

# Silver lining or red herring. The impact of COVID-19 on Vietnam's air quality

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### ABSTRACT

Since 2019, the novel coronavirus outbreak has shaken the world to its core in terms of the deadly mortality and economic turbulence. On a positive note, national restriction measures to stem the spread of the virus have unexpectedly ameliorated the environment. One of the silver linings is that air pollution in many parts of the world has witnessed a substantial improvement, especially in the heavily polluted countries as in the case of Viet Nam. That being said, it does not take a rocket scientist to discern that in the absence of concrete environmental commitments and actions Viet Nam's air pollution will remain even if the COVID-19 has ebbed. This Article suggests that the COVID-19 pandemic should serve as a wake-up call for the Vietnamese authority to embrace sturdier and more vigorous environmental laws and policies to fully address the worsening air pollution in the country. Thereby it also makes some recommendations for Viet Nam in this respect.

### KEYWORDS

COVID-19 – Vietnam – Air quality – Environment

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## Introduction

At this juncture, let us reassert that the COVID-19 is in no way a “regular flu” as it has claimed more than 1 million lives worldwide and shown disinterest in slowing down regardless of borders or temperature<sup>1</sup>. Its catastrophic impacts are far from predictable as the world economy witnessed a steep downturn, and millions of jobs were tossed out of the window in less than a year. Moreover, the pandemic affected populations unevenly and unequally insofar as it may be deemed *de facto* discriminatory because individuals' private capacity to resist and adapt to the hardships differs greatly<sup>2</sup>. The COVID-19 pandemic has also posed a wide range of legal and policy conundrums in the situation of exception. Nonetheless, the COVID-19 pandemic has engendered some unanticipated consequences on the environment. Facing rapid waves of the infectious disease, a large number of countries have imposed harsh measures nationwide. Mobility and travel restrictions, closure of schools and businesses, and prohibition of public gatherings were the last resort to contain the spread of the deadly virus. As a result, the atmospheric environment in many places witnessed a substantial improvement thanks to limited human activities. Anecdote has it that with the cruise ships gone and the souvenir stalls closed, “the nature [was] taking back Venice” as wild animals could be seen wandering around the city<sup>3</sup>. Even endangered leatherback turtles, which were last reported 8 years ago in Phuket (Thailand), have resurfaced on the beaches to lay eggs<sup>4</sup>.

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<sup>1</sup> For general data, John Hopkins University, at <https://coronavirus.jhu.edu/>, last accessed: 28 Oct 2020.

<sup>2</sup> For an empirical study on the unequal impacts of COVID-19, *see generally* H.H. Dang, T. L.D. Huynh, M. Nguyen, *Does the COVID-19 Pandemic Disproportionately Affect the Poor? Evidence from a Six-Country Survey* (2020) 13352 *Discussion Paper IZA DP*.

<sup>3</sup> J. Brunton, *Nature is Taking Back Venice: Wildlife Returns to Tourist-free City*, *The Guardian*, (London, 20 March 2020) <https://www.theguardian.com/environment/2020/mar/20/nature-is-taking-back-venice-wildlife-returns-to-tourist-free-city>, last accessed: 28 Oct 2020.

<sup>4</sup> N. Ocharoenchai, *In Thailand, the Return of the Leatherbacks*, *US News* (Washington D.C., 24 April 2020) <https://www.usnews.com/news/best-countries/articles/2020-04-24/endangered-turtles-reclaim-thailands-beaches-during-coronavirus-lockdown>, last accessed: 28 Oct 2020.

Against that backdrop, Viet Nam is not an outlier as the country has also experienced much better and cleaner air quality during and shortly after the nationwide lockdown. Yet as this Article suggests, we should not set the bar too high about the COVID-19's environmental side-effects. Failure to take bold environmental actions in the face of the COVID-19-induced crisis would likely retard the environmental progress. Worse yet, it may trigger a “race to the bottom” as governments seek to quickly revive their economies. Viet Nam's air pollution should be a wake-up call for the authority to thoroughly address the gnawing air quality concerns.

The structure of this Article comprises three main parts. The next section will provide a glance at the COVID-19 pandemic and its intersection with the atmospheric environment. It serves as a springboard to probe the case of Viet Nam's responses and environmental implications in section 3. The COVID-19 can be a red herring because it may make us fall for the misbelief in choosing either economic growth or the environment. Hence the virus-induced clean air would become an interim – rather than permanent – state. Of course, this phenomenon does not escape many environmental scholars' notice, who have sounded an alarm about rising environmental concerns<sup>5</sup>. Thereby in section 4 this Article will offer some legal and policy implications for Viet Nam government to spin out the clean air.

