

## Critical Analysis of the Philosophy of Defense in Dealing with the Impact of Climate Change Risks

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**Abstract:** The issue of climate change has become a hot topic of discussion among scientists, industry practitioners, and governments of various countries in the last two decades. This discourse began when we obtained a number of facts which show that the earth's temperature has increased significantly recently. The increasing temperature of the earth is alleged to be a trigger for various events that have never happened before, due to disruption of various aspects of natural balance. One of the serious impacts of this phenomenon is closely related to exposing potential threats and real disturbances to the state of defense and security. A number of studies related to the impact of climate change on state defense and security have been carried out by various research institutions around the world. This paper contains a result of critical analysis of the risk of climate change impacts from the perspective of the philosophy of defense science. The research method used in this study is phenomenology. The hope is that Indonesia can increase its awareness of this real risk so that strategic steps can be taken to mitigate it.

**Keywords:** Defense science, climate change, earth's temperature, security awareness

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### I. INTRODUCTION

At first, the issue of climate change which was triggered by the increasing temperature of the earth was only underestimated by various parties, including scientists in various countries. Even the documentary work of a Vice President of the United States of Al Gore's caliber, entitled "The Inconvenient Truth", became the laughing stock of many parties [1]. In fact, not a few world figures consider this phenomenal work as a myth or mere fiction. The situation turned around when in a matter of years since the issue surfaced, there were various unusual events (read: extreme weather) or even natural catastrophes, such as: Hurricanes Katrina and Harvey that hit the United States, snow falling in the African desert, super heat waves that hit India and Pakistan, major floods in the Asian region, and so on [2]. In fact, in recent years there have been an average of 400 weather anomalies or extreme weather events that have occurred throughout the hemisphere. More serious research was undertaken, most of which presented incontrovertible facts. First, climate scientists confirm that the earth is really getting warmer. And this fact is the main driver of climate change. Indeed, basically, the temperature on the earth's surface has always increased gradually from since the emergence of civilization a few million years ago. Yet there has never been such a rapid rise in temperature as has been seen in the last twenty years [3].

### II. DIRECT IMPACTS TO HUMAN LIFE

This phenomenon has disturbed many countries in responding to it. Unpredictable climate change brings a number of potential threats and disturbances that endanger the situation and conditions of various countries in the world. The greatest fear is famine, as extreme weather destroys crops of all kinds. A shortage of staple food supplies that are not handled properly by the government will have a very serious impact on national defense and security because it can lead to community rebellion. Other disturbances that are quite frightening are the increase in natural disasters such as hurricanes, volcanic eruptions, tsunamis, earthquakes, and so on.

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Research shows that the increasing frequency of catastrophe is also triggered by the disrupted natural balance due to climate change. Of course, the areas affected by the disaster will be in ruins because in addition to damage everywhere, thousands and even millions of lives could be lost because of it [4].

Another risk associated with this phenomenon is in the economic sector. Massive harvest failure will trigger massive imports, which means that it will affect the country's trade balance. Social assistance due to natural disasters will also absorb a very large portion of the state budget. Not to mention the operational costs to bring rain due to prolonged drought; on the other hand, the costs of building new reservoirs and canals are also required due to the massive floods that occur everywhere. Directly or indirectly, disruption to this economic sector will affect the social life of the community [5, 6]. The increasing price of basic commodities due to swift imports will complicate family life as well as burden the people. The loss of houses and property will make people demand "compensation" from the government which, if not fulfilled, will have unwanted negative impacts. The difficulty of getting water due to prolonged drought in the midst of economic pressure has the potential to increase crime everywhere [7].

Failure to answer the various domino effects in the economic and social sectors due to climate change will affect political stability. The public will feel that the government they choose is not able to face problems and solve problems. Public trust in the government they choose will be lost. The coalition parties supporting the government will start to turn against him. The public will start doing things such as demonstrations to parliament, protests in front of the palace, provoke disturbances, and so on [8, 9]. The non-coalition (read: opposition) parties will take strategic steps to change the government midway - on a constitutional basis. Of course this political problem can lead to the possibility of negative things that are not desired by the nation and state.

