

Journal of Conflict Management & Sustainable Development



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Volume 11

Issue 4

2024

ISBN 978-9966-046-15-4

Abating Air Pollution for a Heathy Environment

By: *Hon. Prof. Kariuki Muigua**

Abstract

Environmental pollution is one of the major global challenges facing humanity and a key cause of morbidity and mortality. It is one of the triple planetary crisis alongside climate change and biodiversity loss. Environmental pollution occurs in various forms including water pollution; land pollution; noise pollution; and air pollution. It has been identified as a key threat to not only the Sustainable Development agenda but also to the very existence of the humankind. Addressing this problem is therefore necessary for Sustainable Development and the good health and well-being of humanity. This paper critically discusses the problem of air pollution. It defines air pollution and examines its causes and effects. The paper argues that air pollution is a key threat to Sustainable Development and good health and well-being of humanity. It further posits that abating air pollution is necessary for the sustainability of both nature and humankind. The paper critically examines some of the measures adopted towards addressing air pollution noting to highlight their strength and weaknesses. It also suggests approaches towards abating air pollution for a healthy environment.

1.0 Introduction

Pollution has been defined as the indirect or direct alteration of the biological, thermal, physical, or radioactive properties of any medium in such a way as to create a hazard or potential hazard to

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human health or to the health, safety or welfare of any living species¹. In addition, the *Environmental Management and Co-ordination Act (EMCA)*² of Kenya defines pollution as any direct or indirect alteration of the physical, thermal, chemical, biological, or radioactive properties of any part of the environment by discharging, emitting, or depositing 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 plants³. Further, environmental pollution has been defined as 'the contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected⁴. It can also refer to any discharge of material or energy into water, land, or air that causes or may cause acute (short-term) or chronic (long-term) detriment to the Earth's ecological balance or that lowers the quality of life⁵. It has been noted that a substance that causes pollution is known as a pollutant⁶. These substances can exist in solid,

¹ United Nations Environment Programme., 'Pollution' Available at <https://leap.unep.org/en/knowledge/glossary/pollution#:~:text=The%20indirect%20or%20direct%20alteration,welfare%20of%20any%20living%20species.%20> (Accessed on 11/03/2024)

² Environmental Management and Co-Ordination Act, No. 8 of 1999, Government Printer, Nairobi

³ Ibid, S 2

⁴ Ullah, S., "A sociological study of environmental pollution and its effects on the public health Faisalabad city," *International Journal of Education and Research*, Vol. 1 No. 6 June 2013, p.2.

⁵ Coker, A.O., "Environmental Pollution: Types, Causes, Impacts and Management for the Health and SocioEconomic Well-Being of Nigeria," p.1. Available at <https://pdfs.semanticscholar.org/8e7b/a9595bab30d7ea87715533353c53f7452811.pdf> (Accessed on 11/03/2024)

⁶ Khasanova, S., & Alieva, E., 'Environmental Pollution: Types, Causes and Consequences' Available at <http://dx.doi.org/10.1051/bioconf/20236307014> (Accessed on 11/03/2024)

liquid, or gaseous form⁷. Pollution occurs in various forms including water pollution; land pollution; noise pollution; and air pollution⁸.

Environmental pollution has been identified as one of the major global challenges facing humanity and a key cause of morbidity and mortality⁹. Alongside climate change and biodiversity loss, pollution is among the triple planetary crisis which is a term that refers to the three main interlinked issues that humanity currently faces¹⁰. According to the World Bank, pollution is the largest environmental cause of disease and premature death¹¹. It points out that pollution causes more than nine million premature deaths, the majority of them as a result of air pollution¹². The World Bank further notes that pollution of all types hinder development outcomes¹³. For example, air pollution, exposure to lead and other chemicals, and hazardous waste including exposure to improper e-waste disposal, causes debilitating and fatal illnesses, create harmful living conditions, and destroys ecosystems¹⁴. In addition, pollution stunts economic growth, exacerbates poverty and inequality in both urban and rural areas, and

