30 (2) 2022 IIUMLJ 102-129

EMPHASISING THE ROLE OF ENVIRONMENTAL LAW IN POLLUTION CONTROL TOWARD PUBLIC HEALTH PROTECTIONS

Maizatun Mustafa*

Husna Fauzi**

Abstract

The Coronavirus pandemic (COVID-19) which has globally impacted the social ecosystem is a combination of public health and environmental crises. Amidst the challenges faced in dealing with the consequences of the crises, the pandemic has unintendedly revealed the significance of the current environmental law system to protect human health from pollution. The pandemic has also heightened the realisation that environmental threats are driven by human activities. Consequently, COVID-19 has underscored the need of securing safe and clean surroundings and has emphasised the importance of having measures to protect human health. For Malaysia, strategies aiming at environmental protection could be found within the provisions of the Environmental Quality Act 1974 (EQA). Using the library-based research methodology on primary and secondary sources of law, this paper seeks to examine the scope of the EQA on public health protection and pollution control. Against the backdrop of sustainability, the research concludes that the interlinkages of environmental conservation and public health protection mean that the EQA is the most relevant law to attain these two interrelated objectives. It is submitted that COVID-19 has re-emphasised the importance of environmental law within the realm of health protection, which is in turn essential for the sustainable development agenda.

Keywords: Environmental Law, Public Health, Economy, COVID-19, Sustainable Development.

* Associate Professor, Ahmad Ibrahim Kuliyyah of Laws, International Islamic University Malaysia. Email: maizatun@iium.edu.my.

** Assistant Professor, Ahmad Ibrahim Kuliyyah of Laws, International Islamic University Malaysia. Email: husna@iium.edu.my.

MENEKANKAN PERANAN UNDANG-UNDANG ALAM SEKITAR TERHADAP PERLINDUNGAN KESIHATAN AWAM

Abstrak

Wabak Coronavirus (COVID-19) yang telah memberi kesan kepada ekosistem sosial secara global ialah gabungan krisis kesihatan awam dan alam sekitar. Di tengah-tengah cabaran yang dihadapi dalam menangani akibat daripada krisis ini, wabak tersebut secara tidak sengaja mendedahkan kepentingan sistem undang-undang alam sekitar dalam melindungi kesihatan manusia daripada pencemaran. Pandemik itu juga meningkatkan kesedaran bahawa ancaman alam sekitar didorong oleh aktiviti manusia. Akibatnya, COVID-19 telah menekankan keperluan untuk memastikan persekitaran yang selamat dan bersih dan kepentingan mempunyai langkah-langkah untuk melindungi kesihatan manusia. Bagi Malaysia, strategi yang bertujuan untuk melindungi alam sekitar boleh didapati dalam peruntukan Akta Kualiti Alam Sekeliling 1974 (EQA). Menggunakan metodologi penyelidikan berasaskan perpustakaan ke atas sumber undang-undang primer dan sekunder, makalah ini bertujuan mengkaji skop EQA mengenai perlindungan kesihatan awam dan kawalan pencemaran. Berlatarbelakangkan kemampanan, penyelidikan ini menyimpulkan bahawa perkaitan di antara pemuliharaan alam sekitar dan perlindungan kesihatan awam bermakna EQA ialah undang-undang yang paling relevan untuk mencapai dua objektif yang saling berkait ini. Adalah dikemukakan bahawa COVID-19 telah menekankan semula kepentingan undang-undang alam sekitar dalam bidang perlindungan kesihatan, yang seterusnya penting untuk agenda pembangunan mampan.

Kata Kunci: Undang-Undang Alam Sekitar, Kesihatan Awam, Ekonomi, COVID-19, Pembangunan Mampan.

Introduction

The severity of environmental problems and their impact on human health are already serious challenges to the global community prior to the COVID-19 crisis. Confronting the continuous environmental menaces means that countries must take action to respond not only to ecological impacts associated with those threats, but also to health implications as an outcome of such threats. Throughout the world,

pollution and natural resources degradation are affecting human health and wellness in a variety of ways. These concerns have been a worldwide agenda for the past few decades and continue to be highlighted by international agencies such as the United Nations[1], WHO[2] and UNICEF.[3] As the impact of pollution and its underlying consequences on human health are becoming more prominent, there is a pressing need to revisit existing legal strategies on pollution control to ascertain and strengthen the capacity of law in protecting public health against such consequences.[4]

It is accepted that environmental quality is intrinsically intertwined with human health protection.[5] Thus, from the perspective of the law, health protection through a clean and safe ecosystem is seen as one of the objectives of pollution control strategies.[6] Various mechanisms have been established within the law aiming at emission prevention and health protection such as the restriction on the usage of toxic substances, and the prohibition on pollutant discharge.[7] However, while health and the environment are interdependent and considered to be crucial aspects of sustainable development, their connection within

1 "Annual Report 2021", United Nations Environmental Programme, accessed 10 October 2022, https://www.unep.org/resources/annual-report-2021.

2 "Policy Brief: Priority environment and health risks, 2021",WHO, accessed 10 October 2022, https://www.who.int/heli/risks/en/

3 "Healthy Environment, Healthy People, Thematic report Ministerial policy review session Second session of the United Nations Environment Assembly of the United Nations Environment Programme Nairobi, 23–27 May 2016", UNEP, accessed 10 October 2022, https://www.unep.org/resources/publication/healthy-environment-healthy-people.

4 "Environmental Rule of Law First Global Report 2019" United Nations, accessed 10 October 2022, https://wedocs.unep.org/bitstream/handle/20.500.11822/27279/Environmental_rule_of_law.pdf?sequence=1&isAllowed=y

5 "Public health and environment", WHO, accessed 10 October 2022, https://www.who.int/data/gho/data/themes/public-health-and-environment.

6 Maizatun Mustafa et al, "Analysis of Domestic Legal Framework based on International Law Towards Children's Environmental Protection," *Isu Khas/ Special Issue JUUM* (2021), 21 – 36.

7 Ibid.

the law may not be straightforward. Fundamentally, while environmental law is meant to serve public health goals and improve environmental quality, other underlying factors, particularly that of the economy require consideration.[8] As this paper will demonstrate, while environmental law strategies take into account economic policy objectives,[9] the pervasiveness of the law toward sustainable development means that its objectives need to be re-assessed regularly to ensure that the importance of human health protection continues to be upheld in consonant with other factors.[10]

At this junction, the recent pandemic can provide a preview of future disruptions if public health concerns due to environmental pollution are not adequately addressed. For many years, environmental law in Malaysia has evolved into legal strategies that deal with a wide-ranging set of environmental issues.[11] Centre to the idea of the law is pollution control which directly and indirectly addresses public health concerns, but which is highly influenced by national economic priority.[12] Thus, the two interrelated issues that require scrutiny relate to the position of environmental law in safeguarding public health, and the ability of the law to achieve the appropriate balance of environmental protection and economic development. This paper seeks to highlight that strategies aiming at pollution control could be found within the provisions of environmental law. The library-based research

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8 Maizatun Mustafa, "Environmental Quality Act 1974: A Tool Towards the Implementation and Achievement of Malaysia's Environmental Policy'," *IIUM Law Journal* 19, no. 1 (2011), 1-3.

