

# Environmental Awareness Creation Under Kenya's Environmental Diplomacy Pillar: An Objective With Potential For Mitigating Air Pollution

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**Abstract.** This study aimed to assess the environmental awareness creation objective of Kenya's environmental diplomacy pillar, which aims to encourage public dialogue, awareness, and knowledge creation on environmental matters through national, regional, and international forums to reverse and halt environmental degradation. It focused on four areas encompassing the extent of environmental awareness creation, the institutions involved and the approaches adopted, the impact of participation in multilateral forums on the level of environmental awareness and consideration given to air pollution issues in development planning. The study adopted an exploratory research design targeting 130 key informants from institutions concerned with environmental issues and diplomacy in Kenya. Through descriptive statistics and conceptual content analysis of the data collected, this study found that despite the growing global attention to environmental degradation, there still existed gaps in meaningful environmental awareness creation in Kenya, with little success achieved and few visible outcomes. The study also established inconsistencies between Kenya's regional and international leadership in environmental matters and the actual status of air pollution in the country. It thus recommended that the Government of Kenya take proactive and context-based actions to enhance the public's care of the environment, develop and implement a robust environmental awareness creation framework to link actions at the various levels and introduce practical and specific metrics to ensure that actions taken result in measurable change in environmental behaviour. Kenya should also utilise its environmental leadership role to bolster environmental awareness.

**Keywords:** Air pollution; environmental diplomacy; environmental diplomacy pillar; environmental awareness.

## INTRODUCTION

Environmental issues have increasingly become an area of interest in international politics, evidenced by the rise in international agreements on the environment urging collective efforts by states to address environmental pollution [1, 2]. This multilateral approach to environmental challenges can be traced back to the United Nations Conference on the Human Environment (UNCHE) in 1972 in Stockholm, with the first-ever Africa Climate Summit (ACS) held in Nairo-

bi, Kenya, in September 2023, giving evidence for continuing collaborative actions [3].

Expanding production activities, driven by the ever-growing world population, contribute to ongoing environmental pollution [4]. As a result, the current era can be described as advanced and polluted simultaneously [3]. Air pollution is the most devastating, with profound effects that include climate change. Most big cities, particularly in developing countries, continue experiencing severe air pollution, a situation expected to worsen as the population rises [5].

Conversely, due to massive urbanisation in the developed world, European urban populations continue to suffer from unsafe levels of air pollutants [6]. In China, a rising power in the east, many people face grave air pollution effects, some leading to fatalities [7]. In Europe and China, urbanisation and industrialisation emerge as the main culprits. Poverty, a sharp population rise, and rapid urbanisation complicate the air pollution situation in Africa [8].

States have adopted various international treaties and domestic legal and policy frameworks to address environmental pollution and its consequences. In 2014, Kenya made a significant stride by unveiling an environmental diplomacy pillar in its foreign policy document, solidifying its commitment to international environmental actions. The pillar encourages public dialogue, awareness, and knowledge creation on environmental matters through national, regional, and global forums to reverse and halt environmental degradation [9].

However, despite these efforts, air pollution in the country remains worrying, with pollution levels in the capital city, Nairobi City County, exceeding the safe limits set by the World Health Organization (WHO) [10]. This study thus aimed to address this inconsistency by assessing the degree of environmental awareness creation and its impact on countering the challenges of air pollution in Kenya.

## Literature Review

*Theoretical Review.* This study was anchored on sustainable development theory as posited by Safwat Shakir Hanna and Gian Paolo Cesaretti in 2019. The theory is a derivative of two concepts, sustainable and sustainability, which arose in the 20<sup>th</sup> century [11]. These concepts denote the need to shield the environment from human interference through sustainable exploitation of resources. The UNCHE in 1972 ushered the theory into the moulding phase with increasing recognition that development activities prioritised economic growth to the detriment of the environment [11]. Sustainable development theory therefore considers the polluting effects that development activities have on the environment [12]. Such consideration would require awareness about the environment and human activities that harm it to effectively guide environmentally friendly corrective efforts.

*Empirical Review.* The growing population and economic development continue to put pressure on the environment, resulting in unending pollution that threatens human life [13]. While there may be sufficient legal and policy frameworks at international and national levels to address environmental pollution, its continuation may signify a gap in awareness. Raising environmental awareness is critical to stimulate behavioural change in this context.

