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Addressing Noise Pollution for a Clean and Healthy Environment in Kenya

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Abstract

This paper discusses the general and specific effects of noise pollution on human health as the basis for addressing noise pollution in Kenya, in line with the constitutional and statutory guarantees on creating a clean and healthy environment for all persons. The author argues that noise pollution is a direct violation of this right and consequently offers recommendations on how the problem can be addressed. The paper generally discusses the legal and institutional framework on noise regulation, with a view to identifying the key players and stakeholders in tackling the vice. The author argues that unless this problem is effectively addressed, realisation of a clean and healthy environment for the Kenyan people will remain a mirage.

1. Introduction

Any sound that bothers, irritates, or potentially harm a person's ear is considered noise. Other definitions of noise include undesired, undesirable, and unpleasant sound.¹ Environmental noise, as defined by the World Health Organization (WHO), is all noise, except noise from places of employment. Any unwelcome sound or group of

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¹ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., 'Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software' (2012) 6 International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials) 38, p.38.

noises that annoys people or could be harmful to their health is considered noise.² EMCA defines “noise” as any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment.³ Notably, EMCA also defines “pollutant” as including any substance whether liquid, solid or gaseous which – (a) may directly or indirectly alter the quality of any element of the receiving environment; (b) is hazardous or potentially hazardous to human health or the environment; and includes objectionable odours, radio-activity, noise, temperature change or physical, chemical or biological change to any segment or element of the environment.⁴

Environmental noise pollution still poses a serious risk to people's health and quality of life on a global scale. Urbanization, along with the accompanying rise in mobility and industrialization, has led to an amplification of noise in densely populated areas, increasing noise exposure. In a city, as the population grows, so does industrial activity to suit the demands of the populace. Hence, noise levels rise.⁵ This paper discusses the general and specific effects of noise pollution on human health as the basis for addressing noise pollution in Kenya, in line with the constitutional and statutory guarantees on creating a clean and healthy environment for all persons. The author argues that noise pollution is a direct violation of this right and consequently offers recommendations on how the problem can be addressed. The

² ‘Definition of Environmental Noise’ (Gouvernement du Québec) <<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/definition-environmental-noise>> accessed 25 March 2023.

³ EMCA, Sec. 2.

⁴ EMCA, Sec. 2.

⁵ Wawa EA and Mulaku GC, ‘Noise Pollution Mapping Using GIS in Nairobi, Kenya’ (2015) 7 *Journal of Geographic Information System* 486, p. 487.

paper generally discusses the legal and institutional framework on noise regulation, with a view to identifying the key players and stakeholders in tackling the vice. The author argues that unless this problem is effectively addressed, realisation of a clean and healthy environment for the Kenyan people will remain a mirage. Kenyans have for a while suffered the menace of noise pollution especially after the promulgation of the 2010 Constitution, where there has been conflicting jurisprudence on which level of the Government between national and county governments is mandated to address noise pollution and other nuisances that affect the right to clean and healthy environment as far as noise pollution is concerned.⁶

⁶ <https://www.the-star.co.ke/authors/maureen-kinyanjui>, 'Sakaja Thanks Ruto for Support in Curbing "noise Pollution Menace" in City' (*The Star*) <<https://www.the-star.co.ke/news/2022-12-12-sakaja-thanks-ruto-for-support-in-curbing-noise-menace-in-city/>> accessed 24 March 2023; Okoth B, 'Loud Music in Kenya Neighbourhoods Illegal Regardless Nature of Your Business' (*The Standard*) <<https://www.standardmedia.co.ke/article/2001458024/loud-music-in-neighbourhood-illegal-regardless-nature-of-your-business>> accessed 24 March 2023; February 16 2020 S, 'You Have a Right to a Quiet Environment' (*Business Daily*, 19 September 2020) <<https://www.businessdailyafrica.com/bd/lifestyle/personal-finance/you-have-a-right-to-a-quiet-environment-2280534>> accessed 24 March 2023; Okafor C, 'Night Clubs in Kenya Face Closure and WhatsApp Groups Could Help Save Them' (*Business Insider Africa*, 55:25 100AD) <<https://africa.businessinsider.com/local/markets/night-clubs-in-kenya-face-closure-and-whatsapp-groups-could-help-save-them/rsv3phk>> accessed 24 March 2023; 'Kisumu Bans Church Crusades over Noise Pollution – Kenya News Agency' (4 November 2022) <<https://www.kenyanews.go.ke/kisumu-bans-church-crusades-over-noise-pollution/>> accessed 24 March 2023; Chepkwony J, 'Churches on the Spot over Noise Pollution, Court Order Them to Cease or Be Prosecuted' (*The Standard*) <<https://www.standardmedia.co.ke/coast/article/2001459278/churches-on-the-spot-over-noise-pollution-court-order-them-to-cease-or-be-prosecuted>> accessed 24 March 2023; WAKWELO V, 'Kileleshwa Bar Operators, Patrons Arrested after Alai's Noise Pollution Complaint » Capital News' (*Capital News*, 2 October 2022) <<https://www.capitalfm.co.ke/news/2022/10/kileleshwa-bar>

