



## **NAIROBI CITY AIR QUALITY ACTION PLAN (2019-2023)**

# **STOCK-TAKE REPORT**

**MARCH, 2025**

## EXECUTIVE SUMMARY

The stock-taking for the Nairobi City County Air Quality Action Plan (2019-2023) was undertaken by Environmental Compliance Institute with support from the Clean Air Fund through the Breath Cities Initiative. The aim of this exercise was to evaluate the implementation of the plan and provide recommendations that would inform the next Air Quality Action Plan for the planning period 2025-2029. Key actors involved in the formulation and implementation of the 2019-2023 Air Quality Action Plan were interviewed and focus group discussion with members from the relevant units and departments in Nairobi City County involved in implementing the plan was undertaken for feed-back on implementation of the plan. Findings shows that the city has been successful in formulation of relevant policies and legislations that provide robust legal framework for addressing air quality issues at City County Level. It has also set up and staffed a functional air quality unit in the department of environment of Nairobi City Government and leveraged on establishment of Nairobi Air Quality Working group to enhance public awareness and exchange of knowledge and skills for better implementation of the air quality action plan. The stock-take also indicates inadequate capacity of NCCG officials to monitor and report on air quality data and lack of an air quality baseline assessment and a public participation strategy on air quality. In general Nairobi City Government had an average performance in implementation of Nairobi City County Air Quality Action Plan 2019-2023 with a means-score of 2. Means-Score from the performance rating matrix of Nairobi City County Air Quality Action Plan 2019-2023 with “best practices” is **0.54**. Implying that the first Air Quality Management Plan for Nairobi rated above average – on the lower ranks. Thus, there is much room for improvement in formulation of the next air quality action plan. The report recommends enhanced strategic partnerships and meaningful community involvement in air quality action planning and implementation to harness financial support and leverage on innovative local solutions to air quality management challenges.

## **ACKNOWLEDGEMENT**

The stock-take exercise on implementation of Nairobi City County Air Quality Action Plan (2019-2023) is a result of collaborative efforts amongst Nairobi City County Government, Environmental Compliance Institute and stakeholders in air quality management space within Nairobi City. This exercise was financed by Clean Air Fund through the Breath Cities Initiative. The initiative is a collaboration of Clean Air Fund, C40 Cities and Bloomberg philanthropies with a shared commitment to enhance air quality and fostering healthier, more resilient Cities.

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## **ACRONYMS**

NCCAQAP	Nairobi City County Air Quality Action Plan
NCCG	Nairobi City County Government
CIDP	County Integrated Development Plan
WRI	World Resources Institute
ECAS	Environmental Capacities and Sustainability Institute
CAF	Clean Air Fund
ECI	Environmental Compliance Institute

## **CHAPTER 1: INTRODUCTION**

### **1.1 Context of Air Quality Management in Nairobi City**

The United Nation's Sustainable Development Goal number 11 advocates for sustainable cities and communities by making cities and human settlements inclusive, safe, resilient and sustainable. To achieve this goal, target 11.6 aims at reducing the adverse per capita environmental impact for cities by paying attention to air quality and other aspects of the city. The Constitution of Kenya 2010, Urban Areas and Cities ACT 2011, County Government Act 2012, Nairobi Air Quality Act 2022 and the Environmental Management and Coordination (Air Quality Regulations) 2024 provide a legal framework to manage air quality in the City. Through the existing legislative framework, The Nairobi City County Government (NCCG) formulated and has been implementing the first Air Quality Action Plan (2019-2023). This stock-take report highlights the planning actions, their success and challenges in implementation and provides recommendations to inform the next planning cycle of the Nairobi County City Air Quality Action Plan (2025-2029).

### **1.2 Overview of the Nairobi City County Air Quality Action Plan (2019-2023)**

The Nairobi City County Air Quality Action Plan (NCCAQAP) 2019-2023 was formulated on a set of actions under four objectives:

1. Building scientific evidence for policy, legislative and regulatory interventions for air quality management.
2. Raising public awareness on the health and environmental impacts of air pollution.
3. Developing effective approaches for air quality management.
4. Building an effective implementation and enforcement programme for air quality legislation.

The plan highlights why air quality is a subject of concern, priority actions for management of air quality, resources needed to implement the plan and opportunities for synergy and linkage to other City County Plans, in particular the County Integrated Development Plans (CIDPs).

