INDONESIA'S FOREST FIRE AND HAZE POLLUTION: AN ANALYSIS OF HUMAN SECURITY

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ABSTRACT

This paper explains the analysis of human security to Indonesia's forest fires and haze pollution. Traditionally, security is related to national security, but nowadays, the security of human is also a challenging issue. State is no longer a lone threatened actor, as lives of individuals are also significantly impacted by threats. Forest fires and haze pollution are long time threats for environmental security in Indonesia and even in neighbouring states. First, this research explains the background of forest fires and haze pollution in Indonesia and their impacts on neighbouring states. This will be followed by reviews of literatures relating to human security, especially environmental security. Finally, this research analyses the phenomenon of forest fires and haze pollution by using human security concept, especially environmental security. The findings of this research include a result that forest fires and haze pollution affect seven dimensions of human security, such as the economy, food, health, environment, person, community and politics. In addition, human dignity, health and wellbeing, livelihood, safety and survival are not fully achieved by the people because of the severity in threats (causing domestic regional impacts of haze), sensitivity in vulnerability (occurring as an almost annual disaster), and deprivation-exclusion (worsened by relative deprivation and exclusion).

Keywords: Forest fires, Haze pollution, Human security, Environmental security, Indonesia, Southeast Asia

INTRODUCTION

Human security makes traditional approach irrelevant to the understanding of many referent objects of security. Indonesia's forest fires and haze pollution are counter to the traditional approach in security which focuses on military and war, but not recent threats which threaten human lives. Based on the 1994 Human Development Report (HDR), 'freedom from fear' and 'freedom from want' are two major components of human security (Gómez & Des, 2013). Realism challenges these two components by narrowing it to "freedom from fear" as more compatible in its perspective (MacLean, Black & Shaw, 2006). Nowadays, that argument is not relevant in understanding security because state is not the only referent object in security. In his book, Buzan (1983) alerts people to not take human security for granted, because health, status, wealth and freedom are considered as irreplaceable components of lives. In case of forest fires and haze pollution in Indonesia, there are victims who suffer and die because of this disaster. Many dimensions of human lives have been threatened by forest fires and haze pollution, such as the economy, food, health, environment, person, community and politics. Deprivation-vulnerability approach can measure what is the human security quality resulted from Indonesia's forest fires and haze pollution.

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LITERATURE REVIEW

To understand previous studies on human security, several researches have been collected and paraphrased, and are then related to forest fires and haze pollution in Indonesia.

Human Security

Buzan (1983) gives some of his thoughts on human security in his book "People, States, and Fear", where he explains that the increase of human activities makes environmental matters becoming human-made factor rather than nature. Environmental matters are seen as low priority in security, but there is a reason to pay attention to it. A threat to human security from deforestation is an extreme scenario. Closely related to peace study and critical security, human security views human being as primary object of security, and as threat over human integrity and potential in international security studies (Buzan & Hansen, 2009). It is not easy to define individual security as complicated factors, such as health, status, wealth and freedom are often irreplaceable, and people often feel obscure from the threat of them (Buzan, 1983).

Besides Buzan's thoughts on human security, Acharya (2007) explains that the publication of the Human Development Report in 1994 by the UNDP was the origin of human security concept. Economic security, food security, health security, environmental security, personal security, community security, and political security are seven areas of human security. Environmental security is defined as the protection of people from the destruction of nature threatened by humans and the progressively worse natural environment in the short and long term of severe extraction. By focusing on the individual as the main referent object of security, state-centric notion of security has been challenged by the concept of human security. The security of people is more representative in human security rather than the security of state or government (Acharya, 2007). In his book, Acharya also explains that the concern of human security is not weapons, but human dignity (Acharya, 2007).