## 1. COVID-19, the Atmospheric Environment, and Viet Nam's Air Pollution

A novel respiratory virus that emerged in Wuhan (China) last December has spread to the rest of the world<sup>6</sup>. The virus can infect both people and animals, and can cause respiratory illnesses. The lethality of this new virus remains questionable. It seems to be less often deadly than the SARS or MERS-related coronaviruses, but more serious than the seasonal flu<sup>7</sup>. As of the time of writing, the pandemic has claimed almost 1.2 million lives worldwide, and well over 44 million infection cases<sup>8</sup>.

Meanwhile, air pollution levels remain dangerously high in many parts of the world. According to the World Health Organization's estimates, nine out of ten people in the world

<sup>5</sup> See, e.g., D. Amirante, *Tangled up in Green: The Tight Connection between COVID-19 and the Environment*, in *Law on the State of Emergency* (2020), International Conference Proceedings PHÁP LUẬT VỀ TÌNH TRẠNG KHẨN CẤP (KỶ YẾU HỘI THẢO QUỐC TẾ), co-held by VNU School of Law (Viet Nam) and Melbourne University (Australia), 16-17 June 2020; D. Boyd, *COVID-19: “Not an excuse” to roll back environmental protection and enforcement*, UN rights expert says, OHCHR, <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25794>, last accessed: 15 Dec 2020.

<sup>6</sup> K. Sheikh, R. C. Rabin, *The Coronavirus: What Scientists Have Learned So Far*, *The New York Times* (New York, 9 September 2020) <https://www.nytimes.com/article/what-is-coronavirus.html>, last accessed: 28 Oct 2020.

<sup>7</sup> *Id.*

<sup>8</sup> John Hopkins University, (n. 3).

live in the environment containing high levels of pollutants, and this results in 7 million premature deaths worldwide<sup>9</sup>. Major respiratory disorders and infections in children and adults are attributable to chronic and acute exposure to chemicals, such as air pollutants: PM (fine particulate matter), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>)<sup>10</sup>. Air pollution might worsen the condition of COVID-19-induced respiratory diseases, increasing the risk of severe outcomes (hospitalization, intensive care, or death). Moreover, the viability of the virus in the environment could be enhanced due to short-term air pollution episodes, the local innate immunity of the respiratory mucous membranes<sup>11</sup>. It is evident that urban and industrial areas suffer more from environmental pollution than rural areas, COVID-19 intensity is expected to be higher in urban and populated areas.

In response, many countries imposed strict lockdowns to curb the spread of the virus. As a result, the atmospheric environment in other parts of the world has received a much needed respite as data collected by many ozone monitoring instruments have shown reduction of tropospheric trace gases related to air pollution<sup>12</sup>.

In China, the government forced strictest lockdown measures on social and industrial activities. It thus reduced the number of vehicles on the road and shrank factory production, which resulted in a significant decline in measurable air contaminants<sup>13</sup>. The NO<sub>2</sub> emission reductions was linked the transportation sector, while lower emissions from industries were the major cause for the decreases of PM<sub>2.5</sub> (particulate matter of less than 2.5 micrometers), CO and SO<sub>2</sub><sup>14</sup>. Concentrations of six major air pollutants during January-March 2020 in China were significantly decreased compared with previous years, citing a mean reduction of 20% for PM<sub>10</sub>, 15% for PM<sub>2.5</sub>, 25% for NO<sub>2</sub>, 6% for CO, and 21% for SO<sub>2</sub><sup>15</sup>. Overall, the air quality in China greatly improved, most likely due to reduced emissions from the transportation and secondary industrial sectors.

<sup>9</sup> S. Yari, H. Moshammer, *The Effect of Ambient Air Pollution on Severity of COVID-19: Hospitalisation and Death* (2020) 3(1) *Asian Pacific Journal of Environment and Cancer* 15-6.