### **III. STRATEGIC CHALLENGES TO THE STATE DEFENSE AND NATIONAL RESILIENCE**

All Global security conditions have allegedly been affected due to climate change. In-depth studies have concluded that phenomena such as Arab Springs, ISIS, the Syrian Conflict, and the Mali Crisis have a direct or indirect relationship with climate change. The report produced by the GMACC (Global Military Advisory Council on Climate Change) said that the stability of the South Asia region needs to be considered because of this issue, where its existence must get serious attention from the countries of India, Pakistan and Bangladesh. In fact, the CSR (Climate Security Report) reports on a number of zones that are considered very vulnerable to climate change disruption, namely: Sub-Saharan Africa, Middle East, Latin America, East Asia Pacific, and Antarctica [10].

The superpower of the United States of America has clearly and clearly stated that climate change has become a serious threat to its national security. Various hurricanes, floods, and weather anomalies that hit several states have eroded their energy and finances which have had an impact on socio-political, economic and cultural conditions [11, 12]. Even in a number of cases, the extreme hot weather has endangered public health, including American soldiers in strategic locations and military bases all over the earth. Infrastructure related to energy, transportation, telecommunication, food supply and health is very vulnerable to prolonged extreme weather, because it is not designed to deal with it. Disruption to the infrastructure of life that controls the lives of many people will directly affect national security. In particular, the ASP (the American Security Project) initiative was held, in collaboration with various private and industry parties, to develop standards and strategies for resilience for major cities in the United States. Government officials, industry practitioners, and community leaders consulted to measure the index of the city's resilience to the threat of climate change, and assess the risks. The ultimate goal is to increase the city's resilience from various events that may occur due to climate change (read: city resilience index).

Indonesia itself as an archipelago, which is on the equator, is traversed by a circle of volcanic mountains (read: Ring of Fire), and is in the vortex of world traffic between two continents and two oceans, has a high risk profile for natural disasters. It is a fact that in the last two decades, it seems that there are so many natural disasters happening everywhere. The higher frequency of earthquakes, increased volcanic activity, the threat of a rising tsunami, reduced duration of the rainy season, increased duration of drought, widespread flash floods, etc. - are evidence that an unexpected phenomenon has occurred. Experts agree that all of these catastrophic are the effect of a domino effect that originates from the increasing temperature of the earth, which in turn causes the melting of the South Pole and the iceberg on the Antarctic continent, thus disrupting the ecosystem and overall natural balance [13, 14]. This domino effect continues, leading to a new balance that cannot be predicted when it will occur.

#### **IV. CLIMATE CHANGES RISK TO NATIONAL DEFENSE**

State defense, also known as national defense, is all efforts to defend the sovereignty of the state, the territorial integrity of a country and the safety of the entire nation from threats and disturbances to the integrity of the nation and state. The phenomenon of climate change as described above is clearly a threat that has the potential to disrupt the safety of the nation and state. This threat can be categorized as non-military, because it is not related to deliberate aggression from other countries to interfere with the country's sovereignty. Climate change is the impact of the failure of the earth's population collectively to protect their living environment so that it disturbs the balance of nature [10]. Regardless of the type or posture of the existing disturbances, it is clear that climate change is a real danger (read: the clear and present danger) which must receive serious attention from the government to maintain the integrity and sovereignty of the Unitary State of the Republic of Indonesia.

In the concept of defense in Indonesia, a threat is defined as any business and activity both from within the country and abroad which is deemed to endanger the country's sovereignty, the territorial integrity of the country and the safety of the entire nation. The term "business and activity" implies the principle of an activity that is "deliberate" or "designed" or has the intention of a particular actor. Therefore, it seems that there should be an extension of the meaning of threats, where it is necessary to think about the possibility of things beyond human control, such as natural disasters and national calamities.