Acharya lists seven separate components of security, which were proposed by Mahbub ul Haq - the founding father of human security concept, who had contributed to the 1994 UNDP's report on the early concept of human security, and proposed environmental security as part of human security. In environmental security, a non-degraded land system is the goal, which is a struggle to be achieved (Acharya, 2001). In the Asia Pacific region, the salient aspect of human security is "human needs", because of the economic crisis which affects people who live in the region. In the case of Indonesia, the recklessness and corruption in its governance cause unsustainable development, such as the disappearance of forests. Social safety nets are crucial for people in facing the crisis and the regional economic downturn (Acharya, 2007).

Another prominent researcher in human security is Peter Hough. Hough, (2008) in his book "Understanding Global Security", explains that environmental problems have developed into human security issues. Based on history, there were

conventions and conferences that discussed environmental issues. In early 1889, the issue of environmental change was discussed at an international convention to prevent the spread of Phyloxera in grapes. In relation to animal conservation, the 1902 Convention on the Protection of Birds Useful to Agriculture became the first international instrument to address the issue of animal protection in the agriculture sector. In the 1960s, major environmental issues experienced a significant revival in North America and Western Europe in the form of the revival of environmental politics, economic attention and political agenda. On health issues, the 1972 UN Conference on the Human Environment (UNCHE) held in Stockholm, Sweden regulates human health from pollution, and the shape of environmental change on a global level. This conference established the formation of the United Nations Environment Program (UNEP), and set environmental change as an international political agenda. In short, the debate over environmental problems had started since the 19th century - indicating the early emergence of the environment as a security issue.

Hough (2008) also explains that the rise of environmental issues into human security issues occurred in the 1990s with the issues of ozone depletion, global warming, persistent organic pollutants (POPs), deforestation and desertification. Depleting ozone layer is an environmental threat that affects human health. Increased global temperatures or global warming threatens human life due to the effects of greenhouse gases. Organic wastes, deforestation, and desertification also pose threats to the environment. In the 1990s, the relationship between environment, politics and security was given more attention in forming political and state security policies because environmental problems that occurred not only posed threats to the state, but also to humans. One international agreement on the environment that became popular in the 1990s was the United Nations Framework Convention on Climate Change (UNFCCC), which was adopted in 1992, followed by the Kyoto Protocol as an additional agreement.

The world has to know and realise that the impact of security to human is rarely discussed in security studies. As over 8 million people are killed by pollution every year, and many people threatened by the current worse climate change ever recorded, the value of human security concept is a challenge to achieve. To be chosen in the world of security, human security faces 20th century militarism. To understand the cause of proper conceptualisation and political prioritisation of such global problems, people have to move beyond their mindset in understanding how human security interest has been served by the protection of the environment (Hough, 2019).

Human Security in South East Asia

Guan (2012) in his research, explains that there is failure of South East Asian states in mitigating environmental issues, particularly forest fires and haze pollution, which cause climate change, and directly affect human activities and health. He states that regimes in South East Asia view haze pollution as a threat to the security and economy of their regimes, though ASEAN has viewed those disasters as threats to human. Deforestation becomes a major problem in South East Asian states, such as Indonesia, Thailand, Malaysia, and Vietnam. However, forest fires and haze pollution are not always understood as threats to human lives by all actors in South East Asia.

Guan also states that Indonesia's experience of forest fires and haze pollution cause threats, not just domestically, but also regionally. Indonesia's haze pollutions affect major shipping lanes, such as the Straits of Malacca, and Malaysia's and Singapore's air travel. As a result, it is included as the world's worst air pollution. Another effect of Indonesia's forest fires is the spread of toxic air and its implications to health than the burnt land. The morbidity of Indonesian residents and the degradation of Malaysia's and Singapore's air qualities are effects of air pollution to people's health. There is a lack of efforts in addressing haze pollution and its impact, though regional and international complaints occur (Guan, 2012).

Edwards elaborates the influence of securitisation efforts to haze pollution, and problems in decision-making process. In his research (Edwards, 2015) he explains that Indonesia's declaration on "war on haze" - framed as threats to Indonesia's population — is part of Indonesia's attempts to securitise the impact of haze on health of the population in Indonesia, Malaysia and Singapore. Environmental awareness had risen in the last decade based on the data of the survey. In his research, Edwards also explains the role of NGOs in areas concerning "human health, human welfare, land rights, and the survival of indigenous communities". However, haze pollution still occurs on an annual basis in Indonesia despite the many efforts taken in addressing and tackling it, and despite the increase in the awareness among the Indonesian population. Edwards also explains that there are many actors in Indonesia's decision-making process, and this creates confusion and contestation among stakeholders.