<sup>10</sup> Exposure to high concentration of particulate matters (PM), in particular micro particles with a diameter of 2.5 microns or less (PM<sub>2.5</sub>), increases the risk of air pollution-related diseases, including acute lower respiratory infections, stroke, heart attack, chronic obstructive pulmonary disease and lung cancer. Excessive ozone in the air can have a marked effect on human health. It can cause breathing problems, trigger asthma, reduce lung function and lead to lung diseases. Exposure to nitrogen dioxide (NO<sub>2</sub>) aggravates symptoms of bronchitis in asthmatic children. Sulfur dioxide (SO<sub>2</sub>) can affect the respiratory system and the functions of the lungs, and causes irritation of the eyes.

<sup>11</sup> S. Yari, H. Moshammer, (n. 10), p. 15.

<sup>12</sup> K. D. Kanniah et al. 'COVID-19's Impact on the Atmospheric Environment in the Southeast Asia Region' (2020) 736 *Science of the Total Environment* 2.

<sup>13</sup> See Q. Wang, M. Su, 'A Preliminary Assessment of the Impact of COVID-19 on Environment—A Case Study of China' (2020) 728 *Science of The Total Environment*; F. Duteil et al., *COVID-19 as A Factor Influencing Air Pollution?* (2020) 263 *Environmental Pollution*.

<sup>14</sup> Y. Wang et al., *Changes in Air Quality Related to the Control of Coronavirus in China: Implications for Traffic and Industrial Emissions* (2020) 731 *Science of the Total Environment* 1-2.

<sup>15</sup> Q. Wang, M. Su (n. 14).

In a similar vein, many U.S. governors enacted executive orders in a bid to restrict the human-to-human transmission of the virus. It is reported that due to the government-backed shutdowns, the air quality in New York City, the most populous city in the United States, improved<sup>16</sup>. Daily concentrations of PM<sub>2.5</sub> and NO<sub>2</sub> were obtained from 15 central monitoring stations throughout New York city from January to May of 2015–2020, showing decreases in PM<sub>2.5</sub> (36%) and NO<sub>2</sub> (51%) concentrations shortly after the shutdown took place.

Southeast Asian countries have experienced an improvement of air quality caused by atmospheric aerosols<sup>17</sup>. Big cities, such as Bangkok (Thailand), Quezon city (the Philippines) and Kuala Lumpur (Malaysia), have recorded reductions in PM<sub>2.5</sub>, emanating from vehicle exhaust and industrial activities, up to 80% during the lockdown period<sup>18</sup>. In India, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub> and CO concentrations analyzed during March-April from 2017 to 2020 in 22 cities over the country revealed reductions by 43%, 31%, 18% and 10%, respectively compared with previous years<sup>19</sup>. Significant reductions in CO (37.0% - 64.8%) and NO<sub>2</sub> (24.1% - 54.3%) levels were also observed in Rio de Janeiro and Sao Paulo (Brazil)<sup>20</sup>. Similarly, these figures in Almaty (Kazakhstan) were 49% and 35%, while PM<sub>2.5</sub> decreased by 21%<sup>21</sup>.

In Vietnam, ambient air pollution has been exacerbating over the years. The country has been struggling with alarming air pollution that has been steadily rising with economic growth. Data from the World Health Organization (WHO) found that more than 60 thousand deaths from heart disease, lung cancer, stroke, chronic obstructive pulmonary disease and pneumonia in Viet Nam in 2016 were linked to air pollution<sup>22</sup>. A Report on Air Pollution by the Ministry of Natural Resources and Environment shows that the main sources of air pollution in Viet Nam are industrial production, transportation, construction, agricultural production and handicrafts, and improper waste management<sup>23</sup>. Viet Nam's concen-

<sup>16</sup> S. Zangari *et al.*, *Air quality changes in New York City during the COVID-19 pandemic* (2020) 742 *Science of The Total Environment*.

<sup>17</sup> K.D. Kanniah *et al.*, (n. 14), pp. 2-7.

<sup>18</sup> F. Arkin, *Asian COVID-19 Lockdowns Clear the Air of Pollutants*, *SciDev.Net* (London, 15 April 2020) <https://www.scidev.net/asia-pacific/environment/news/asian-covid-19-lockdowns-clear-the-air-of-pollutants.html>, last accessed: 28 Oct 2020.

<sup>19</sup> K.D. Kanniah *et al.* (n. 14), p. 9.

<sup>20</sup> See G. Dantas *et al.*, *The Impact of COVID-19 Partial Lockdown on the Air Quality of the City of Rio de Janeiro, Brazil* (2020) 729 *Science of The Total Environment*; L. Nakada, R. Urban, *COVID-19 Pandemic: Impacts on the Air Quality During the Partial Lockdown in São Paulo State, Brazil* (2020) 730 *Science of The Total Environment*.