2. Links Between Noise and Human Health

Building sites or traffic on the roads, trains, and in the air are significant sources of environmental noise exposure. Other sources of noise exposure include wind turbines and leisure activities like playing loud music or other audio content or participating in e-sports (video and computer game competitions). In addition to increasing the risk of ischemic heart disease (IHD), hypertension, sleep disturbance, hearing impairment, tinnitus⁷, and cognitive impairment, research shows that excessive noise can be annoying. There is also mounting evidence that excessive noise can have negative effects on mental health and birth outcomes.⁸

Decibels are used to measure noise level (dB). Decibel levels increase as noise levels do. To accommodate human hearing, decibels can be

operators-patrons-arrested-after-alais-noise-pollution-complaint/> accessed 24 March 2023;

⁷ When a person has tinnitus, their ears or head may hiss, ring, or buzz. These sounds do not originate from an outside source; instead, a person hears them. High noise levels, such as those produced by loud music, can cause tinnitus. Tinnitus may also be brought on by loud or abrupt noises, such as an explosion or gunshot. Hearing loss frequently coexists with the hearing issue of tinnitus. It might be merely passing or permanent. A person's emotional, cognitive, psychological, or physical state is constantly disturbed by debilitating tinnitus.

Around 3% of debilitating tinnitus is caused by environmental noise exposure, primarily noise from leisure activities. <'Effects on Physical Health - The Effects of Environmental Noise on Health' (Gouvernement du Québec) <<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/effects-of-environmental-noise-on-physical-health>> accessed 25 March 2023.

⁸ 'Guidance on Environmental Noise' <<https://www.who.int/tools/compendium-on-health-and-environment/environmental-noise>> accessed 24 March 2023; 'Compendium of WHO and Other UN Guidance on Health and Environment' <<https://www.who.int/publications-detail-redirect/WHO-HEP-ECH-EHD-22.01>> accessed 25 March 2023.

changed. Decibels (dBA) is the unit of measurement for noise level. As a person is exposed to different levels of noise, different impacts result. Hearing loss can occur after years of being exposed to loud noises (75 dBA for eight hours each day). The body can react to lower noise levels as well; for example, a 40 dBA outdoor noise can be enough to keep someone awake.⁹

Noise's psychosocial effects on people include annoyance, which is the discomfort and disturbance that the person exposed to the noise experiences, as well as consequences on learning.¹⁰

3. Noise Regulation in Kenya: Legal and Institutional Framework

According to the International Covenant on Economic, Social, and Cultural Rights, every person has the right to the best possible level of physical and mental health, and State Parties are required to recognise this right. The actions that must be done by the States Parties to the current Covenant in order to fully realise this right must include those required for: the advancement of all facets of industrial and environmental hygiene.¹¹

3.1 Constitution of Kenya 2010

⁹ 'Noise Measurement - The Effects of Environmental Noise on Health' (Gouvernement du Québec) <<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/noise-measurement>> accessed 25 March 2023.

¹⁰ 'Psychosocial Effects - The Effects of Environmental Noise on Health' (Gouvernement du Québec) <<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/psychosocial-effects-of-environmental-noise>> accessed 25 March 2023.

¹¹ 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, Article 12 (1)(2)(b).

Article 42 (a) of the 2010 Constitution¹² guarantees that: “every person has the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures.”