In terms of approach, this part collects and reviews the research, "Contextualising human security: A 'deprivation–vulnerability' approach", conducted by Busumtwi-Sam (2008), which explains the deprivation–vulnerability approach to understand the case of human security. There are differences between one human security case to another. It is not always about exposure to threats – but, physical and psychosocial vulnerability must also be taken into account. This research is useful in mapping human security around the world by setting the first priority for the most vulnerable population in the world. In the context of forest fires and haze pollution in Indonesia, this approach is relevant to make clearer understanding of the actual threats to human lives in Indonesia by classifying potential vulnerability and threats to human lives which are caused by forest fires and haze pollution in Indonesia. As reviewed above, there are some effects of haze pollution and misunderstandings amongst regimes about threats to security. There is opportunity, based on this approach, to understand what the actual threats and vulnerabilities are.

Separate research by Guan and Edwards also specify the case of haze pollution as threats to security in South East Asia, and this strengthens the relevance of forest fires and haze pollution as a security study. Guan argues that regimes do not know what the threats actually come to - they only know environmental problems as threats to their regimes. Nevertheless, this has been promoted by ASEAN. It means that human security analysis is important to increase the awareness of stakeholders in South East Asia because this concept is only partially understood and not widely spread. He also describes the barrier to people's mobility in South East Asia caused by haze pollution. Edwards also describes the failure of people's efforts in mitigating haze pollution in South East Asia. His concerns are mainly over stakeholders' confusion in decision-making process. Both writers are concerned about haze

pollution in this region as human security case as people are unable to live in a secured condition caused by barriers to their mobility. This regional case perspective is a good start to go into deeper inquiry on human security, such as from Indonesia's forest fires and haze pollution perspective.

Generally, this part sees that the concept of the seven human security dimensions is important to explain the analysis of human security to forest fires and haze pollution in Indonesia. First, it can explain what dimensions are relevant to Indonesia's case. Second, it can also be used to explain the failure of haze pollution mitigation measures conducted by Indonesian stakeholders. Third, it also explains the complexity of threats in forest fires and haze pollution in Indonesia. Besides these seven human security dimensions, this research also needs to use the deprivation–vulnerability approach to analyse the potential threats, vulnerabilities and deprivations-exclusions factors from the seven human security dimensions of this case.

METHODOLOGY

This research uses a qualitative method. As one method in research, qualitative methods can expedite attitudes, behaviors and experiences (Dawson, 2007). Qualitative methods are very relevant to use as they can explore the phenomenon of forest fires and haze pollution in Indonesia to generate new knowledge on these experiences. In adopting qualitative methods, data can be collected by observation, visual analysis, library research, and interviews (individual or group) (Gill, Stewart, Treasure & Chadwick, 2008). This research uses a literature study as it can provide an overview of the relationship between previous studies on human security (especially environmental security) and the phenomenon of forest fires and haze pollution that occurred in Indonesia. At the end, this research can reveal new knowledge related to human security cases (especially environmental security) in Indonesia and their effects in and to South East Asian countries. In collecting data, this research uses the library research technique whereby books, journals and relevant and credible sources are used to analyse the case and answer the questions of this research. To do so, this research reviews literatures as mentioned above and then relate them to the case of forest fires and haze pollution in Indonesia. Identification of gaps in research and knowledge on a particular topic can be achieved by literature review technique. It also aimed to engage in theory development in research (Snyder, 2019, p. 334).