<sup>21</sup> A. Kerimray *et al.*, *Assessing air quality changes in large cities during COVID-19 lockdowns: the impacts of traffic-free urban conditions in Almaty, Kazakhstan* (2020) 730 *Science of The Total Environment*.

<sup>22</sup> WHO, *More than 60 000 Deaths in Viet Nam Each Year Linked to Air Pollution*, at <https://www.who.int/vietnam/news/detail/02-05-2018-more-than-60-000-deaths-in-viet-nam-each-year-linked-to-air-pollution>, last accessed: 28 Oct 2020.

<sup>23</sup> *Id.*

tration of PM2.5 is above the global average for the past 20 years<sup>24</sup>. It is comparable to that of China – a country with a widely recognized high record of air pollution – and below countries currently with the most polluted air levels such as Bangladesh and India. Economic losses associated with ambient air pollution are estimated to cost Viet Nam more than 25 billion USD, which is equivalent of 5.5% of its Gross Domestic Product<sup>25</sup>.

At the same time, Viet Nam has earned praise from the international community and its people for the effective COVID-19 responses. Harsh measures restrictions, such as face mask wearing requirement, mass quarantine, closure of borders, schools and non-essential shops, and prohibition of public gatherings, were swiftly put in place to flatten the curve. The lockdown during 1 to 21 April led to limited mobility and cessation of economic activities. This setting has provided researchers with a natural experiment to probe whether the stringent measures help alleviate the worsening air pollution levels.

In general, research has found that the lockdown imposed to combat COVID-19 improves air quality in Vietnam<sup>26</sup>. The average concentration of NO<sub>2</sub> drop by approximately 24-32% two weeks after the curfew<sup>27</sup>. Particularly, the difference is more visible in urban and populated areas. In Hanoi, statistics show the correlation between economic activities and air pollution and sheds some light on the effects of different factors. Given reduced levels of activities in March and April, Hanoi's air quality improved significantly compared to the previous month and to the same months in the previous year. Among others, agricultural activity seems to exert a minimal impact while industrial manufacturing activities and road traffic are the main causes of the air pollution in Hanoi. PM2.5 dropped significantly as these activities gradually eased in March and April as the country set for the lockdown. It is estimated that two weeks after the lockdown the economic gains from better air quality are roughly 600 million USD<sup>28</sup>.

However, the concentration of PM2.5 has started to rebound as economic activities restarted when the curfew was lifted. It is also suggested that the positive effects tend to fade away ten weeks after the lockdown<sup>29</sup>.

<sup>24</sup> H.H. Dang, T. Trinh, *The Beneficial Impacts of COVID-19 Lockdowns on Air Pollution: Evidence from Vietnam* (2020) 13651 *Discussion Paper IZA DP 2*.

<sup>25</sup> World Bank, *The Cost of Air Pollution: Strengthening the Economic Case for Action* (Washington: World Bank Group, 2016).

<sup>26</sup> H.H. Dang, T. Trinh (n. 25), pp. 5-30.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*, pp. 6-8.

## 2. Viet Nam's Responses and Environmental Implications

Against the backdrop of the pandemic, the economy is very much up in the air as a great depression is looming large. Enterprises are prone to lay off or furlough workers, worsening the crisis facing Viet Nam and the entire world economy. Therefore, it is a critical moment for governments to step up actions and support for affected people and businesses. This is “one stone, two birds” as the government's support may help businesses weather the COVID-19-induced crisis and retain workers in employment, thus minimizing the shock of a social crisis.

For that purpose, governments have taken different policies. The U.S. and China are a clear example of divergent approaches to striking the balance between economic interests and environmental considerations. In terms of greenhouse gas (GHG) emissions, in March 2020, the U.S. Environmental Protection Agency has decided to relax environmental rules in response to the COVID-19 pandemic, giving way for power plants, factories and other facilities to make assessments on legal requirements on reporting air and water pollution<sup>30</sup>. In actuality, many other countries have loosened environmental safeguards of environmental rules in response to the COVID-19 pandemic<sup>31</sup>. In contrast, in May 2020, Chinese minister of environment stressed that ecological protection and green development shall remain priorities<sup>32</sup>. China also announced a total of 60 billion USD would be allocated to environmental protection in 2020, up from 57 billion USD last year. It would impose ultra-low emission standards at more steel mills and continue to tighten emissions controls at coal-fired power plants<sup>33</sup>. Yet, despite China's strong commitments, concentrations of affected pollutants have recently rebound to pre-pandemic levels in some Chinese provinces after the expiration of the COVID-19 quarantine period and resumption of normal activities<sup>34</sup>.

