

# Analysis of the Threats of Bioterrorism and Efforts to Protect Public Health in Indonesia

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Abstract : This paper aims to analyze the threat of bioterrorism and public health protection efforts. Bioterrorism is an effort to spread terrorist acts using biological agents / weapons in the form of bacteria, viruses, toxins, fungi. War through bioterrorism is very effective, because the results are clear and the possibility of being accused of human rights violations or extra ordinary crimes is also difficult to prove. This study uses a normative juridical approach, and secondary data as the main data supported by primary data. The secondary data in the form of primary, secondary and tertiary legal materials are analyzed qualitatively. Based on the analysis it was revealed that even though the Indonesian government had ratified Law Number 5 Year 2018 related to the Eradication of Crime of Terrorism, this law had not specifically regulated the prevention of the threat of bioterrorism, so that implementation regulations were still needed in detail. Besides that, the Indonesian people themselves still demographically still have a very low level of awareness of the dangers of biological weapons.

## 1 INTRODUCTION

### 1.1 Background

Good citizens' health is the first step in efforts to protect, advance and educate the nation's life. Without a healthy condition the objectives of the government of the Republic of Indonesia as stated in the Preamble of the 1945 Constitution are impossible to achieve. But in order to realize this, it is often faced with the presence of ATHG (threats, challenges, obstacles, disturbances).

The facts reveal that the terror that occurred in several places in Indonesia which was carried out directly by using explosives (bombs) was indeed shocking and at the same time claimed many victims. However, the suffering of terror that is carried out does not or has not caused a significant effect when compared to bioterrorism, namely terror through viruses, germs, or microorganisms that are deliberately spread by irresponsible people.

Terror that is carried out by using viruses, germs, or microorganisms is used by terrorist organizations that carry out attacks in order to cause damage and are usually associated with threats that create an atmosphere of fear and danger in order to

attract attention and public panic. It can also be done by major countries in order to strengthen its hegemony, especially in the context of controlling natural resources.

The terror of microorganisms is also used to reduce the human population in the world / the annihilation of certain ethnicities (genocide), indications of this also begin to meet the truth, where people in several countries in Africa were used as "guinea pigs" to carry out tests on discoveries new medicines produced by Western countries. Reduction of population or population by disease and war outbreaks is the equilibrium population strategy. (Purwodianto, 2011)

Viruses, germs, or microorganisms that are used as biological agents that can cause this disease are considered by many to be far more deadly and miserable. The argument is simple, the terror of a bomb can happen so fiercely but it is only once suffered after it dies. Another case with bioterrorism can occur in the long term and more torturous. The irony is that biological material is easily available in the community, so you can imagine terror attacks using biological materials will be easy to do. Moreover, every year there are 1-3 variations in infectious diseases in humans (emerging diseases) or

old re-emerging diseases. Dengue fever, tuberculosis (TB), HIV / AIDS, mad cow disease, bird flu, SARS, MERS, Anthrax still threaten humanity.

Cases that have occurred related to deadly viruses and microorganisms in Indonesia, namely on April 11, 2003, 1 case of probable SARS (Severe Acute Respiratory Syndrome) or sudden respiratory disease has been found, after one day previously announced 1 person was reported as a suspect case. The probable case is a British businessman of Chinese descent who came from Hong Kong and Singapore before going to Indonesia. From 2016 to the beginning of January 2017, 16 cases of skin anthrax were reported in Kulonprogo and 1 suspect Anthrax in Sleman, DI Yogyakarta province.

The abuse of the role of microorganisms such as bioterrorism has a very broad impact. The impact can be on the political, economic, security, health, and even civilization sectors of a nation.

This is actually one of the "entry points" why the threat of bioterrorism in the future cannot be underestimated by the Indonesian government. War through bioterrorism is very effective, because the results are clear and the possibility of being accused of human rights violations or extra ordinary crimes is also difficult to prove.

The Government of Indonesia on May 25, 2018 has enacted Law Number 5 Year 2018 concerning Amendments to Law Number 15 of 2003 concerning the Establishment of Government Regulation in lieu of Law Number 1 of 2002 concerning Eradication of Criminal Acts of Terrorism into Law. This law is expected to be a more solid legal basis to ensure the protection and legal certainty in eradicating criminal acts of terrorism.

