

Foot and Mouth Disease in Indonesia and International Trade Policy; What Can Be Learnt from The Recent Outbreak?

*(PENYAKIT MULUT DAN KUKU DI INDONESIA
DAN KEBIJAKAN PERDAGANGAN INTERNATIONAL;
APA YANG DAPAT DIPELAJARI DARI WABAH TERAKHIR?)*

**M. Daud AK^{1*}, M. Yakub Aiyub Kadir²,
Nabyla Humaira², Eka Kurniasari²**

¹Faculty of Veterinary Medicine,
Universitas Syiah Kuala,

Jl. Teuku Nyak Arief, No. 441,
Kota Banda Aceh, Aceh, Indonesia 23111

²Faculty of Law and Anti-Corruption Research Center Universitas Syiah Kuala
Putroe Phang No.1, Kopelma Darussalam,
Kec. Syiah Kuala, Kota Banda Aceh,
Aceh, Indonesia 23111
Email: m.daud.ak@usk.ac.id

ABSTRACT

The statement letter from the World Health Agency "*Office Internationale Des Epizoties* (OIE)," started in OIE Resolution Number XI in 1990, has been a new era for Indonesia to rebuild the livestock and animal health sector. However, the outbreak of foot and mouth disease (FMD) in mid-May 2022 in Indonesia and the Central Asian country of Kazakhstan in early January 2022 proves that the importance of international trade, both formal and informal trade, on government policies in exporting animals and its products to prevent the spread of FMD disease through commodity trading. The lack of supervision of trade in animal commodities and animal products from export and import activities can impact to the emergence of other infectious diseases in the future. Therefore, world health organizations, international trade organizations, and governments must review policies related to international trade to prevent repeated transmission and other potential diseases in the future by evaluating the causes of FMD transmission in countries declared free of FMD, such as Indonesia. This paper attempts to analyze this problem through the history of FMD in Indonesia and the FMD-free zone from the perspective of international trade. This paper provides information and prevent the future of FMD through international trade in Indonesia. Specifically, stakeholders may strengthen the global livestock trading system's ability to deal with the threat of FMD and protect public health and food security by implementing a proactive strategy based on effective regulation, surveillance, capacity-building, and international collaboration.

Keywords: Animals; Foot-and-Mouth Disease; Internationality; Indonesia.

ABSTRAK

Surat pernyataan Badan Kesehatan Dunia “Office Internationale Des Epizoties (OIE)” yang diawali dengan Resolusi OIE Nomor XI tahun 1990, merupakan era baru bagi Indonesia untuk membangun kembali sektor peternakan dan kesehatan hewan. Namun, mewabahnya penyakit mulut dan kuku (PMK) pada pertengahan Mei 2022 di Indonesia dan negara Kazakhstan di Asia Tengah pada awal Januari 2022 membuktikan bahwa pentingnya perdagangan internasional, baik perdagangan formal maupun informal, terhadap kebijakan pemerintah dalam mengekspor hewan dan produk hewan untuk mencegah penyebaran penyakit PMK melalui perdagangan komoditas. Lemahnya pengawasan terhadap perdagangan komoditas hewan dan produk hewan dari kegiatan ekspor dan impor dapat berdampak pada munculnya penyakit menular lainnya di kemudian hari. Oleh karena itu, organisasi kesehatan dunia, organisasi perdagangan internasional, dan pemerintah harus mengkaji ulang kebijakan terkait perdagangan internasional untuk mencegah penularan berulang dan potensi penyakit lainnya di masa depan dengan mengevaluasi penyebab penularan PMK di negara-negara yang dinyatakan bebas PMK, seperti Indonesia. Artikel ini mencoba menganalisis permasalahan tersebut melalui sejarah PMK di Indonesia dan zona bebas PMK dari perspektif perdagangan internasional. Artikel ini memberikan informasi mengenai PMK dan cara mencegah kejadian FMD di masa yang akan datang melalui perdagangan internasional di Indonesia. Secara khusus, para pemangku kepentingan dapat memperkuat kemampuan sistem perdagangan ternak global untuk menghadapi ancaman FMD dan melindungi kesehatan masyarakat dan ketahanan pangan dengan menerapkan strategi proaktif berdasarkan regulasi yang efektif, pengawasan, peningkatan kapasitas dan kolaborasi internasional.

Kata-kata kunci: hewan; penyakit kaki dan mulut; internasionalitas; indonesia.

INTRODUCTION

The re-emergence of FMD in several regions in Indonesia has created new problems in the livestock and animal health sectors. Since 1990, Indonesia has been struggling to get recognition for the title of a Disease-Free Country (Diseases Free Country) without vaccination from OIE through OIE resolution Number XI (Recognition of the Foot and Mouth Disease Status of Members), which is published regularly every year; the latest one is OIE Resolution Number XIII 2021, free status can still be maintained (Grubman and Baxt, 2004; Soehadji and Setyaningsih, 1994; WOA, 2022c).

