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Climate Change: A New Security Paradigm for ASEAN¹

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The climate crisis is arguably the existential challenge of our times. It is graphically described as “global boiling” by António Guterres, the UN Secretary-General. ASEAN countries are vulnerable to its impacts. According to the long-term Climate Risk Index in 2021, three ASEAN countries, namely Myanmar, the Philippines, and Thailand are among the top 10 countries affected by climate change. Regional and national impacts can clearly be seen from various natural disasters, which have increased markedly in numbers and intensity. The data from the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) in July 2012-June 2018 reported 1,380 disasters taking place in the region. Flood was recorded as the most recurrent hazard at 808 times, followed by wind (230), storm (124), landslide (123), earthquake

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(42), volcano (32), and drought (21). Therefore, there is an urgent call for ASEAN to act together more proactively and explore more effective solutions with its dialogue partners.

The causes and effects of climate change have direct linkages with global, regional and national security. As Sir Emyr Jones Parry, former Permanent Representative of the United Kingdom to the United Nations, wrote in 2007 that climate change “has consequences that reach the very heart of the security agenda: flooding, disease and famine, resulting in migration on an unprecedented scale in areas of already high tension; drought and crop-failure, leading to intensified competition for food, water and energy”. He is also convinced that climate change is not merely an “environmental issue” by referring to a report published by the United States’ Military Advisory Board on 16 April 2007 and the debate in the UN Security Council one day later. The Council decided climate change was a “core security issue”. Sir Emyr Jones Parry also added that it is “collective security” that requires global harmony in solving the issue.

The 6th Assessment Report (AR6) by the Intergovernmental Panel on Climate Change (IPCC) affirms that climate is a security issue that requires socio-economic solutions and that the problem is getting more severe and frequent. The planet is exposed to changing seasonal and weather patterns and natural catastrophes, such as sea level rise, widespread flooding, extreme heat waves, severe droughts, weather whiplash, that occur in different ways from the past.

In term of socio-economic impact, climate risks can be divided into two categories: physical risk and transition risk. Physical risk refers to consequences from weather-related circumstances that caused frequency, severity and long-term changes. It will decrease the productivity and quality that affects consumption. The risk may also influence the determination of fiscal policy and microfinance at the household and community level. Transition risk deals with aftermaths of legal and institutional adaptation to serve the transformation of green economy that requires changes in

technology, standards, taxation and related policies. Timing and speed of the adjustment is key to successful transformation. As such, we need a paradigm shift in perception of climate change as an environmental issue to one of security issue. Five implications of climate change for security can be identified: resource scarcity, energy security, food security, health security and displacement.

Firstly, on resource scarcity, changes in the pattern of weather lead to the disruption in production and consumption throughout the value chain. An independent report commissioned by G7 countries identified seven interlinked challenges from climate change, namely local resources competition, livelihood insecurity and migration, extreme weather events and disasters, volatile food prices and provision, transboundary water management, sea level rise and coastal degradation and unintended effects of climate policy. The report also pointed out that changing rainfall patterns and flows in glacier-fed shifting seasons have direct effect on water supplies. In the future, there is a possibility that an area where people rely on rain-fed agriculture may compete with people living in an area that does not rely on rain-fed agriculture to seek access to land and water. As a result, climate change is a source of conflict as it could trigger local resource competition in vulnerable regions.

Secondly, on energy security, climate change has great impacts on supply and demand of energy usage globally. On supply side, there is an urgent need to limit the usage of fossil fuels and shift to more implementable renewable energy, which is not yet ready to be fully utilised in several countries. Resource scarcity has direct linkage with the availability as “renewables are directly dependent on the wind speed for wind power, on radiation and temperature for solar, and on water availability for hydropower”. On demand side, extreme temperature accelerates rocketing demand for heating and cooling machines that consume a lot of electricity. More frequent and severe natural

disasters, including storms, heavy rainfall, strong wind, heat wave, lightning and wildfires also influence the operational environment of power plants.