⁷ Ibid

⁸ Coker, A.O., "Environmental Pollution: Types, Causes, Impacts and Management for the Health and SocioEconomic Well-Being of Nigeria," Op Cit

⁹ Khasanova. S., & Alieva. E., 'Environmental Pollution: Types, Causes and Consequences' Op Cit

¹⁰ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Available at <https://unfccc.int/news/what-is-the-triple-planetary-crisis#:~:text=The%20triple%20planetary%20crisis%20refers,change%2C%20po%20llution%20and%20biodiversity%20loss.> (Accessed on 11/03/2024)

¹¹ World Bank Group., 'Pollution' Available at <https://www.worldbank.org/en/topic/pollution> (Accessed on 11/03/2024)

¹² Ibid

¹³ Ibid

¹⁴ Ibid

significantly contributes to climate change¹⁵. It has also been pointed out that poor people, who cannot afford to protect themselves from the negative impacts of pollution, end up suffering the most¹⁶.

According to the United Nations Environment Programme (UNEP), environmental contamination significantly contributes to non-infectious diseases like cancer and respiratory illnesses, causing approximately nine million deaths annually¹⁷. UNEP further notes that air pollution alone is responsible for nearly seven million deaths¹⁸. In addition, pollution, through air, freshwater and ocean contamination, accumulates toxic chemicals in the food chain, harming humans and animals¹⁹. Environmental pollution is therefore a threat to not only the Sustainable Development agenda but also to the very existence of the humankind²⁰. Addressing this problem is therefore necessary for Sustainable Development and the good health and well-being of humanity.

This paper critically discusses the problem of air pollution. It defines air pollution and examines its causes and effects. The paper argues that air pollution is a key threat to Sustainable Development and good health and well-being of humanity. It further posits that abating air pollution is necessary for the sustainability of both nature and

¹⁵ Ibid

¹⁶ Ibid

¹⁷ United Nations Environment Programme., 'Pollution and Health' Available at <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health> (Accessed on 11/03/2024)

¹⁸ Ibid

¹⁹ Ibid

²⁰ Muigua. K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2019/09/Safeguarding-the-Environment-through-Effective-Pollution-Control-in-Kenya-Kariuki-Muigua-28th-SEPT-2019.pdf> (Accessed on 11/03/2024)

human kind. The paper critically examines some of the measures adopted towards addressing air pollution noting to highlight their strength and weaknesses. It also suggests approaches towards abating air pollution for a healthy environment.

2.0 Air Pollution: Causes and Effects

Air pollution refers to the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere²¹. The World Health Organization (WHO) defines air pollution as the contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere²². It has been noted that household combustion devices, motor vehicles, industrial facilities and forest fires are some of the common sources of air pollution²³. Further, according to UNEP, air pollution comes from many sources – from cookstoves and kerosene lamps to coal-fired power plants, vehicle emissions, industrial furnaces, wildfires, and sand and dust storms among others²⁴.

It has been asserted that air pollution is the greatest environmental threat to public health globally and accounts for an estimated seven

²¹ Sharma, S. B., Jain, S., Khirwadkar, P., & Kulkarni, S., 'The Effects of Air Pollution on the Environment and Human Health,' *Indian Journal of Research in Pharmacy and Biotechnology*, Volume 1, No. 3 (2013)

²² World Health Organization., 'Air Pollution' Available at https://www.who.int/health-topics/air-pollution#tab=tab_1 (Accessed on 12/03/2024)

²³ Ibid

²⁴ United Nations Environment Programme., 'About Air' Available at <https://www.unep.org/explore-topics/air/about-air> (Accessed on 12/03/2024)

million premature deaths every year²⁵. UNEP notes that air pollution is the most-pressing environmental health crisis of our time, responsible for an estimated seven million premature deaths every year²⁶. It further notes that approximately nine in ten people around the world breathe unclean air, which increases the risk of asthma, heart disease and lung cancer²⁷.