In 1990, which had previously been declared free in 1986 through the Decree of the Minister of Agriculture Number 260/Kpts/TN.510/5/1986 from the first outbreak in 1887 and the second outbreak in 1983, ASEAN countries also declared

the recognition of freedom in 1987 through an agreement on the implementation of the ASEAN Free Trade Area (ASEAN Free Trade Area /AFTA) and the establishment of the Economic Cooperation of the Asia-Pacific Countries (Asia-Pacific Economic Cooperation (APEC) in 1989 (Adjid, 2020; Putri, 2004)

After 32 years of being an uninfected country, FMD was again endemic in mid-May 2022 in Indonesia and the Central Asian country of Kazakhstan in early January 2022 (Tyulegenov *et al.*, 2022; Widayanti *et al.*, 2023). There is no certainty about the cause of the outbreak of FMD in Indonesia, considering that FMD-free countries can only perform trade traffic for imports of animals and animal products with fellow FMD-free countries such as Australia and New Zealand (Grubman and Baxt, 2004). However, experts strongly suspect that the outbreak of FMD is caused by the weak supervision of livestock traffic

in Indonesia, especially from countries that are not yet free (Callis, 1996).

Recently, the government has legalized importing buffalo meat and agricultural products from India and Brazil. The entry of livestock, especially sheep and buffalo, which are FMD carrier animals from infected countries not yet free of FMD, such as Malaysia (Abdi and Wright, 2016; Bastianetto *et al.*, 2020; Cortey *et al.*, 2019). Illegal imports and exports from countries that have the FMD are not yet accessible, and transmission of the virus can be through carrier media such as garbage planes and ships (swill feeding) are given to animals (Salemdeeb *et al.*, 2017; WOAHA, 2022a).

Therefore, this review was aimed to discuss and reveal the track record of FMD in Indonesia, the international trade policies related to the export and import activities and the cases of animal traffic resulting from the outbreak in the free countries. Consequently, we can find solutions to controlling, reducing and destroying the risk of the entry of new pathogens in Indonesia to return to being a Free Disease Country of FMD.

RESEARCH METHODS

The research is normative research, conducted by examining library materials or secondary data, searching for regulations and reviewing literature methods related to the problem under study (Soekanto and Mamudji, 2021). Law research is conducted to find solutions to issues that arise, so it is research within the framework of legal know-how to get prescriptions (regulatory instructions) on what should be done on issues that arise (Marzuki, 2017).

The form of research conducted is prescriptive, which is research aimed at obtaining suggestions on what should be done to overcome the problem. The approach used in this research is statutory (statute approach) is an approach used to study the consistency and conformity between law and other laws, between laws

and the Constitution, or between regulations and laws and a historical approach to reconstruct the issue period systematically and objectively, by collecting, evaluating, verifying and synthesizing evidence to support evidence to support facts to obtain firm conclusions.

RESULTS AND DISCUSSION

Foot and Mouth Disease Virus (FMDV)

Foot and mouth disease virus (FMDV) is a notable disease that impacts cloven-hoofed animals such as cattle, sheep, goats, pigs and different wildlife species. It is a member of the Picornaviridae family and the Aphthovirus genus, identified as a non-enveloped virus containing a single-stranded RNA genome (Iriarte *et al.*, 2023). Foot and mouth disease virus is well-known for its rapid mutation rates, resulting in the continuous appearance of new varieties, making disease control challenging (Scott *et al.*, 2017). The disease is extremely contagious and is known for developing vesicular lesions on affected animals' feet, mouths, noses, muzzles, and teats. These lesions can cause lameness, salivation, decreased appetite, and in severe instances, mortality, especially in young animals. The incubation period for FMD can vary from 2 to 14 days after infection. Foot and mouth disease virus is transmitted through direct contact with infected animals or indirect interaction with contaminated things. The virus can spread through respiratory aerosols across significant distances (Brown *et al.*, 2022).

This virus is characterized by its presence in seven main serotypes: O, A, C, SAT-1, SAT-2, SAT-3, and Asia-1 (Li *et al.*, 2023). These serotypes exhibit regional distribution, impacting the likelihood of epidemics in specific areas rather than being evenly spread worldwide. The O serotype is the most common among these serotypes and is frequently identified in numerous global outbreaks. The variation

in serotypes is a significant challenge in managing FMDV because vaccinations are effective only against certain serotypes, making a vaccine designed for one serotype ineffective against others (Alam *et al.*, 2019; Ding *et al.*, 2014). The vaccinations' specificity to serotypes hinders the management and control of FMD epidemics. Vaccine development must consider the specific serotype causing an outbreak in a region, necessitating ongoing monitoring and identification of prevalent strains. Currently, the absence of a universal vaccination covering all serotypes requires the storage of many vaccines, each designed to target a specific virus serotype (Chen *et al.*, 2011; Maree *et al.*, 2011).