To effect the NCCAQAP (2019-2023), the County's Air Quality Policy was developed and adopted. The Policy outlines transport, waste management, housing, agriculture, industry and energy as priority sectors targeted to reduce emissions and improve air quality. The County also formulated and enacted the Nairobi City County Air Quality Act, 2022.

### **1.3 Objectives of Stock-taking**

The Objectives of this stock-taking report include:

1. To document success in the implementation of the NCCAQAP (2019-2023)
2. To document non-compliance or failures in implementation of the NCCAQAP (2019-2023)
3. To examine barriers to successful implementation of the NCCAQAP (2019-2023)
4. Provide recommendations to inform next planning cycle of the NCCAQAP (2025-2029)

### **1.4 Scope of stock-taking**

The stock-taking exercise is confined to the spatial extents and planning actions implemented or undertaken within timelines provided in the Nairobi City County Air Quality Action Plan 2019-2023. The exercise is guided by the legislative framework that governs air quality management in the City County and respective terms of reference formulated by Clean Air Fund and Nairobi City County Government.



## **CHAPTER 2: STOCK-TAKING METHODOLOGY**

### **2.1 Desktop review**

The report is informed by review of relevant literature detailing actions or strategies applied in management of air quality in the city. Information was sourced from relevant secondary data sources such as articles, reports, publications and official websites.

### **2.2 Interviews and Focus Group Discussion**

Information from secondary data was triangulated by key informant interviews and focus group discussion with Assistant directors in the Nairobi City County Environment Department. The interview guides were structured by thematic area aligning to roles of the key informants. The inclusion criteria for participants in the workshop entailed identification of key actors who participated in the development and implementation of the NCCAQAP (2019-2023). The mapping and selection of participants was guided by Power-Interest Matrix (figure 2.1) which focuses on identifying the roles of actors, determining their level of engagement and action and defining the communication channels and the frequency of involvement.

A total of 76 City environmental officers in charge of sub-counties and wards were interviewed. 6 No. Key Informant interviews targeting actors that partnered with the city in formulation and implementation of 2019-2023 Nairobi City County Air Quality Action Plan were undertaken. A focus group discussion consisting of assistant directors in Climate & Air Quality, Compliance and Enforcement, Renewable energy, Final disposal and intermediary treatment units was undertaken. A total of 11 No. officers participated in the focus group discussion.