According to Snyder (2019, p. 334), there are four phases in conducting literature review. The first involves the design of the review. Some relevant sources from books, journals, and online news are collected and reviewed. The literature reviews start with works on human security research from prominent and distinguished scholars, such as Buzan, Acharya and Hough. This research also reviews works on human security issues in South East Asia. It aims to find literatures on human security and its strengths in recent security studies in order to learn how forest fires and haze pollution Indonesia fit in as one of human security studies. In the second phase, the researcher starts reviewing collected research as identified in the first phase. At this stage, the researcher needs to read and paraphrase previous research into brief summaries of human security concept in general, and cases in South East Asia specifically, and other collected research. Thirdly, after summarising the collected research, this research begins to analyse the groups of research

summaries and relate them to the case of Indonesia's forest fires and haze pollution. And finally, at the fourth phase, this research elaborates and analyses the significance of Indonesia's forest fires and haze pollution as one of human security studies.

DISCUSSION

Forest fires and haze pollution effects on human security in Indonesia

In this part, this research explains the analysis of human security concept to Indonesia's forest fires and haze pollution. As discussed in the literature review, human security has become a relevant concept in political science, particularly in International Relations. Based on the literature review above, it can be deduced that human security is a significant concept to open the horizon of scholars in understanding security from a wider perspective. Compared to human security, realism only focuses on state in security and ignores others. Realism is a state-centric perspective in International Relations (MacLean, Black & Shaw, 2006).

The concept of human security answers the weaknesses of realism as it can be used to explain Indonesia's forest fires and haze pollution, and it can analyse threats to human; while realism only focuses on threats to the state. In this research, there are some evidence that humans or people are threatened by the forest fires and haze pollution. According to Acharya (2007), state-centric approach has been challenged by human security because the main referent object of security is human. Forest fires and haze pollution do not threaten states directly, but human lives. As described in the introduction, forest fires and haze pollutions cause victims (injury and death) and ignore traditional assumption in security which believes security is only about state.

According to the Global Environmental Change and Human Security (GECHS):

"Human security is achieved when and where individuals and communities have the options necessary to end, mitigate, or adapt to threats to their human, environmental, and social rights; have the capacity and freedom to exercise these options; and actively participate in attaining these options"

(Brauch, ed., 2009, p. 525).

Based on the GECHS's definition, people can achieve human security if they have choices to get away from threats which appear in their lives. In case of Indonesia, individuals and communities do not have the choices to move from the forest fires and haze pollution threats because they cannot stop the disaster which always affects the lives of people living in Indonesia in terms of the environment, health, education, economy and other threats. One of the evidences is their inability to protect the death of an infant in Pekanbaru. This case shows that individuals and community do not have the choices to protect themselves from forest fires and haze pollution threats. Several dimensions of human security can be used to understand forest fires and haze pollution in Indonesia.

Figure 1 below describes seven dimensions of human security, which are being, or can be, threatened. The 1994 UNDP Report emphasised that the change from national security to security of people is a must (Brauch, ed., 2009). These dimensions show many sides of threats in security, and challenge the realist traditional perspective of seeing state as the main threatened actor.

Figure 1: Seven Dimensions of Human Security

Seven dimensions of human security	Types of vulnerability (vulnerable to what?)
Economic security (assured basic income)	Global economic changes
Food security (physical, economic, and social access to food)	Extreme events, agricultural changes, etc.
Health security (relative freedom from disease and infection)	Disease
Environmental security (access to sanitary water supply, clean air, and a non-degraded land system)	Pollution and land degradation
Personal security (security from physical violence and threats)	Conflicts, natural hazards, 'creeping disasters' (e.g. HIV/AIDS)
Community security (security of cultural integrity)	Cultural globalization
Political security (protection of basic human rights and freedoms)	Conflicts and warfare

Source: Brauch, 2009, p. 134

Human security dimensions enlighten scholars of the wider scope of security, which also involves other security dimensions, such as economy, food, health, environment, health, economy, person and community. In case of forest fires and haze pollution in Indonesia, the focus of security is people, because people are threatened in all of the abovementioned dimensions. These dimensions also describe the effects of forest fires and haze pollution to human lives in Indonesia.