Article 70 (1) of the Constitution provides: “If a person alleges that a right to a clean and healthy environment recognised and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress in addition to any other legal remedies that are available in respect to the same matter.”

It is also worth pointing out that the Fourth Schedule [Articles 185(2), 186(1) And 187(2) to the Constitution provides for the distribution of functions between the national government and the county governments. The functions and powers of the county governments include, *inter alia*: control of air pollution, noise pollution, other public nuisances and outdoor advertising. The implication of this is that the duty of noise pollution control moved from National Environment Management Authority (NEMA) which is a national government arm, to the county governments. NEMA is just required to play an oversight role in this area, as per the Act. This is on the understanding that county governments are the lead agency in noise pollution control.¹³ EMCA defines “lead agency” to mean any Government ministry, department, parastatal, state corporation or local authority, in which any law vests functions of control or management or any element of the environment or natural resources.¹⁴

¹² Constitution of Kenya 2010 (Government Printer, Nairobi, 2010).

¹³ EMCA, sec. 12.

¹⁴ EMCA, sec. 2.

3.2. Environmental Management and Co-ordination Act, 1999

The Environmental Management and Co-ordination Act, 1999¹⁵ (EMCA) was enacted to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto.¹⁶

Section 101 of EMCA gives the Cabinet Secretary the power to set standards for noise and, on the recommendation of the Authority: recommend minimum standards for emissions of noise and vibration pollution into the environment as are necessary to preserve and maintain public health and the environment; determine criteria and procedures for the measurement of noise and vibration pollution into the environment; determine criteria and procedures for the measurement of sub-sonic vibrations; determine standards for the emission of sub-sonic vibrations which are likely to have a significant impact on the environment; issue guidelines for the minimization of sub-sonic vibrations, referred to in paragraph (d) from existing and future sources; determine noise level and noise emission standards applicable to construction sites, plants, machinery, motor vehicles, aircraft including sonic boom, industrial and commercial activities; determine measures necessary to ensure the abatement and control of noise from sources referred to in paragraph (f); and issue guidelines for the abatement of unreasonable noise and vibration pollution emitted into the environment from any source.¹⁷

¹⁵ Environmental Management and Co-ordination Act, No.8 of 1999, Laws of Kenya.

¹⁶ Ibid, Preamble.

¹⁷ EMCA, sec. 101.

Section 102 thereof prohibits noise in excess of established standards by providing that subject to the provisions of the Civil Aviation Act (Cap. 394), any person who emits noise in excess of the noise emission standards established under this Part commits an offence. However, exceptions exist in relation to noise levels.¹⁸

EMCA offers the broad rules and criteria to be followed in the management and conservation of several environmental issues. Hence, it is intended to be put into practice by the adoption of sector-specific laws that should concentrate on the various facets of the environment.

In order to align the Act with the Constitution, EMCA was amended in 2015 by the *Environmental Management and Co-ordination (Amendment) Act* (No 5 of 2015). While EMCA contains provisions on almost all the aspects of the environment, it is worth pointing out that the procedural aspects of the regulation of these aspects heavily depends on regulations and other laws that expound on the EMCA provisions.

3.3. *Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulation, 2009, Legal Notice No. 61 of 2009*

¹⁸ EMCA, sec. 103.

The *Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulation, 2009*¹⁹ defines “noise” to mean any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. These Regulations prohibit any person from making or causing to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.²⁰ However, there are some exemptions to these prohibitions.²¹

In the case of *Pastor James Jessie Gitahi and 202 others vs Attorney General*²², the court recognized one of the components of a clean and healthy environment to be the prevention of noise and vibration pollution. Despite the Regulations, noise pollution is however still a major problem in the country because of lack of enforcement of the Regulations and possibly the public’s ignorance on the levels of noise that may be considered as air pollution.

3.4. National Environment Management Authority (NEMA)

In order to implement all environmental policies and to exert general oversight and coordination over all environmental issues, the National Environment Management Authority (NEMA) was established as the main government vehicle under EMCA. NEMA has the authority to create rules, specify requirements and guidelines, and issue directives for the management and preservation of the

¹⁹ Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009, Legal Notice No. 61 of 2009.

²⁰ Ibid, Regulation 3 (1).

²¹ Regulation 7.