Furthermore, the rapid mutation rates of FMDV serotypes complicate disease control efforts. The virus's capacity to produce new variants allows it to mutate within a single serotype, potentially diminishing the efficacy of current vaccinations (Jamal and Belsham, 2013; Li *et al.*, 2023). Continuous research and development efforts are needed to update vaccinations to ensure they are effective against the latest viral strains (Grant *et al.*, 2017; Kotecha *et al.*, 2016). Ongoing research is creating more adaptable vaccination methods, such as investigating cross-protective vaccinations that could provide wider immunity against many serotypes (He *et al.*, 2021). The Indonesian government responded by implementing various measures, such as setting up a national task force, euthanizing infected livestock, providing medical supplies to farmers, and conducting a widespread vaccination campaign using millions of vaccine doses, primarily obtained from France. This thorough strategy emphasized the importance of taking quick action and implementing preventive measures to manage the development of FMD and safeguard the agricultural sector's sustainability (Zhu *et al.*, 2018).

International collaboration and exchanging information are essential for monitoring the dissemination of various

FMDV serotypes and successfully responding to outbreaks. Collaboration between food-safety authorities worldwide is essential to efficiently exchange information and enable tracking and recalling of affected products to ensure food safety and protect public health (Freimanis *et al.*, 2016; Gossner *et al.*, 2009). Indonesia collaborated closely with the Food and Agricultural Organization of the United Nations, (FAO), and other nations, including the Government of Australia, who offered substantial assistance in vaccinations and technical knowledge. This alliance facilitated urgent relief operations and attempted to enhance long-term resilience against outbreaks through knowledge exchange, capacity building, and enhanced diagnostics. Collaboration is crucial for enhancing the comprehension of FMDV's diversity and creating effective strategies and regulations to reduce its impact on trade and ensure the livestock sector's sustainability (Paton *et al.*, 2009).

Foot and Mouth Disease Prevention Track Record in Indonesia

The history of FMD control in Indonesia demonstrates a comprehensive approach to managing this highly contagious viral disease affecting livestock (Blacksell *et al.*, 2019). In 1974 the Indonesian government divided the country into three FMD zones: The zone of FMD-free, suspected FMD zone and FMD-infected zone. Strict animal movement and quarantine were enforced in the FMD-free zone, routine surveys were enforced in the suspected FMD zone while a mass vaccination programme was enforced in the FMD-infected zone. However, in July 1983, just before the country was declared free from FMD, an outbreak re-emerged in Java and spread to other islands such as Bali, East Nusa Tenggara, West Nusa Tenggara, Madura, Sumatra, Sulawesi and Kalimantan, infecting 13,976 animals. A strict control system was implemented such as large-scale and rapid mass vaccination (crash programme), control of animal

movement, stamping out, and several other measures (Tyulegenov *et al.*, 2022). The

prevention track record of FMD before and after the FMD free declaration were presented in Table 1 and Table 2.

Table 1. The prevention track record of foot and mouth disease in Indonesia before the FMD-free declaration

Year	Actions against FMD	Time	Reference
1974	Establishment of 3 free zones: FMD-free zone, suspected FMD-infected zone, FMD-infected zone, and vaccination	3 years	(Malole, 1994)
1977	Rules for the Rejection, Prevention, Eradication, and Treatment of Animal Diseases	6 years	PP NO. 15, LN. 1977
1983-1985	Stamping out programme, control of livestock movement, strict disinfection, mass vaccination and surveillance campaigns	3 years	Young et al., 1985

Table 2. The prevention track record of foot and mouth disease in Indonesia after the FMD free declaration

Year	Actions against FMD	Time	Reference
2014-2015	Establishing a National Animal Health System (siskeswanas) (Revision of Law Number 18, 2009)	1 year	Law Number 41, 2014
2016-2017	Rules for the Entry of Livestock and Animal Products in Certain Cases Originating from Countries or Zones Within the Country of Origin of Entry and the establishment of Veterinary Authority and National Animal Health System (siskeswanas)	1 year	PP No. 4, 2016 PP No. 3, 2017
2022	Regionally-Based Control of Traffic in Foot and Mouth Disease Vulnerable Animals and Foot and Mouth Disease Vulnerable Animal Products	6 year	Circular letter from BNPB No. 6, 2022
2023-2024	Technical FMD control and management guidelines include vaccinating FMD-susceptible animals, treating infected animals, and implementing biosecurity and public education.	1 year	Decree letter of the directorate-general of animal health No. 616/Kpts/PK.320/F/01/2023

The last case occurred in December 1983 and was overcome by a vaccination program. In 1986, Indonesia was declared FMD-free with a vaccination program, and FMD vaccine production was stopped (Soehadji and Setyaningsih, 1994). In its history, Indonesia becoming a FMD-free country was not easy. After 32 years of being FMD-free. As evidenced by the years-long struggle to combat the disease.