State sovereignty is also directly related to disasters. According to the prevailing law, in Indonesia an event is declared a national disaster when the local government no longer has the ability to control the situation. When the national disaster crisis protocol is activated, various countries can easily enter the territory of the country for humanitarian reasons [10, 13, 15]. The Aceh tsunami event shows how dozens of countries in the world are competing hand in hand to provide assistance. This means that in a crisis situation caused by a national natural disaster, the state must compromise its sovereignty in various forms [16]. Therefore, it is necessary to think about updating the protocol for the national disaster crisis so that there are not many aspects of the country's "sovereignty" at stake in the event of various unexpected catastrophic. Please remember that recovery due to national disasters takes years, during which it is not impossible that several parties from various countries are still operating within the territory of the Republic of Indonesia.

Territorial integrity is also one of the main defense issues that has the potential to become a major problem in Indonesia. Global warming which has an impact on Antarctic ice melt has an impact on rising sea levels. A maritime country like Indonesia will of course be very disturbed by this phenomenon because some small islands can "disappear" - while big cities on the coast have the potential to experience major flooding. The sea level rise has the potential to form new rivers that can divide areas that were previously into one unit. Canada is an example of a country that is very afraid of this possibility because it could form a large strait that divides the country. For this reason, the design of environmental ecosystems, urban architecture, urban topology, and regional governance policies is an important matter to be considered in the context of national defense.

Meanwhile, the safety of the nation and the state will be disrupted if various public service infrastructures such as electricity supply networks, telecommunication transmissions, drinking water installations, transportation traffic, and payment systems experience problems. Look at how the power outage in the Java-Bali network some time ago has caused panic in various circles (read: blackout). Or the incident when the underwater internet cable in Sulawesi waters was cut, which resulted in disruption of the operational activities of various corporations. It is inconceivable that the situation will occur if a natural disaster strikes the strategic route of transportation which will disrupt the supply of food, fuel, drinking water, and so on. It is inconceivable if there is a prolonged drought which results in massive crop failure, the spread of epidemics and infectious diseases everywhere, or the malfunctioning or damage to public facilities - of course there will be situations and conditions that threaten the safety of the community at large [17, 18].

#### **V. DEVELOPING COOPERATION AMONG COUNTRIES**

Facing this threat beyond control, various strategies are tried to be designed and implemented by major powers. Most of the strategies chosen are working together in overcoming these problems. The leaders of the state are convinced that national defense will be stronger if a number of joint alliance-based steps are taken [19]. Following are some of the steps taken by various parties in managing the risks faced.

China is pursuing a trade diplomacy strategy with the United States, especially in relation to exports and imports of carbon-based raw materials. If these approaches are not carried out together, there will be misperceptions in the context of the trade war - because the issue is not raised to jointly fight the phenomenon of global warming. This strategy is known as a transnational carbon emission control regime.

India in 2006 signed agreements with a number of countries related to reducing its nuclear installations. In addition to this agreement reducing regional tensions, reducing nuclear-based facilities also has an effect on reducing greenhouse gas emissions - which means participating in reducing global warming. Calculations from

Stanford University estimate that India contributes to reducing carbon emissions by approximately 145 million tons per year.

Costa Rica and Papua New Guinea, as poor countries but rich in forest resources, submitted proposals in Montreal, in the form of compensation for their efforts to prevent logging. Countries that felt sympathy or were indebted to this effort provided some financial assistance to build the two countries. However, the Kyoto Protocol does not share this approach. They offer a reverse approach, namely by providing credit or financial assistance to countries that are actively planting new trees (read: reforestation).

Brazil and Congo have a unique approach. The large number of rebels hiding in the forests makes their existence important to maintain. This condition indirectly affects the preservation of part of the lungs of the earth which can reduce the issue of global warming.

Facing this common enemy in the form of climate change, a number of countries that are actually hostile to each other build alliances with each other. The US and Russian Navy fleets are jointly on guard to help victims in the event of a hurricane or typhoon in a number of border areas of the allied or coalition countries. Meanwhile, India, Bangladesh and Pakistan formed a kind of joint force to deal with the extreme weather problem that they experienced together.