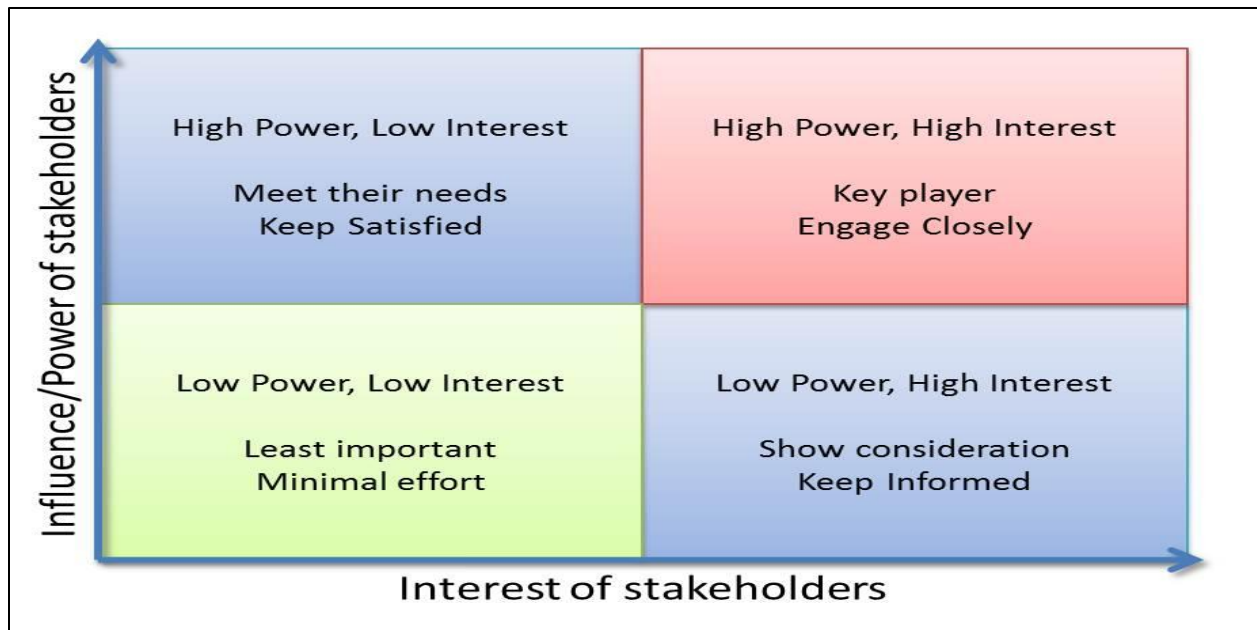


Figure 1: The Power Interest Matrix

Source: Eden, C., Ackermann, F., 1998 in *Eduardo (2014)*

## **CHAPTER 3: FINDINGS**

This section provides the stock-take findings aligned by the objectives and respective strategies in the Nairobi City County Air Quality Action Plan (2019-2023).

### **3.1 Building Scientific Evidence**

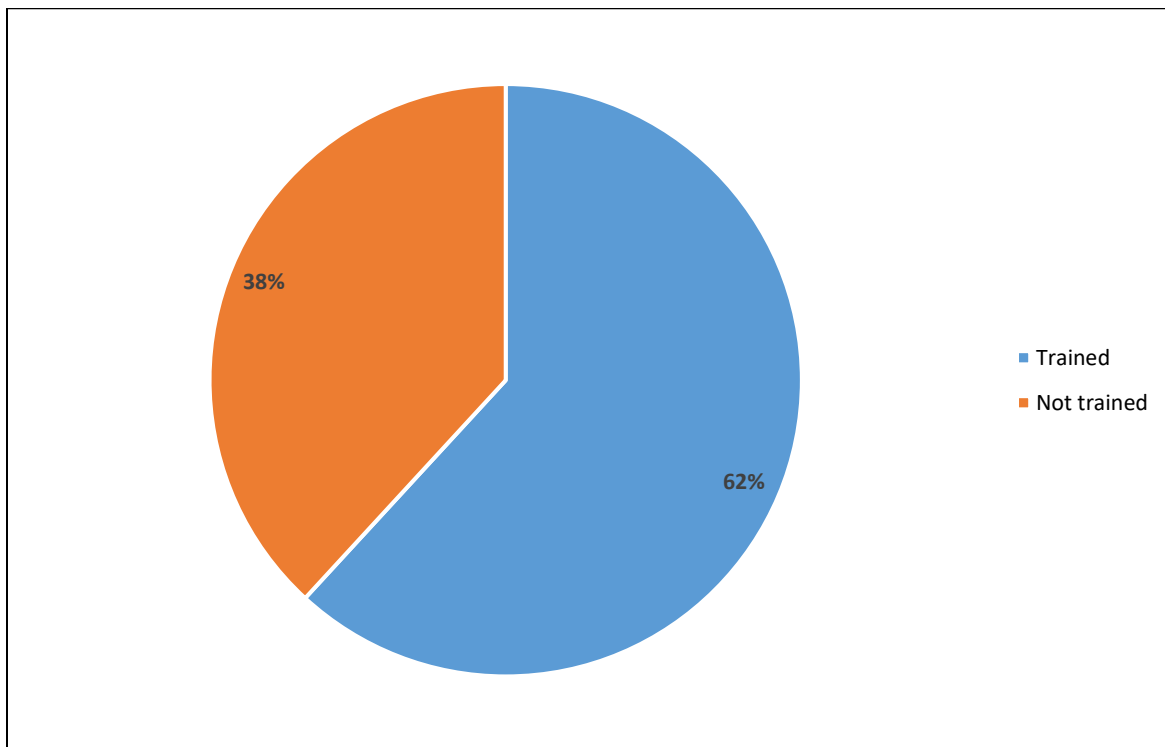
The plan's objective 1 was to build scientific evidence for policy, legislative and regulatory interventions for air quality management in Nairobi City County. The respective strategy was to undertake an inventory of the air pollutants and emission sources that mainly contribute to poor air quality in the City. To attain this the actions discussed in subsections below were planned.