The vaccination program implemented in Indonesia played a crucial role in achieving freedom from FMD, emphasizing the significance of vaccination strategies in disease control and eradication (Greenwood, 2014; Parida, 2009). The case of Indonesia serves as a testament to the effectiveness of vaccination programs in combating FMD and underscores the importance of continuous efforts in maintaining disease-free status. This success story not only highlights the impact of vaccination in disease control but also underscores the need for sustained vigilance and commitment to prevent the re-emergence of FMD, showcasing Indonesia's dedication to safeguarding animal health and promoting a thriving livestock industry through effective vaccination initiatives (Sutawi *et al.*, 2023b). In addition, spatial analysis of FMD outbreaks should be employed in Indonesia to manage the spread of FMD during and future outbreaks effectively (AK *et al.*, 2024).

International Trade Policies To Prevent FMD from Entering Indonesia

The rapid and dynamic development of the strategic environment in the last 20 years has significantly impacted the implementation of animal, fish and plant quarantine (Martin *et al.*, 2016). It is related to the trade flow between countries, which can have positive and negative impacts. In addition to earning foreign exchange benefits, trade can expand marketing reach and increase technology and knowledge transfer. However, trade in agricultural and livestock products also carries the risk of spreading pests and

diseases of plants, animals and fish. (Tasrif *et al.*, 2021). This risk not only threatens to reduce productivity but also threatens human life, both directly (diseases) and indirectly (vectors) (Naipospos, 2004).

The introduction of the FMD virus can be minimized or ignored as long as importation procedures are carried out carefully and consistently by Indonesian laws and regulations, including international references such as the Terrestrial Animal Health Code (OIE) and the Sanitary Phytosanitary Agreement (SPS Agreement) established by the World Trade Organisation/WTO (Brigitte, 2006). The Terrestrial Animal Health Code is a global standard of the OIE sets to improve the health of terrestrial animals (animals that live primarily on land), including animal welfare and veterinary public health (Disdier *et al.*, 2011; Wilder-Smith and Freedman, 2020).

The SPS Agreement addresses food safety and animal and plant health protection undertaken by a country. It sets out the rules and regulations a country must comply with if it is to formulate and adopt a health protection measure affecting trade. The SPS Agreement recognizes the right of each country to take health protection measures to protect its country based on transparent and scientific grounds (WTO, 2002).

The standardized measures in the Terrestrial Animal Health Code should be used by a country's veterinary authorities about the import and export of animals and animal products, including biological materials of animal origin, to establish measures for the early detection, reporting and control of pathogenic agents, including zoonotic agents, in terrestrial animals (mammals, birds, reptiles and bees) and the prevention of their spread through international trade (Zepeda *et al.*, 2001). Sanitary and phytosanitary measures are all laws, regulations, requirements, and procedures applied to protect human or animal health and life against (a) the risks posed by the introduction, proliferation, or spread of

pests, diseases, disease-carrying organisms and (b) the risks posed by disease-causing organisms in foodstuffs (WTO, 2020).

In addition, the role and function of quarantine in the era of trade globalization has become crucial and strategic (Hulme, 2009; National Research Council, 1995). The management paradigm has changed from quarantine as a passive agent to an active agent along with the paradigm shift in trade policy towards Non-Tariff Barrier (NTB). Quarantine management can run effectively and efficiently with international standards based on scientific principles. The agreement states that in international trade activities, a country has the right to protect human, animal and plant health. Issues for food safety are further regulated by the Codex Alimentarius Commission (CAC), while animal health issues are regulated by The Office International des Epizooties/OIE or The World Organization for Animal Health/WOAH (Martin *et al.*, 2016; OIE, 2018).

These standards are an essential part of taking preventive and curative measures to control the movement of plant / animal / fish commodities, plant / animal / fish products, and foodstuffs contaminated with plant/animal/fish pest organisms (viruses, bacteria, fungi, parasites and weeds) or residues (such as antibiotics, heavy metals, pesticides and other chemicals) that can result in death or impairment of human health, animal health and the preservation of biological natural resources and the environment (Sancho *et al.*, 2011).