First, the 2019 Indonesian forest fires and haze pollution had worsened the economy of the Riau Province due to the limitation of public activities in Riau (Kompas, 2019). Indonesia's forest fires and haze pollution affect the ability of people to carry out economic activities during the spread. World Bank (2015) had stated that many low-income families could potentially become poor families because of their inability in carrying out businesses and studying in schools. This disaster also affects the economic dimension as their income is also affected by those inabilities. Furthermore, this economic problem will be vulnerable if there is a change in the global economy. The threat to their economy potentially affects their ability to get freedom from insecurity.

Second, the 2016 forest fires and haze pollution had caused insecurity of people in getting food in Riau. Based on the Women Research Institute (2016) in Riau, people felt the increase of price of primary goods. In its research, the Women

Research Institute had quoted Bank of Indonesia's assessment report, which also reported increase in price caused by the problem of primary goods distribution. Even worse, Riau is not self-sufficient in primary goods as it needs supplies from West Sumatra, South Sumatra and Java. Should haze pollution occur in Riau and other provinces, the distribution of primary goods will potentially be disturbed – leading to people being threatened against access to their livelihood. This case can be understood in the food security dimension, as shown in Figure 2.

Third, haze pollution was also claimed to be the cause of death of an infant in Pekanbaru, Indonesia (Mongabay, 2019). As reported by the Riau Province Health Office in 2019, there were 29,528 people who suffered health problems - having acute respiratory infections caused by haze pollution, and 309,883 people who had other health problems, such as eye and skin irritation, dizziness and vomiting (Mongabay, 2019). According to Varkkey (2016), the pollution had affected public health in South East Asia, as 75 million people in this region had experienced health problems. In addition, a research conducted by medical researchers claims that haze pollution is the largest environmental health threat because haze pollution, respiratory and cardiovascular diseases are related (Cheong, et.al, 2019). Haze pollution not only threatens the Indonesian population, but also the population of its neighboring states such as Malaysia, as the research reported that many victims were having health problems caused by the disaster. The Indonesian National Disaster Management Authority also reported that almost one million (919,516) people had Upper Respiratory Tract Infection (URTI) due to forest fires in Indonesia (Galuh, 2019). These data are evidences that people are threatened by haze pollution in the health dimension.

Fourth, environment is one of human security dimensions that can be used to explain the effects of forest fires and haze pollution on people living in Indonesia. In 2019, forest fires and haze pollution had created poor air quality. In Palangkaraya, Central Kalimantan, Greenpeace reported how air quality had reached a reading of 2000 in the Air Quality Index (AQI), which was worse than readings indicating hazardous stage (301-500) (BBC, 2019). The environment in Riau province was also very unhealthy during the forest fires and haze pollution in 2019 (The Straits Times, 2019). As a result, people became vulnerable and were not free to have clean air in Indonesia as haze pollution threatened their environment.

According to a Greenpeace's report (2013, p. 1), the clearing of oil palm plantations had caused damage to Indonesia's forests. Indonesia had lost its forest around, "…1,240,000 hectares of forest over the period 2009 to 2011, equivalent to 620,000 hectares per year: Half (50%) of this took place in just three provinces: Central Kalimantan (296,000 ha/24%), Riau (230,000 ha/19%), West Kalimantan (95,000ha/ 8%)." Based on this data, Indonesia has experienced forest loss or deforestation caused by the opening of oil palm plantations. More than one million hectares of forests had been cleared for this purpose. Indonesia also lost US$5.2 billion because of its forest fires (Reuters, 2019). Deforestation could be observed in Central Kalimantan, Riau and West Kalimantan, and this has affected the environment because forests are a natural resource that is beneficial to the life of living things, including humans. Even worse, as the world's largest CPO producer, Indonesia has granted license covering around 15 million hectares of its land to develop palm oil (Greenpeace, 2013).