It should also be noted that climate change has not only increased the frequency of disasters, but the natural balance has also triggered a shift in the natural balance. The emergence of new viruses and diseases, the extinction of various types of flora and fauna that support human life, the fragility of the soil structure in various residential areas, the destruction of marine life that threatens fish populations, and so on - are serious threats and disturbances to the survival of the community [20, 21].

## **VI. CLIMATE CHANGE AND NATIONAL SECURITY IN THE CONTEXT OF INDONESIA**

National Resilience is formulated as a dynamic condition of the Indonesian nation in all aspects of integrated life, which is a combination of resilience and resilience that contains the ability to develop all potential resources owned, in order to face and overcome all forms of Challenges, Threats, Obstacles and Disturbances (TAHG), both from within the country and from abroad, as well as directly or indirectly, which could endanger the integrity, identity, existence of the nation and state of the Republic of Indonesia. The phenomenon of climate change is clearly a threat that can disrupt and endanger the integrity of the nation. There are two main challenges faced, namely in the form of preventive and reactive efforts [22, 23].

The first is related to how to anticipate the occurrence of these threatening catastrophic events. And second is how to manage disaster management effectively when these unwanted events occur. While the obstacles faced are quite a lot, including: limited public literacy in dealing with disasters, characteristics of natural catastrophic management protocol policies, lack of resources for detecting natural disasters, low awareness of the community and industry on the importance of protecting the environment, and so on.

Climate change that occurs must be balanced with the nation's efforts to increase national resilience which includes the three geographic dimensions, natural resources and demographics - in relation to aspects of ideology, politics, economy, socio- culture, technology and defense and security.

The main thing that must be done is to study and map the risk profile faced by Indonesia as a maritime country or an archipelago continent. According to the concept of risk management, priority attention should be focused on events where the probability of occurrence is high, and the impact of the loss is large (read: economic, social, cultural, ideological impacts and defense and security). The following is the potential for natural disasters due to climate change facing Indonesia based on the record of events in the last twenty years.

The first is earthquakes, both volcanic and tectonic, with a high scale of shaking. Climate change has stimulated more frequent earthquakes as the natural balance is disturbed [14]. Indonesia is considered an earthquake-prone country for four reasons, namely:

- (i) being in the most active earthquake route in the world because it is surrounded by the Pacific ring of fire (read: ring of fire);
- (ii) located at the meeting point of the three earth plates, namely the Pacific, Eurasia and Indo-Australia;
- (iii) is part of the Alpine Belt; and (iv) adjacent to the convergence point between the Sunda plate and the Indo-Australian plate.

The second is the tsunami, which threatens people, especially those on the coasts of Sumatra, Java, Bali, Lombok, Nusa Tenggara, Sulawesi and Papua. This tsunami occurred due to an earthquake whose epicenter was in the sea area. Because Indonesia is prone to earthquakes, the threat level of a tsunami will automatically be high [2]. The potential for megathrust or upward fault motion in the earth's plate has the potential to occur in Indonesia. The subduction zone in the marine area of the Republic of Indonesia can at any time shift and release such a large amount of energy to trigger a tsunami. The subduction zone of Aceh released its energy in 2004, causing a terrible tsunami disaster. Other peeping subduction zones are Aceh-Amdaman,

Nias-Simelue, Batu, Mentawai-Siberut, Mentawai- Pagai, Enggano, the Sunda Strait, West Java, Bali, Sulawesi, Banda, to North Papua.

The third is flash floods, which occur due to, among other things, high rainfall and are exacerbated by forest use, either intentionally or as a result of fires. Flash floods in Wasior West Papua in 2010, Tangse Aceh in 2011, Manado in 2014, West Sumatra in 2016, and Sumbawa in 2017 have devastated the ecosystem of local human life [24]. The loss of lives, the destruction of settlements, the destruction of the environment, and the destruction of the joints of the economy are the impacts that must be borne by hundreds of thousands and even millions of Indonesians. If this situation is not immediately reversed, it will have an impact on the condition of national security and defense.