#### **3.1.1 Build capacity of NCCG officials to monitor and report air quality data**

The plan envisaged that this action would be undertaken by the Environment Department in the Nairobi City County Government with support from partners within the first year of the implementation of the plan. Opportunity to incorporate this action in the County Integrated Development Plan and other relevant city plans was also highlighted.

Findings indicate that the county provided limited opportunity to its staff in the department of environment to attend workshops and trainings on air quality management under its budget line due to financial constraints. The city further explored partnerships to provide financing for training its relevant staff on various aspects of air quality management. The Department of Environment had an internal target to train at least 85 of their staff on various aspects of air quality management. However, they were able to train 20 staff through support funding from partners such Clean Air Fund and World Resource Institute (WRI).

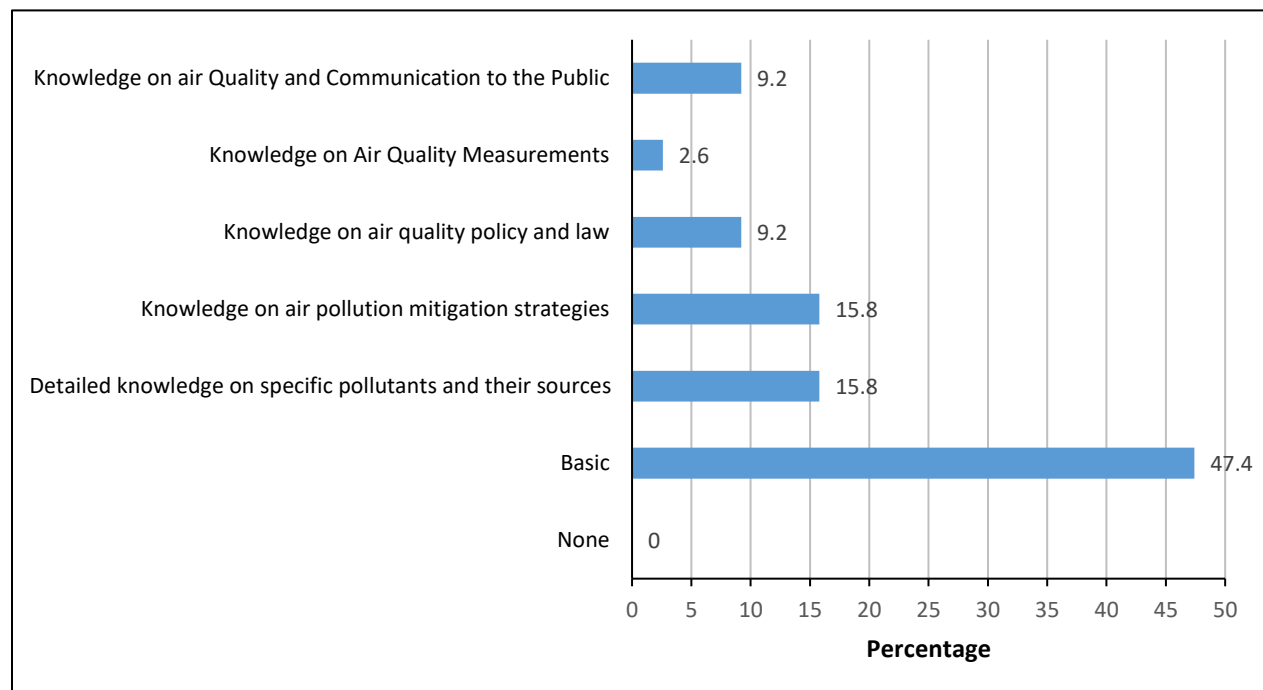
Response from interviewed Environmental staff mainly in charge of the Sub-Counties and wards indicate that 38% of them had received training on air Quality (Figure 2).