WHO notes that outdoor and indoor air pollution cause respiratory and other diseases and are important sources of morbidity and mortality²⁸. It further points out that the burden of disease attributable to air pollution is now estimated to be on a par with other major global health risks such as unhealthy diets and tobacco smoking²⁹. Air pollution has also been identified as a risk factor for some noncommunicable diseases such as ischemic heart disease, stroke, chronic obstructive pulmonary disease, asthma and cancer³⁰. It is estimated that almost all of the global population (approximately ninety nine per cent) breathe air that exceeds WHO guideline limits and contains high levels of pollutants, with low- and middle-income countries suffering from the highest exposures³¹. Further, according to UNEP, most recorded air pollution-linked deaths occur in developing countries, where laws are weak or not applied, vehicle emission standards are less stringent and coal power stations more

²⁵ United Nations Environment Programme., 'Pollution Action Note - Data you Need to Know' Available at <https://www.unep.org/interactives/air-pollution-note/> (Accessed on 12/03/2024)

²⁶ United Nations Environment Programme., 'Five Cities Tackling Air Pollution' Available at <https://www.unep.org/news-and-stories/story/five-cities-tackling-air-pollution> (Accessed on 12/03/2024)

²⁷ Ibid

²⁸ World Health Organization., 'Air Pollution' Op Cit

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

prevalent³². Air pollution is therefore a major global concern especially in developing countries.

Air pollution is also linked to climate change³³. UNEP notes that air pollution is also fundamentally altering the climate, with profound impacts on the health of the planet³⁴. It has been correctly asserted that many of the drivers of air pollution (such as combustion of fossil fuels) are also sources of greenhouse gas emissions³⁵. As a result, policies to reduce air pollution, therefore, offer a win-win strategy for both climate and health, lowering the burden of disease attributable to air pollution, as well as contributing to the near- and long-term mitigation of climate change³⁶. Abating air pollution is thus a vital tool in climate change mitigation³⁷.

Air pollution is thus an undesirable phenomenon that does not only damage human health, but also hampers the planet and the economy in many ways³⁸. Abating air pollution is therefore of utmost importance for the health of humanity and nature. WHO correctly takes the position that clean air is fundamental to health³⁹. Further, it has been argued that clean air is a human right, and a necessary precondition for addressing climate change as well as achieving many

³² United Nations Environment Programme., 'Air Pollution Hurts the Poorest Most' Available at <https://www.unep.org/news-and-stories/story/air-pollution-hurts-poorest-most> (Accessed on 12/03/2024)

³³ United Nations Environment Programme., 'About Air' Op Cit

³⁴ Ibid

³⁵ World Health Organization., 'Air Pollution' Op Cit

³⁶ Ibid

³⁷ Ibid

³⁸ United Nations Environment Programme., 'Air Pollution Hurts the Poorest Most' Op Cit

³⁹ World Health Organization., 'Air Pollution' Op Cit

Sustainable Development Goals (SDGs)⁴⁰. Improving our air quality will bring health, development, and environmental benefits⁴¹. The global nature of the challenge of air pollution calls for an enhanced global response in order to effectively abate the problem⁴².

3.0 Abating Air Pollution: Progress and Challenges

The need to abate pollution is recognized under the *International Covenant on Economic, Social and Cultural Rights (ICESCR)*⁴³ which enshrines the right of every person to the enjoyment of the highest attainable standard of physical and mental health⁴⁴. In order to realize this right, the Covenant urges states to take relevant measures including those necessary for the improvement of all aspects of environmental and industrial hygiene⁴⁵. It has been argued that these provisions of the ICESCR recognise the right of every person to be free from all forms of pollution including air pollution⁴⁶.

