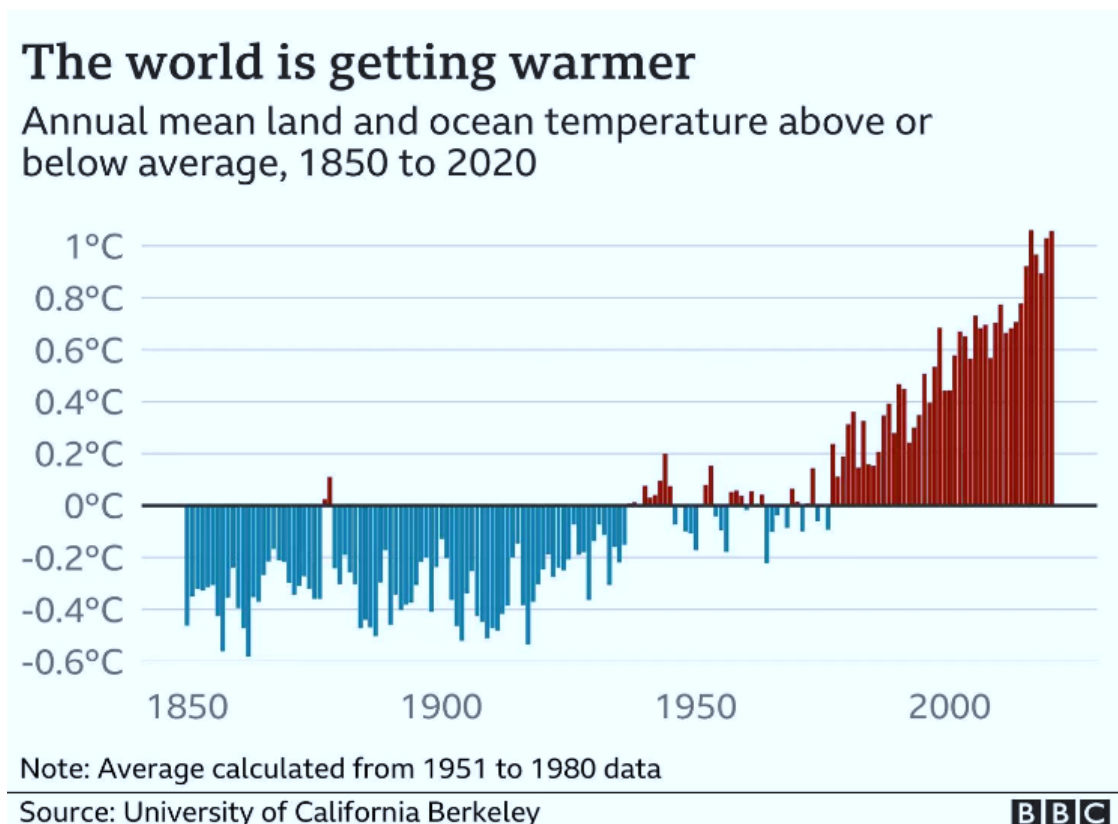


Nottingham-World Bank Economics Essay Competition 2022

Why is climate change an issue in Malaysia? What climate change mitigation and adaptation measures would you suggest to the government? Discuss.