The fourth is drought due to prolonged drought. The greatest danger from this threat is lack of water, which in turn results in crop failure, which in turn can lead to the danger of starvation [25]. In the concept of state resilience, the threat of hunger is a very serious problem that should not occur because it is very dangerous to national defense.

The fifth is forest fires, especially those triggered by pro- longed drought, and excessive sunburn - including those that were deliberately burned by irresponsible persons. Deforestation is not only a trigger for flooding, or a contributor to global warming, but also a cause of loss of habitat for important flora and fauna that support human life [26].

Various studies in detail illustrate that the number of victims due to natural disasters exceeds the total people who died due to war. In the context of defense, the significant impacts that will befall Indonesia are as follows:

- Peeping danger of starvation due to crop failure which affects the fulfillment of basic human daily needs;
- Disruption of production supplies or industrial operations due to damage to infrastructure; and so forth.

The aforementioned conditions directly or indirectly have an impact on the psychological condition of the community, which, if not handled properly, will lead to severe social problems [27]. Dissatisfaction with living conditions, difficulties in dealing with various economic conditions, inability to deal with daily problems, and feelings of not getting justice will have the potential to trigger things that are not desirable, such as: demonstrations, rebellion, neglect of regulations, destruction of public facilities, riots, and others.

## **VII. RECOMMENDATIONS FOR INDONESIA**

Indonesia as a big country needs to take important steps in dealing with this climate change phenomenon. Moreover, it has been explained how uncertainty and failure to mitigate risks can endanger the unity, integrity, sovereignty and safety of the nation and state. That is why it is suggested that all Indonesian government and people should do immediately.

First, there is a national agreement in the form of a legal declaration (read: policy/regulation) which states that the climate change phenomenon is a threat to the state, because it threatens the integrity, sovereignty and safety of the nation [9]. With this principle, the mindset of all Indonesians will be the same in responding to the issue of climate change. The hope is that the behavior and patterns of action of all bureaucratic leaders, industry practitioners, and the wider community will be aligned in facing the global problem.

Second, conducting a comprehensive assessment of the various risks faced by Indonesia as a country, especially in relation to the potential for events triggered by climate change. This is important because every country has its own risk posture. In the concept of risk management, it is necessary to emphasize and define various threats that have a high probability of occurring, and have a significant impact on the integrity, sovereignty and safety of the nation and state [17].

Third, the construction of infrastructure to anticipate the potential threats that have been defined. By using a risk mitigation approach, it is hoped that these facilities and infrastructure can reduce the probability of an unwanted event occurring. And if this happens, the resulting impact can be minimized in such a way, especially to prevent the disintegration and disintegration of the nation [28].

Fourth, the formulation of legislation and crisis protocols that are effective, efficient, and controllable in dealing with extraordinary situations (read: national disasters) that are undesirable. The crisis protocol must be understood, understood and implemented by all relevant stakeholders. In addition, the protocols that are compiled and developed must be such that the crisis conditions can be quickly passed, and recovery activities can be carried out as soon as possible (read: resilience strategy) [24].

Fifth, prepare a superstructure that is adequate and reliable in executing the prevailing rules, regulations and protocols. The superstructure is an organization/institution, human resources, structure, and culture that will play an active role as an actor in managing climate change issues - starting from preventing, planning, building, developing, and controlling various strategic assets related to climate change [10].

Sixth, the establishment of strategic alliances and partnerships between Indonesia and external parties including friendly countries to jointly anticipate, cope with and overcome the phenomena and impacts of global

climate change. Cooperation is carried out during normal conditions or on an ad-hoc basis in a crisis or critical situation. For example, when a disaster occurs, catastrophic, environmental destruction, neglect of regulations, and so on [29].

Seventh, the integration of the concept of climate change in the education system, so that adequate literacy is built in all Indonesians [30]. If since childhood, concepts such as protecting the environment, preserving the surrounding ecosystem, reducing carbon emissions, avoiding the use of plastics, planting trees, disposing of garbage in their place, conserving electrical energy, and so on - then the culture of environmentally friendly living will be embedded in the heart of Indonesian people [8, 31].

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