Figure 2. Map of Forest Fires in Indonesia
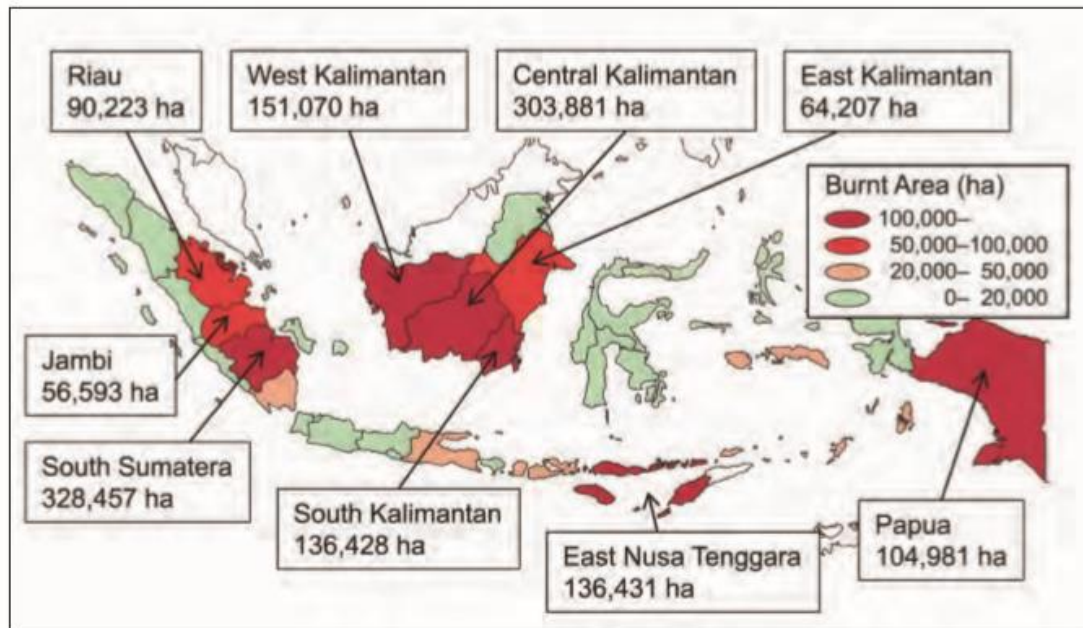
Source: Tropical Peatland Society Project, 2019.

On the other hand, the restriction on forest license can be contra-productive. Legally protected forests have also been burned. Although Indonesia has created a moratorium on deforestation of primary forests and peat lands, forest fires continue to occur in forest areas and lands of which permit moratorium is applicable. From 2015 to 2018, more than one million hectares of areas subject to the moratoriums had been burned due to forest fires and deforestation activities (Greenpeace, 2019). This shows that the moratorium on land clearing licenses is not enforced nor implemented accordingly. Forest fires affect various aspects of human life. They cause great damage to agriculture, tourism and transportation; destroy Indonesian forests and ecology; and even affect global environment (Severino, 2008). Consequently, forest fires not only damage the ecosystem of living things, but they also cause the spread of haze pollution in the air. This problem can be understood as the environmental dimension of human security.

Fifth, haze pollution can also be understood in the personal dimension of human security. Haze pollution affects personal security when individuals are threatened. Threats to the economy, food, health, and environment lead to threatened condition in personal lives, as they become barriers to having a better life. This dimension is a logic consequence of other dimensions in human security. For cultural security dimension, haze pollution also causes people to lose their cultural integrity. Some articles argue that customary law plays as an important tool to protect forests from forest fires. In South Sumatera, the Indonesian government has released a Ministerial Decree which recognises the management of forests by the Basemah tribe by using customary law. In an interview conducted by Mongabay, Budiano - a representative of the tribe, stated that this law could protect their forests (Mongabay, 2019). Customary law is believed to be a more effective tool to protect the forests than formal law for some provinces (Kompas, 2019). On the other hand, the Dayak

tribe in Kotabaru uses the Bera System as their customary law to protect forests by enforcing fines (Ifrani, 2019). However, forest fires and haze pollution still occur annually in Sumatera and Kalimantan. They threaten the cultural integrities of local people in Sumatera and Kalimantan which are preserved by tribe societies.