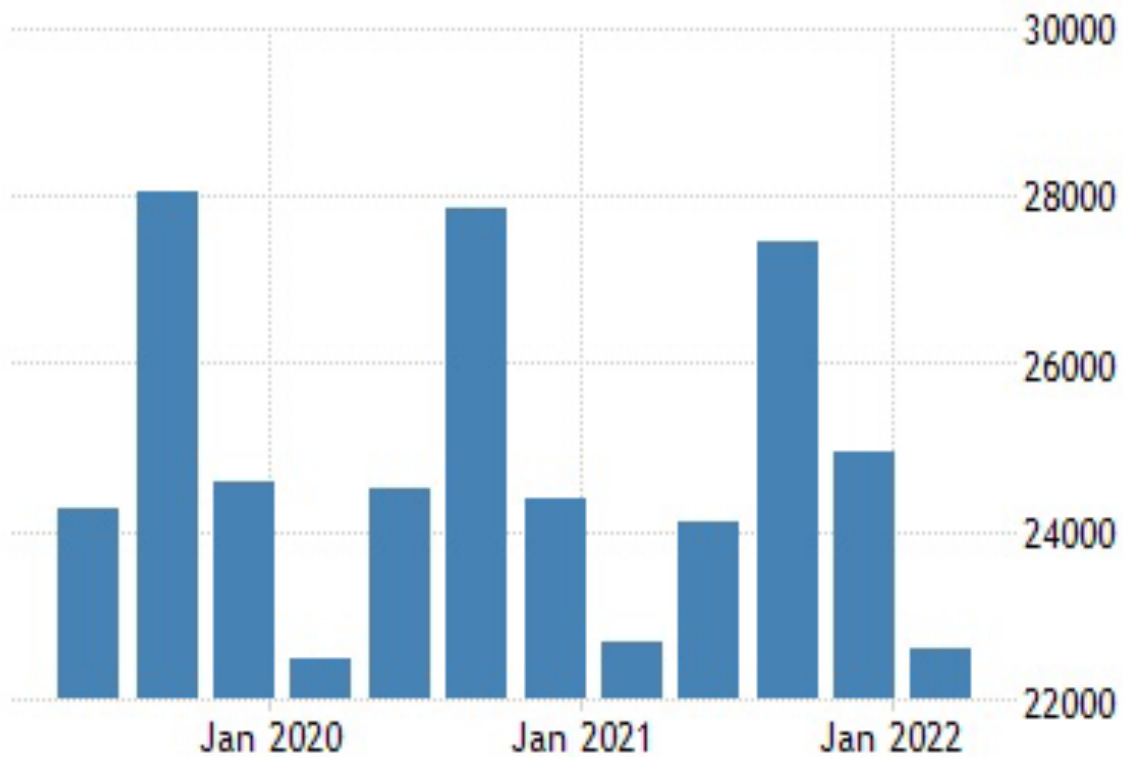
In recent years, global climate has become more and more extreme, and the impact of global warming on the world's climate has gradually become obvious. The hot weather is getting hotter, the colder weather is getting colder, and the rainfall is also abnormal. Notwithstanding the fact that Malaysia is not a country with severe natural disasters, climate change has also brought a plethora of negative impacts to Malaysia, including slowing down our economy. Malaysia is an equatorial country, and it is like summer all year round. Malaysians cannot escape the extremely hot weather, and the highest temperature in Malaysia can reach up to 35 degrees Celsius. According to an article published by University Putra Malaysia (UPM) in 2018, it is estimated that by the year 2050, the temperature of Malaysia is going to rise 1.5 degrees Celsius, thus, making Malaysia hotter. Heatwaves are also expected to increase. Furthermore, climate change also precipitates the rise of sea level, causing inundation in some coastal areas. For example, according to an article published by "The Star", it stated that 15% of Malaysia's beach are gone. Kelantan and Penang are also the most vulnerable places to face inundation. This situation is exacerbated because of the project "Forest City" in Johor Bahru, pitched under China's Belt and Road Initiative, which damages our sea lives and aggravate the impacts of climate change in Malaysia.