In addition, the *United Nations Framework Convention on Climate Change (UNFCCC)*⁴⁷ is an international legal instrument that seeks to confront climate change by stabilizing greenhouse gas concentrations

⁴⁰ United Nations Environment Programme., 'Air Pollution Hurts the Poorest Most' Op Cit

⁴¹ United Nations Environment Programme., 'Pollution Action Note – Data you Need to Know' Op Cit

⁴² World Health Organization., 'Air Pollution' Op Cit

⁴³ United Nations, *International Covenant on Economic, Social and Cultural Rights*, Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, entry into force 3 January 1976, in accordance with article 27

⁴⁴ Ibid, article 12 (1)

⁴⁵ Ibid, article 12 (2) (b)

⁴⁶ Muigua. K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Op Cit

⁴⁷ United Nations General Assembly, 'United Nations Framework Convention on Climate Change' Resolution / Adopted by the General Assembly, 20 January 1994, A/RES/48/189.

at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system⁴⁸. Achieving the objectives of the UNFCCC is also vital in abating air pollution⁴⁹. It has been correctly argued that air quality and climate change are interconnected because the chemical substances that lead to a degradation in air quality are normally co-emitted with greenhouse gases⁵⁰. Therefore, changes in one inevitably cause changes in the other⁵¹. As a result, efforts to combat climate change by avoiding or limiting greenhouse gas emissions are also important in tackling air pollution⁵². It is therefore necessary to achieve the objectives of the UNFCCC by combating climate change in order to simultaneously abate air pollution.

*WHO Global Air Quality Guidelines*⁵³ seek to enhance the global response to air pollution. According to the Guidelines, clean air is fundamental to health⁵⁴. The Guidelines offer quantitative health-based recommendations for air quality management, expressed as long- or short-term concentrations for a number of key air pollutants⁵⁵. According to WHO, exceedance of the air quality

⁴⁸ Ibid, article 2

⁴⁹ United Nations Climate Change., 'Air Quality Sinks as Climate Change Accelerates' Available at <https://unfccc.int/news/air-quality-sinks-as-climate-change-accelerates#:~:text=%E2%80%99CAs%20the%20globe%20warms%2C%20wildfires,says%20WMO%20Secretary%2DGeneral%20Prof.> (Accessed on 12/03/2024)

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

⁵³ World Health Organization., 'Global Air Quality Guidelines' Available at <https://iris.who.int/bitstream/handle/10665/345329/9789240034228-eng.pdf?sequence=1> (Accessed on 12/03/2024)

⁵⁴ Ibid

⁵⁵ Ibid

guideline levels is associated with major risks to public health⁵⁶. Though the Guidelines are not legally binding standards; they do provide WHO Member States with an evidence-informed tool that can shape legislation and policy on air pollution⁵⁷. Ultimately, the goal of the WHO Guidelines is to provide guidance to help reduce levels of air pollutants in order to decrease the enormous health burden resulting from exposure to air pollution worldwide⁵⁸. WHO sets out several measures that are necessary for implementation of the Guidelines including the existence and operation of air pollution monitoring systems; public access to air quality data; legally binding, globally harmonized air quality standards; and air quality management systems⁵⁹. Implementing the WHO Guidelines is therefore necessary to abate air pollution. According to the Guidelines, abatement refers to the reduction or elimination of pollution, which involves either legislative measures or technological procedures, or both⁶⁰.

Further, the United Nations General Assembly (UNGA) has recognized the human right to a clean, healthy and sustainable environment⁶¹. According to the United Nations, this right includes the right to clean air⁶². According to the United Nations, the impact of climate change, the unsustainable management and use of natural resources, the *pollution of air*, land and water, the unsound management of chemicals and waste, the resulting loss of

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ United Nations General Assembly (UNGA), ‘The Human Right to a Clean, Healthy and Sustainable Environment.’ UNGA Resolution ‘A/76/L.75.’

⁶² Ibid

biodiversity and the decline in services provided by ecosystems interfere with the enjoyment of a clean, healthy and sustainable environment and that environmental damage has negative implications, both direct and indirect, for the effective enjoyment of all human rights (Emphasis added)⁶³. It has been argued that the UNGA Resolution is a watershed moment in the fight against the triple planetary crises of climate change, biodiversity loss and pollution⁶⁴. It has also been pointed out that upholding the right to a clean, healthy, and sustainable environment is vital in protecting the planet and its people from air pollution among other environmental problems⁶⁵. It is thus imperative to safeguard the human right to a clean, healthy, and sustainable environment as part of the measures towards abating air pollution.

