; III - tactical level; and IV - operational level.

ANNEX 03 - DSA Circular Letter reporting the occurrence of an EAD.

Circular Letter DAS no.

Brasilia [date]

To the Divisions of Agriculture and Livestock [all]

c/o Superintendents [all]

To the State Veterinary Services Board [all]

Subject: Reporting of an EAD and definition of an animal health emergency area

Dear Sir or Madam

We report the occurrence of [inform EAD] in the municipality of [inform name] located in the UF [inform name] and inform that sanitary actions are underway aimed at containing and eliminating the focus.

Considering the need to prevent the spread of the pathogen to other areas of the country, the region [inform the list of municipalities or part of municipalities that initially formed the health risk area] has been defined as a animal health emergency area from which the exit of animals and products at risk to [inform EAD] is prohibited. The mentioned area may be changed according to the evolution of the ongoing epidemiological investigations and after evaluation by this department.

We request the immediate adoption and epidemiological surveillance actions required for the case with emphasis on those related to the inspection of rural properties related to the animal health emergency area by animal transit from the last [inform the period] days.

Yours sincerely

ANNEX 04 - Ministerial Ordinance declaring a state of animal health emergency.

ORDINANCE No__, OF__OF_____OF ____

THE MINISTER OF STATE FOR AGRICULTURE, LIVESTOCK AND SUPPLY, in the use of the powers conferred on him/her by Article 2 of Decree No. 5.741 of March 30, 2006, and Article 52 of Law No. 12.873 of October 24, 2013, in view of the provisions of Decree No. 8.133 of October 28, 2013.

Considering the confirmation of occurrence of [Inform the EAD] in the national territory.

Considering the need for the immediate application of specific measures to contain and eliminate the pathogen, preventing its spread to other areas of the country.

Considering the temporary nature of the measures being adopted and what is stated in Process no. _____, resolves:

Art. 1 Declare a state of animal health emergency for a period of 12 months, counted from the present date, due to the occurrence of [Inform EAD], and define as the affected area the region identified below:

I.

~~Sole paragraph: The animal health emergency area established in this article may be modifie~~d, by normative act of the Secretariat of Agricultural Health, according to the evolution of epidemiological investigations and animal health surveillance work in progress.

Art. 2 Declare all rural properties and other establishments with animals susceptible to [Inform EAD] and other products that pose a risk for the maintenance or spread of the disease, located in the animal health emergency area, from which the exit of animals and other products at risk for [Inform EAD] is prohibited.

Sole paragraph. The movement of animals and products at risk within the animal health emergency area must be governed by rules and procedures established by the technical team established for the execution of field operations, aiming at the containment and elimination of the [Inform EAD] pathogen.

Article 3. This Ordinance enters into force on the date of its publication.

MINISTER OF STATE FOR AGRICULTURE AND LIVESTOCK

ANNEX 05 - Ministerial notice informing about the occurrence of the EAD.

Notice no _____

Brasília,__of_____of_____.

To Your Honor, [title] [Name]
[job title]

Subject: **Occurrence of [Inform EAD] on national territory.**

Minister,

I inform you of the occurrence of [Inform EAD] in [indicate location of focus], as detailed in the attached Technical Note. This episode has a strong impact on the national agriculture and immediate measures must be taken to mitigate the socio-economic consequences and restore normalcy.

Therefore, I request Your Honor's support for the application of the necessary measures to
prompt handling of the said animal health occurrence.

Sincerely,

[name of person signing]
Minister for Agriculture and
Livestock Farming

ANNEX 06 - SDA Ordinance appointing professionals to coordinate COEZOO.

ORDINANCE No__, OF__OF_____OF _____

THE SECRETARY OF AGRICULTURE HEALTH AND LIVESTOCK, OF THE MINISTRY OF AGRICULTURE AND LIVESTOCK, in the use of the attributions conferred by Art. 22 of Annex I of Decree No. 11,332 of January 1, 2023, and the provisions of Decree No. 5,741, of March 30, 2006, Decree No. 24,548, of July 3, 1934, and

Considering the need for the immediate application of specific measures to contain and eliminate the pathogen of [Inform EAD], preventing its spread to other areas of the country.

Considering the temporary nature of the measures being adopted and what is stated in Process no, resolves:

Art. 1 Appoint civil servants_____, Veterinarian , CRMV *(UF)*-_____, e_____, Veterinarian, CRMV *(UF)*-_____, as General Coordinators of the Animal Health Emergency Operations Center (COEZOO) aiming at the containment and elimination of the pathogen of [Inform EAD].