Indonesian society, from grassroots to demographic political elites, still have a very low level of awareness of the threat of danger from the threat of bioterrorism. Politically, at the national level it turns out that Indonesia's "political concern" for the problem of the threat of bioterrorism is still very partial. Likewise, the Political will of the government is still insignificant, as seen from the still sectoral handling of issues related to bioterrorism. Meanwhile, the public's readiness if there is an attack from the threat of bioterrorism has also not been fully handled by the government / state. Compliance with the threat of bioterrorism requires comprehensive legislation. Therefore it is necessary to look again at the existing laws and regulations, and look at the reality that is happening now and how to anticipate it.

Based on the background above, the problem that must be solved is related to how to deal with the

threat of bioterrorism and public health protection efforts in Indonesia?

## 1.2 Research Methods

The research method used in this study is normative legal research, namely legal research that puts law as a building system of norms. The norm system in question is regarding principles, norms, rules of law and doctrine. In this study a juridical approach method is used, by examining the rule or rule of law as a system building related to a legal event. (Mukti Fajar, 2010) The type of data used in this study is Secondary Data which consists of Primary Legal Materials, Secondary Legal Materials, and Tertiary Law materials obtained from books, literature, papers, legislation and other data sources. Secondary data collection was carried out using the literature approach method, which is a library research using legal library materials that support in this study. Collection of legal materials is done by way of tracing, collecting, and studying conventional documents such as reading, viewing listening, and information technology (internet media). Secondary data in the form of primary legal materials, secondary legal materials, and tertiary legal materials that have been collected and processed will be analyzed by normative methods which will then be presented descriptively. Data analysis in this study used qualitative analysis.

## 2 DISCUSSION

### 2.1 The Threat of Bioterrorism

Bioterrorism is a term used to describe the use of sabotage or attack with biological or biological poisons in order to cause damage to individuals or groups of individuals and even a nation / country. These activities generally cause damage, intimidation or cohesion and are usually associated with threats that cause public panic. Cinti and Hanna said that Bioterrorism is the malevolent use of bacteria, viruses, or toxins against humans, animals, or attempts to cause harm and to create fear. (Cinti SK, 2007) So, what can be utilized is not only microbes but also microbial products. As a target, not only humans, but also animals and plants. Meanwhile Lederberg defines biological warfare as the use of microbial ... agents ... for hostile purposes or in armed conflict. (Lederberg J, 2000) So Bioterrorism means the use of microbes as a means of terrorism.

The most commonly used biological agent as a weapon of terror is a micro-organism and its poisons, which can be used to cause illness or death in a population, animals or even plants. Pollution agents can be released in air, water or food. Microbes used in bioterrorism are more popular in the mass media as biological weapons or bioweapons.

Biological weapons by the United Nations are defined as follows: "living organism, whatever their nature, or the effectiveness of material derived from them, which are intended to cause disease or death, animals or plants, and which depend on their abilities to multiply in the person, animal or plant attacked".(Nation, 1969)

Terrorists are no longer monopolized by terrorists, but can be anyone. Bioterrorism, with its extensive damage and its easy creation and distribution, is a threat to national security, especially in the economic field.

Bioterrorism is actually hundreds of years old. Tartar forces were the first group to take advantage of bioterrorism in 1346. Tartar forces threw pes patients behind the opposing lines. The next group was British forces in America in 1736 and German forces in World War I.

The United States has been attacked by bioterrorism, at least in 1984, the City of Oregon was attacked by radical groups using poisonous salmonella food to contaminate salada bars in an effort to influence local elections. This terrorist group chose substances to cripple not to kill, so that their attacks succeeded in making as many as 751 people sick, but no one died. Then in 1994 and 1995, four Minnesota men all members of the extreme anti-government group called the Minnesota Patriot Council were the first people convicted of possessing a biological substance used for weapons according to the 1989 Biological Weapons Terrorism Act. The Minnesota Patriot Council was never implemented, the group was heavily influenced by Christian Identity's right-wing extremist ideology, similar to the ideology that prompted the Oklahoma City bombing by former members of the United States Army army, Timmothy Mc Veigh.(Jun, 2009)

The next case occurred in Japan, a Japanese scientist spread anthrax bacteria, allegedly as a case of bioterrorism. However, in the United States, the action of bioterrorism with anthrax bacteria distributed with envelopes in 2001 succeeded in killing 5 people and making more than 20 people infected. The incident caused the US government to bear huge costs because it had to give a dose of prophylaxis to tens of thousands of people.