Figure 1



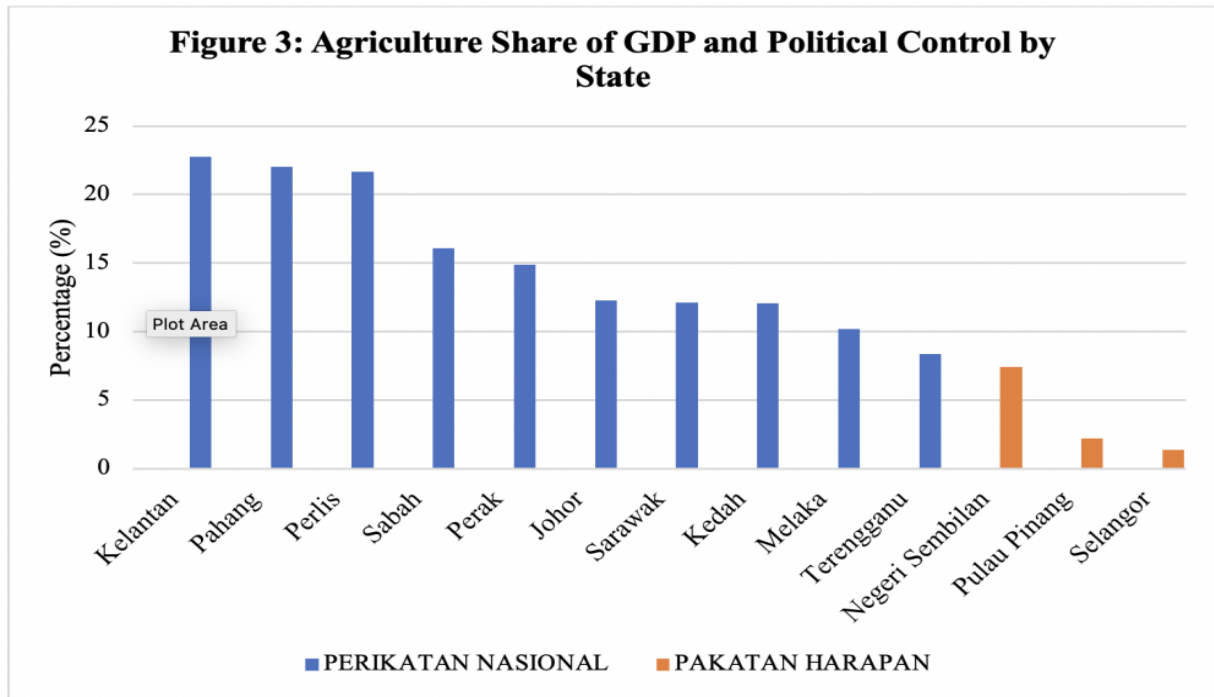
According to an article released by South China Morning Post (SCMP), Malaysians will face the challenge of water shortages and less food due to climate change. To give an illustration of what I mean, agriculture in Malaysia is further threatened by droughts as a result of climate change. Rice yields may reduce by around 55% to 60% according to researchers. Besides, other potentially impacted products include rubber, palm oil, and cocoa. They are the main agricultural products of Malaysia. If their yields are threatened, it will surely impact the economy of Malaysia tremendously. Besides, annual drought probability, which currently lies at 4%, may increase to 9% in the near future due to climate change. Such probability being most likely to happen in Sabah. The contribution of the agriculture sector to Malaysia's GDP in 2020 is 7.4%. As we can see in Figure 2, agriculture plays an important role in the Gross Domestic Product (GDP) in Malaysia. Therefore, the government should be concerned on the negative impacts towards our agriculture sector brought upon by climate change. Besides, climate change is constantly affecting weather patterns, leading to extreme weather events, unpredictable water availability, worsening water scarcity and contaminating water supplies. Consequently, Malaysia will have to face water shortages in certain areas. For example, La Niña and El Niño, a natural climate pattern that is disrupted by climate change, will unquestionably pose a threat to all Malaysians living near coastal areas. From Figure 3, we know that Kelantan and Penang plays a vital role in the agriculture sector in Malaysia. As mentioned above, the two states face a threat of inundation due to climate change. If this worsens, the economy of Malaysia will surely be affected. Hence, the government should implement appropriate measures to curb this situation. For example, building dams and improving our technology on agriculture.

Figure 2



Source : Department of Statistics, Malaysia

Figure 3



Sources: Authors' computation based on data from the Department of Statistics and media