At a national level, the *Constitution of Kenya*⁶⁶ enshrines the right of all Kenyans to a clean and healthy environment⁶⁷. It has been noted that this right includes the right to clean air⁶⁸. Realizing the right to a clean and healthy environment in Kenya as envisioned under the Constitution is therefore necessary in abating air pollution. In addition, the Constitution of Kenya gives powers to county

⁶³ Ibid

⁶⁴ United Nations Environment Programme., 'Advancing the Right to a Healthy Environment' Available at <https://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-right-healthy-environment#:~:text=Over%20150%20countries%20have%20binding,change%2C%20biodiversity%20loss%20and%20pollution> (Accessed on 12/03/2024)

⁶⁵ Climate & Clean Air Coalition., 'UN Declares Healthy Environment - Including Clean Air - A Human Right' Available at <https://www.ccacoalition.org/news/un-declares-healthy-environment-including-clean-air-human-right> (Accessed on 12/03/2024)

⁶⁶ Constitution of Kenya, 2010., Government Printer, Nairobi

⁶⁷ Ibid, article 42

⁶⁸ United Nations General Assembly (UNGA)., 'The Human Right to a Clean, Healthy and Sustainable Environment.' Op Cit

governments to control of air pollution and noise pollution among other public nuisances⁶⁹. County governments therefore have a key role to play in abating air pollution in Kenya.

In addition, EMCA requires the Cabinet Secretary in charge of matters relating to environment and natural resources on the recommendation of the National Environment Management Authority (NEMA) to establish Air Quality Standards⁷⁰. According to EMCA, the Air Quality Standards should provide for the criteria and guidelines for air pollution control for both mobile and stationary sources⁷¹. Further, EMCA requires the Cabinet Secretary to issue Guidelines to minimize emissions of greenhouse gases and identify suitable technologies to minimize air pollution; and do all such things as appear necessary for the monitoring and controlling of air pollution⁷². Pursuant to these provisions, the *Air Quality Regulations, 2014*⁷³ were enacted. The objective of these Regulations is to provide for the prevention, control and abatement of air pollution to ensure clean and healthy ambient air⁷⁴. The Regulations further seek to ensure that there is establishment of emission standards for various sources such as mobile sources like motor vehicles and stationary sources such as industries as outlined under EMCA⁷⁵. The Regulations prohibit any person from acting in a way that directly or indirectly causes, or is likely to cause immediate or subsequent air

⁶⁹ Constitution of Kenya, 2010., Fourth Schedule, Part 2

⁷⁰ Environmental Management and Co-ordination Act, No. 8 of 1999, S 78, Government Printer, Nairobi

⁷¹ *Ibid*, S 78 (1) (b) (iii)

⁷² *Ibid*, S 78 (1) (d) & (e)

⁷³ Environmental Management and Co-ordination Act., The Environmental Management and Co-ordination (Air Quality) Regulations, 2014, Legal Notice No. 34

⁷⁴ *Ibid*, Regulation 4

⁷⁵ *Ibid*

pollution⁷⁶. They also set out several mechanisms for ensuring air quality including inspection and monitoring⁷⁷. Further, in order to ensure clean and healthy ambient air, the Regulations makes it an offence to commit acts of air pollution in Kenya⁷⁸. Under the Regulations, a person who contravenes their provisions commits an offence and is liable on conviction to a fine of five hundred thousand shillings or imprisonment for a term not exceeding six months⁷⁹.

Despite the existence of laws, policies and regulations aimed at preventing air pollution, the problem continues to persist at all levels with developing countries being the most affected⁸⁰. It has been posited that developing nations have limited air quality management systems due to inadequate legislation and lack of political will, among other challenges⁸¹. In addition it has been contended that maintaining a balance between economic development and environmental management is usually a challenge in developing countries with there being no adequate investments in pollution prevention technologies⁸². Air pollution is a major threat to human health, environmental sustainability, and economic development⁸³. Improving our air quality will bring health, development, and environmental benefits⁸⁴. It is therefore necessary to abate air pollution in order to realize a healthy environment.