Environmental awareness involves developing pro-environmental behaviour among the global population to make it cognizant of and concerned about the environment and be prepared to take actions individually and collectively to find solutions to the current environmental problems and prevent new ones from arising [14]. The essential components of environmental awareness are knowledge, attitudes, skills and participation [15]. It entails understanding that our behaviour affects the environment and pledging to change our actions to safeguard it. Such awareness is key as minor changes at the individual level can significantly impact environmental health at the macro level. This study examined the level of awareness created about the environment and air pollution in Kenya.

Environmental awareness has become essential in environmental diplomacy over the last few decades. The UNCHE in 1972 recommended the establishment of an International Environmental Education Program (IEEP). Five years later, an international conference on Environmental Education (EE) convened by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in collaboration with the United Nations Environmental Programme (UNEP) in Tbilisi, Georgia, recommended the development of a school curriculum in EE [16]. Participants in the United Nations Conference on Environment and Development (UNCED) reiterated that environmental knowledge is the foundation for EE [17]. This study thus sought to assess the impact of EE on environmental and air pollution awareness in Kenya.

The United Nations (UN) Secretary General, UNESCO and other international organisations continue endeavours to implement the EE program targeting the public. The program is meant to build the population's capacity to manage and control the environment and advise member states on EE [17]. However, despite these efforts, there are no signs that global ecological decline is

abating [16]. Similarly, despite EE's existence in Kenya since the 1980s, the beneficiaries, more so students, do not exhibit vigour towards protecting and enhancing environmental health. The study examined this inconsistency.

Kenya also participates in different international environmental forums. These forums provide a meeting point for delegations from state parties to discuss environmental issues. While the meetings and declarations may create a perception that humanity is aware of and cares for the environment, there needs to be more evidence that people are taking the environment seriously by translating boardroom decisions into meaningful environmental awareness and behaviour [16]. This study, therefore, explored how environmental discussions during high-level environmental forums have been harnessed in Kenya and how this impacts the level of environmental awareness in the country.

Human beings have the potential to safeguard the environment, but this requires that innate awareness be catalysed [18]. Individuals and organisations could use various means and methods, including social media, blogs, and YouTube, to achieve this and raise awareness of environmental issues. They could also create environmental awareness by sharing informative themes and encouraging people to comment. Traditional print and electronic media can also create public awareness about the environment. For the most significant effect, a multi-channel approach should include talks, interviews, dramas, and documentaries [18]. These methods could complement EE in formal school settings or be employed independently. This study examined the approaches adopted to advance environmental awareness in Kenya.

Across the board, private institutions hold colossal potential that can be exploited to advance environmental awareness. Civil Society Organizations (CSOs), Non-Governmental Organizations (NGOs) and academic organisations in China, for example, have opened alternative channels for influencing government environmental policies and promoting awareness of environmental pollution [19]. A public-private partnership with relevant institutions in Kenya, like the Green Belt Movement, could similarly assist in advancing the ecological awareness agenda. This study assessed the role private institutions in Kenya played in creating environmental awareness.

Enforcement bodies like the National Environment Management Authority (NEMA) in Kenya regularly invite relevant stakeholders and the public to participate in environmental events such as exhibitions, clean-up activities and tree-planting drives [20]. These events provide excellent avenues for creating awareness on various environmental issues. Moreover, NEMA conducts targeted sensitisation forums for departments and personnel implementing and enforcing environmental laws. It also invites the public to comment on Environmental Impact Assessment (EIA) reports on development projects. These efforts have, however, failed to change the population's general attitude towards the environment, evidenced by the continuing rise in air pollution. Researchers in this study explored the extent to which such initiatives had been adopted and how they contributed to advancing environmental awareness in Kenya.

## METHOD

*Research Design.* The researchers used an exploratory research design which is recommended for studies in areas where there has been little previous research [21]. Unlike other types of diplomacy, research on Kenya's environmental diplomacy has not received much scholarly attention. Key aspects, such as environmental awareness, have also not been adequately studied.

*Study Area.* The study area was Nairobi City County, the Kenyan capital. It hosts the headquarters of key ministries, departments, agencies, and other institutions concerned with environmental issues and diplomacy. According to UNEP data, Nairobi also suffers the most serious air pollution.

