Intelligence In Foot And Mouth Disease Disasters In Livestock In Indonesia

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Abstract—Disasters are perceived as a threat to society. Communities are positioned as objects that are unable to defend against the onset of disasters. One of the plagues that attacked was foot and mouth disease which broke out again in Indonesia after 135 years. The task of intelligence is needed to unlock this problem. Coordinating the general planning and operational implementation of intelligence activities of all agencies for the implementation of their respective tasks so as to resolve the plague that harms Indonesian farmers and the country can be carried out quickly and precisely.

Keywords—Foot and Mouth Disease; Intelligence.

I. INTRODUCTION

Intelligence is knowledge, organization, and activities related to policy formulation, national strategy, and decision-making based on analysis of information and facts collected through working methods for detection and early warning in the context of preventing, deterring, and overcoming any threat to national security (UU NO.17 Tahun 2011 dalam Pasal 1). In intelligence, an observer must know the early detection, early warning, predicting, and handling of a problem carefully and thoroughly.

Basically, counterintelligence is carried out in a closed manner, but it still requires coordination with related agencies to obtain the necessary authentic evidence. The state establishes an intelligence system to improve domestic defense and security efforts so that state security can be maintained from internal and external threats. In order to implement its domestic and foreign policy, every state requires knowledge of threat dynamics, which can be obtained through intelligence activities. Where the dynamics of threats and intelligence activities will continue and from time to time and increasingly complex.

Disasters are perceived as if they are a threat to the community, so they must be contained like an enemy or war. As a perspective, the hazards surrounding the settlements are also perceived as enemies that attack the settlements at any time. In this perspective, the community is positioned as an object that is unable to defend the attack from the disaster. An example is the case of foot and mouth disease in Indonesia, which suddenly returned after the first case was detected in Gresik on April 28, 2022. It had previously occurred in Malang, East Java in 1887. This is thought to have originated from imported Dutch cattle (Adjid, 2020). Therefore, it is necessary to further examine intelligence related to foot and mouth disasters in Indonesia that could re-emerge as a pandemic in hoofed livestock.

II. RESEARCH METHODS

Method study is method scientific to use get the data you have utility as well as objective certain. As for writer use on method study this is qualitative as well as approach through studies literature that is look for reference from relevant articles, books and others.

III. RESULT AND DISCUSSION

Foot and Mouth Disease (FMD) is one of the viral diseases of livestock that has a significant economic impact worldwide. It is caused by Aphthovirus infection and affects a wide range of animals, including cattle, pigs, goats and sheep. There are seven FMD virus serotypes, namely A, O, C, Asia 1, and SAT 1, 2, and 3 (Pal, 2018). Here is some information about FMD (Amaral Doel et al., 2009), namely high fever (pyrexia) up to 41°C, loss of appetite (anorexia), vesicles (blisters) on the mucous membrane of the nose, mouth, and feet of animals, rubbing lips, grinding teeth, and kicking feet, morbidity can reach 100% in susceptible populations, especially in young animals. FMD virus is spread by contact with infected animals or their feces. Transmission can also occur through aerosols via respiratory secretions, milk and semen of infected animals. Production losses on farms, trade restrictions, control and eradication costs, decreased supply of meat and livestock products, which can affect inflation and people's purchasing power.

In this case, intelligence acts as bio-defense. Where, there is a set of procedures involving various ways of taking defense measures against attacks using biological agents (Miller, 2001). What is meant by biological agents are bacteria, viruses, prions, or fungi that can cause infections, allergies, poisonings that are dangerous for bioterrorism or biological warfare. Shown in the biorisk spectrum chart is divided into 3 parts, namely natural, accidental, and intentional, below.
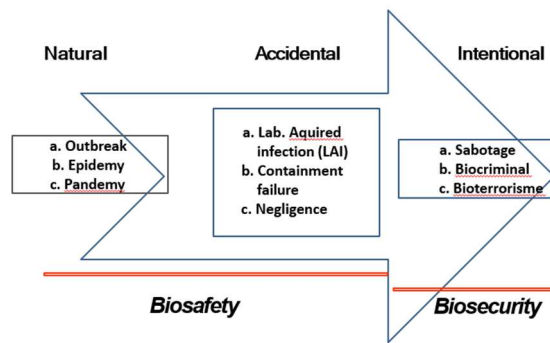