²² *Pastor James Jessie Gitahi and 202 others vs Attorney General*, [2013] eKLR, petition No. 683 of 2009.

environment and natural resources in conjunction with the lead agencies. Environmental restoration orders, conservation orders, and easements are just a few of the mechanisms the Act uses to protect the environment. It also calls for environmental impact assessments, audits, and monitoring.²³

Notably, NEMA can delegate its functions under EMCA to any lead agency, being the oversight authority, and where it carries out a delegated duty, it can recover costs from the relevant body for any of such functions.²⁴

3.5. County Laws

Some counties have already embraced their role under the Constitution to control noise pollution, such as the Nairobi City County Government which has since enacted the Nairobi City County Public Nuisance Act 2021.²⁵

3.5.1. Nairobi City County Public Nuisance Act 2021

Notably, Section 20 thereof provides that: “a person shall not in any street or in any shop, business premises or any other place adjoining any street to which the public are admitted, play, operate, cause or allow to be played or operated, any musical instrument, wireless, gramophone, amplifier or similar instrument thereby making, causing or authorising noise to be made which is loud and continuous, or repeated as to constitute a nuisance to the occupants

²³ See EMCA, Part Vi – Integrated Environmental Impact Assessment; Part Vii – Environmental Audit and Monitoring.

²⁴ Sec. 12, EMCA.

²⁵ ‘The Nairobi City County Public Nuisance Act 2021 Signed into Law. | Nairobi City County’ (20 August 2021) <<https://nairobi.go.ke/nairobi-city-county-public-nuisance-act-2021-signed-law/>> accessed 25 March 2023.

or dwellers of any premises in the neighbourhood or to passersby on the street.”

There is a need for other county governments to follow suit and put in place laws and regulations aimed at addressing noise pollution within their counties.

4. Getting it Right: Streamlining Noise Regulation Framework in Kenya

This section offers some viable recommendations on how to address the noise pollution in the country.

4.1 Institutional Streamlining and Effective Enforcement of Laws and Regulations on Noise Pollution

As a way of curbing noise pollution, the World Health Organisation (WHO) urges countries to enact and enforce legislation/regulations/policies for limiting sound levels and exposure in entertainment venues and events such as clubs, bars, fitness centres, concerts.²⁶ WHO also advises that such legislation should focus on: limiting sounds to 100 dB(A) averaged over 15 minutes; conducting regular sound monitoring to ensure and document compliance; optimizing venue acoustics and sound system design to ascertain optimal listening conditions for all audience members in the venue/event; create quiet zones allowing audience members to rest; ensuring provision of hearing protection (earplugs); and ensuring provision of training on noise reduction strategies and information about noise.²⁷

²⁶ ‘Compendium of WHO and Other UN Guidance on Health and Environment’ <<https://www.who.int/publications-detail-redirect/WHO-HEP-ECH-EHD-22.01>> accessed 25 March 2023, p. 152.

²⁷ Ibid, p. 152.

It is worth pointing that there is still a lot of confusion on who between NEMA and the county governments should substantively deal with the noise pollution menace. This may, therefore, call for some updates and/or amendments to EMCA to capture and clarify the constitutional position on this issue.

Meanwhile, while under the Constitution of Kenya 2010, the national government, has the role of protecting the environment and natural resources,²⁸ and county governments have a role in pollution control²⁹ and implementation of specific national government policies on natural resources and environmental conservation including soil and water conservation and forestry,³⁰ the counties should work closely with the national government and other stakeholders in discharging some of these duties considering that they may traverse various counties and may require some major steps from both national and county levels of government.

4.2. Use of Appropriate Technology for Noise Mapping

One of the most effective methods for identifying the crucial locations in urban, suburban, and rural areas is noise monitoring under various traffic and environmental conditions.³¹

The level of noise in a given area at a given moment is depicted cartographically as a noise map. Aside from general evaluation, noise maps are also used to assess the impact of new roads and highways within metropolitan areas as well as the noise levels during various phases of any development project. As a result, noise maps are a

²⁸ Fourth Schedule, S. 22.

²⁹ S. 3 of Part II.

³⁰ Fourth Schedule, S. 10.