*Target Population, Sampling Procedure and Sample Size.* The target population for the study consisted of key informants, including diplomats, environmentalists, energy specialists, transport specialists, environmental law specialists and parliamentarians. The researchers used purposive sampling to identify participants familiar with the areas of interest and further employed the snowballing sampling technique to find additional respondents. A sample of 30% was drawn from each population category [22]. Table 1 below gives a summary of the target population and the sample drawn:

Table 1 – Target Population and Sample Size by Categories

Category	Target Population	Sample Ratio	Sample Size
Diplomats	20	0.3	6
Environment	20	0.3	6
Energy	15	0.3	4
Transport	15	0.3	4
Environmental law	10	0.3	3
Parliament/ Senate	5	0.3	2
Other key informants	45	0.3	14
Total	130		39

*Data Collection Procedure.* The researchers collected both primary and secondary data. They used semi-structured questionnaires to collect primary data. The open-ended questions in the questionnaires allowed the participants to provide varied responses, which is essential in an exploratory study. A document review guide guided collection of secondary data from journals, policy documents, books, treaties, records and reports.

*Data Analysis and Presentation.* The researchers used descriptive statistics to analyse data on the participants' background information and conceptual content analysis to analyse data from the substantive sections of the questionnaires. Conceptual content analysis entailed classifying the data into key themes aligned to the study objective, thus allowing the researchers to establish meanings and make interpretations systematically. The researchers presented the study findings in a narrative supported by tables.

## RESULTS AND DISCUSSIONS

*Response Rate.* The study's sample size was 39 respondents. Twenty-eight respondents participated, representing 72%, but four questionnaires were rejected for being inconsistent and incomplete. Therefore, the final response rate was 62%, which was considered adequate for data analysis and reporting [23].

*Background Information of Respondents.* Table 2 below summarises the background information of the respondents:

Table 2 – Background Information of the Respondents

Category		Frequency	%
Sex	Male	13	54
	Female	11	46
	Total	24	
Age bracket	20-29 years	1	4
	30-39 years	12	50
	40-49 years	7	29
	50-59 years	4	17
	Total	24	
Years in the organisations	Below 5 years	9	38
	6-10 years	9	38
	11-15 years	2	8
	Above 15 years	4	16
	Total	24	

From Table 2, males constituted 54% of the respondents and females 46%, indicating a slightly higher number of male participants. However, the study found no significant variance in the perception of the study objective by each sex. On age, 4% of the participants were between 20-29 years, 50% between 30-39 years, 29% between 40-49 years and 17% were between 50-59 years. Thus, most of the respondents were in the middle age brackets. However, the variance in responses obtained across the various age categories was insignificant, and the study concluded that the age of the participants did not affect the results.

Regarding years in the organisations, 38% of the respondents had less than 5 years of experience, 38% had 6-10 years, 8% had 11-15 years, and 16% had above 15 years of experience. Thus, over 60% of the participants had at least 5 years of experience in the organisations and could sufficiently articulate issues relating to the contribution of Kenya's environmental diplomacy pillar to ecological awareness in the country. Variation in the level of informativeness across the different experience categories was insignificant.

To logically assess the degree of environmental awareness and its impact on countering air pollution challenges in Kenya, a thematic approach was adopted as follows:

1) *Assessment of the Degree of Awareness Creation about Air Pollution in Kenya, the Institutions Involved, and the Approaches Adopted.* Kenya's foreign policy document in 2014 highlighted creating awareness about environmental issues at all levels as one of the objectives under its environ-

mental diplomacy pillar [9]. In assessing the extent to which this had been achieved, 71% of the respondents indicated that awareness creation about the environment and air pollution ranged from non-existent to moderate. In comparison, 29% felt that it was significant.

The findings agree with those obtained from surveys on climate change during the development of the National Climate Change Action Plan (NCCAP) and its second implementation status report. Limited environmental awareness level was identified as a leading challenge affecting the effective implementation of environmental policies and consequently negatively impacting environmental behaviour change [24].

On institutions involved in environmental awareness and environmental diplomacy in Kenya, the Ministry of Environment, Climate Change and Forestry and the Ministry of Foreign and Diaspora Affairs were mentioned by 79% of the respondents as the leading agencies. Other institutions identified included NGOs, academic institutions, the Ministry of Tourism and Wildlife and the Ministry of Information, Communications and the Digital Economy.