At an international forum, the United Nations Special Rapporteur on human rights and the environment, David Boyd, has condemned the irresponsible loosening of environmental standards in exchange for economic gains, citing that these policy decisions are going to

<sup>30</sup> L. Friedman, *E.P.A., Citing Coronavirus, Drastically Relaxes Rules for Polluters*, at <https://www.nytimes.com/2020/03/26/climate/epa-coronavirus-pollution-rules.html>, last accessed: 28 Oct 2020.

<sup>31</sup> COVID-19 environmental roll back 'irrational and irresponsible': rights expert, UN News, <https://news.un.org/en/story/2020/04/1061772>, last accessed: 15 Dec 2020; See also D. Amirante (n. 7), p. 6; P. Viola, *Climate and Environmental Approaches in the United States and Canada at the Outbreak of the 2020 Pandemic* 2020 I(1) *Opinio Juris in Comparative* 8.

<sup>32</sup> Xinhuanet, *China Won't Relax Ecological, Environmental Protection: Minister*, [http://www.xinhuanet.com/english/2020-05/25/c\\_139087080.htm](http://www.xinhuanet.com/english/2020-05/25/c_139087080.htm)

<sup>33</sup> H. Huang, *COVID-19 and the Environment: Reflections on the Pandemic in Asia* (2020) 4(1) *EnviroLab Asia* 5.

<sup>34</sup> B. Silver *et al.*, *The Impact of COVID-19 Control Measures on Air Quality in China* (2020) 15 *Environmental Research Letters*; J. Ding *et al.*, 'NOx Emissions Reduction and Rebound in China due to the COVID-19 Crisis' (2020) 46 *Geophysical Research Letters*.



aggravate, not remedy, the global environmental crisis that predates COVID-19<sup>35</sup>. Worse yet, according to Boyd, these actions will have an adverse impact on the environment and human rights, particularly the rights to life, health, water, culture, and food, as well as the right to live in a healthy environment<sup>36</sup>. Hence, the COVID-19 pandemic would turn into a catalyst for accelerating the existing environmental crisis facing humanity.

For now, Viet Nam has not witnessed an extensive downgrading of environmental rules. The government has enacted various support policies for those hard hit by the pandemic, such as relief package, tax relief, suspension of payment of social insurance, etc. To revive the aviation industry, the Ministry of Natural Resources and Environment (MONRE) has obtained the government's approval to cut the jet fuel tax from \$0.13 per liter to \$0.091<sup>37</sup>. The policy is effective till 31 December 2020. It is expected to temporarily ease the aviation industry's burden due to the record low demand. The tax collection ratio to total state budget revenue has increased from over 1% to around 4%<sup>38</sup>. In addition, the MONRE has recently proposed to the government measures to relieve enterprises from onerous environmental obligations. Its proposal includes deadline extension for wastewater monitoring, automatic and non-stop waste-gas monitoring systems, permit extension for licenses for processing hazardous wastes<sup>39</sup>.

Since late March till now, with virtually no international arrivals, Viet Nam's tourism industry has become one of the worst victims of the COVID-19 pandemic. Many travel companies witnessed a year-on-year plummet in customer numbers and revenues. After the nationwide lockdown in April, the Ministry of Culture, Sports and Tourism launched a program "Vietnamese people travel Viet Nam" in a bid to stimulate domestic tourism<sup>40</sup>. The program aimed to popularize tourist destinations and tourist products through communication campaigns to attract domestic tourists. Support packages were also provided. Localities were advised to offer a range of incentives, such as ticket exemption or reduction at tourism spots, thus helping to boost the industry in the time of hardships. The number of domestic trips thus skyrocketed.

<sup>35</sup> COVID-19: "Not an excuse" to roll back environmental protection and enforcement, UN rights expert says, OHCHR, <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25794>, last accessed: 15 Dec 2020.

<sup>36</sup> Ibid.