*Figure 2: Percentage of Staff in charge of Sub-Counties and wards with a training on air quality*

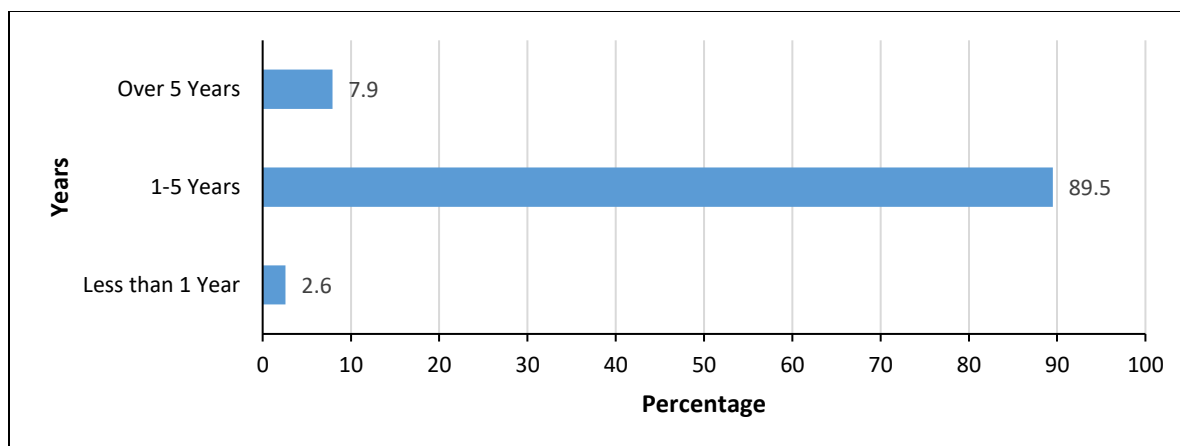
The response on knowledge level in air quality management indicates that 47.4% of sampled respondents in the Sub-Counties and Wards had basic knowledge on air quality management, 15.8% had knowledge on specific pollutants and their sources, 15.8% had knowledge on pollution mitigation strategies, 9.2% knowledge on air quality policy and law, 2.6% Knowledge on air quality measurements and 9.2% knowledge on air quality management and communication to the public (Figure 3).

County records indicate that there are approximately 4300 staff in the environment department. The number of staff (No.20) who have received training on air quality form 0.5% of the staff in the Department.



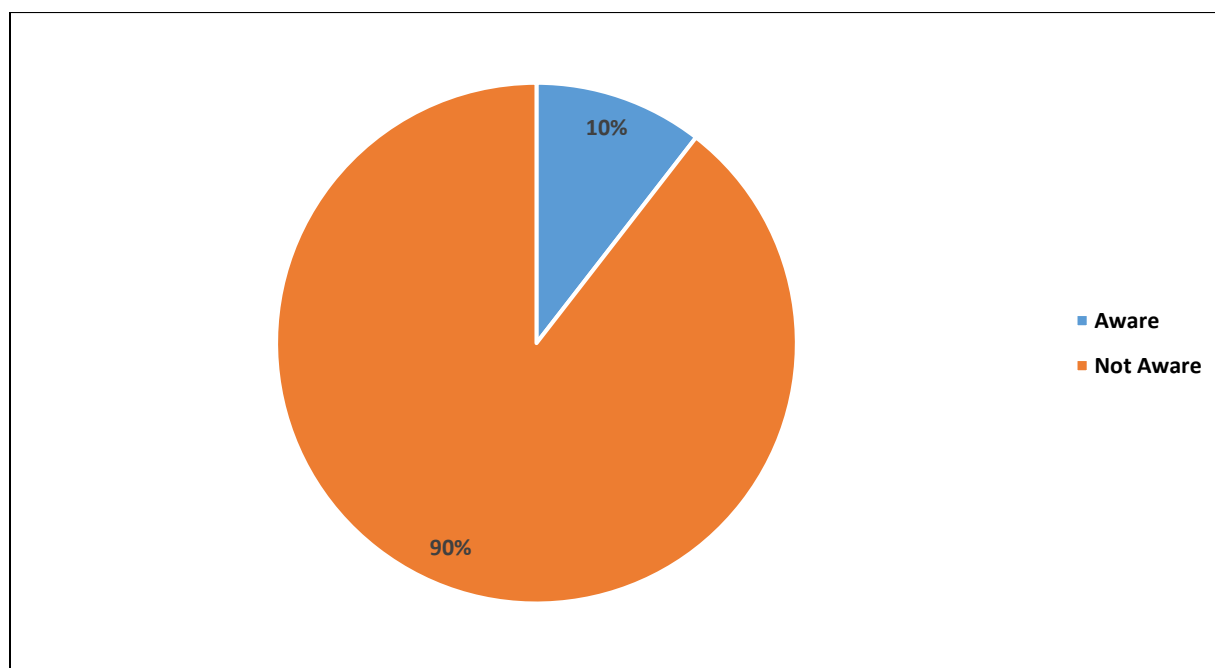
*Figure 3: Level of Knowledge on air quality management among officers in charge of Sub-Counties and Wards*