The responses showed that multiple sectors were involved a phenomenon requiring a central coordinating agency to ensure effectiveness and coherence. The study, however, established that no such agency existed, and different institutions carried out independent and often parallel environmental awareness creation campaigns. This could hamper the effectiveness of such efforts.

The study further found that various means and methods were used to advance environmental awareness, including public awareness campaigns, educational campaigns, formal environmental education (EE), mass media, billboards, social media, tree planting holidays, events and charity walks and community outreach. This multi-channel approach conforms with the assertion that combining methods produces the most significant effect [18].

While such a healthy combination of approaches would be expected to raise actual environmental awareness and positively influence environmental behaviour, 67% of the respondents observed that there had been minimal tangible success. Researchers attributed this to a lack of commitment among the agencies responsible for creating environmental awareness, poor selection of target groups for awareness campaigns that

hampered their effectiveness, and unfavourable political prioritisation. A similar lack of correlation between robust awareness creation approaches and actual care for the environment has been observed in other studies, leading to calls for visible evidence to indicate that people were meaningfully conscious of environmental pollution [16].

This study also sought to establish whether a formal framework for creating environmental and air pollution awareness existed. 67% of the respondents from the Ministry of Environment, Climate Change, and Forestry indicated that the ministry had established a mechanism for public campaigns on pollution issues at different levels through the mass media. However, 71% of the total respondents felt that there were no formal structural arrangements and different agencies either conducted awareness campaigns randomly or not at all.

The study also identified a lack of translation of international and national air pollution objectives into actionable targets for implementation at the sub-national level to link international environmental objectives with domestic ecological behaviour effectively. These gaps risk severely hampering the attainment of the goals of Kenya's ecological diplomacy pillar. Therefore, a formal environmental awareness creation framework would be crucial to synergise actions across public and private sectors, as noted in Kenya's Second National Communication to the UNFCCC [25].

The study recorded mixed findings on how effective formal EE had been in advancing environmental awareness and curbing air pollution. The respondents agreed that Kenyan education curricula incorporated ecological issues to varying extents, such as environmental protection education, with two Kenyan public universities offering courses in climate change. However, 67% of the respondents indicated that EE was ineffective in creating meaningful environmental awareness. Despite being taught at different levels, air pollution, notably in Nairobi City County, was rising, and negative attitudes towards environmental care persisted.

Conversely, 21% of the respondents felt that EE had significantly contributed to enhanced environmental awareness and change in ecological behaviour. The responses, therefore, generally indicated a lack of correlation between formal EE and environmental awareness. Scholars have

previously questioned the effectiveness of formal EE in instilling meaningful environmental awareness that would reverse ecological decline. This highlights the need to reexamine the formal education package to extend its value beyond the classroom setting [16].

2) *Participation in Multilateral Forums on Air Pollution and Effect on Domestic Environmental Awareness.* This study sought to understand the extent to which Kenya participated in multilateral forums on air pollution and whether this had enhanced environmental awareness and contributed to reducing air pollution. 4% of the respondents indicated that Kenya participated in multilateral forums on air pollution to a small extent, and 13% felt it was to a moderate extent. In comparison, 83% indicated that it was to a large extent. These findings show that most respondents felt that Kenya was a major participant in multilateral forums on air pollution.

The respondents particularly cited significant participation by President Ruto and his predecessor, President Kenyatta. Some identified forums were COP26 in Glasgow, COP27 in Sharm El Sheikh, the Global Climate Economy Conference in Paris, Africa Clean Air Network and the Three Basins Summit in Brazzaville. Kenya also hosts the UNEP HQs, while the hosting of the ACS in September 2023 notably placed the country as a leader in the continent on issues related to air pollution, climate change and the environment.

In assessing if participation in multilateral forums on air pollution enhanced actions geared to addressing air pollution domestically, 71% of the respondents felt that the forums raised awareness about air pollution and the related climate change phenomenon. Specific outcomes noted as emerging from participation in the multilateral environmental forums included securing partnerships in the fight against air pollution, securing funding for environmentally friendly technologies like renewable energy and electric vehicles, enhanced actions by CSOs and contribution to domestic policies on curbing air pollution and its adverse effects like climate change.