⁷⁶ Ibid, Regulation 5 (1) (a)

⁷⁷ Ibid, Part XI

⁷⁸ Ibid, Regulation 76

⁷⁹ Ibid

⁸⁰ Muigua. K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Op Cit

⁸¹ Ibid

⁸² Ibid

⁸³ United Nations Environment Programme., 'Air Pollution Hurts the Poorest Most' Op Cit

⁸⁴ United Nations Environment Programme., 'Pollution Action Note – Data you Need to Know' Op Cit

4.0 Way Forward

In order to abate air pollution, it is necessary to realize the right to a Clean, Healthy, and Sustainable environment⁸⁵. This right encompasses various elements including clean and balanced ecosystems, *clean air*, rich biodiversity and a stable climate (Emphasis added)⁸⁶. A safe, clean, healthy and sustainable environment is considered to be integral to the full enjoyment of a wide range of human rights, including the rights to life, health, food, water and sanitation⁸⁷. The right to a Clean, Healthy and Sustainable Environment is an essential human right that has been equated to the right to life⁸⁸. The importance of this right has been upheld by UNGA which recognized the human right to a clean, healthy and sustainable environment⁸⁹. It has been argued that realization of the right to a Clean, Healthy, and Sustainable environment can aid in tackling environmental challenges such as pollution, climate change, and unsustainable management of natural resources⁹⁰. It is therefore

⁸⁵ Muigua. K., 'Realizing the Right to a Clean, Healthy and Sustainable Environment' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Realizing-the-Right-to-a-Clean-Healthy-and-Sustainable-Environment.pdf> (Accessed on 13/03/2024)

⁸⁶ Zimmer K, 'The Human Right That Benefits Nature' Available at <https://www.bbc.com/future/article/20210316-how-the-human-right-to-a-healthy-environment-helps-nature> (Accessed on 13/03/2024)

⁸⁷ Muigua. K., 'Recognising a Human Right to Safe, Healthy and Sustainable Environment.' Available at <http://kmco.co.ke/wp-content/uploads/2021/04/Recognising-a-Human-Right-to-Safe-Healthy-andSustainable-Environment-Kariuki-Muigua-1st-April-2021.pdf> (Accessed on 13/03/2024)

⁸⁸ Peter K. Waweru v Republic, Misc. Civil Application No. 118 of 2004, (2006) eKLR

⁸⁹ United Nations General Assembly (UNGA), 'The Human Right to a Clean, Healthy and Sustainable Environment.' UNGA Resolution 'A/76/L.75.' Op Cit

⁹⁰ Muigua. K., 'Realizing the Right to a Clean, Healthy and Sustainable Environment' Op Cit

necessary to realize the right to a Clean, Healthy, and Sustainable Environment in order to abate air pollution alongside other environmental problems.

In addition, there is need to strengthen air quality laws and regulations including through monitoring⁹¹. Air quality across the globe continues to deteriorate due to air pollution threatening human health and contributing to climate change and biodiversity loss⁹². In addition, it has been argued that air quality monitoring and transparent access to data is critical for humanity since it helps us understand how air pollution impacts people, places and planet⁹³. Through monitoring, it is possible to identify air pollution hotspots and take targeted action to protect and improve human and environmental well-being⁹⁴. However, it has been noted that air quality monitoring is yet to be fully embraced in developing countries meaning that people may be disproportionately impacted by air pollution in such countries⁹⁵. It is therefore necessary to enhance air quality monitoring by implementing air quality laws and investing in technology and infrastructure to improve data reliability⁹⁶. Investing in technology will enable government agencies to achieve real time air pollution monitoring which can go a long way in ensuring that pollutants are kept within acceptable levels as defined by the WHO

⁹¹ Muigwa, K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Op Cit

⁹² United Nations Environment Programme., 'How is Air Quality Measured?' Available at <https://www.unep.org/news-and-stories/story/how-air-quality-measured#:~:text=Some%20use%20lasers%20to%20scan,nitrogen%20dioxide%20and%20sulfur%20dioxide>. (Accessed on 13/03/2024)

⁹³ Ibid

⁹⁴ Ibid

⁹⁵ Ibid

⁹⁶ Ibid

standards⁹⁷.