On the other hand, as an active agent, quarantine is not only required to prevent the entry and spread of quarantine pests and diseases but also has implications for expanding the range of quarantine functions that are more holistic, namely related to the protection of biological resources from contamination of genetically modified organisms (GMOs) that can be used as biological weapons (bioterrorism), the presence of invasive alien species (IAS) that can disrupt the ecosystem, supervision of wild plants/animals and biological agents, and food safety that affects food

consumption (Divljak, 2022; Makita, 2021; Mishra and Singh, 2023; Satya *et al.*, 2017).

Under the SPS Agreement, an importing country is required to have a scientific reason if it refuses trade in a commodity from another country (Roberts and Unnevehr, 2005). A tool that can be used to assess the likelihood of the introduction of disease seeds that may be carried by a traded commodity and the possible impact of the introduction of these disease seeds in the importing country is import risk analysis (Peeler *et al.*, 2015). Risk analysis is defined as a function of the probability of an adverse effect and the magnitude/level of that effect as a consequence of the presence of hazards in food. Therefore, the risk of a hazard has two components, namely (1) the probability, and (2) the consequence or effect if the hazard occurs (Islam *et al.*, 2022). The OIE has published guidance on import risk analysis in the Handbook on Import Risk Analysis for Animals and Animal Products in 2 volumes. The risk analysis process developed by the OIE consists of 4 components, namely (1) hazard identification, (2) risk assessment, (3) risk management, and (4) risk communication (Satya *et al.*, 2017; WOA, 2022b).

The world of trade is not known for zero risk or no risk or in other words, trade between countries can carry the risk of introducing disease seeds from the exporting country to the importing country (Wintle and Cleeland, 2012). The risks associated with trade must be minimized to an acceptable level by the importing country by applying an import risk analysis before trade is agreed between two countries in accordance with WTO rules and the SPS Agreement (Peeler *et al.*, 2015).

Policies in Countries with Cases of Animal Traffic Resulting in Pathogen Outbreaks

Indonesia as an agricultural country has entered the food trap, this is the result of most of the components of the community's basic food needs are supplied

from abroad (imports) such as rice, soybeans, wheat, meat, milk, fish, sugar, and even salt which are basically able to be produced by local farmers or breeders (Sutrisno, 2016). But now they have to be imported from abroad in large quantities and the amount increases every year (Forgenie and Khoiriyah, 2023).

The main factor in this condition is the country's enthusiasm for economic liberalisation, especially in the areas of investment and trade (Wattanakul, 2014; Widodo, 2015). The opening of investment with large capital in various sectors of the economy, including animal husbandry, has directly or indirectly led to the displacement of livestock breeders and farmers and even fishermen from their livelihood areas. As a result, the production and productivity of livestock and agriculture in general have been relatively weakened so that they cannot keep up with the rate of population growth and are increasingly far from being able to fulfil domestic needs (Liu *et al.*, 2017).

In addition, Indonesia's food demand continues to increase and one of the main sources is animal protein, so the government imposes imports to fulfil domestic beef demand. Indonesia's largest import sources are Australia, New Zealand and the United States (MLA, 2021; Sulistiyani *et al.*, 2022). These three countries are Indonesia's main sources of beef imports both in terms of volume and import value. Indonesia's beef imports continue to show an increasing trend every year. The large amount of beef imports shows that even with a relatively low beef consumption level, Indonesia is still unable to fulfil domestic needs independently (Tseuo *et al.*, 2012). The government's beef self-sufficiency efforts have not been able to resolve this gap. This is reflected in several revisions to the government's beef self-sufficiency target (Ashari *et al.*, 2016; Atmakusuma *et al.*, 2015).

These facts have strengthened the government's reasoning to continue to actively promote trade liberalisation to meet

national needs through the World Trade Organization (WTO), Free Trade Agreement (FTA), and other national laws and policies. The existence of the General Agreement on Tariff and Trade (GATT) means that in principle there should be no more non-tariff protection policies. In addition, the existence of the WTO which is based on the GATT also reinforces this principle (Rappard *et al.*, 1991). Likewise, with the agreement to implement the ASEAN Free Trade Area (AFTA) and the Asia Pacific Economic Cooperation (APEC), trade flows between ASEAN and Asia Pacific countries are increasingly swift and competitive (Amaliawati, 2017; Feridhanusetyawan and Pangestu, 2003).