On the other hand, 25% of the respondents indicated that the participation had not fully contributed to better environmental awareness. This finding reflects a gap between Kenya's visibility in multilateral environmental forums and the translation of the same into enhanced environmental awareness in the country. This study concluded that such a disconnect could dampen po-

tential gains from Kenya's international and continental environmental discourse leadership.

Secondary data sought by the study on environmental awareness resulting from participation in multilateral ecological forums showed impact at the national and extra-national levels. For example, during COP26, Kenya announced plans to work with the Giants Club conservation group comprising Kenya, Uganda, Gabon, Rwanda, Botswana and Mozambique to raise finances for the continent's climate change mitigation programs in addition to funding expansion of forest cover. Further, the Kenyan government during COP27 pledged to finance an increase in the national forest cover to 30 per cent in the next 10 years [26]. Tree planting exercises provide an excellent opportunity to advance awareness about air pollution and environmental care.

3) *Consideration of Air Pollution Issues in Development Planning.* The study sought to establish whether environmental awareness had contributed to better consideration of air pollution issues in development planning. It established that the Kenyan government had set up several policy options, including the Climate Change Act 2016, to mainstream environmental and climate change obligations into the country's economic development blueprint. In addition, the NCCAP 2018–2022 aimed to foster Kenya's development objectives through measures that ensured low carbon climate resilient development. This aligns with the Kenyan government's developmental policy roadmap comprising Vision 2030 and the United Nations Sustainable Development Goals (UN SDGs).

However, 75% of the respondents indicated that little consideration was given to air pollution in development planning and/or enforcement of policy provisions was lacking. 29% of the respondents noted that authorities practised public participation only for major national and county projects while implementing several minor projects without complying with environmental standards.

The foregoing responses highlight the antagonism between economic development and environmental care. The phenomenon contradicts the provisions of Article 10 of Kenya's Constitution, which calls for development that does not harm the environment and the stipulations of the 1992 UNCED, which encourage states to rethink economic development by considering environmental pollution.

To fully realise the objectives of Kenya's environmental diplomacy pillar, considerations of air pollution should be emphasised and enforced in all development activities through robust awareness efforts. Therefore, it must be politically correct to question economic growth, and government regulatory institutions should incorporate assessments of projected air pollution in all projects to determine their environmental viability. This would also better align development with sustainable development theory, which calls for environmental awareness in all economic activities [12, 27].

4) *Correlation between Environmental Awareness and Reduction in Air Pollution.* To sum up the research objective, the study sought to establish whether environmental awareness, to whatever degree, translated into lesser air pollution. Mixed findings split in the middle were obtained. 50% of the respondents indicated that enhanced environmental awareness had improved air pollution in Nairobi by reducing offending actions and ensuring adherence to existing environmental laws and regulations. The other half of the respondents felt that environmental awareness had not contributed to reduced air pollution due to lack of follow-up at the grassroots levels, impunity and laxity by enforcement institutions as well as high cost and inaccessibility of alternative environmentally friendly technologies.

These two sets of responses identified areas of success and areas of weakness relating to the correlation between environmental awareness and reduction in air pollution. Addressing the weak regions observed by the respondents would be key to bridging the gap between ecological awareness for the sake of it and taking specific and measurable steps to address air pollution and its consequences.

## CONCLUSIONS

The environmental awareness creation objective of Kenya's environmental diplomacy pillar has the potential to turn around the environmental landscape in the country through synergised and coherent sensitisation actions at international,

national and sub-national levels to positively influence ecological behaviour and address air pollution and its effects. The study, however, concluded that despite this robust goal, gaps still existed in both the level of environmental awareness created and translating the successes made into outcomes. The study also identified inconsistencies between Kenya's regional and international leadership in environmental matters and the status of air pollution in the country. These conclusions are relevant in guiding Kenya's future efforts to fully realise meaningful environmental awareness among its citizens.

The study, therefore, recommended that the Government of Kenya, through the leadership of the Ministry of Environment, Climate Change and Forestry, take proactive and context-based actions to enhance the public's appreciation and care of the environment and accelerate the adoption and diffusion of environmentally friendly behaviour. To ensure coherence in environmental awareness creation efforts, the government should develop and implement a robust framework to link actions at the various levels and, at the same time, introduce practical and specific metrics to ensure that actions taken result in measurable change in environmental behaviour and visible reduction in air pollution which answer to international environmental standards and obligations. The country should further capitalise on its ecological leadership role to bolster domestic environmental awareness.

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