§ Paragraph 1 - Said officials shall be subordinated to the Director of the Department of Animal Health, with the following responsibilities, limited to the area of animal health emergency:

I. implement and coordinate the execution of the guidelines of the Contingency Plan for Animal Health Emergencies and the corresponding annex for the [Inform EAD], for action on foci;

II. act in close cooperation and articulation with the health authorities in the State concerned, which must be constantly notified and updated on all actions being taken;

III. With the support of the health authorities of the affected state(s), form the complementary team for coordinating and implementing field activities;

IV. define the geographical limits of the animal health emergency area and keep them updated according to the evolution of the ongoing epidemiological investigations;

§ Paragraph 2 Pending the appointment and deployment to the animal health emergency area of the officials referred to in this Article, the responsibility for the initial and immediate implementation of field operations shall be shared by the heads of the veterinary services of the Federal Superintendence for Agriculture, Livestock and Supply and the State Veterinary Service or their designated representatives.

§ Paragraph 3 The designated officials shall work in the animal health emergency area on a rotating basis according to a work schedule that does not interfere with the continuity of field operations.

§ Paragraph 4 The appointment of the COEZOO Coordinator(s) does not characterize an appointment to a commissioned position in the federal public administration.

Article 2 This Ordinance enters into force on the date of its publication.

SECRETARY OF ANIMAL HEALTH

ANNEX 07 - SFA Ordinance establishing an evaluation committee.

ORDINANCE No_____ OF__OF__OF 20_

CONSTITUTES A COMMISSION FOR THE EVALUATION OF THE ANIMAL HEALTH EMERGENCY GROUP DUE TO FOCUS OF [INFORM EAD] REGISTERED IN THE STATE __

_____

The Federal Superintendent of Agriculture and Livestock in the State of ....., exercising the powers conferred upon him/her by law;

Having regard to Law No 569 of 21/12/1948, as amended by Law No 11.515 of 28/8/2007 and regulated by Decree No 27.932 of 28/3/1950;

Considering the declaration of animal health emergency by the MINISTER OF STATE OF AGRICULTURE AND LIVESTOCK through Ordinance No._____, of_____of_____of 20_____;

R E S O L V E S:

Art. 1 Constitute the **EVALUATION COMMISSION** of the animals that will be submitted to sanitary slaughter, and of the goods destroyed with a view to eliminating the pathogen of [Inform EAD], appointing the following representatives:

I - *Representative of the Official Veterinary Service of the Federal*

Government; II - *Representative of the Official Veterinary Service*

state government; and III - *Representative of the private sector*.

Art. 2 The head of the evaluation committee shall be the representative of the Official Veterinary Service of the Federal Government.

Art. 4 This ordinance enters into force on the date of its publication.

Federal Superintendent of Agriculture and Livestock

ANNEX 08 - PPE and Biosecurity Procedures

A) Personal Protective Equipment - PPE

Equipment and materials required for biosecurity procedures:

In order to better organize the material and facilitate disinfection, the materials should be placed in boxes or resistant plastic bags, labeled, and closed, with emphasis on:

a. Personal Protective Equipment (PPE):
   - overalls, preferably disposable.
   - disposable latex gloves and heavy-duty rubber gloves.
   - face masks.
   - high-top rubber boots.
   - disposable foot protectors.

b. polyethylene adhesive tapes.

c. disinfectants.

d. detergents and soap.

e. large plastic bags, ideally at least 2 different colors should be available for transporting material for disposal or for disinfection.

f. brushes for cleaning boots, hands, and equipment.

g. buckets for disinfection and drums or buckets for transporting water.

h. backpack pumps and hand sprayers.

i. container for the disposal of sharp material.

B) BIOSECURITY PROCEDURES

Biosecurity measures should be strict during surveillance activities. This appendix highlights some biosecurity procedures for use by surveillance teams, in addition to the **Surveillance Manual**.

1. General measures to prevent contamination:

   a. avoid unnecessary walking through potentially contaminated areas.

   b. avoid direct contact with potentially contaminated materials, surfaces, and vehicles.

   c. before putting on the PPE check that it is not torn or punctured.

   d. do not carry items such as: cigarettes, candies, food, drinks, etc.

2. Precautions that should be taken to minimize contamination of equipment:

   a. when taking samples, place the boxes and instruments in a clean bag before placing them in the vehicles; and

   b. the samples taken must be properly conditioned and placed in bags that allow external disinfection before being transported.