<sup>37</sup> C. Thanh, *Giảm 30% thuế bảo vệ môi trường với nhiên liệu bay [Cut 30% environmental protection tax for jet fuel]*, <https://thuvienphapluat.vn/tintuc/vn/thoi-su-phap-luat/chinh-sach-moi/29919/giam-30-thue-bao-ve-moi-truong-voi-nhien-lieu-bay>, last accessed: 28 Oct 2020.

<sup>38</sup> X. Thinh, *Vietnam to cut 30% jet fuel environmental tax to back virus-hit carriers*, <https://e.nhipcaudautu.vn/news/vietnam-to-cut-30-jet-fuel-environmental-tax-to-back-virus-hit-carriers-3335736/>, last accessed: 28 Oct 2020.

<sup>39</sup> Official Dispatch No. 4729/BTNMT-TCMT by the Ministry of Natural Resources and Environment, <https://thuvienphapluat.vn/cong-van/doanh-nghiep/Cong-van-4729-BTNMT-TCMT-2020-thao-go-kho-khan-san-xuat-kinh-doanh-trong-boi-canhh-Covid-19-451893.aspx>, last accessed: 28 Oct 2020.

<sup>40</sup> See T. Anh, *Thúc đẩy thị trường du lịch trong nước [Promoting domestic tourism market]* <https://nhandan.com.vn/tintuc-du-lich/thuc-day-thi-truong-du-lich-trong-nuoc-459143/>, last accessed: 28 Oct 2020; Kim Loan, Program on "Vietnamese People Travel Vietnam" Launched, <http://news.chinhphu.vn/Home/Program-on-Vietnamese-people-travel-Viet-Nam-launched/20205/40064.vgp>, last accessed: 28 Oct 2020.



In addition, Vietnam relies heavily on Chinese and South Korean tourists, which accounted for 56 percent of its international arrivals in 2019<sup>41</sup>. In September, the transport ministry made a proposal to the government on resuming commercial flights from Hanoi and Ho Chi Minh City to mainland China's Guangzhou, Japan, South Korea, and Taiwan from 15 September, and Laos and Cambodia starting 22 September<sup>42</sup>. Those are Asian countries that have made significant progress in containing the virus. Nevertheless, the proposal has been put on hold since medical authorities are still finalizing COVID-19 testing and quarantine protocol for individual arrivals<sup>43</sup>. Yet the prospect for a gradual and vigilant reopening for the aviation industry is within sight.

In general, it is a welcoming sign that Viet Nam has not embarked on an environmental "race to the bottom" in an attempt to revive quickly its industries. Some of environmental rules are relaxed to ease the COVID-19-induced burdens for enterprises, especially the aviation and tourism industries. Yet such actions have been taken with great care and provisionally, denoting that the authority have remained wary of those developments and potential impacts in the long run. The environmental tax relief for the aviation industry is an example to help restructure its financial capacity although the industry prospect would not certainly take off anytime soon due to low demand.

### 3. To Where from Here? Legal and Policy Implications for Clean Air in Viet Nam

To begin with, air pollution has been a perennial problem caused by many factors. From the policy-making viewpoint, regulating air pollution is a formidable challenge facing every nation because it touches upon various layers of the social life. As astutely observed by Eloise Scotford, this is simultaneously a problem of regulatory strategy – identifying appropriate measures to address air pollution; controlling individual behavior – each individual is responsible, to certain extent, for air pollution; policy priority – a tradeoff between economic growth and environmental concern; and governance – failure to regulate appropriate actors and monitor their compliance<sup>44</sup>. In addition, the acceptability of air quality remains nuanced and legalizing its threshold is a tough nut to crack. For sure, these issues had remained unresolved long before the COVID-19 pandemic hit.

<sup>41</sup> Pritesh Samuel, How Vietnam Contained COVID-19 and Why Its Economy Will Rebound, <https://www.vietnam-briefing.com/news/how-vietnam-successfully-contained-covid-19.html/>, last accessed: 28 Oct 2020.

<sup>42</sup> N. Nam, *Vietnamese Carriers Prepare to Resume Int'l Flights*, <https://e.vnexpress.net/news/travel/places/vietnamese-carriers-prepare-to-resume-int-l-flights-4160900.html>, last accessed: 28 Oct 2020.

<sup>43</sup> D. Loan, *Vietnam Yet to Resume International Flights*, <https://e.vnexpress.net/news/news/vietnam-yet-to-resume-international-flights-4161983.html>, last accessed: 28 Oct 2020.