Lastly, there is also political security in case of haze pollution in Indonesia. In 2019, the National Commission of Human Rights of the Republic of Indonesia (KOMNAS HAM RI) categorised haze pollution as human rights violation as every person has the right to have clean and healthy environment as provided by the 1945 UUD (Indonesian State Constitution). Based on political security dimension, protection of basic human rights and freedoms is essential (Alfarizi, 2019). It means that there are vulnerability and threats to human caused by haze pollution.

Deprivation–vulnerability approach

Based on the above elaboration on the dimensions, deprivation–vulnerability approach is used to sharpen an analysis in regard to how human security views forest fires and haze pollution in Indonesia. This approach is "derived from the observation that communities around the world differ not only in their level of exposure to threats, but, also in their vulnerability to the physical and psychosocial harms caused" (Busumtwi-Sam, 2008, p. 16). The aim is to understand the variation of threats and vulnerability caused by physical and psychosocial harms in case of forest fires and haze pollution in Indonesia.

Figure 3: Deprivation–vulnerability approach to human security
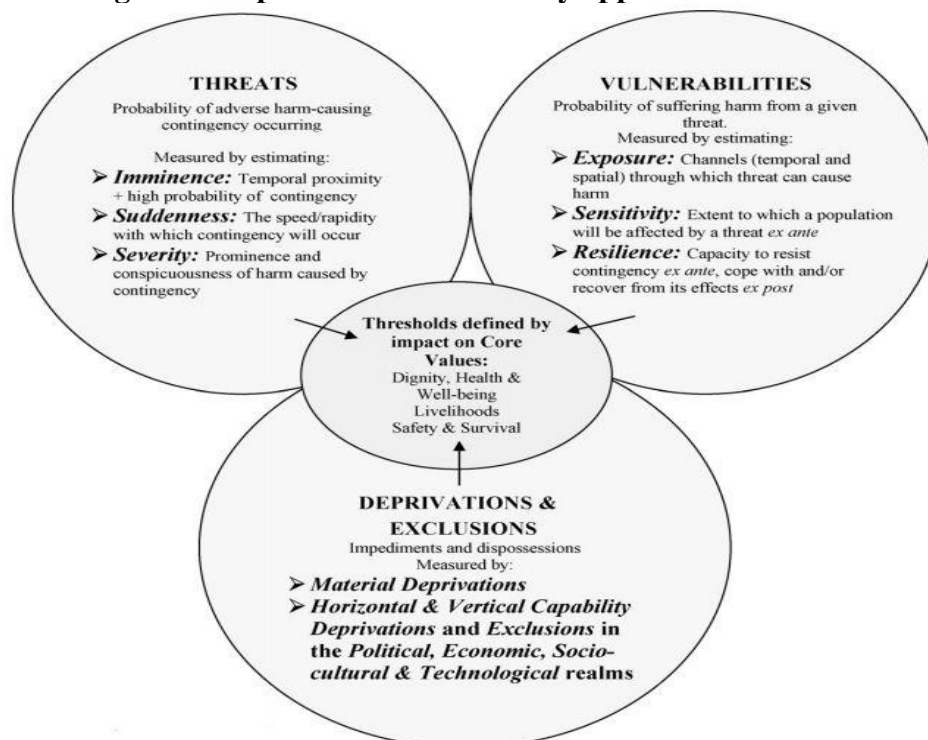
Source: Busumtwi-Sam, 2008, p. 20

As described in Figure 3, threats, vulnerabilities, and deprivation or exclusion can be used to measure Indonesia's forest fires and haze pollution. From the perspective of measuring threats, forest fires and haze pollution can be categorised

under the "severity" class as they affect many dimensions of human security, such as the economy, food, health, environment, person, community and politics. As elaborated above from the perspective of the seven dimensions, there are individuals who become victims and threatened by this disaster which has become prominent and conspicuous, and has attracted international attention. In addition, in measuring "vulnerabilities", forest fires and haze pollution are classified under the "sensitivity" class due to them being an annual event. Dried peat lands are easily burned in dry season (The Conversation, 2019).