Thirdly, on food security, soil, water and crops are the three principal factors that have direct consequences on food production. Soil properties and fertility could be affected by high-atmospheric carbon dioxide concentrations that would worsen food quantity and quality as well as environmental quality. It is not different in the case of water. Climate change harms water quality and quantity. Plant loses the ability of absorb necessary nutrients and could not survive. The effect will transmit through the whole food chain. Floods and droughts, triggered by climate change, are the two key components linked with crop failure. Increasing temperature also leads to changes in crop production condition. Farmers may encounter intense attacks from pests and new crop diseases that affect the cycle of planting and harvesting. Not only human but also bees, and possibly other insects, have been disrupted by climate change. Bees could not be present at the right time to feed on flower as spring came earlier and earlier. Extreme weather conditions also deteriorate flowers' ability to produce nutritious pollen and nectar. Changing conditions for foraging pattern will have impacts on ecosystem as well as honey production.

Rising temperature could trigger several problems from production to consumption. First is food availability. Low fertility in both agriculture and aquaculture are the result of low quality of absorption of necessary nutrients. This could lead to species extinction or mutation. Second, food insecurity has greater impact on developing countries than developed countries due to (1) the country's dependence on agriculture (2) lacks of capacity to mitigate risks and (3) shortage of stockpiling practices to ensure consistent supply and access to critical resources. There is a tendency that global food security is getting worse. The projection by the World Bank notes that the number of hungry people will increase to approximately 400-500 million by 2050.

Fourthly, on health security, changing climate has already affected health in various ways. Increasingly extreme weather triggers illness, death and mental health problems. It also worsens social determinants for decent livelihoods and health care, food distribution, and living conditions of vulnerable groups. The World Health Organization (WHO) anticipates that climate change will bring about nearly 250,000 deaths per year in 2030-2050, directly from malnutrition, malaria, diarrhea, and heat stress. It is estimated that climate risks would create economic and social cost of 2-4 billion US Dollar per year by 2030. Climate change causes other health risks, namely injury and death from extreme weather events, heat-related sickness, respiratory sickness, water-borne diseases and other water-related health impacts, zoonoses, vector-borne diseases and noncommunicable diseases.

Another daunting challenge for health security is the melting of “permafrost” or perennially frozen ground that seals a number of ancient pathogens inside. This can be a source of new infectious diseases. It has been reported that the bacterium *Bacillus anthracis*, that caused anthrax, was acknowledged as the main problem that “killed thousands of reindeer and affected dozens of people” in western Siberia in 2016. Not only bacterium but also viruses have been released from the melting ice. The spread of these pathogens could endanger the environment as well as humans worldwide. It is possible that humankind would encounter new diseases that could “enter the human population via a zoonotic pathway”, the transmission of which to human could be easier than SARS-CoV-2, Ebola and HIV.

Fifthly, on displacement, climate change has tremendous impacts that forced people to be displaced. A report by the International Federation of Red Cross and Red Crescent Society in 2021 stated that changing climate situation, including sea level rise, extreme heat, floods, storms and drought, are sources of people’s migration worldwide. The report also pointed out emerging trends

of climate-related displacement. First, natural disasters cause massive migration “within” the country and region. For instance, the two hurricanes which battered Honduras in November 2020 led to the displacement of approximately 370,000 people. Three million more suffered from food insecurity. Thus, people decided to move to the North of the continent by joining “the migrant caravans”. The concurrent disasters and displacement also deteriorate people’s ability to recover when new catastrophes come. Second, there is no exception for high-income countries. In 2019, during the Australian bushfires, the Australian Red Cross Society were on duty to facilitate the evacuation of 50,000 people. Thousands left their homes to resettle in other parts of the country. Another case is Germany in 2021. The country was hit by storms, causing the displacement of 30,000 people. Moreover, in the case of Samoa, a country suffering from coastal subsidence due to sea level rise, the Samoa Red Cross Society had to facilitate the voluntary relocation of people from their original settlement.

While there is a difference in climate situation among ASEAN member countries, what they have in common is the characteristic of weather events they are facing now and will face in the future. These include extreme rainfall events, droughts, floods, typhoons, sea level rise and extreme weather patterns. Hence, ASEAN should join the global efforts in reducing the CO2 emissions that require proactive measures as well as political will to tackle the issue together. It is time for ASEAN countries to rethink regional and national development policy that takes into consideration balances between economic growth and environmental and socio-economic consequences, aiming for sustainable development and to prevent it from becoming a serious issue affecting their security.