Suggested procedures for entering properties:

Stop the vehicle in a safe, dry, and clean place, preferably near the gate, and avoid entering if it is a subsistence property. In the case of commercial properties, drive close to the sheds, but keep some distance and choose a dry and clean location.

At this point, it is already advisable to delimit a "clean" area and a "dirty" area, based on the entrance of the property or other access point to the place where the animals are. Ideally, a plastic tarpaulin should be spread on the ground, divided by a tape that delimits the areas, with the dirty area closer to the animals, and the clean one closer to the vehicle.

Wearing personal protective equipment:

1. put on the overalls. The use of disposable coveralls is recommended.

2. put on the rubber boots.

3. put on the foot protectors.

4. put on the face mask.

3. put on disposable gloves. Two pairs of gloves can be used, with the bottom ones secured with tape. It is also recommended to have more resistant rubber gloves for the clinical inspection activities of the animals.

Suggestions for on-farm procedures:

1. Check all material before entering. Many items are unnecessary (such as bags and keys, among others) and should be kept in the car. Take off your watch, rings, bracelets, necklaces etc. and leave them in the vehicle. Cell phones, cameras and GPS devices should be placed in individual sealed plastic bags to allow for subsequent cleaning and disinfection.

2. While working on the property you should avoid eating, smoking, or drinking.

Preparing to leave the property:

1. Take advantage of the farm's washing facilities to remove as much visible dirt as possible from the materials used and boots.

2. After the clinical inspection and sample collection procedures, staff should separate all non-disposable items, which should be washed with soap, water, and a brush, then disinfected and stored in specific non-disposable bags, sealed, and disinfected again over the boundaries of the clean area, before being placed in the vehicle.

3. Used disposable items should be placed in plastic bags of disposable material for destruction. Piercing or cutting materials should be placed in specific devices or pet bottles before being placed in the garbage bags.

Procedure for preparing to leave the property:

1. Respect the boundaries between the clean and dirty area. All material must be properly cleaned and disinfected before being transferred to the clean area.

2. Removal of personal biosecurity equipment should be carried out to protect against exposure to potentially infectious materials. The adoption of the following points is recommended:

   a. cleaning and disinfecting samples and material boxes, bagging the equipment, sealing the bags, disinfecting them, and passing them to the clean area.

   b. cleaning and disinfecting the bags of cell phones, cameras, and GPS, passing them to the clean area.

   c. remove foot protectors and dispose of them in a disposable bag located in the dirty area.

   d. clean and disinfect rubber boots and gloves with a brush, including the soles.

   e. remove the face mask and dispose of it in a disposable bag located in the dirty area.

   f. remove overalls, preventing the outside from coming into contact with clothing.

g. clean and spray the reusable coveralls with disinfectant, or soak them in a bucket of disinfectant solution, then place them in a clean bag, seal the bag, disinfect it, and move it to the clean area. In the case of disposable overalls, remove them carefully so that they do not come into contact with the outside and place them in a bag with disposable materials in the dirty area.

h. remove the gloves, taking care not to touch your hands on the outside, and place them in the disposable bag in the dirty area. If they are reusable rubber gloves, they should be washed, disinfected, and put in the bag together with the reusable overalls. The bag should then be sealed, disinfected, and passed to the clean area.

i. clean and disinfect the boots for the second time, including the soles.

j. remove boots and place them in a plastic bag made of reusable material, seal the bag, disinfect it, and move it to the clean area.

k. move to the clean area.

l. put your shoes on.

m. clean and disinfect hands, wrists, and arms.

n. pour the remains of disinfectant on the wheels of the vehicle.

o. place the bags with samples and non-disposable materials inside the car or in a place defined as a clean area of the vehicle.

p. place the bags with externally disinfected disposable materials in the dirty area of the vehicle (trunk or car body); and

q. disinfect the wheels, pedals, and floor of the vehicle before leaving the property.

3. Upon returning from the property, provide:

a. proper disposal of biohazardous disposable material.

b. cleaning and disinfection of reusable materials; and

c. shower and change of clothes.

ANNEX 09 - Animal assessment report

Number:	**UF:**	**Date:**	**FORM-IN:**

Legal basis:

Law No 569 of December 21, 1948, as amended by Law No 11.515 of August 28, 2007, and regulated by Decree No 27.932 of March 28, 1950.