³¹ Alam, P., Ahmad, K., Afsar, S.S. and Akhtar, N., 'Noise Monitoring, Mapping, and Modelling Studies—a Review' (2020) 21 Journal of Ecological Engineering, p.82.

valuable strategic tool for planning metropolitan areas and making environmental management decisions.³²

The idea that it is crucial to gauge the amount of noise coming from particular sources and communicate that information to those who are nearby the source of the noise is well-founded. This will enable the public to understand the noise levels to which they are exposed and to create mechanisms for reducing the noise to acceptable levels.³³ One of the suggested ways of doing this is geographic information system (GIS). A geographic information system (GIS) is a computer-based system that makes it possible to input, manage, analyse, produce, and disseminate geographically referenced, land-related data and information at all scales. Auditory circumstances are well-presented spatially on noise maps. GIS helps in creating a spatial decision support system that can be applied in the decision-making process and offers effective tools for visualising noise propagation. As a result, such analysis and management procedures might leverage noise maps created in GIS.³⁴ GIS offers a potent set of tools for storing and retrieving, processing, and displaying spatial data from the real world for a specific set of uses.³⁵

³² Manojkumar N, Basha K and Srimuruganandam B, 'Assessment, Prediction and Mapping of Noise Levels in Vellore City, India' (2019) 6 Noise Mapping 38, p.40.

³³ Wawa EA and Mulaku GC, 'Noise Pollution Mapping Using GIS in Nairobi, Kenya' (2015) 7 Journal of Geographic Information System 486, pp. 486-87.

³⁴ Ibid, p. 487.

³⁵ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., 'Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software' (2012) 6 International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials) 38, p.38.

In order to create a graphic depiction of the distribution of sound levels over a certain location for a specific time period, noise mapping entails measuring sound levels at predetermined sites and using the generated data. Assessing compliance with permissible noise levels, putting in place noise reduction measures, and tracking the effects of such actions can all be done using noise maps.³⁶

Some authors have praised SoundPLAN Software, a software package offering a wide variety of noise and air pollution evaluation modules, developed by SoundPLAN International LLC and Braunstein + Berndt GmbH. It is perhaps the world's top environmental forecast programme and is used by more than 5,000 users, including governments, consultants, and researchers in more than 40 nations.³⁷

It is suggested that the government of Kenya and/or County Governments should invest in such tools in order to enhance noise mapping in the country.

4.3. Need for Integration of Health in Urban and Territorial Planning

As already pointed, there are various sources of noise especially in urban areas. As a result, there is a need for urban and city planners to take these sources of noise into consideration. Target 3.9 of Sustainable Development Goal (SDG) 3 urges countries to ensure that by 2030, they substantially reduce the number of deaths and illnesses

³⁶ Wawa EA and Mulaku GC, 'Noise Pollution Mapping Using GIS in Nairobi, Kenya' (2015) 7 *Journal of Geographic Information System* 486, p. 488.

³⁷ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., 'Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software' (2012) 6 *International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials)* 38, p.38.

from hazardous chemicals and air, water and soil pollution and contamination.³⁸ This is closely related to SDG 11 which provides that countries should ensure that they make cities and human settlements inclusive, safe, resilient and sustainable.³⁹ Target 11.a seeks to support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning. In addition, Target 11.b seeks to ensure that by 2020, countries substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.⁴⁰ The Physical and Land Use Planning Act, 2019⁴¹ provides that one of the things that should be considered in the contents of local physical and land use development plans is aspects of housing, unemployment, traffic congestion, pollution, land tenure, lack of services, terrain, soils.⁴²

5. Conclusion

As discussed in this paper, noise pollution has various adverse effects on human health and thus poses a risk to the realisation of Article 42 of the Constitution of Kenya on the right to clean and healthy environment for all. As a result, it is important that all stakeholders join hands in addressing the menace for the sake of all, and promoting public health. It is not the time to point fingers and watch as the

³⁸ 'Goal 3 | Department of Economic and Social Affairs' <<https://sdgs.un.org/goals/goal3>> accessed 25 March 2023.

³⁹ 'Goal 11 | Department of Economic and Social Affairs' <<https://sdgs.un.org/goals/goal11>> accessed 25 March 2023.

⁴⁰ Ibid.

⁴¹ Physical and Land Use Planning Act, No. 13 of 2019, Laws of Kenya.