Fig. 1. Biorisk Spectrum

In this case, foot and mouth disease that attacks cloven-hoofed livestock is included in natural biosecurity. So that CBRN (Chemical Biological Radiation Nuclear) becomes a very serious (terrible) threat so that its impact is mass and related to various fields of life that are very broad in science, political integration, economy, social, culture and defense and security. Foot and mouth disease, which is spreading again today, is indicated as a biological weapon. With the definition of a cyst whose effects are caused by living things to cause epidemics, death in humans / animals / humans and animals, destruction of crops, and damage to supplies with the intention of weakening the enemy's war potential. This foot and mouth disease is a flashback of anthrax disease which is included in anti-animal biological weapons, which causes disease / death in animals. anthrax attacks are characterized by animals always being restless, bleating continuously, the presence of wounds / ulcers in the form of pustules and carbuncles, and ends in death.

The countermeasures from CBRN that can be done are by coordinating the preparation of general planning and coordinating the operational implementation of other intelligence activities, which carry out these functions as part or to support the implementation of their respective tasks (KEPPRES 46, 2002). Not only that, coordinating the general planning and operational implementation of intelligence activities of all agencies for the implementation of their respective tasks is no less important (INPRES 5, 2002). The steps taken by farmers to anticipate the outbreak of the foot and mouth disease virus by :

a. Biosecurity

Biosecurity is a set of measures aimed at preventing the spread of disease among animals. It involves controlling animal movement, hygiene and other precautions. Disposal, i.e. infected animal carcasses must be properly managed, including burial or destruction using acidic disinfectants. Decontamination, i.e. all items entering the kennel area need to be sanitized. This can be done through disinfection, fumigation, or the use of ultraviolet lights. Employees entering the housing area should also change into full clothing, including uniforms, boots and masks. Isolate new or sick livestock to prevent the spread of the virus to other animals. Keeping the pens clean and regularly spraying disinfectants in the pens is important. Restrict people and vehicle traffic in and out of the pen area. FMD virus can be spread through various ways, including direct contact between infected and susceptible animals, indirect contact through live vectors, and aerosolized spread (DKPP, 2024).

b. Vaccination

Vaccination is an effective prevention method to protect animals from FMD. Routine vaccination can reduce the risk of disease transmission. The vaccine is injected 3 times at regular intervals. Second dose four weeks apart and booster 6 months. Periodically booster vaccines every 6 months with the same vaccine. The types are: aftopor (from France), CAvac FMD (from China), Aftomune (from Brazil), Aftogen Oleo (from Argentina), Aftosa (from Argentina) (Kepmen, 2022).

c. Surveillance

Surveillance is the process of monitoring and detecting cases of disease. By actively monitoring animal populations, it is possible to identify disease cases early and take the necessary action.

d. Quarantine

Quarantine involves isolating infected or suspected infected animals. This helps prevent the spread of disease to other animals.

e. Controlling Animal Movement

Regulating animal movement is an important step in preventing disease transmission. By regulating animal movement, we can reduce the risk of spreading disease through direct or indirect contact.

Although prevention and control measures seem simple, people often neglect to implement them. Education and awareness of the importance of tackling FMD are also key factors in the eradication of foot and mouth disease.

IV. CONCLUSION

The role of intelligence in dealing with disasters is very important, especially in bio-defense. This was summarized when the outbreak of foot and mouth disease broke out again in Gresik on April 28, 2022. Which had previously occurred in Malang, East Java in 1887. No doubt, this is included in the natural biosecurity threat. So that CBRN (Chemical Biological Radiation Nuclear) becomes a very serious (terrible) threat whose impact is mass and related to various fields of life that are very broad in science, political integration, economy, social, culture and defense and security. Important aspects that need to be guarded by the Indonesian people against this outbreak are data analysis with intelligent algorithm analysis to identify areas with high potential for outbreaks, coordination and response between related institutions. Thus, handling and mitigating the outbreak can be done more quickly and organized. AI can be used to quickly and precisely disseminate information on disease prevention and control to farmers and the public at large. This includes information on vaccination, cage hygiene, and quarantine measures. Once the outbreak is over, intelligence can be used for monitoring the health condition of livestock and the effectiveness of the measures taken. This is important to prevent the re-emergence of the disease and improve the management system in the future. With the data collected and analyzed by intelligence-based systems, policymakers can gain deeper insights to develop more effective regulations for the prevention and management of foot-and-mouth disease in the future. Through the integration of intelligence technology in the management of foot-and-mouth disease outbreaks, Indonesia can improve efficiency and effectiveness in controlling diseases that often affect livestock, thereby reducing the risk of economic losses and safeguarding animal welfare.

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