As reported on the official website of the University of Indonesia, August 21, 2014, explained, "the spread of the Bird Flu virus and Mers-Cov virus was once associated with bioterrorism. Global conspiracy theorists mention bioterrorism as all threats even though scientists have so far not found evidence of the use of biological weapons in the outbreak of the disease. Both Avian Flu and Flu A (H1N1) can be used as bioterrorism / biological terrorism. However, which can be used as a biological weapon in this case only flu A (H1N1) because it can be transmitted between humans.(Mahasin, n.d.)

One important reason for using microbes by terrorists is financial reasons. Bioterrorism is relatively efficient compared to other methods. Efficient in the sense of low cost and has a great impact. The great impact can be a large number of victims or a tremendous panic from the target of bioterrorism. One of the advantages of microbial use is that the impacts that occur are difficult to control and very difficult to predict.(Tortora GJ, Funke BR, 2007)

Ideal microbes for bioterrorism have very reliable characteristics, can be targeted right on target, are cheap, durable, not very visible, effective, easily obtained, and easily transportable.(Lederberg, 2009) Very reliable and effective means having the effect that terrorists expect. Cheap and easily obtained means the price is affordable and can be obtained not necessarily by legal means. It does not seem so meaningful it is difficult to be sniffed by the intelligence apparatus.

Microbes used in bioterrorism can be classified into three classes. The three classes are: (Bauman RW, Machunis-Masuoka E, 2007) Class A (High Risk), examples of microbes that enter this class are Bacillus anthracis and smallpox virus. The characteristics of the disease caused by this class of microbes are infectious, high mortality, and can cause great social unrest. Class B (Medium Risk), an example of microbes belonging to this class is Salmonella and the virus that causes encephalitis. The disease caused and the impact caused by this class are slightly below Class A. Class C (Low Risk), an example of microbes belonging to this class is Mycobacterium tuberculosis which is resistant to various antibiotics (multidrug-resistant) and influenza viruses. Disease caused and the impact of this class are under Class B.

There are four popular microbes commonly used by terrorists, namely Bacillus anthracis, Clostridium botulinum, Yersinia pestis and smallpox virus. Microbes used in bioterrorism are classified into three categories. Category A is the most

dangerous among the three categories. (Sudibya, 2015)

In frequently encountered cases, biological materials or biological poisons are sabotaged for the purpose of attack to cause damage and are usually associated with threats that cause public panic. Biological agents that are commonly used are microorganisms and their poisons that can cause disease and even death.

The threat of bioterrorism has become a separate reality from the development of non-conventional terrorism. Because now with the vast availability of information through the internet there is the ability of terrorists to easily obtain chemical, biological, radiological and even nuclear materials to produce and make weapons from biological substances.

The threat of bioterrorism can also occur because it is easy to obtain biological substances, especially those provided by sponsoring countries of terrorists who can have such substances as a potential source of biological materials for terror groups. The use of relatively sophisticated technology by terrorists is not only able to be evidence of the involvement of the state in the attack, but terrorist groups can also be very difficult to control and may be able to turn around using the technology provided against the sponsoring state itself. Another source of obtaining biological substances for warfare is buying or stealing from laboratories that are related to government-level biological weapons programs.

In general, there are two scenarios for bioterrorist attacks. One of them is the submission of small scale in a relatively crude way such as the methods of the letters of anthrax in 2001, which succeeded in causing mass disturbances and panic, but did not have the possibility to cause significant damage in the framework of loss of human life. Another scenario is attacks with mass casualties, which are much less likely, but have the potential to cause disaster. (Pate, 2008)

One popular scenario for a bioterrorist attack is mass pollution of a city's water reserves. Another method is that the pathogenic substances can be put into storage tanks, to prevent water shortages during the morning and evening hours. The next scenario is the spread of non-infectious substances such as anthrax into the open air. Anthrax is the first example of a biological weapon, this substance is relatively easy to make, very malignant and the infection is not contagious, so the outbreak will not spread outside those directly affected. Anthrax forms very strong spores when exposed to environmental stresses, and these spores make the process and manufacture of

weapons easier with the material. Anthrax can be transported in liquid or powder form.

In 1972, under the leadership of the United Nations, 103 countries signed a convention on biological weapons, which essentially prohibited the development, production, accumulation and use of biological weapons. The aim of this convention is to completely eliminate the possibility of using biological agents and their poisons as weapons of mass destruction.