9 Adnan A. Hezri and M Nordin Hasan, "Towards sustainable development? The evolution of environmental policy in Malaysia," *Natural Resources Forum* 30 (1), 2006, 37-50.

10 Maizatun Mustafa, Zuraini, Ab Hamid, Kwan, S.C., Siti Nur Hanis Mamood, Mazrura Sahani, "Analysis of children's health protection under the framework of environmental law and child law," In Majdah Zawawi et al., *Family Law in Malaysia and Beyond: Towards Sustainable Family Institutions* (Kuala Lumpur: JKSM, 2021), 69-87.

11 Maizatun Mustafa, "Environmental Quality Act 1974: A Tool Towards the Implementation and Achievement of Malaysia's Environmental Policy'," *IIUM Law Journal* 19, no. 1 (2011), 1-3.

12 Adnan A. Hezri and M Nordin Hasan, "Towards sustainable development? The evolution of environmental policy in Malaysia," *Natural Resources Forum* 30 (1), 2006, 37-50.

methodology was conducted on primary and secondary sources of law, particularly on the provisions of the EQA and its subsidiary legislations to examine their scope relating to the environment and human health protection. On the basis that only a healthy ecosystem can support public well-being,[13] the research concludes that the EQA should continue to focus at transforming pollution control objectives toward safeguarding public health while upholding the nation's national development aspiration.[14] This research argues that COVID-19 has re-emphasised the function of environmental law within the realm of health protection and has provided a significant opportunity for the achievement of the sustainable development agenda.

Impacts of Environmental Pollution on Public Health

Studies have shown that in the past few decades, the occurrence of pollution has risen at an unprecedented rate causing enormous impacts on environmental quality and public health all over the world.[15] Natural resources such as soil, water and air would be polluted due to human activities from industries, domestic wastes, transportation and agriculture through the discharge of harmful pollutants into the environment.[16] Annually, the status of environmental degradation has been documented by international agencies which also assess its impacts on human health. The United Nations, in its recent Annual Environmental Report 2020[17] have identified pollution and climate

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13 "The role of health in achieving the sustainable development goals" WHO, accessed 10 October 2022, https://www.who.int/bulletin/volumes/96/9/18-221432/en/

14 "COVID-19: Not an excuse to roll back environmental protection and enforcement, UN rights expert says", OHCHR, accessed 10 October 2022,https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25794&LangID=E

15 Manisalidis, I., Stavropoulou, E., Stavropoulos, A., & Bezirtzoglou, E., "Environmental and Health Impacts of Air Pollution: A Review," *Frontiers in public health*, (2020) *8*, 14.

16 "Malaysia National Climate Change Portal," Ministry of Natural Resources and Environment, accessed 10 October 2022, https://www.ketsa.gov.my/

17 "Annual Environmental Report 2020," United Nations, accessed 10 October 2022, https://www.unep.org/resources/annual-report/letter-executive-director-2020-review

change to be among the main planetary crises. According to the report, the crises not only contributed to the pollution of the air, land and sea, but have also damaged the crucial ecosystem and claimed human lives.[18] This Report supports the findings made by the World Health Organisation (WHO) in 2016 that consider factors such as clean air, stable climate, adequate water, and a preserved nature as prerequisites for good health.[19] The WHO estimated that 24% of all global deaths are linked to the environment, which is roughly 13.7 million deaths a year. From this figure, the findings confirmed that vulnerable groups such as children under five years and adults aged 50 to 75 are most affected by critical illness posed by environmental risks.[20] The view of United Nations' Secretary-General has encapsulated the seriousness of environmental problems when he placed them at the top of the agenda and reminded humanity that they will face "far more damaging problems than COVID-19 in the future unless transformative actions are taken by resetting the system and laying the foundations for a green post-pandemic recovery". [21] For this reason too, the WHO strongly supports the notion that the environment is a sound platform for good public health and considered an inclusive legal instrument as an important tool to tackle the impact of pollution on health.[22]

Another authoritative document on the environment is the United Nations Environment Programme (UNEP)'s Global

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18 Ibid

19 Prüss-Ustün, A., Wolf, J., Corvalán, C., Bos, R., and Neira, M., *Preventing disease through healthy environments. A global assessment of the burden of disease from environmental risks* (Geneva: WHO Press, 2016) 97.

20 Ibid.

21 Annual Environmental Report 2020," United Nations, accessed 10 October 2022, https://www.unep.org/resources/annual-report/letter-executive-director-2020-review

22 "Health, environment and climate change", WHO 2019, accessed 10 October 2022, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjp8rXaxNLxAhUv4jgGHSLCDDcQFjAAegQIAhAD&url=https%3A%2F%2Fwww.who.int%2Fdocs%2Fdefault-source%2Fclimate-change%2Fwho-global-strategy-on-health-environment-and-climate-change-a72-15.pdf%3Fsfvrsn%3D20e72548_2&usg=AOvVaw0EqxCb4D1Uq1QD_CCvznEe

Environment Outlook which contains the most comprehensive report on the world's environment and prospects for a healthy future since 2012. This report supports the notion that environmental issues are closely related to the social issue of public health and considered pollution to be one of the important causes of health problems and environmental diseases. In its sixth and latest report published in 2019 (GEO-6), UNEP has identified that 9 million premature deaths worldwide have been caused by air pollution, whereas poor water quality has contributed to the death of 3.5 million people.[23] As a whole, GEO-6 described the overall environmental situation globally as "suffering" and the future of environmental quality as grim with "warmer climate, wasted natural resources, and stressed ecosystems".[24]

Similar to other countries, pollution and other types of environmental problems recorded in the past few decades are also causing serious threats to Malaysia. From the economic perspective, Malaysia is considered to be an upper middle-income country by the World Bank.[25] As this nation is projected to achieve the status of a high-income economy by 2024, the importance of its economic development and industrialization cannot be overemphasized.[26] Consequently, these activities have caused considerable damage to the environment through the pollution of air quality, contamination of water resources, and the disposal of dangerous discharge of hazardous and toxic wastes.[27] Inevitably, these pollutions have the potential for causing health problems on humans. There have been several studies

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23 United Nations, *Global Environment Outlook – GEO-6: Healthy Planet, Healthy People*, (Cambridge: University Printing House, 2019), 4-14.