<sup>44</sup> E. Scotford, *Rethinking Clean Air: Air Quality Law and COVID-19* (2020) 32(3) *Journal of Environmental Law*, 349-353.

At the international level, the United Nations Sustainable Development Goals (SDGs) has set out targets on air quality so that by 2030, the world can witness substantial reduction in the number of air pollution-related deaths and illnesses (SDG target 3.9); and reduction in the adverse per capita environmental impact of cities with a focus on air quality (SDG target 11.6).

As the case of Viet Nam has shown, despite improvements in air quality during the lockdown, air pollution could worsen quickly in the recovery phase, as people have been desperate to travel, and businesses have ramped up production to make up for revenue losses. With the resumption of normal activities, the country has seen concentrations of air pollutants getting back to the pre-pandemic levels. Also, it highlights that the COVID-19 pandemic and gnawing environmental concerns are two interrelated yet independent issues. Albeit Viet Nam's good performance in containing the coronavirus, the root causes of Viet Nam's air pollution remain unaddressed.

Several key factors that can contribute to high air pollution levels in Viet Nam include power generation, industry, residential buildings, and transportation. Among those, coal-fired power is the main source of air pollution which contributes to 4,300 premature deaths in 2011<sup>45</sup>. Yet, coal consumption has increased significantly over the past decade and coal-fired power currently takes a major share of power generation, accounting for more than 40 percent of the country's total generated power<sup>46</sup>. The country expects to build 26 additional coal power stations after 2020, despite its plans to generate more electricity from renewable sources<sup>47</sup>.

Besides, transportation contributes to worsen the problem. Many of vehicles in Viet Nam are old with limited and outdated emission control technology. On top of it, poor urban planning makes the situation even worse given the high population density in urban areas. Another problem is dust from construction sites. Of which thousands filled with trucks that are heavily loaded with sand and cement create perpetual dust storms in the big cities. In order to meaningfully exercise the constitutional right to live in a clean environment<sup>48</sup>, concrete environmental actions should be taken more seriously. Environmental authorities have devised short-term solutions, including tightening regulations on new vehicle emission standards, strengthening traffic control, dust management, enhanced monitoring of industrial emissions and bans on charcoal stove use, straw burning in cities. As one of the

<sup>45</sup> S. Koplitz *et al.*, *Burden of Disease from Rising Coal-fired Power Plant Emissions in Southeast Asia* (2017) 51(3) *Environmental Science & Technology* 1467-76.

<sup>46</sup> J. Baker, *This Clean Energy Champion Is Out to Break Vietnam's Coal Habit*, *Forbes* (Jersey City, 21 May 2018) <https://www.forbes.com/sites/jillbaker/2018/05/21/thisclean-energy-champion-is-out-to-break-vietnams-coal-habit/#6e10ed0476b2>, last accessed: 28 Oct 2020.

<sup>47</sup> B. Ngoc, *Vietnam Needs Just One, not 26 Coal Power Plants*, *VNExpress* (Hanoi, 7 June 2018) <https://e.vnexpress.net/news/business/vietnam-needs-just-one-not-26-coal-power-plants-3759808.html>, last accessed: 28 Oct 2020.

<sup>48</sup> Article 43 of the 2013 Constitution of Viet Nam. See more B.D. Hien (2011), *Ve quyen duoc song trong moi truong trong lanh o Viet Nam [On the Right to Live in A Clean Environment in Viet Nam]*, *Hanoi Law Review* 11, pp. 22-8.

authors has argued elsewhere, despite Viet Nam's myriad legal regulations on the environment, those related to air quality control remain fragmented and unsystematic<sup>49</sup>. There is no clear concept of air pollution control and atmospheric environmental capacity; Regulations on environmental impact assessment (EIA) on atmospheric environment are deficient and even cosmetic, leading to poor implementation<sup>50</sup>.

Therefore, environmental scholars and activists are advocating a new law on clean air with the purpose to redress the shortcomings of the 2014 Law on Environmental Protection. The new law shall prescribe clearly the responsibilities of the State in controlling ambient air pollution. These include State responsibility of promulgating technical regulations on ambient air, standards on the concentration of toxic gases in the ambient air, emissions; atmospheric environmental capacity; State responsibility of investigating and assessing the current state of the air quality. Moreover, air environmental assessment must be mandated in strategic environmental assessment (SEA), environmental impact assessment (EIA) and environmental protection plan for investment projects and economic development activities that are likely to cause air pollution. It is necessary to promulgate a list of industries with high risk of causing air pollution, which should be discouraged or banned from investment, conditional investment.