Other legislation:

ANIMAL(S) ASSESSED

Identification	Species	Breed	Sex	Age	Weig ht	Amount (R$)
					GRAND TOTAL	

OWNER IDENTIFICATION

Name of owner:		
Nationality:	*Marital status:*	*Occupation:*
ID:	*Issuer:*	INDIVIDUAL TAXPAYER NUMBER [CPF]:
Address:		
Municipality:	*UF:*	*ZIP CODE:*

PROPERTY IDENTIFICATION

Name of property:	
Code in the UVL:	Location:
Municipality:	*UF:*

EVALUATION AND SLAUGHTER COMMITTEE

Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	

OWNER OR PERSON IN CHARGE - ***I declare that I agree with the amount to be indemnified.***

Name:		Signature:
ID:	Issuer:	

ANNEX 10 - Items and Buildings assessment report

Number:	**UF:**	**Date:**	**FORM-IN:**

Legal basis: (remember to mention the reference sources)

Law No 569 of December 21, 1948, as amended by Law No 11.515 of August 28, 2007, and regulated by Decree No 27.932 of March 28, 1950.
Other legislation:

DESCRIPTION OF THE THING(S) OR CONSTRUCTION(S) VALUED

Description	Amount (R$) assessed (A)	Amount (R$) discounted (B)[1]	Amount (R$) to be indemnified (A-B)
TOTAL			

[1] A discount will be due on the assessment when part of the condemned things or constructions is deemed to be in a usable condition - Article 1, sole paragraph, Law 569/1948".

OWNER IDENTIFICATION

Name of owner:		
Nationality:	*Marital status:*	*Occupation:*
ID:	*Issuer:*	INDIVIDUAL TAXPAYER NUMBER [CPF]:
Address:		
Municipality:	*UF:*	*ZIP CODE:*

PROPERTY IDENTIFICATION

Name of property:		
Code in the UVL:	Location:	
Municipality:		*UF:*

COMMITTEE RESPONSIBLE

Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	

OWNER OR PERSON IN CHARGE - ***I declare that I agree with the amount to be indemnified.***

Name:		Signature:
ID:	Issuer:	

ANNEX 11 - Sanitary Animal slaughter report

SANITARY SLAUGHTER REPORT

Number:	**UF:**	**Date:**	**FORM-IN:**

Legal basis:

Law No 569 of December 21, 1948, as amended by Law No 11.515 of August 28, 2007, and regulated by Decree No 27.932 of March 28, 1950.
Other legislation:

LIST OF THE ANIMAL(S) SLAUGHTERED

Identification	Species	Breed	Sex	Age	Weig ht

OWNER IDENTIFICATION

Name of owner:		
Nationality:	Marital status:	Occupation:
ID:	Issuer:	INDIVIDUAL TAXPAYER NUMBER [CPF]:
Address:		
Municipality:	UF:	ZIP CODE:

PROPERTY IDENTIFICATION

Name of property:	
Code:	Location:
Municipality:	UF:

DISPOSAL OF CORPSES, VISCERA AND REMAINS

THOSE IN CHARGE OF SANITARY SLAUGHTER:

Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	

WITNESSES:

Name:		Signature:
ID:	Issuer:	
Name:		Signature:
ID:	Issuer:	

OWNER OR PERSON IN CHARGE

Name:		Signature:
ID:	Issuer:	

ANNEX 12 - Items and Buildings destruction report

ITEMS AND BUILDINGS DESTRUCTION REPORT

Number:	**UF:**	**Date:**	**FORM-IN:**

Legal basis:

Law No 569 of December 21, 1948, as amended by Law No 11.515 of August 28, 2007, and regulated by Decree No 27.932 of March 28, 1950.

Other legislation:

DESCRIPTION OF THE THING(S) OR CONSTRUCTION(S) VALUED

Description

OWNER IDENTIFICATION

Name of owner:		
Nationality:	*Marital status:*	*Occupation:*
ID:	*Issuer:*	INDIVIDUAL TAXPAYER NUMBER [CPF]:
Address:		
Municipality:	*UF:*	*ZIP CODE:*

PROPERTY IDENTIFICATION

Name of property:	
Code in the UVL:	Location:
Municipality:	*UF:*

COMMITTEE RESPONSIBLE

Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	
Name:		Signature:
Agency:	ID:	

OWNER OR PERSON IN CHARGE

Name:		Signature:
ID:	Issuer:	

Ministry of Agriculture and Livestock.

Secretary of Animal Health

Department of Animal Health

TEL 00-556132182701

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