24 Ibid

25 Visit the World Bank website at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiPzOXTusnxAhXYyjgGHeH6DfAQFjAAegQIAhAD&url=https%3A%2F%2Fwww.worldbank.org%2Fen%2Fcountry%2Fmalaysia%2Foverview&usg=AOvVaw2xa9zJmc4iM8ixiR86274d

26 "12th Malaysia Plan 2020," Economic Planning Unit, accessed 10 October 2022, https://www.epu.gov.my/

27 "Malaysia Environmental Quality Report 2020," Department of Environment, accessed 10 October 2022, https://enviro2.doe.gov.my/ekmc/digital-content/laporan-kualiti-alam-sekeliling-environmental-quality-report-2020/

conducted in Malaysia which have linked exposure to ambient air pollution with respiratory diseases[28] and have identified the effects of haze events on human health.[29] In 2015, it was reported that 4,778 schools had to be closed affecting nearly 2.7 million students nationwide due to health degradation when the air pollution index reached dangerous levels due to haze pollution.[30] Whereas when the Kim Kim river disaster happened in Johor, Malaysia in 2019, thousands of people especially school children had to be admitted to the hospital due to inhalation of toxic fumes with nine of them admitted to the intensive care unit.[31] These two incidences are examples of public health impacts of environmental pollution which have caused an increase in mortality and hospital admissions, especially for respiratory outcomes due to haze,[32] and toxic waste pollution respectively.[33]

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28 Ili Nabila Ismail, I.N., Juliana Jalaludin, Suhaili Abu Bakar, Nur Hazirah Hisamuddin, & Nur Faseeha Suhaimi, "Association of Traffic-Related Air Pollution (TRAP) with DNA damage and respiratory health symptoms among primary school children in Selangor," *Asian Journal of Atmospheric Environment* 13(2) (2019), 106-116.

29 Mazrura Sahani, et al. "A case-crossover analysis of forest fire haze events and mortality in Malaysia," *Atmos Environ [Internet]* (2014) 96, 257–265.

30 Jamal Othman et.al., "Transboundary smoke haze pollution in Malaysia: Inpatient health impacts and economic valuation," *Environmental Pollution* Vol 189 (2014) 194-201, and Ho, R.C. et.al., "Impact of 2013 south Asian haze crisis: study of physical and psychological symptoms and perceived dangerousness of pollution level," *BMC Psychiatry*, (2014) 14:81.

31 "All 111 schools in Pasir Gudang closed indefinitely", Bernama, Accessed 10 October 2022, https://www.theedgemarkets.com/article/all-111-schools-pasir-gudang-closed-indefinitely; "Health Ministry: Almost 6,000 sought treatment over Sungai Kim Kim pollution", the Straits Times, accessed 10 October 2022, https://www.nst.com.my/news/nation/2019/03/471277/health-ministry-almost-6000-sought-treatment-over-sungai-kim-kim

32 Reid C.E. et al., "Critical review of health impacts of wildfire smoke exposure," *Environ Health Perspect.* (2016) 124(9), 1334–1343.

33 Yap, C.K., Peng, S.H.T. & Leow, C.S., "Contamination in Pasir Gudang Area, Peninsular Malaysia: What can we learn from Kim Kim River chemical waste contamination?", *Journal of Humanities and Education Development*, (2019) 1(2), 82–87.

Implications of the COVID-19

During the time when polluting activities have come at the expense of the environment and public health,[34] the COVID-19 crisis which was declared a pandemic by the WHO[35] had inevitably created new challenges on environmental protection. At the same time, this crisis has uncovered the importance of the current systems to protect human health from pollution. To date, over 617 million confirmed cases of infection have been recorded worldwide with about 6.5 million deaths.[36] Malaysia is still getting new numbers every day, with a total of over 4.8 million cases already being recorded so far, including 36,387 fatalities.[37]

Within a short period of time, the impacts of the pandemic have been felt across all sectors around the world. Initially, there were reports that the pandemic's lockdown has resulted in some positive outcomes for the environment. For example, restrictions on the economy, trade and transportation have contributed to the decrease in

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[34] Maizatun Mustafa & Zuraini Ab. Hamid, Zuraini, "Evaluating current practices of disaster management under environmental law towards sustainable development," in Rawshan Ara Begum et al (eds), *International Conference on Climate Change, Disaster Management and Environmental Sustainability*, (Kumamoto: Center for Water Cycle, Marine Environment and Disaster Management, Kumamoto University, 2019), 738-746.

[35] "WHO Director-General's opening remarks at the media briefing on COVID-19", WHO, accessed 10 October 2022 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj8tYCi29LxAhXK4XMBHWaJDRUQFjAAegQIAhAD&url=https%3A%2F%2Fwww.who.int%2Fdirector-general%2Fspeeches%2Fdetail%2Fwho-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020&usg=AOvVaw3bmjEyTRo22hqFMfOlPeHK

[36] "WHO Coronavirus (COVID-19) Dashboard", WHO, accessed 10 October 2022, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjmy4LO29LxAhVq8XMBHQSTAV4QFjAAegQIAhAD&url=https%3A%2F%2Fcovid19.who.int%2F&usg=AOvVaw22XfLmq9xe_pBXQ-q5vKUr (as of 6 October 2022)

[37] "COVIDNOW in Malaysia", Ministry of Health, accessed 10 October 2022, https://covidnow.moh.gov.my/

the discharge of pollution into the water, atmosphere and soil.[38] This decrease has eventually resulted in enhanced environmental quality in certain places.[39] According to the data from the National Aeronautics and Space Administration (NASA), some improvements in the atmospheric quality in the USA and Europe were noticeable as an outcome of the movement and travel control policies.[40] A comparable outcome has been reported by other countries such as China regarding the decrease in pollution levels due to lockdown restrictions on industrial activities and transportation movements.[41]

Similar to Malaysia, when the Movement Control Order (MCO) was enforced in Mac 2020 to curb the spread of COVID-19, it was found that pollution levels were declining, whereas the quality of air and water improved. According to the news report published by the Star on 25 April 2020, over one month after the total MCO was enforced, the water quality for the Klang River was stated as noticeably clearer and cleaner.[42] On 28 April 2020, a similar report on the improvement of a river in Penang was published by a news portal, the Straits Times Asia. The online portal highlighted the status of Penang River, which was previously polluted severely by various sources such as factories, workshops, hawker centres and markets, as "not dirty anymore" due to lower pollution load as an outcome of the lockdown.[43]

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38 Rupani, P.F., Nilashi, M., Abumalloh, R.A., et al., "Coronavirus pandemic (COVID-19) and its natural environmental impacts," *Int. J. Environ. Sci. Technol*. 17 (2020) 4655–4666.