Deprivation and exclusion are also important perspectives in understanding impact of forest fires and haze pollution to human security. In terms of "deprivation", Indonesia is lacking in its attempts or efforts to address forest fires and haze pollutions as Indonesia's economy and politics are still developing. Based on the elaboration on the economic dimension above, Indonesia has many low-income families who are affected by haze pollution (World Bank, 2015). In addition, Indonesia still faces human rights problems, as elaborated in the political dimension above. Eventually, these measurements view forest fires and haze in Indonesia as threats with severe impact on the population who are vulnerable due to their sensitivity, and due to the above said deprivation and exclusion.

In contextual relation, threats and vulnerabilities are mediated by deprivations. Under certain conditions, threats to the survival and safety of people have been created by threats to prosperity and daily lives. The probability of threats to the survival or safety, and prosperity for the poorest and vulnerable population in the entire world lack in qualitative differences (Busumtwi-Sam, 2008). To understand the variation, deprivation is related to current adversity and dispossession and this can be divided into two kinds - absolute deprivation and relative deprivation. In case of haze pollution, threats and vulnerabilities are influenced by its deprivation. BNPB and the Indonesian Police found evidence that forest fires are caused by financial motivation in clearing private lands, so there is relative deprivation of these action as there are some groups of people who want to get the benefits from burning land. Forest fires and haze pollution have also caused exclusion, as there are human rights violations, as reported by KOMNAS HAM RI. Eventually, the core values of a human, such as dignity, health and wellbeing, livelihood, safety and survival have been affected by threats, vulnerability and certain deprivation-exclusion. In case of Indonesia, human security has not been fully achieved by its people because of the severity in threats (causing domestic regional impacts of haze), sensitivity to vulnerability (occurring as an almost annual disaster) and deprivation-exclusion (worsened by relative deprivation and exclusion).

CONCLUSION

Based on the theoretical analysis of the concept of human security, forest fires and haze pollution threaten human lives in Indonesia because people have been injured and killed by forest fires and haze pollution. Traditional security focuses on state. On the other hand, threats to human are the focus from the perspective of human security. The elaboration on the seven dimensions of human security shows that Indonesia's haze pollution has caused massive impacts to various aspects of human lives - such as threats to the economy, food, health, environment, culture, persons and politics. In addition, the 'deprivation–vulnerability' approach views forest fires and haze

pollution in Indonesia as a disaster that affects human security as there are tangible evidences of its severity, sensitive vulnerability, and elements of deprivation-exclusion related to the disaster.

There are three recommendations for the Indonesian government and society in preventing forest fires and haze pollution in Indonesia. First, the consolidation in the understanding of human security has to be increased because the regime is not widely informed. This research finds that the regime only understands human security as threats to their power, and not to their people. Second, the elaboration on the seven dimensions of human security shows that forest fires and haze pollution affect several dimensions of human lives, therefore, the government has to widely inform Indonesians of these threats, particularly those in Sumatera and Kalimantan, by organising seminars, disseminating information through public campaigns and conducting workshops. Third, human security is related to human rights fulfilment, so the Indonesian government could collaborate with KOMNAS HAM RI to set a proper standard in ensuring human rights. The elaboration on the seven dimensions of human security also shows that there are barriers for people to fulfill their basic rights due to their conditions and also due to the forest fires-haze pollution.

Last but not least, this research opens the opportunities for other inquires. First, future researchers may possibly discuss Indonesia's efforts in strengthening the understanding on human security for its local governments, particularly in cases of forest fires and haze pollution. Second, they can also elaborate on Malaysia's and Singapore's perspectives on human security when facing forest fires and haze pollution by using the deprivation and vulnerability approach which significantly gives the variation of threats, vulnerabilities, and deprivations-exclusions elements. Third, they can also discuss the significance of human rights group in mitigating Indonesia's forest fires and haze pollution.

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