The law must provide legal liability of organizations and individuals for violations, including the responsibility to compensate for damage to the air environment and to people's health, life, property and benefits. Legal liability should be based on the polluter pays principle. The cost of failure to comply with the law must outweigh the profits reaped by the polluter<sup>51</sup>. At the same time, the precautionary principle still bears little relevance to Viet Nam's environmental concerns<sup>52</sup>.

Moreover, disclosure of the air quality should not be made occasionally but regularly. This aspect is also related to ensuring the right to access information about the air environment and the right to monitor and detect air pollution of the community and individuals. Communities have the right to be consulted about economic activities that are likely to affect them and their living environment, At the same time, it is necessary to promote the role of civil society organizations, the media and the press in participating in monitoring and detecting acts that pollute the air environment.

<sup>49</sup> See generally B.D. Hien, *Phap luat ve kiem soat o nhiem moi truong khong khi o Viet Nam hien nay [The Laws on Air Pollution Control in Vietnam]*, The National Truth Publisher (2017); B.D. Hien, *Trach nhiem boi thuong thiet hai ve suc khoe, tinh mang, tai san va cac loi ich hop phap khac do lam o nhiem moi truong o Viet Nam hien nay [Responsibility for Damage to Health, Life, Property and Legitimate Interests Caused by Environmental Pollution in Vietnam]* (2020) 2-3 *Journal of Legislative Studies* 71-5; B.D. Hien, *Hoan thien phap luat ve kiem soat o nhiem moi truong khong khi [Complete the Law on Ambient Air Pollution Control]* (2015) 4 *Journal of Legislative Studies* 58-62.

<sup>50</sup> See B.D. Hien (2017), *Id.*, pp. 63-172.

<sup>51</sup> Decree 155/2016/ND-CP of the Government on sanctioning of administrative violations in the field of environment. Accordingly, the highest penalty for a violation of an individual is 1 billion VND (43 thousand USD), and for organizations it is 2 billion VND (86 thousand USD). This is too low for the deterrent purpose.

<sup>52</sup> See B.D. Hien (2017) (n. 51), pp. 123-142.

In a long run, air pollution can be tamed by the use of greener vehicles. The State should phase out obsolete and polluting vehicles by providing incentives and subsidies, for example trading in old cars. The government could also enact enabling policies to encourage the use of electric vehicles (EVs), such as allowing only EVs in downtown and an income tax cut for EV manufacturers to make them more competitive and affordable. Fossil fuel subsidy reform could reduce the use of the dirty fuel and free up the current annual fossil subsidy of US\$ 612 million or 0.3 percent of Vietnam's GDP for other welfare activities such as health, education and environmental protection<sup>53</sup>. The environmental protection tax regulation could be revised to better target polluting fuels such as diesel and coal. Carbon pricing would reduce the consumption and production of carbon-based products and promote a low-carbon economy.

Coal-fired power plants should be phased out. Instead, transition to a renewable electricity system would make a contribution to mitigating air pollution and climate change impacts. Enabling policies such as feed-in tariffs and reverse auctions for solar and wind power would pick up the pace of a recent boom in solar power in Vietnam<sup>54</sup>. The government can set out more ambitious targets for renewable energy, given its high potential for solar, wind and off-river pumped hydropower.

## Conclusion

Despite the devastating health and economic toll on human beings, some environmentalists hold the hope that the global pandemic lockdown may be an opportunity to reset our ecological practices in order to delay or halt climate change. It is true that all over the world, travel limits have severely limited car and airplane traffic, so observable air quality has improved globally. However, as this Article suggests, the bar should not be set too high as the COVID-19's environmental side-effects are not long-lasting.

Apart from air pollution, various areas in Asia have witnessed an upsurge of environmental degradation activities, such as illegal logging, mining, and wildlife poaching due to lax environmental law enforcement during the pandemic period. The COVID-19 pandemic is not a cure for environmental diseases but a wake-up call for the humanity in protecting the mother nature. Bolder environmental actions are required to ensure our vision of a green world for all.

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<sup>53</sup> T.N. Do, *Vietnam's Big Air Pollution Challenge* (*TheDiplomat*, 30 March 2020) <https://thediplomat.com/2020/03/vietnams-big-air-pollution-challenge/>, last accessed: 28 Oct 2020.

<sup>54</sup> *Id.*