39 Arora Shefali et al, "Coronavirus lockdown helped the environment to bounce back," *The Science of the total environment* vol. 742 (2020), 140573

40 "Less pollution over the US as coronavirus shuts down public places, satellite images show", CNN Health, accessed 10 October 2022, https://edition.cnn.com/2020/03/23/health/us-pollution-satellite-coronavirus-scn-trnd/index.html

41 Xu, K., Cui, K., Young, L.H., Hsieh, Y.K., Wang, Y.F., Zhang, J. and Wan, S., "Impact of the COVID-19 event on air quality in central China," *Aerosol Air Qual. Res.* 20 (2020), 915–929.

42 "Cleaner waterways and rivers during MCO", The Star, accessed 10 October 2022, https://www.thestar.com.my/news/nation/2020/04/25/cleaner-waterways-and-rivers-during-mco

43 "Coronavirus: Penang River green again, thanks to MCO", The Straits Times Asia, Accessed 10 October 2022,

During a similar period, the Department of Environment (DOE) which was tasked to monitor the quality of river water throughout Malaysia, reported that "28% of the 29 real-time water quality stations have shown improvement in the quality of water" and associated the improvement with the temporary cessation of operation for non-essential service.[44] As regards the status of air pollution during the lockdown, data from some scientific studies have shown that movement control initiatives to reduce the transmission of the COVID-19 pandemic have a significant impact on the air pollutants concentration in achieving cleaner air for Malaysia.[45] For example, a study conducted by Othman and Latif on PM2.5 concentrations based on the Air Pollutant Index of the DOE before and during the lockdown period (14 March 2020 to 14 April 2020) has concluded that the MCO has "significant effects in reducing the PM2.5 concentrations in Malaysia".[46] There was another air quality study conducted by Mohd Nadzir et.al. to investigate the concentration of carbon monoxide and particulate matter at a local scale in an urban area of Malaysia. [47] In that study, a comparison was made on concentrations before the MCO (20 November 2019 to 17 March 2020), and during the MCO (18 March 2020 to 12 April 2020). The overall result of this investigation affirmed that "the range of daily average concentrations for carbon

https://www.straitstimes.com/asia/se-asia/penang-river-green-again-thanks-to-mco).

44 "Air and water quality improve during MCO", New Straits Times, accessed 10 October 2022, https://www.nst.com.my/news/nation/2020/04/585488/air-and-water-quality-improve-during-mco

45 Abdullah S, Mansor AA, Napi NNLM, Mansor WNW, Ahmed AN, Ismail M, and Ramly ZTA, "Air quality status during 2020 Malaysia Movement Control Order (MCO) due to 2019 novel coronavirus (2019-nCoV) pandemic," *Sci Total Environ.* (2020) Aug 10;729

46 Mazrura Othman & Muhammad Taib Latif, "Air pollution impacts from COVID-19 pandemic control strategies in Malaysia," *J. Clean. Prod.* (2021) 291, 12592

47 Mohd Nadzir, M.S., Ooi, M.C.G., Alhasa, K.M., Bakar, M.A.A., Mohtar, A.A.A., Nor, M.F.F.M., Latif, M.T., Hamid, H.H.A., Ali, S.H.M., Ariff, N.M., Anuar, J., Ahamad, F., Azhari, A., Hanif, N.M., Subhi, M.A., Othman, M. and Nor, M.Z.M., "The Impact of Movement Control Order (MCO) during Pandemic COVID-19 on Local Air Quality in an Urban Area of Klang Valley, Malaysia," *Aerosol Air Qual. Res.* 20 (2020) 1237–1248.

monoxide was reduced by ~40–50%, whereas particulate matter was reduced by ~20–60% due to the reduction in vehicle numbers and industrial operations".[48]

While the trend in enhanced environmental quality has been recorded in Malaysia and all over the world as already shown, it was found that this trend is not absolute. The United Nations was skeptical that the decrease in pollution during the pandemic would be permanent.[49] Recent findings from scientists have indicated that the Corona pandemic will only have insignificant effects on environmental quality in comparison with the huge volume of pollutants that have been emitted into the environment over the past decades.[50] The same worry was expressed by the secretary-general of the Environment and Water Ministry Malaysia, who was concerned about the re-emergence of pollution when the economy reopens after the lockdown is lifted.[51] This concern is supported by the conclusion made by Othman and Latif based on their air pollution investigation that "reduced human outdoor activities, vehicle emissions and coal-fired power plant emissions play significant roles in achieving cleaner air".[52] Whereas Najah et al. in their investigation of the impact of COVID-19 on water pollution concluded that restrictions on economic activities and human mobility which consequently limit the discharge of pollutants such as carbon,

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48 Ibid

49 "First Person: COVID-19 is not a silver lining for the climate, says UN Environment chief", United Nations, accessed 10 October 2022, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjKoIS-_dLxAhWWwzgGHRKgA3sQFjADegQIGhAD&url=https%3A%2F%2Fnews.un.org%2Fen%2Fstory%2F2020%2F04%2F1061082&usg=AOvVaw2kvY_8KoDmJeFjwoRImA1i

50 Praveena, S.M. & Aris, A.Z., "The impacts of COVID-19 on the environmental sustainability: a perspective from the Southeast Asian region," *Environ Sci Pollut Res* (2021) 63829–63836.

51 New Straits Times, Impact of Covid-19 on the environment, 14 January 2021. https://www.nst.com.my/opinion/columnists/2021/01/657271/impact-covid-19-environment [26 June 2021]

52 Mazrura Othman & Muhammad Taib Latif, "Air pollution impacts from COVID-19 pandemic control strategies in Malaysia," *J. Clean. Prod.* (2021) 291, 12592

smoke, and toxic effluents, have in turn benefitted the environmental quality index.[53] Thus, while MCO has provided some relief to the environment where Malaysians experienced clearer skies and cleaner air, there is a high probability that pollution would re-occur once the economic sector restarted. Acknowledging the seriousness of the issue, the former Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin, conceded that the challenge now was in "restoring economic activities without reactivating environmental degradation".[54]

From the economic perspective, it has been affirmed by the United Nations in their Sustainable Development Goals Report 2020 that the COVID-19 pandemic is causing world economies to face deep recessions and driving nations further off-course from achieving sustainability Agenda.[55] This is due to the implications of COVID-19 mitigating measures which have caused many countries to face a reduction in income, a rise in job loss, and disruptions in transportation, services, and manufacturing sectors. International Monetary Fund (IMF) has confirmed that the pandemic impacts have resulted in an economic decline with only 3% growth for the year 2020. [56] This decline is considered by the IMF to be "much worse than the 2008

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53 Najah, A., Teo, F.Y., Chow, M.F. et al., "Surface water quality status and prediction during movement control operation order under COVID-19 pandemic: Case studies in Malaysia," *Int. J. Environ. Sci. Technol.* 18 (2021), 1009–1018.