At a conference on bioterrorism in San Diego, United States in early 2000, experts concluded that the United States was not ready to deal with attacks by biological weapons with pathogens such as smallpox, anthrax, ebola, botulinum and others. Therefore, bioterrorism is a big problem throughout the history of mankind. (Wibowo, 2009)

In his book, *Bio Hazard*, Ken Alibek, who served as deputy chairman of the Soviet Union's biological weapons development in 1988-1991, described his experience and research in the Soviet archives. According to his findings, the Soviet Union used germs that caused tularemia in the Wehrmacht (German armed forces) unit during the Stalingrad battle in 1942. Symptoms of this disease were headaches, nausea and high fever which caused death if not treated. Meanwhile, the UK tests anthrax, dysentery and glender germs. The United States even developed biological weapons at Edgewood Arsenal in Maryland and Pine Bluff in Arkansas. (Wibowo, 2009)

According to Paul Wilkinson, many analysts predict that terrorist attacks using nuclear weapons or nuclear terrorism to the United States will strengthen in the future, which is carried out in the context of "global jihad", "justice revolution" or liberation, where nuclear attacks this will cause hot intentions, shock and intense explosions, electro magnetic phenomena and initial radiation. Besides that, nuclear explosions also make radiation continued / repeated, contaminated areas are increasingly widespread and cause death and radiation effects that are very serious for a number of members of civil society. (Wilkinson, 2006)

Meanwhile, according to Dr. Richard Clutterback, many experts in the study of terrorism predict the possibility of terrorists using chemical and biological weapons as one of the prospects of nuclear terrorism itself. Methods for making nerve gas and biological pathogens easy to learn in the last few decades. In fact, to make Sarin can be learned on the internet, biological and chemical materials are also easy to obtain and cheap and easy to learn by anyone. (Clutterback, 1990)

## 2.2 Efforts to Protect Public Health against the Threat of Bioterrorism in Indonesia

Compared to other countries, even with fellow ASEAN countries such as Thailand and Singapore, Indonesia has been so late that if there is an attack the biological agency cannot do anything.

As a tropical country, Indonesia is a "warehouse" for various biological agents. On the other hand, as an agrarian country, Indonesia is very vulnerable to the possible threat of biological agents. Meanwhile, readiness for the emergence of disease outbreaks in humans, animals and plants is still very low. Vaccine readiness to deal with outbreaks of some viruses is virtually nonexistent when compared to other countries.

Regarding biological weapons, the attention of the government can be said to be still very weak. The government's attention to various outbreaks that have occurred is so great, such as the outbreak of dengue fever, polio etc., but in relation to bioterror threats, the government still views the outbreak not comprehensively, but only from the perspective of human health alone. The government has not been wary of any disease attacks that attack humans, animals and plants as a negative potential that weakens national security.

Besides being aware of the possibility of genetic weapons, another thing to watch out for is the presence of genetic imperialism or genetic colonization. What is meant by genetic colonization is the dependence of a country on another country for genetic resources. Indonesia in this case has been a victim for many years and if analyzed it actually has caused an economic loss that is extraordinary or has caused economic dependence.

Therefore the Indonesian state needs to be aware of biotechnological advances such as:

- 1) The rapid development of biotechnology and genetic engineering.
- 2) Reemerging diseases and new emerging diseases.
- 3) The possibility of creating weapons that only attack certain targets appears.
- 4) The ease of making biological weapons.
- 5) The difficulty of distinguishing research activities aimed at peace or hostility.
- 6) His ability to multiply himself.
- 7) The possibility to increase the dependence of a country with another country (geneticimperialism).

Bioterrorism threats in the future must be a serious concern for the government of Indonesia or other countries, especially considering the terrorist groups either on their own ability or because the support of terrorist sponsor countries has the potential to carry out attacks using nuclear, chemical and biological weapons.

Bioterrorism can be used as a psy war in the context of international relations or international cooperation in the future, besides that bioterrorism also has the potential to be used as a tool to weaken and damage manpower of a country or nation. Not only that, bioterrorism is also used to generate economic dependence from developing countries to developed countries with the motive to achieve maximum economic benefits through pier tracing or the spread of "man made" epidemics so that the country whose population is affected by the epidemic buys vaccines a virus that has been prepared by a country that is suspected of spreading the outbreak of the disease, both by means of bacteria or viruses.

In Indonesia, Law Number 5 Year 2018 concerning Amendment to Law Number 15 of 2003 concerning the Determination of Government Regulation in Lieu of Law Number 1 Year 2002 concerning Eradication of Terrorism Crime in particular article 35A-B and 36A-B which regulates rights victims of rerorism are related to, medical assistance, psychological rehabilitation, psychosocial rehabilitation, compensation for death victims, provision of restitution and compensation. Where in the previous law only regulated two victims' rights, namely compensation and restitution. The addition of the regulation of rights to victims of criminal acts of terrorism is carried out as an effort to protect the law to the community and efforts to provide legal certainty related to criminal acts of terrorism. Likewise with the problem of preventing terrorism as stipulated in Article 43-C, that the government is obliged to prevent acts of terrorism. In this prevention effort, the government is taking anticipatory steps continuously based on the principle of protecting human rights and the principle of prudence.