⁴² Ibid, sec.48; Second Schedule.

general populace suffers; both levels of government should respond to the cry for help from their citizens and address the problem of noise pollution.

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‘Goal 11 | Department of Economic and Social Affairs’

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‘Goal 3 | Department of Economic and Social Affairs’

<<https://sdgs.un.org/goals/goal3>> accessed 25 March 2023.

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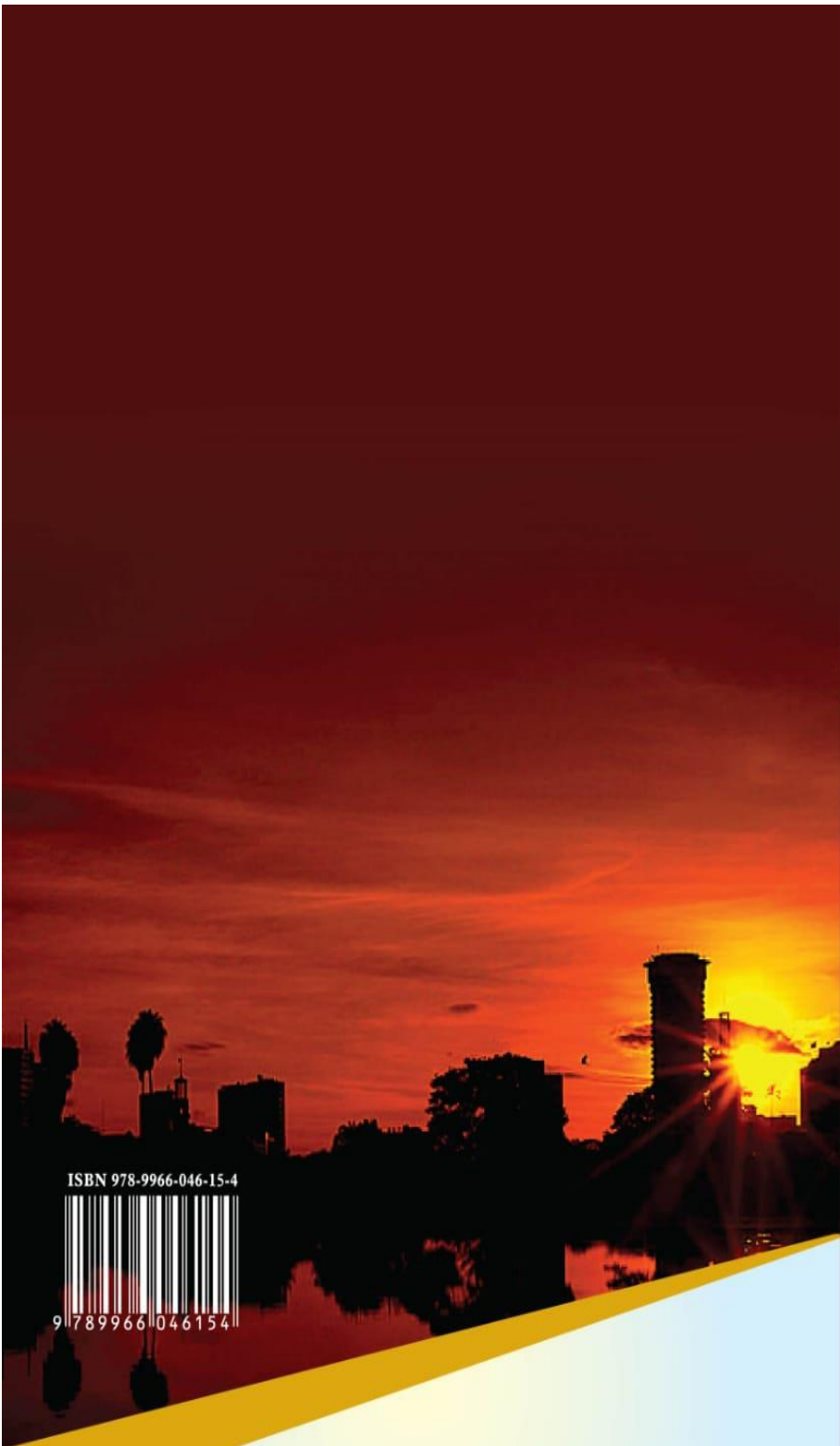
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