54 "Govt reviewing Environmental Quality Act 1974, says PM", The Straits Times, accessed 10 October 2022, https://www.nst.com.my/news/government-public-policy/2021/02/669027/govt-reviewing-environmental-quality-act-1974-says-pm

55 "Sustainable Development Goals Report 2020", United Nations, accessed 10 October 2022, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjl1L-uv9LxAhWOIbcAHV5fDkoQFjAAegQIAxAD&url=https%3A%2F%2Funstats.un.org%2Fsdgs%2Freport%2F2020%2F&usg=AOvVaw21q-Ff6MKI1rPsEbARS3Uk

56 "World economic outlook, April 2020: The Great Lockdown", International Monetary Fund (IMF), accessed 10 October 2022, https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020.

global financial crisis".[57] When a recession happens, the United Nations warned that it is likely to have a major impact on the environment. This is based on the experience from previous economic slowdowns which suggested that a sluggish economy will affect the priority between development, environmental protection and public health.[58] At this critical time, countries differ in their respective growth projections. In order to ensure economic survival, there are nations that need to lower environmental standards or intensify utilisation of natural resources which in turn might affect human wellbeing.[59]

It is well established that environmental policy for Malaysia is influenced by the economic agenda,[60] notably that of the New Economic Policy (1971-1990)[61], New Development Policy (1991-2000),[62] Vision 2020[63] and Shared Prosperity Vision 2030.[64] This is evidenced by environmental policy targets embodied within the Malaysia Plans, starting from the 3rd Malaysia Plan (1976-1980) until the current 12th Malaysia Plan (2021-2025).[65] Within these policy documents, broad and flexible environmental management concepts have been applied to support the nation's objectives of high economic

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57 Ibid.

58 "OECD Policy Responses to Coronavirus (COVID-19): The long-term environmental implications of COVID-19", OECD, accessed 10 October 2022, https://www.oecd.org/coronavirus/policy-responses/the-long-term-environmental-implications-of-covid-19-4b7a9937/

59 Ibid.

60 Adnan A. Hezri and M Nordin Hasan, "Towards sustainable development? The evolution of environmental policy in Malaysia," *Natural Resources Forum* 30 (1), 2006, 37-50.

61 Economic Planning Unit, *Second Malaysia plan 1971–1975* (Kuala Lumpur: Government Printers, 1972).

62 Economic Planning Unit Malaysia, *The Second Outline Perspective Plan, 1991–2000* (Kuala Lumpur: National Printing Department, 1991).

63 Mahathir Mohamad, "Malaysia, the Way Forward", in Ahmad Sarji Abdul Hamid (ed.), *Malaysia's Vision 2020* (Petaling Jaya: Pelanduk Publications, 1993).

64 Percetakan Nasional Malaysia Berhad, *Shared prosperity vision 2030: Restructuring the priorities of Malaysia's development,* (Putrajaya, Ministry of Economic Affairs, 2019).

65 Economic Planning Unit, *12th Malaysia Plan 2020*, (Putrajaya, Economic Planning Unit, 2021).

growth.[66] As a consequence, environmental standards to be adhered to were made consistent with national development goals. [67] The aftermath of the Brundtland Report and the United Nations' Rio Conference in 1992 has enabled Malaysia to embrace the concept of sustainable development as the main thrust in environmental management and to interpret it to suit economic, environmental and social needs. [68] Malaysia's environmental policy objectives continue to embrace United Nations' progress on sustainable development through Sustainable Development Goals (SDG) as a new approach to resolving development issues and aimed to be achieved by 2030. The SDG comprises 17 high-level goals with 169 specific targets that address development's social, economic, and environmental dimensions relevant to Malaysia.[69]

From this discussion so far, it can be established that economic activities are the main contributors to the pollution of the environment which can affect public health, whereas COVID-19 on the other hand has disrupted the economy and could cause long-term impacts on the environment and society. The Organisation for Economic Co-operation and Development (OECD) projected that "as the economy gradually recovers, emissions are going to increase again, with growth rates going back to the pre-COVID baseline projection levels".[70] When economic activities reopen after the pandemic, there will be a high probability that pollution levels would increase which would have lasting impacts on the environment and human health.[71] During the

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66 "Malaysia Economic Report 2018/2019", Ministry of Finance, accessed 10 October 2022, https://www.mof.gov.my/arkib/economy/ec_Main.html

67 Vant, A., *Environmental governance: institutions, policies and actions*, (Cheltenham: Edward Elgar Publishing, 2015).

68 Maizatun Mustafa, "Environmental Quality Act 1974: A Tool Towards the Implementation and Achievement of Malaysia's Environmental Policy'," *IIUM Law Journal* 19, no. 1 (2011), 1-3.

69 "Transforming Our World: The 2030 Agenda for Sustainable Development," United Nations, accessed 10 October 2022, https://sustainabledevelopment.un.org/content/documents/.

70 "OECD Policy Responses to Coronavirus (COVID-19): The long-term environmental implications of COVID-19", OECD, accessed 10 October 2022, https://www.oecd.org/coronavirus/policy-responses/the-long-term-environmental-implications-of-covid-19-4b7a9937/

71 Praveena, S.M. & Aris, A.Z., "The impacts of COVID-19 on the

COVID-19 pandemic, the United Nations made a request to all countries to maintain the momentum of environmental protection and not to side-line the enforcement on pollution.[72] Whereas the OECD made a reminder that "the structure of the economy plays a key role in how economic effects translate into changes in environmental pressures".[73] Malaysia's position on these matters can be observed within the pollution control strategies of environmental law as examined below.

The Environmental Quality Act 1974

The discussion on aspects of pollution control strategies is to identify the scope of environmental law in public health protection. It is known that environmental law performs several functions including governing how human beings interact with their environment. Thus, the law would cover a wide variety of topics such as air and water quality protection, pollution control, toxic waste management, and chemical safety. In the context of Malaysia, the EQA serves as a fitting example as it is equipped with diversified strategies for pollution control (limits of emission, discharge licence, fines, environmental standards) that target both anthropogenic inputs and receiving environmental compartments.[74] Under the EQA, the control of emissions allows identification of sources, and implementation of remediation measures to reduce the input of pollutants, or to prosecute offenders.[75] The diversity of EQA's strategies continues to grow with the expansion of administrative tools such as monitoring, inspecting, searching and

environmental sustainability: a perspective from the Southeast Asian region," *Environ Sci Pollut Res* (2021) 63829–63836.