It is worth noting that 92% of the staff in the department were employed in the last five years – midstream of the implementation of 2019-2023 Air Quality Action Plan (Figure 4). The survey further indicates that 10% of environmental officers' in



*Figure 4: Duration of service of environmental staff in charge of Sub-Counties and Wards*

Charge of Sub Counties and wards are unaware of the Nairobi Air Quality Action Plan 2019-2023 (Figure 5). This may be attributed to 2.6% of environmental staff who have served in less than 1 year.



*Figure 5: Awareness of existence of NCCAQ Action Plan among staff in charge of Sub-counties and Wards*

Findings from the focus group discussion revealed that the 20 officers trained through the Breath Cities initiative had not had the opportunity to monitor and report on air quality albeit introductory training on the same. It was also indicated that the training period was too short and some of topics covered such as monitoring, data analysis and calibration needed further training. The focus group rated themselves as below average in undertaking monitoring and reporting on air quality data. The foregoing findings on action to capacity build Nairobi City County Officials to monitor and report air quality data implies that there is a great need to employ innovative strategies to build capacity of departmental staff to bridge this gap.

### **3.1.2 Establish Nairobi City air quality baseline**

The plan envisaged that the action of establishing Nairobi City County air quality baseline through rapid assessment cutting across seasons would be implemented, within the first year of plan implementation, by department of Environment in Nairobi City County Government in partnership with actors sharing same interests as universities and research institutions. Opportunity to incorporate this action in County integrated plan and other relevant county plans was also highlighted.

Findings of the stock take indicate this action had not been undertaken. However, there were ongoing ad-hoc studies within universities and research institutions measuring varied air pollutants with weak collaboration or no involvement of the County. Ongoing efforts spearheaded by WRI on source apportionment and emission inventories was also noted. However, focus group discussion revealed that whereas academia/ data sub-committee of Nairobi Air Quality working group was involved, there was very little involvement of city environmental

officers who are tasked with the implementation of air quality action plan in the city.

### **3.1.3 Installing a network of air quality monitors in Nairobi City County**

The plan envisaged that the action of installing air quality monitors in Nairobi City and in selected background locations to monitor key air pollutants of concern, would be undertaken, within the first two years of implementation of the plan, with the environment department of Nairobi City government and bilateral partners and Universities. Opportunity to incorporate this action in the County Integrated Development plan and other relevant City plans was also highlighted.

Findings of the stock take indicate that the county in collaboration with WRI through Clean Air Catalyst project has installed 2 grade reference monitors measuring PM<sub>2.5</sub> at Mama Lucy Hospital and at Fire station. Focus group discussion revealed that there was very little involvement of city environmental officers in maintenance of the equipment and interaction with the data being gathered. In addition, the officers had no access to the monitoring site. The site was under lock and key – with the University team that they anticipated would meaningfully capacity build them through apprenticeship. It is worth noting that some of the trainings organized for a select team of City environmental officers on the monitors and induct them into monitoring and use of data from the monitors were halted due to funding freeze from the donor – USAID.

Response from the focus group discussion affirmed that academia partners Airqo had cloned their low-cost air sensor monitors, installed in various sub-counties within the Nairobi City, in the City's website. This website provides indicative state of air to the public to support decision making. However, it cannot be used for enforcement. The low-cost sensors and data generated are not owned by the



city, although they can request data from their partner for use through agreed framework. There is need for the city to have its own monitors and information management system for air quality management to ensure quality of data, ease of use of data in decision making and enforcement – in case where reference grade monitor is used for measurements. The 2019-2023 plan does not speak to maintenance of air quality monitors which has a budget implication.

The focus group discussion rated implementation of action of installing air quality monitors in Nairobi City and in selected background locations to monitor key air pollutants of concern as below average.

#### **3.1.4 Estimate the health and environmental impact of air pollution.**

The plan envisaged that the action of estimating health and environmental impact of the City's air pollution and likely future trends would be undertaken, within second and third year of the plan implementation, with department of Environment in Nairobi City County Government in partnership with the Universities and research institutions. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the City County Government had not undertaken this action. Although there are some independent and ad-hoc studies in the universities linking air pollution to health impacts, the City has not been meaningfully engaged. The focus group rated implementation of this action as “not undertaken”. The foregoing discussion of findings indicate that there is a serious gap on this action point which is considered as a best practice that galvanize governments action towards managing air quality.