Further, it is imperative to fully operationalize and enhance the enforcement of laws and regulations on air pollution⁹⁸. For example, in Kenya, it has been argued that it is vital to fully operationalize the Air Quality Regulations in order to ensure clean and healthy ambient air⁹⁹. In addition, there is need for strict enforcement of compliance with the emission standards for various sources such as mobile sources including motor vehicles and stationary sources such as industries as stipulated in the Air Quality Regulations and EMCA¹⁰⁰. One of the key ways that can be used to achieve this goal is effective enforcement of the polluter pays principle¹⁰¹. According to this principle, the costs of pollution should be borne by the polluter¹⁰². The aim of this principle is to distribute the costs of pollution from governments to organisations and people that engage in acts of pollution¹⁰³. Under the *Rio Declaration on Environment and Development*¹⁰⁴, national authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the *polluter should,*

⁹⁷ Muigua. K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Op Cit

⁹⁸ Ibid

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ Muigua. K., 'Enforcing the Right to Clean and Healthy Environment in Kenya through the Polluter Pays principle' Available at <https://kmco.co.ke/wp-content/uploads/2023/02/Enforcing-the-Right-to-Clean-and-Healthy-Environment-in-Kenya-Through-the-Polluter-Pays-principle-Kariuki-Muigua-February-2023.pdf> (Accessed on 13/03/2024)

¹⁰² Ibid

¹⁰³ Ibid

¹⁰⁴ United Nations General Assembly., 'Report of the United Nations Conference on Environment and Development: Rio Declaration on Environment and Development.' A/CONF. 151/26 (Vol.1)

in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment (Emphasis added)¹⁰⁵. Further, under EMCA, the cost of cleaning up any element of the environment damaged by pollution, compensating victims of pollution, cost of beneficial uses lost as a result of an act of pollution and other costs that are connected with or incidental to the foregoing, is to be paid or borne by the person convicted of pollution under this Act or any other applicable law¹⁰⁶. It is therefore necessary to implement this principle in order to ensure that organizations and persons found liable of air pollution alongside other forms of pollution bear the costs of such pollution¹⁰⁷. It has been argued that making violators bear the cost of environmental restoration will go a long way in not only guaranteeing the right to clean environment but also in achieving Sustainable Development¹⁰⁸.

Courts also have a role to play in abating air pollution at all levels¹⁰⁹. It has been pointed out that courts provide a platform for realizing access to justice which is key in enforcing human rights including the right to a Clean, Healthy, and Sustainable environment¹¹⁰. For example, in Kenya, the Constitution grants jurisdiction to courts to enforce environmental rights through measures such as orders to prevent, stop or discontinue any act or omission that is harmful to the

¹⁰⁵ Ibid, Principle 16

¹⁰⁶ Environmental Management and Co-ordination Act., No. 8 of 1999, S 2, Government Printer, Nairobi

¹⁰⁷ Muigua. K., 'Enforcing the Right to Clean and Healthy Environment in Kenya through the Polluter Pays principle'

¹⁰⁸ Ibid

¹⁰⁹ Muigua. K., 'The Role of Courts in Safeguarding Environmental Rights in Kenya: A Critical Appraisal.' Available at <http://kmco.co.ke/wp-content/uploads/2019/01/The-Role-of-Courts-in-Safeguarding-Environmental-Rights-in-Kenya-A-Critical-Appraisal-Kariuki-Muigua-17th-January-2019-1.pdf> (Accessed on 13/03/2024)