72 United Nations, *Global Environment Outlook – GEO-6: Healthy Planet, Healthy People*, (Cambridge: University Printing House, 2019), 4-14.

73 "OECD Policy Responses to Coronavirus (COVID-19): The long-term environmental implications of COVID-19", OECD, accessed 10 October 2022, https://www.oecd.org/coronavirus/policy-responses/the-long-term-environmental-implications-of-covid-19-4b7a9937/

74 Maizatun Mustafa, "Environmental Quality Act 1974: A Tool Towards the Implementation and Achievement of Malaysia's Environmental Policy'," *IIUM Law Journal* 19, no. 1 (2011), 1-3.

75 Maizatun Mustafa, "Environmental Quality Act 1974: Development and Reform", *MLJ*, Vol. 2 March-April (2009) pp.lv-lxxxviii.

investigating of pollution.[76] Below is the examination of strategies on pollution control which are relevant to human health protection.

Public Health Protection under the Environmental Quality Act 1974

In order to appraise the position of public health protection within the ambit of the EQA, it is necessary to examine the scope of the law based on its interpretation section. Parliamentary statutes such as the EQA commonly include a "definition section" in which the meaning of words and phrases found in the statute are explained. Certain words would have specific meanings for the purpose of the Act. Similarly, a word would have a specific meaning that might differ from its common usage. Thus, the interpretation section would define words when a special meaning is to be attributed to those words. Table 1 below contains the list of terms and their interpretations which set the scope of the EQA in relation to pollution control and public health protection.

Table 1: Interpretation of Relevant Terms under Section 2 of the EQA

Terms	Interpretation
beneficial use	"means a use of the environment or any element or segment of the environment that is conducive to public health, welfare or safety and which requires protection from the effects of wastes, discharges, emissions and deposits"
environment	"means the physical factors of the surroundings of the human beings including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics"
environmentally hazardous substance	"means any natural or artificial substances including any raw material, whether in a solid, semi-solid or liquid form, or in the form of gas or vapour, or in a mixture of at

[76] Maizatun Mustafa, *Environmental Law in Malaysia*, 4th ed. (The Netherlands: Kluwer Law International, 2019), 23-32.

	least two of these substances, or any living organism intended for any environmental protection, conservation and control activity, which can cause pollution"
pollutants	"means any natural or artificial substances, whether in a solid, semi-solid or liquid form, or in the form of gas or vapour, or in a mixture of at least two of these substances, or any objectionable odour or noise or heat emitted, discharged or deposited or is likely to be emitted, discharged or deposited from any source which can directly or indirectly cause pollution and includes any environmentally hazardous substances"
pollution (previous interpretation)	"means any direct or indirect alteration of the physical, thermal, chemical, or biological properties of any part of the environment by discharging, emitting, or depositing environmentally hazardous substances, pollutants or wastes so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to public health, safety, or welfare, or to animals, birds, wildlife, fish or aquatic life, or to plants or to cause a contravention of any condition, limitation or restriction to which a licence under this Act is subject."
Pollution (present interpretation) [Am. Act A953: s.2; Subs. Act A1441 of the year 2012]	"means an act or process, whether natural or artificial, resulting in the introduction of any pollutant into the environment in contravention of the acceptable conditions as specified in the regulations made under section 21".

Source: Environmental Quality Act 1974

From the list of terms and their interpretations as listed in Table 1 above, it can be construed that the restrictive method of interpretation

is being applied by the EQA based on the usage of the word 'means' which shows that the definition enacted is hard and fast and that no other meaning can be assigned to the defined word. The effect of such interpretation would be that the scope and reach of the EQA's provisions on pollution control and public health would be based on such interpretations.

For example, the term `environment' has been widely interpreted by the EQA to include "physical factors that surround human being" and this interpretation needs to be read together with the word `pollution' contextually in order to ascertain its scope relating to health protection. It is necessary to point out the amendment made by the EQA on the interpretation of the term `pollution' as provided in Table 1. Before 2012, the term pollution was given a wider interpretation where elements such as `public health, safety, or welfare' have been included to indicate the scope of pollution which is directly concerned with its impact on human health. However, after being amended in 2012, the scope of pollution is now being restricted and confined only within the ambit of section 21. The new interpretation states that pollution means:

> "an act or process, whether natural or artificial, resulting in the introduction of any pollutant into the environment in contravention of the acceptable conditions as specified in the regulations made under section 21". While there is no justification provided by the EQA for the change in the interpretation of "pollution", the new interpretation is more practicable from the regulatory perspective. This is because it allows for a more straightforward approach of enforcement particularly in determining whether the discharge would constitute an offence since it can be based on the parameters limit as provided in section 21. This section empowers the Minister to "specify the acceptable conditions for the emission, discharge or deposit of environmentally hazardous substances, pollutants or wastes or the emission of noise into any area, segment or element of the environment and may set aside any area, segment or element of the environment within which the emission, discharge or deposit is prohibited or restricted".

It is by virtue of Section 21 that human health considerations would be reflected through the acceptable conditions for pollution from different sources.[77]

While section 2 of the EQA provides for a `narrow' interpretation of pollution and related terms, it must be pointed out that what constitutes public health protection is not confined to the interpretation of section 2 only. Since the EQA is a framework law, its provisions would take effect only through the making of rules and regulations relating to that provision. Under section 51 of the Act, the Minister is allowed to make regulations "aiming at environmental protection and pollution control". The regulations can prescribe standards or criteria, prohibit discharge, emissions or use of any equipment which is likely to endanger the environment, and determine the quantum of fines to be imposed. Generally, the regulations which set emission or discharge standards contain a statement of the scope of the law, together with a definition of the applicable terms and concepts; a detailed description of the requirements, including limits on pollutants, applicable tests, mandatory control methods and so on, and applicable penalties for contraventions. Examples of parameters limit of pollution under the EQA relevant to human health are provided below.

Parameters Limit under the Environmental Quality Act 1974

There are several strategies within the EQA which are indirectly relevant to human health protection that target both anthropogenic inputs and receiving environmental mediums. For example, the EQA contains emission limits on industrial discharges to air and water which are set to protect vulnerable receptor, such as human beings, or environment. These regulatory standards are either health-based or environmental. There is a wide variety of external influences on determining the limit settings under the EQA, such as international agreement, the United Nations mandate or the WHO standards.[78] These

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77 Maizatun Mustafa, and Nurah Sabahiah Mohamed, "The development of environmental crime and sanction in Malaysia," *European Scientific Journal*, 11(25), (2015) 29-39.