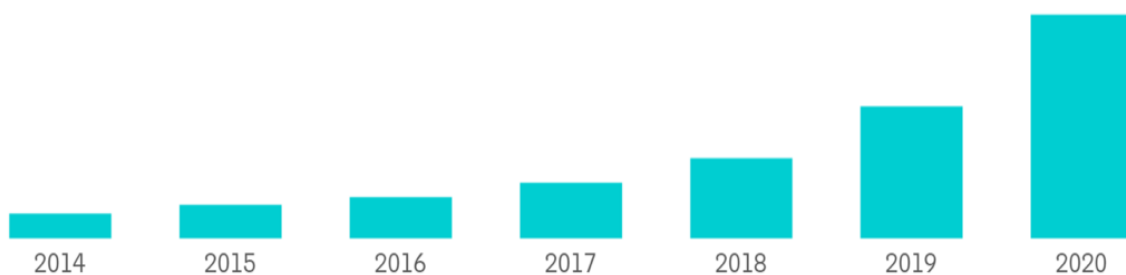
Furthermore, actions that we can take on a day-to-day basis can also contribute mitigate climate change. Mitigation means reducing the effects of climate change by preventing or cutting the emission of greenhouse gases (GHG) into the atmosphere. For example, driving and flying less often, switching to a “green” energy provider, and changing your eating and shopping habits. Of course, climate change won't be solved by changing our personal shopping or driving habits, but many experts believe it is important and can influence others to make corresponding changes. Hence, government should encourage citizens to take action and practise the methods recommended. For example, government organisations should consider starting up campaigns and talks about climate change to bring awareness to citizens. We may not see results immediately , but, in the long run, the mitigation of climate change will surely be a success. Moreover, it has been scientifically proven that ditching the use of hydrofluorocarbons (HFCs) ,chemicals used in refrigerators and air conditioners, is a key to reducing carbon emissions, which helps in alleviating climate change. Therefore, the government should consider purchasing alternatives whenever feasible and transitioning to equipment that uses safer and more sustainable alternatives to HFCs. These alternatives include hydrocarbon or ammonia based secondary cooling systems, evaporative cooling and absorption cooling. Although this might cost much and slow down our economy, especially in this COVID-19 era, however, these will no doubt help mitigate the negative impacts of climate change. Deforestation is a major contributor to climate change that has been overlooked. Hence, the government should focus in reducing activities involving deforestation to mitigate

climate change in the long run.

In the year 2021, the government announced the goal of reaching net zero emissions by 2050 in the Twelfth Malaysia Plan. Prime Minister Ismail Sabri Yaakob stated that Malaysia would not build any new coal power plants, but expand electric vehicle infrastructure and introduce a blue economic blueprint for coastal development. However, this is barely sufficient in mitigating climate change. In order to alleviate climate change, the government should strengthen researches in the field of climate change, further develop and improve analysis on climate change. The government should also pay close attention to the training of relevant professional and management talents in climate change. Government organisations should strive to make areas of climate change researches on par with the international level, such as the United Kingdoms (UK) and implement effective measures to deal with climate change. For example, the government should change strategies and policies, and actively participate in international conferences. For example, Malaysia should actively participate in United Nations Climate Change Conferences. The government should also focus on the progress in energy development, energy conservation and clean energy technology. For example, the government should focus more on developing solar power. This is because Malaysia is located in the equatorial zone, an extremely advantageous place to develop solar power. According to Figure 4, Malaysia has been seen to have a steady increase in using solar power to generate electricity. This is a good sign as solar power create jobs and help our economy. Moreover, the government should also improve and encourage the use of tidal power in Malaysia. The geographical location of Malaysia is no doubt suitable in developing tidal power as Malaysia is located near the South China Sea. These will definitely help us to mitigate climate change and strengthen our economy.

Figure 4

Total Solar Energy Installed Capacity, in Megawatts (MW), Malaysia, 2014-2020



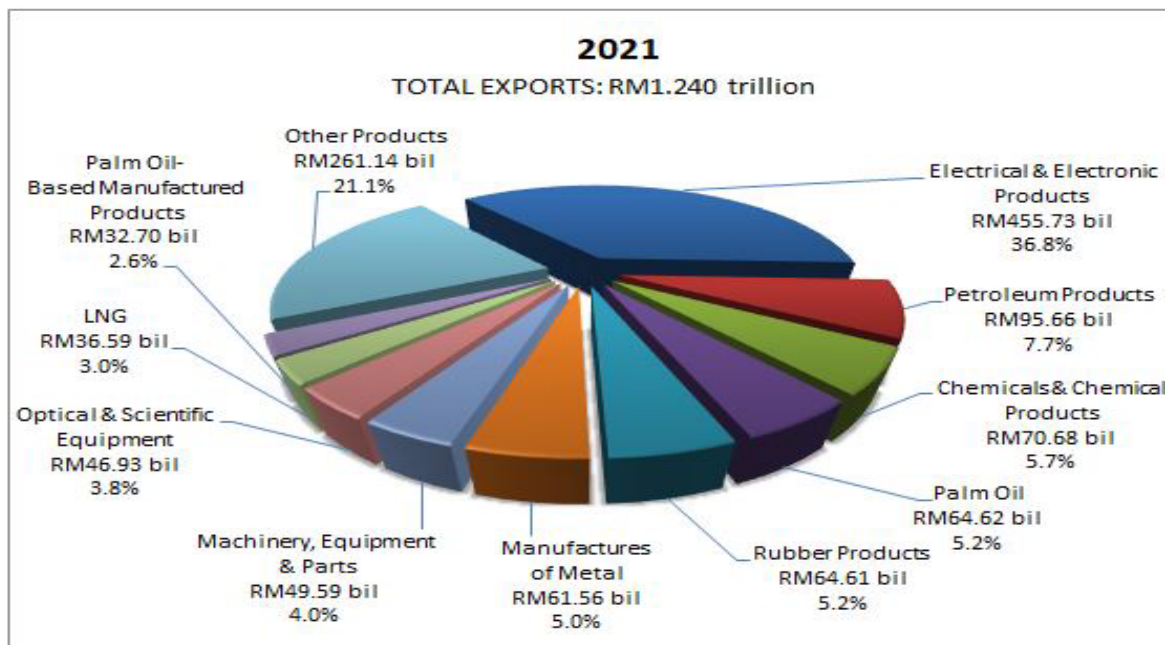
Source: IRENA Renewable Energy Statistics 2021