One of the most advanced FTA agreements is the FTA between ASEAN and Australia and New Zealand/AANZ-FTA (Cahyaningrum, 2016). The most comprehensive agreement covers trade in goods and services, investment, ROO, Customs, SPS, TBT, safeguards, IPR, competition policy, MNP, economic cooperation, DSM and e-commerce. The AANZ-FTA is closely related to the removal of import duties and tariffs on most Australian food products that have dominated the Indonesian market since its inception (Meredith, 2016). Even before the AANZ-FTA was signed, Australia and New Zealand were the largest beef and No. 1 beef suppliers to Indonesia. In fact, Indonesia is Australia's largest importer of live cattle, accounting for 75 per cent of the total live cattle exported from Australia to the world market. Meanwhile, dairy products such as milk powder, sweetened condensed milk and liquid milk (ultra-high temperature or UHT/pasteurised/sterilised) account for 70% of imported raw materials, mostly from New Zealand (Putra, 2021; Yong, 2024).

High dependence on imports of livestock and livestock products, the government instead of improving the livestock industry and people's agriculture in the country but acted otherwise such as expanding livestock importation policies by

making new laws on animal husbandry and animal health and all forms of restrictions on food imports were also removed in order to fulfil the free trade agreement. Major import sources include Australia, New Zealand, India and the United States, facilitated by free trade agreements like AANZFTA (o.inski, 2022).

The enactment of Law No. 18/2009 on Animal Husbandry and Animal Health, replacing Law No. 6/1967 on Animal Principles, is intended to expand the policy of market liberalization for livestock and livestock products (Law No. 18, 2009). The law, which the President passed on 4 June 2009, was motivated by plans to open up meat imports from various countries by removing restrictions in the previous law, such as prohibiting imports from countries still infected with dangerous zoonotic diseases. Not long after the law's enactment, the Ministry of Agriculture issued Decree No. 3026/kpts/PD 620/8/2009 on the Approval of the Importation of Deboned Meat from *itis* which may have previously been restricted due to animal disease concerns (Ashitey, 2016; Mentan, 2006).

Based on the latest WOAHA data (*itis*) in Resolution no 15 of 2019 set in May 2019, it is known that Brazil is still one of the countries in the world that is still infected with zoonotic diseases, such as FMD (Adnyana *et al.*, 2023). This also caused beef from Brazil to be rejected by various countries in the world, especially in Europe. However, Indonesia, on the contrary, is making very hard efforts to overcome the legal obstacles related to the opening of cheap meat imports from countries that are still infected with infectious animal diseases including zoonotic ones from Brazil, India, and other countries (Sarah *et al.*, 2023).

In fact, when it comes to food, many countries in the world are implementing protectionist policies in order to support domestic/local economic policies. Developed countries such as the European Community, the United States, Canada and Japan provide large subsidies to the

agricultural and livestock sectors. While in Indonesia the opposite is happening, both tariffs and subsidies are being eliminated with various policies (Saifulloh, 2020).

Previously, Indonesia implemented a maximum security policy regarding the import of livestock and livestock products (Ghifari, 2024). This is because Indonesia has experienced huge economic losses in the past as a result of FMD, which took up to 100 years to overcome. The maximum security policy is possible given international rules as stipulated in the OIE that a country can set higher standards related to livestock imports in order to protect the health of livestock in the country. Similarly, the WTO agreement on Agreement on Sanitary and Phytosanitary/SPS where a country is allowed to protect the health of consumers, plants, local animals from the entry of imported agricultural products that endanger food safety, plant and animal health with scientific proof (WTO, 2018).

For this reason, Indonesia implemented a strict animal health law, through Law No. 6/1967 on Basic Animal Health. This law does not revoke Staatsblad 1912 No. 432 on Government Intervention in the Animal Sector (Sutawi *et al.*, 2023a). Chapter 3 point 1 states that the state is prohibited from importing meat from countries with infectious animal diseases. The application of the principle of maximum security proved successful and Indonesia was declared a FMD-free country. So that eventually the legislation and subsequent Ministerial Decrees that change the principle of maximum security (DREF, 2023; OIE, 2021).

Although it continues to actively conduct trade liberalisation, Indonesia as a member of ASEAN and APEC must anticipate the phenomena and dynamics of international and regional developments *itis* especially in the field of trade in animals and their products through a reorientation of trade policy by focusing attention on one very important aspect of the GATT agreement, namely the "Agreement on

Human, Animal and Plant Health" (Sanitary and Phytosanitary/SPS). In addition, Indonesia must also pay attention and tighten the supervision of trade in animals and their products because the aspect of animal health, especially in traffic will make the risk of animal diseases entering the territory of Indonesia which can threaten animal resources in Indonesia (Saptana, 2017).