78 Maizatun Mustafa, "Legal Solution to Air Pollution Control in Malaysia", in Sara Hsu (ed), *Routledge Handbook of Sustainable Development in*

international standards have been applied within the EQA's environmental strategies in relation to pollution control and health protection. Some examples could be found within the regulations and orders of the EQA, as shown in Table 2 below on the EQA's emission standards for petrol engine which are measured based on "the Economic Commission for Europe (ECE) Regulation no 15.04 Annex to the United Nations Agreement Concerning the Adoption of Uniform Condition of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts".

Table 2: UNECE Standards for the EQA

International instrument	1958 Agreement (UNECE Vehicle Regulations) United Nations Economic Commission for Europe
Objectives	Establishing uniform regulations for vehicles and their components relating to human health, safety, environment, energy, and anti-theft requirements
Malaysia state party	04 April 2006
Domestic law	The EQA
Example of provision	First Schedule Environmental Quality (Control of Emission from Petrol Engines) Regulations1996

Asia, (Oxon: New York Routledge, 2018).

EMISSION STANDARD OF POLLUTANTS

The emission of the gaseous pollutant of Carbon Monoxide and the combination of Hydrocarbons a
Nitrogent Oxides shall not exceed the following standard:

Reference Mass (rw) (kg)	Carbon Monoxide g/test	Combined Emission of Hydrocarbons and Nitrogen Oxides in g/test
rw < 1020	58	19.0
1020 < rw < 1250	67	20.5
1250 < rw < 1470	76	22.0
1470 < rw < 1700	84	23.5
1700 < rw < 1930	93	25.0
1930 < rw < 2150	101	26.5
2150 < rw	110	28.0

Source: The Environmental Quality Act 1974

While fundamental decisions relating to acceptable risk can be found in the appropriate sections of the EQA, the technical details are set out in subsidiary legislation (Regulations, Order and Rules) as illustrated by Table 2. These technical details include emission or effluent standards which are expressed in terms of the permissible concentration of a pollutant in specified units, or in terms of a total load of pollutant per time unit, unit of production. In practical terms, the control of pollution under the EQA involves limits of effluents or emissions of pollutants to the environment, or of the exposure of individuals to such pollution. This can be seen within the Environmental Quality (Clean Air) Regulations 2014 which interpret the term "limit value" to mean "the quantity of the substance expressed in terms of certain specific parameters, concentration, or levels which shall not be exceeded during normal operation". This limit value is based on parameters limit for various kinds of gaseous emissions from stationary sources of air pollution, and that the criteria for the setting

of standards and measuring of limits are based on sound scientific methods.[79]

The linkage between pollution standards and health protection could further be found in the provision of air pollution under reg 24 of the Environmental Quality (Clean Air) Regulations 2014 which states that "in the event of any undesirable occurrence as specified in the Sixth Schedule, and where in the opinion of the Director General, the continued operation should not be permitted in order to safeguard public health, safety or welfare, the Director General may by notice in writing issue an order to the owner or occupier of a premise prohibiting the further operation of such premises for such period as he may direct, or until remedial requirements as directed by him have been complied with". What constitutes "undesirable occurrence" under the Sixth Schedule is provided in Table 3 below which highlights human health considerations against pollution threats.

Table 3: Sixth Schedule of the Environmental Quality (Clean Air) Regulations 2014

Sixth Schedule [Regulation 24] LIST OF UNDESIRABLE OCCURRENCE 1. "Where there is justified complaint or evidence of nuisance, and non-installation of control Equipment; 2. Breakdown or non-operation of control equipment; 3. Pollution cases that seriously threaten the environment or public health and safety which warrant immediate halt;

[79] "Malaysia Environmental Quality Report 2020," Department of Environment, accessed 10 October 2022, https://enviro2.doe.gov.my/ekmc/digital-content/laporan-kualiti-alam-sekeliling-environmental-quality-report-2020/

4. Premises that experiences industrial disaster such as fire, explosion and the like which may pose serious risk to the environment or the public in the vicinity;
5. Serious environmental pollution which gives rise to frequent complaints and upon investigation, the complaints are found to be justified and the premises are flouting the directives of the Director General;
6. Premises which frequently commit similar offences despite having been subject to various legal actions by the Director General such as notices, directives, compounds or court actions;
7. Pollution cases which cause serious negative impacts to life and there is evidence indicating that the premises do not make sufficient effort to overcome the pollution problems;
8. Serious environmental pollution with wide coverage in mass media and there is evidence indicating that the pollution occurred as a result of absence, non-operation or malfunctioning of the air pollution control system in the premises".

Source: Environmental Quality Act 1974

Apart from air pollution, the EQA's water pollution control strategy also incorporates health factors within its pollution standards. This could be found within the EQA Regulations such as the Environmental Quality (Industrial Effluent) Regulations 2009 which specify effluent standards in terms of concentration and volume that any industrial discharge coming from a point source shall meet. These standards consist of a set of water quality parameters and their corresponding numerical limits which are meant to protect receiving waters and will also protect public health from the effects of water pollution. The Environmental Quality (Industrial Effluent) Regulations 2009 specify two standards for effluent discharge: Standard A for discharge into the catchment areas, and Standard B applicable to any other inland waters or Malaysian waters. (See Table 4 below).

Table 4: Standards A and B of the Environmental Quality (Industrial Effluent) Regulations 2009.

	Parameter	**Unit**	**Standard**	
			A	**B**
	(1)	(2)	(3)	(4)
(i)	Temperature	^{o}C	40	40
(ii)	pH Value	-	6.0-9.0	5.5-9.0
(iii)	BOD at $20^{o}C$	mg/L	20	50

(iv)	Suspended Solids	mg/L	50	100
(v)	Mercury	mg/L	0.005	0.05
(vi)	Cadmium	mg/L	0.01	0.02
(vii)	Chromium, Hexavalent	mg/L	0.05	0.05
(viii)	Chromium, Trivalent	mg/L	0.20	1.0
(ix)	Arsenic	mg/L	0.05	0.10
(x)	Cyanide	mg/L	0.05	0.10
(xi)	Lead	mg/L	0.10	0.5
(xii)	Copper	mg/L	0.20	1.0
(xiii)	Manganese	mg/L	0.20	1.0
(xiv)	Nickel	mg/L	0.20	1.0
(xv)	Tin	mg/L	0.20	1.0
(xvi)	Zinc	mg/L	2.0	2.0
(xvii)	Boron	mg/L	1.0	4.0
(xviii)	Iron (Fe)	mg/L	1.0	5.0
(xix)	Silver	mg/L	0.1	1.0
(xx)	Aluminium	mg/L	10	15
(xxi)	Selenium	mg/L	0.02	0.5
(xxii)	Barium	mg/L	1.0	2.0
(xxiii)	Fluoride	mg/L	2.0	5.0
(xxiv)	Formaldehyde	mg/L	1.0	2.0
(xxv)	Phenol	mg/L	0.001	1.0
(xxvi)	Free Chlorine	mg/L	1.0	2.0
(xxvii)	Sulphide	mg/L	0.50	0.50
(xxviii)	Oil and Grease	mg/L	1.0	10
(xxix)	Ammoniacal Nitrogen	mg/L	10	20
(xxx)	Colour	ADMI	100	200