Adaptation means foretelling the negative effects of climate change and taking appropriate measures to prevent or minimize the destruction that climate change can precipitate or gaining advantages on opportunities that may surface. In order to adapt climate change, the government must understand local risks and come out with effective plans to manage and tackle them. Besides, the government should take actions to put systems in place to respond to the negative impacts of climate change that we are experiencing today as we prepare for an uncertain

future. These actions can include diversifying crops that are able to tolerate warmer and drier conditions. For example, the government should encourage farmers to plant more cocoa and pineapples. In addition, as we all know, Malaysia is infamous for its produce in palm oil and rubber. Relating to Figure 5, we can see that the palm oil industry boast a total export of RM32.70 billions, a major contribution in the exportation of our country. According to an analysis by ZSL , it finds that 93% of palm oil producers have not publicly assessed climate risk, despite the industry contributing significantly to the world's greenhouse gas emissions. As climate change continues to be a global issue discussed by many, several countries have pointed fingers to Malaysia, rebuking us by emphasising that we play a significant role in contributing to climate change. This is because they believe that palm oils and rubbers are tremendous contributors in climate change. In order to ensure the image of our country is safeguarded, the government should play close attention to the palm oil and rubber industry, ensuring that the greenhouse gases that they released can be minimised. For example, Malaysia should focus on its development in crop plantation and upgrade our scientific knowledge in it. The government should encourage researchers on agriculture to focus on improving our technology and knowledge in the field stated. This will surely help Malaysia adapt to the impacts of climate change.

Figure 5



Source: Ministry of Foreign Affairs, Malaysia

Furthermore, infrastructure and buildings need to be improved to be able to withstand more extreme weather caused by climate change. Hence, adaptation measures include large-scale infrastructure changes. Throughout the history of human civilization, wood has been used to construct buildings. However, it has recently started to gain popularity again as a building material due to its proven sustainability and improvements to engineered wood such as cross-laminated timber. One of the biggest benefits of building a building with wood is that it sequesters a lot of carbons from the atmosphere and stores it in the building as long as it remains in its original shape. By offsetting carbon emissions from construction and operations, it can help achieve carbon-negative buildings. Therefore, the government should encourage real estate developers to practise the use of wood when constructing buildings. The government should provide subsidies to them and cut down the import duties of wood. Besides, constructing buildings that are carbon neutral or carbon negative is a key issue for many architects today. The terminology of this push is confusing, but in general a net carbon neutral building is a building that does not emit any carbon dioxide into the atmosphere over its life cycle, taking into account its construction, the materials used in its construction and the required resources to build it. Carbon-negative buildings are those that can remove more carbon from the atmosphere than the amount that they emit in their lifetime. Hence, the government should promote the construction of carbon-negative buildings. To give an illustration of what I mean, the government should invest more of our national income on improving our technologies associated to the construction of carbon-negative buildings. Therefore, our buildings need to be gradually changed in order to adapt climate change.

To sum up, government should always be responsible in mitigating and adapting climate change in Malaysia. In addition, the government should also to build a basic environmental awareness so that our mother earth can be escape from the abyss of suffering climate change. As the saying goes, “better late than never.” The government should focus on mitigating and adapting climate change to not only play a role in alleviating global warming, but also strengthen our economy.

Words: 1830