### **3.2 Raise Public Awareness on Health and Environmental Impact of air pollution**

The plan's objective 2 was to raise public awareness on Health and Environmental Impact of air pollution in Nairobi City County. The respective strategy was to deploy effective communication on the health and environmental impacts of air pollution, mitigation options and benefits in the City. To attain this the actions discussed in subsections below were planned.

#### **3.2.1 Develop and implement a communications strategy for disseminating air quality information**

The plan envisaged that the action of developing and implementing a communication strategy for disseminating air quality information to decision makers and the public in Nairobi City would be undertaken, within the last three years of the plan implementation, with department of Environment in Nairobi City County Government in partnership with bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the city had not undertaken this action by the time the plan implementation period lapsed. The focus group rated the implementation of the action as "ongoing". It was however noted from the focus group discussions and key informant interviews' responses that the city was in the process of developing a communication strategy. The timelines, however, were beyond the planning period (2019-2023).

#### **3.2.2 Develop and implement a public participation strategy for air quality management**

The plan envisaged that the action of developing and implementing a public participation strategy for air quality management in Nairobi City would be

undertaken, within last three years of the plan implementation, with department of Environment in Nairobi City County Government in partnership with bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings of the stock-take indicate that the City had not undertaken this action by the time the plan implementation period lapsed. The focus group rated the implantation of this action as “not undertaken”.

### **3.3 Develop effective approaches for air quality management**

The plan's objective 3 was to develop effective approaches for air quality management in Nairobi City County. The respective strategy was to Adopt policy, legislative and regulatory options for air quality management that incorporate mandatory requirements, voluntary and market-based approaches in the City. To attain this the actions discussed in subsections below were planned.

#### **3.3.1 Develop the Air Quality Policy for Nairobi City**

The plan envisaged that the action of developing the Air Quality Policy for Nairobi City would be undertaken, within the first year of the plan implementation, with department of Environment in Nairobi City County Government in partnership with bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

The stock-take findings indicate that the City had developed Air Quality Policy. These efforts were supported by partners such as Stockholm Environmental Institute, UNEP and Environmental Compliance Institute. The formulation was undertaken within the timelines of the plan implementation. However, there are

no studies, so far, that evaluate the effectiveness of the policy. The focus group rated implementation of this action as “Successful”.

### **3.3.2 Develop Air Quality Legislation for Nairobi City**

The plan envisaged that the action of developing Air Quality Legislation for Nairobi City would be undertaken, within the second year of the plan’s implementation, with department of Environment in Nairobi City County Government in partnership with bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Stock-take findings indicate that the City developed Nairobi City County Air Quality Act within the timelines of plan implementation. These efforts were supported by partners financially and in expertise. However, there are no studies that have evaluated the effectiveness of this legislation. The development of air quality regulations that operationalizes the act is ongoing under financing from Clean Air Fund through Breath Cities initiative and expertise from ECAS institute. The focus group rated implementation of this action as “Successful”.

### **3.3.3 Develop the Implementation Strategy for the Nairobi City Air Quality Legislation**

The plan envisaged that the action of developing Implementation Strategy for the Nairobi City Air Quality Legislation would be undertaken, within the third year of the plan implementation, with department of Environment in Nairobi City County Government in partnership with bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that implementation strategy for Nairobi City Air Quality legislation has not been undertaken. The focus group rated the implementation of the action as “not undertaken”.

### **3.4 Build an effective implementation and enforcement programme for Nairobi City's Air Quality Legislation**

The plan's objective 4 was to Build an effective implementation and enforcement programme for Nairobi city's Air Quality Legislation. The respective strategy was to enhance the capacity of Nairobi City County Government for implementation and enforcement programme for Nairobi City's air quality legislation. To attain this the actions discussed in subsections below were planned.

#### **3.4.1 Set up an air quality unit within the Nairobi City County Government**

The plan envisaged that the action of Setting up an air quality unit within the NCCG would be undertaken, within the first year of the plan implementation, with Department of Environment in Nairobi City County Government. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Stock-take findings indicate that Air Quality Unit has been established in the Department of Environment in Nairobi City County Government. The focus group rated implementation of this Action as “Successful”.