Source: Environmental Quality Act 1974

The term "catchment areas" for the purpose of Standard A above refers to "the areas upstream of surface or above subsurface water supply intakes, for the purpose of human consumption including drinking water". In relation to health protection, the limits of discharge into the catchment areas, which refers to the list of water resources intake throughout Malaysia are meant to secure cleanliness of water resources for human consumption which is determined based on the "normal healthy" population.[80]

[80] "Malaysia Environmental Quality Report 2020," Department of Environment, accessed 10 October 2022, https://enviro2.doe.gov.my/ekmc/digital-content/laporan-kualiti-alam-sekeliling-environmental-quality-report-2020/

The objectives of the EQA to minimise the public health risk and ensure inland water quality protection through the stringent effluent limits of Standard A is in accordance with the WHO's guidelines on the protection of surface water as a basis for providing safe drinking-water and thus protecting public health.[81] Under the EQA, the pollution of inland waters would constitute a criminal offence under section 25 which imposes statutory penalties on the following actions or omissions, including "to place any wastes in or on any waters or in a place where it may gain access to any waters; to place any waste in a position where it falls, descends, drains, evaporates, is washed, is blown or percolates or is likely to fall, descend, drain, evaporate or be washed, be blown or percolated into any waters, or knowingly or through his negligence, whether directly or indirectly, causes or permits any wastes to be placed in such a position; or to cause the temperature of the receiving waters to be raised or lowered by more than the prescribed limits". When any of these actions or omissions have been committed, section 25 imposes penalties in the form of a fine (maximum RM100, 000) or imprisonment (not more than five years) or both.

The importance of the EQA in protecting water resources from pollution and the linkage between public health protection and criminal sanction could be gauged from a court's decision relating to the scope of section 25. In the case of *Malaysian Vermicelli Manufacturers (Melaka) Sdn. Bhd. v Pendakwa Raya,*[82] the appellant was charged under section 25 of the EQA for discharging effluents into the Malacca River. When the trial court found the appellant to be liable for pollution, the appellant appealed and raised the issue of the constitutionality of the EQA relating to the subject matter of `public health'. In order to determine the issue, the Appeal Court examined section 51(1) of the EQA to ascertain the power of the minister to make regulations relating to pollution. From this examination, the court found that section 51(1) empowers the minister, among other things, to "prescribe standards or criteria for determining when any matter, action or thing is poisonous, noxious, objectionable, detrimental to health".[83]

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81 Protecting Surface Water for Health, WHO, accessed 10 October 2022, ttps://www.who.int/publications/i/item/9789241510554

82 [2001] MLJU 359

83 Ibid

By virtue of this provision, the court was of the view that the EQA has the jurisdiction to regulate the occurrence of water pollution as specified in the relevant Regulations. The court then made reference to the long title of the Act in order to establish the purpose of the Act, and concluded that the real object and purpose of the EQA and the regulation is "the protection, promotion, maintenance and enhancement of the health of the public in general".[84] On this basis, the court held that the regulation is in pith and substance a legislation with respect to "public health, sanitation and the prevention of diseases," an entry in the Concurrent List of which the Parliament has the power to enact. The court went further to apply the same principle and approach on section 25 and concluded on the basis of the purpose of the Act that section 25 too comes within the realm of "protecting, promoting, maintenance and enhancement of public health in general". This decision validates the position of the EQA as a legislation that seek to ensure that human health is safeguarded within its provisions. It is commendable for the court to apply the approach of identifying the true object and purpose of the related provisions which include that of protecting, promoting, maintaining and enhancing public health.[85]

From the above discussion, it can be construed that, in relation to water and air pollution, the emission or effluent standard is related to the method of pollution control by the EQA, and these standards of pollution may be taken as a point of departure for the danger to a specific target, namely human health. Then, any pollution that constitutes an unacceptable danger to that particular target will be illegal, and considered to be a criminal offence, such as in section 25 on the restriction of inland waters pollution, or section 22 on the restriction of atmospheric pollution. In the case of the EQA as a federal law, these standards which are meant to balance competing interests of the economic and health priorities, are applied on a nationwide basis to ensure uniformity. Whereas the exercise of judicial power on statutory interpretation of the EQA is necessary in determining the meaning that was intended by the law relating to the protection of public health.

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84 Ibid

85 Research Division Attorney General's Chambers, "Environmental Impact Assessment Regime in Malaysia: Reflections on Some Legal Issues", *Journal of the Malaysian Judiciary January 2017,* (2017) 104.

Conclusion

The COVID-19 pandemic has enhanced realisation of the importance of health protection of the public, and heightened the significance of the law in safeguarding human well-being from pollution threats. For Malaysia, the EQA is an important environmental law which contains various strategies to protect human health from pollution. The formulation of these strategies is based on recognised international standards applicable to parameters limits for different sources of pollution. These limits represent environmental standards that are acceptable to society which do not produce adverse effects, and constitute the necessary safety margins for the establishment of environmental pollution control targets. The EQA has been around for nearly 50 years and it has achieved some of its original goals on public health protection. However, in embracing sustainable development while striving to emerge from the COVID-19 crisis, it is necessary that the EQA's public health strategies are re-assessed consistently in consonant with environmental and economic needs. These include the explicit emphasis on the linkage of public health and pollution while taking into account the exposure levels needed to protect public health. The EQA should continue to aim at health-oriented pollution control targets to enhance the quality of life by minimising discharge to a level that does not lead to unacceptable environmental or human health effects. Thus the EQA's emission standards should always take into account the impacts of economic developments on human health. Economic uncertainty should not be considered a barrier to strong public health measures within the EQA. In light of the lesson learnt from the pandemic, actions in environmental protection should therefore be given a central role in supporting human health and economic development.

Acknowledgment: This paper was supported by the Research Management Centre, International Islamic University Malaysia, the Harun M. Hashim Research Grant (HAREG) **(**HAREG20-006-0006).