The World Organisation for Animal Health (WOAH) has provided general guidelines for the prevention and control of FMD so that it does not enter a country and spread to other countries. Each country can make regulations tailored to the conditions in each country referring to Article 8.8.7, then Article 8.8.40 - 8.8.42 (OIE 2019b). To maintain Indonesia free from FMD, the government issued four regulations and laws, namely 1) Law No. 41/2014 on the Amendment of Law No. 16/2014 on Animal Husbandry and Animal Health which amended many articles to tighten the control and import-export traffic of animals and their products, 2) Indonesian Law No. 21 of 2019 on Animal, Fish and Plant Quarantine, 3) Government Regulation No. 47 of 2014 on Animal Disease Control and Management, and 4) Presidential Instruction No. 4 of 2019 on Enhancing Capabilities to Prevent, Detect and Respond to Disease Outbreaks, Global Pandemics, and Nuclear, Biological and Chemical Emergencies (WOAH, 2022a).

The issuance of Presidential Instruction No. 4 of 2019 is a step forward from the government which must still be supported by all designated parties to improve their ability to prevent, detect early and respond to outbreaks that occur, especially FMD, but even so, Indonesia's efforts can still be said to have failed because in May 2022 FMD broke out again in some areas in Indonesia (Australian Government, 2023). This is evidenced by the issuance of Decree of the Minister of Agriculture No. 403 / KPTS / PK.300 / M / 05 / 2022 concerning the Determination of FMD Outbreak Areas in several Districts in East Java and Decree of the Minister of

Agriculture No. 404/KPTS/PK.300/M/05/2022 concerning the Determination of FMD Outbreak Areas in Aceh Tamiang District, Aceh Province.

Law No. 21/2019 on Quarantine of Animals, Fish and Plants is proof that the Government has made efforts to prevent the entry or transmission of viruses through animals, fish and plants, especially imported cattle and buffaloes. Related to the prevention of infectious animal diseases (PHM), including FMD, has been regulated starting from the entry of seeds and/or seedlings, the entry of livestock and animal products from abroad which must be in accordance with the technical requirements of animal welfare, free from specified PHM, and in accordance with statutory provisions in the formal quarantine. Specifically for the entry of breeding ruminants, the requirements are listed in Articles 36C and 36D, which outline that the entry of livestock into the territory of Indonesia comes from a country or zone within a country that has met the requirements and procedures for entry based on the results of animal health risk analysis by the Veterinary Authority, and the place of origin of livestock must be declared free of infectious animal diseases by the veterinary authority of the country of origin in accordance with OIE provisions and recognised by the Indonesian Veterinary Authority. It is required that the place of entry of the livestock is on the quarantine island as a maximum security animal quarantine installation (Adjid, 2020).

Not only animal, plant and fish quarantine, the issuance of Presidential Instruction No. 4 of 2019 on Improving Capabilities in Preventing, Detecting, and Responding to Disease Outbreaks, Global Pandemics and Nuclear, Biological, and Chemical Emergencies mobilises and encourages 22 Central Government institutions ranging from Ministries / Institutions / Bodies, and Regional Governments including all Governors,

Regents/Mayors to coordinate and synergise according to their primary duties and functions to improve their capabilities in Improving Capabilities in Preventing, Detecting, and Responding to Disease Outbreaks, Global Pandemics, and Nuclear, Biological, and Chemical Emergencies (Halbwax, 2020). The instruction includes es-tablishing policies or improving laws and regulations needed for operational steps. However, this will not be effective if there are still loopholes for illegal meat to enter (Pambudy *et al.*, 2023).

Another fact that should not go unnoticed is that since 2019, it is also known through data from the World Organization for Animal Health (WOAH) in resolution number 15 of 2019 that several countries still heavily infected with FMD are Africa, Central Asia and South Asia. The closest country to Indonesia that is still infected with FMD is Malaysia, except for the provinces of Sabah and Sarawak, which the OIE has declared as FMD-free zones without vaccination. Other countries relatively close to Indonesia, such as Thailand, Cambodia, Vietnam, India, Pakistan, Bangladesh, Nepal, and China, are still infected with FMD (Bacigalupo *et al.*, 2022). However, the entry and outbreak of FMD to Indonesia indeed cannot be based on proximity or distance but is also more related to the movement of people and goods, especially livestock and their products from infected countries to Indonesia (Edwards, 2005; Marschik *et al.*, 2021).

A study shows that one area is hazardous for the origin of FMD outbreaks in Indonesia because it borders Malaysia directly by land, Entikong in West Kalimantan. Based on a study, it is known that illegal meat is still found in border areas - land borders between Indonesia and Malaysia (Rahim and Adiatmojo, 2020). In 2014, Class I Entikong Agricultural Quarantine Station detained and destroyed 504 kg of frozen beef, 300 kg of frozen buffalo meat, 20 kg of bone-in chilled beef, and in 2015, 480 kg of bone-in frozen beef (Sikawan, 2015).