¹¹⁰ Ibid

environment; orders to compel any public officer to take measures to prevent or discontinue any act or omission that is harmful to the environment; orders to provide compensation for any victim of a violation of the right to a clean and healthy environment among others¹¹¹. It has been argued that there is need for courts to promote the realization of the right to a clean, healthy and sustainable environment by enhancing the principles of Sustainable Development and developing sound jurisprudence in environmental matters including cases concerning air pollution¹¹². Further, it is necessary to enhance access to justice including access to courts in order to allow victims of air pollution among other environmental malpractices to realize environmental justice¹¹³.

Finally, it is of utmost importance to combat climate change¹¹⁴. It has been noted that air quality and climate change are interconnected since the chemical substances that lead to a degradation in air quality are normally co-emitted with greenhouse gases¹¹⁵. Therefore, changes in one inevitably cause changes in the other¹¹⁶. As a result, efforts to combat climate change by avoiding or limiting greenhouse gas emissions are also important in tackling air pollution¹¹⁷. According to the World Bank, air pollution and climate change are two sides of the same coin, but they are typically addressed separately¹¹⁸. It asserts

¹¹¹ Constitution of Kenya, 2010, Article 70., Government Printer, Nairobi

¹¹² Muigua. K., 'The Role of Courts in Safeguarding Environmental Rights in Kenya: A Critical Appraisal.' Op Cit

¹¹³ Ibid

¹¹⁴ United Nations Climate Change., 'Air Quality Sinks as Climate Change Accelerates' Op Cit

¹¹⁵ Ibid

¹¹⁶ Ibid

¹¹⁷ Ibid

¹¹⁸ World Bank Group., 'What You Need to Know About Climate Change and Air Pollution' Available at <https://www.worldbank.org/en/news/feature/2022/09/01/what-you->

that they should be tackled jointly, with a focus on protecting peoples' health particularly in low and middle-income countries in order to strengthen human capital and reduce poverty¹¹⁹. Therefore, efforts to reduce greenhouse gas emissions provide dual benefits: of better air quality and improved health in localities and the global benefit of mitigating climate change¹²⁰. It is therefore crucial to confront climate change in order to simultaneously abate air pollution.

5.0 Conclusion

Air pollution is the most-pressing environmental health crisis of our time, responsible for an estimated seven million premature deaths every year¹²¹. Air pollution also contributes to climate change¹²². Improving our air quality will bring health, development, and environmental benefits¹²³. It is therefore necessary to abate air pollution for a healthy environment for the benefit of both humanity and nature. This can be achieved through realizing the right to a Clean, Healthy, and Sustainable Environment¹²⁴; strengthening air quality laws and regulations including through monitoring¹²⁵; full operationalization and enhancing the enforcement of laws and regulations on air pollution¹²⁶; enhancing access to environmental

[need-to-know-about-climate-change-and-air-pollution](#) (Accessed on 13/03/2024)

¹¹⁹ Ibid

¹²⁰ Ibid

¹²¹ United Nations Environment Programme., 'Five Cities Tackling Air Pollution' Op Cit

¹²² United Nations Environment Programme., 'About Air' Op Cit

¹²³ United Nations Environment Programme., 'Pollution Action Note - Data you Need to Know' Op Cit

¹²⁴ Muigua. K., 'Realizing the Right to a Clean, Healthy and Sustainable Environment' Op Cit

¹²⁵ Muigua. K., 'Safeguarding the Environment through Effective Pollution Control in Kenya' Op Cit

¹²⁶ Ibid

justice¹²⁷; and combating climate change¹²⁸. Abating air pollution for a healthy environment is the way to go towards ensuring the sustainability of our planet.

¹²⁷ Muigua. K., 'The Role of Courts in Safeguarding Environmental Rights in Kenya: A Critical Appraisal.' Op Cit

¹²⁸ United Nations Climate Change., 'Air Quality Sinks as Climate Change Accelerates' Op Cit

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ISBN 978-9966-046-15-4



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