However, this Law No. 5 of 2018 has not specifically regulated the threat of bioterrorism and its prevention efforts, such as the opinion of IDI (Indonesian Doctors Association) which states that Indonesia needs a clear and clear legal umbrella to deal with the dangers of bioterrorism. Likewise with the Gajah Mada University plant and wildlife expert, Joko Marsono, stressed the importance of the article on preventing bioterrorism in the body of the draft Quarantine Law.

In order to prevent the possibility of using or doing bioterrorism in Indonesia, there are a number of efforts that need to be carried out including:

- 1) Collect data on researchers and companies engaged in chemistry and biology.
- 2) Providing high incentives to nuclear, chemical and biological experts so as not to be easily mobilized by agents or foreign countries.
- 3) It is not easy to give research permission to foreign researchers, especially those who research related to biological and chemical problems.
- 4) Collaborate with the state and other intelligence agencies to share information and developments related to the possibility of a "nuclear terrorist" attack or "bioterrorism terrorist".
- 5) Conduct training and evacuation of the community in the event of a bioterrorism attack.

### 3 CONCLUSION

So far, both socially, politically, demographically, economically, or ideologically, it turns out that the threat of bioterrorism is still not handled comprehensively and neatly arranged, but still handled sectorally. Therefore, through Law Number 5 Year 2018 concerning Amendments to Law Number 15 Year 2003 concerning the Establishment of Government Regulation in Lieu of Law Number 1 Year 2002 concerning Eradication of Criminal Acts of Terrorism into Law, it is expected that it can be used as an effort to mitigate it. However, this law has not specifically regulated related to the threat of bioterrorism, so implementation regulations are still needed in detail so that safeguards against public health can be realized.

### REFERENCES

- Bauman RW, Machunis-Masuoka E, T. (2007). *Microbiology With Diseases by Taxonomy* (to-2). San Francisco: Pearson Benjamin Cummings.
- Cinti SK, H. P. (2007). *Biological Agents of Warfare and Terrorism*. (Schaechter's Mechanisms of Microbial Disease., Ed.) (to-4). Lippincott Williams & Wilkins.
- Clutterback, R. (1990). *Terrorism in an Unstable World*. London: Routledge.
- Jun, W. X. (2009). 2012 and 2030 Jewish Grand Plans reprinted under the title Blue Print Israel Raya 2012 and 2030. *Heaven Under Jewish Footprints and Israel After Gaza's War*.
- Lederberg. (2009). *Microbial Evolution and Co-Adaptation: A Tribute to the Life and Scientific Legacies of Joshua Lederberg*. Washington (DC): National Academies Press (US);
- Lederberg J. (2000). *Biological Warfare and Bioterrorism*. ( Principles and P. of I. Diseases, Ed.) (5th ed.). Churchill Livingstone.
- Mahasin, A. (n.d.). Dewan Pengasuh Pondok Pesantren Darussa'adah Kebumen. Retrieved from <http://islam Nusantara.com>
- Mukti Fajar, Y. A. (2010). *Dualisme Penelitian Hukum Normatif & Empiris*. Yogyakarta: Pustaka Pelajar.
- Nation, U. (1969). Chemical and economic weapons and their effects. New York: Department of Political and Security Council Affairs.
- Pate, A. D. and J. (2008). Mass Casualty Terrorism: Understanding the Bioterrorist Threat. *Journal of Intelligence and Counter Intelligence*, v, 94.
- Purwodianto, A. (2011). Aspek Etikolegal Makro Senjata Biologi dan Bioterrorisme. bahan kuliah Kajian Strategik Intelijen, Universitas Indonesia.
- Sudibya, A. (2015). *Bioterrorism at a Glance*. Surabaya: Wijaya Kusuma University.
- Tortora GJ, Funke BR, C. C. (2007). *Microbiology An Introduction. 9th Edition*. San Francisco: Pearson Benjamin Cummings.
- Wibowo, M. W. and. (2009). *Ancaman Bio Terorisme yahudi di Indonesia*. Yogyakarta: Library Salomon.
- Wilkinson, P. (2006). Terrorism vs. Democracy: The Liberal State Response. *Routledge London and France*, 182–183.