Through the land route at the Indonesia - Malaysia border, not only illegal meat from Malaysia enters Indonesia, but also from other countries with FMD endemic status, such as Thailand and India (Four Paws, 2020; Khrishanan *et al.*, 2021). The types of illegal meat entering Entikong are risky sources of FMD infection, such as meat with bone in and meat with lymphonodes. Based on the transport routes and frequency, the estimated volume of illegal meat entry suggests that it may still be possible for meat to escape through non-vehicle routes. Therefore, tis very likely that these conditions are the cause of the FMD outbreak in No.. In this regard, the government should tighten supervision and inspection by officers at the border with cross-agency coordination to jointly prevent the entry of illegal meat and other illegal prodNo. Indonesia (Silitonga, 2017).

Aceh Governor Decree as an Effort to Fight FMD in Aceh region

The Government of Aceh through the Disaster Management Organisation in Aceh has now moved to follow the national disaster management system. Changes in the perspective of disaster management from response and emergency to disaster risk reduction have begun to take place. This is marked by the inclusion of disaster management and risk reduc'ion as one of Aceh's development agendas for 2007-2012 in the Aceh medium-term development plan (RPJM Aceh) for the same period, although its implementation is not yet in accordance with the Hyogo Framework for Action (HFA) 2005-2015 (BPBA, 2022). In order to implement the Helsinki Memorandum of Understanding (MoU) of 15 August 2005, Law No. 11/2006 on the Governing of Aceh, especially Article 10 and Aro.cle 100, and Law No. 24/2007 on Disaster Management, Article 18, Article 19 and Article 25, supo.rted by Aceh Qanun No. 5/2010 on Disaster Mano.ement and Aceh Qanun No. 6/2010 on the Establishment of the Organisation and Working Procedures of the Aceh Disaster Management Agency,

the Government of Aceh has established the Aceh Disaster Management Agency (BPBA) (Acehkita, 2005; Kadir, 2012). Meanwhile, all districts/municipalities within Aceh have established district / municipal Disaster Management Agencies (BPBD district/municipality). Likewise, at the village level, communities are beginning to realise the importance of establishing disaster-prepared villages (BPBA, 2022).

Decree of the Minister of Agriculture No. 404/KPTS/PK.300/M/05/2022 was issued as a determination that parts of Aceh had an outbreak of FMD virus (Law, '022). After the Minister's decision was issued, the government continued to make efforts to deal with FMD that had outbreaked in parts of Aceh. Learning from the previous covid-19 pandemic, the Government of Aceh through BPBA has made policies in preparedness and non-natural disasters, and this is also applied in FMD counter-measures in Aceh. One of these efforts is to form a task force for handling and early identification of FMD so that it does not continue to spread. The task force was established through Aceh Governor Decree No. 524/972/2022 on the Establishment of a Task Force for FMD Management in Aceh (Pemda, 2022).

The Rector of Universitas Syiah Kuala also issued a Decree to appoint a task force team for community service implementation activities as a form of participation in FMD prevention in the Aceh region through the Decree of the Rector of Syiah Kuala University Number 2985/UN11/KPT/2022 concerning the Appointment of the Task Force Team (Satgas) for Community Service Implementation Activities for FMD Control in Syiah Kuala University in 2022.

CONCLUSION

In 1986 Indonesia was declared FMD-free with vaccination and the vaccine programme was officially stopped. After 32 years as an FMD-free country, it was

discovered in mid-May 2022 that FMD was again an endemic in Indonesia. This disease is highly contagious, making it one of the most feared by countries with livestock industries. Indonesia's increasing demand for food has led the Indonesian government to import cattle from abroad, mostly from Australia, New Zealand and the United States.

Although it continues to actively conduct trade liberalisation, Indonesia as a member of ASEAN and APEC must anticipate the phenomena and dynamics of international and regional developments, especially in the field of trade in animals and their products through a reorientation of trade policy by focusing attention on one very important aspect of the GATT agreement, namely the "Agreement on Human, Animal and Plant Health" (Sanitary and Phytosanitary / SPS). In addition, Indonesia must also pay attention and tighten the supervision of trade in animals and their products because from the aspect of animal health, the increase in traffic will make the risk of animal diseases entering the territory of Indonesia which can threaten animal resources in Indonesia.

SUGGESTION

In light of the existing research context regarding FMD in Indonesia and the broader implications for trade and animal health policies, further research can be conducted to observe the Impact of Trade Policies on Animal Health and disease risk in Indonesia. It could include case studies on the health status of imported livestock and the correlation with disease outbreaks. Furthermore, a study of the outcomes of international collaborations and agreements on disease control, focusing on ASEAN and APEC member countries' efforts against FMD, should be perpetuated.

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