#### **3.4.2 Develop a training handbook for implementation and enforcement of air quality legislation**

The plan envisaged that the action of developing a training manual/toolkit/handbook for implementation and enforcement of air quality legislation would be undertaken, within the second year of the plan implementation, with Department of Environment in Nairobi City County Government and support from

local experts and funding from partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Stock-take findings indicate that a training manual/toolkit/handbook for implementation and enforcement of air quality legislation has not been developed. The focus group discussion rated the implementation of this action as “not undertaken”.

### **3.4.3 Train enforcement officers on air quality enforcement**

The plan envisaged that the action of Train enforcement officers on air quality enforcement would be undertaken, within the third year of the plan implementation, with Department of Environment in Nairobi City County Government and support from bilateral partners. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the action of training enforcement officers on air quality enforcement has not been undertaken. The focus group discussion rated implementation of this action as “not undertaken”.

### **3.4.4 Develop and implement an incentive-based compliance promotion programme among the regulated community**

The plan envisaged that the action of developing and implementing an incentive based compliance promotion programme among the regulated community would be undertaken, within the third and fourth year of the plan implementation, with the Department of Environment in Nairobi City County Government. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the action of developing and implementing an incentive-based compliance promotion programme among the regulated community has not been undertaken. The focus group discussion rated implementation of this action as “not undertaken”.

### **3.4.5 Monitor compliance & enforce air quality requirements**

The plan envisaged that the action of Monitor compliance & enforce air quality requirements in the City would be undertaken, within the fourth and fifth year of the plan implementation, with the Department of Environment in Nairobi City County Government. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the action on monitoring compliance and enforcing air quality requirements in the city is at a low scale. The City compliance officers within the department of the environment monitors and enforces the “nuisance” aspect of air pollution as spelt out in the by-laws. There has been a challenge in monitoring compliance and enforcing air quality standards prescribed by the national legislation whose enforcers are National Environment Management Authority. Response from focus group discussion indicated that there was a challenge in monitoring compliance to “NEMA regulations” – The regulated community would question City compliance officers’ power to enforce these standards. It was further observed that Nairobi City County Air Quality regulation, once formulated, would legally empower City Compliance & enforcement officers to monitor compliance and enforce standards therein.

The focus group discussion rated implementation of this action as “below average”.

### 3.4.6 Evaluate performance of the Action Plan

The plan envisaged that the action of evaluating performance of the Action Plan, remediate and/or reinforce as necessary, building into the next Action Plan would be undertaken, within the fifth year of the plan implementation, with Department of Environment in Nairobi City County Government supported by external evaluator alongside inbuilt mechanisms in the County. Opportunity to incorporate this action in County Integrated Development Plan and other relevant City Plans was also highlighted.

Findings indicate that the action of evaluating performance of the action plan, remediate and / or reinforce as necessary, building into the next action plan was not undertaken within the stipulated timelines in the plan. Focus group discussions also revealed that there was no inbuilt mechanism in the department to monitor implementation of the Air Quality Action Plan. External evaluation of the plan is currently ongoing as a stock-taking exercise financed by CAF through the Breath Cities Initiative and supported by external evaluator. The group rated the implementation of this action as “ongoing”.

### **3.5 Incorporation of actions in County Integrated Development Plan and other relevant City Plans**

Key informants observed that the City County Planning process is uncoordinated. Actions in the Nairobi City County Air Quality Action Plan (2019-2023) have not been effectively incorporated in the new City Control Development Plan and other related physical plans. However, examination of the Nairobi City County Integrated Development plan 2023-2027 shows that the air quality actions have been incorporated in the CIDP. For instance, the CIDP acknowledges that Increased air pollution from rapid industrialization constantly reduces the air quality and threatens future use of this resource. It recognizes constant tracking



of pollution and proper remedial interventions as opportunity for optimal utilization and highlights Low adoption of green energy as a constraint and stakeholder collaboration as existing sustainable management strategy.

To meet its Aspiration II: A city of dignity, through the CIDP the targets clean environment for all city dwellers which included improved air quality. In Environment and water sub-sector priorities, the CIDP prioritizes protection of Nairobians from environmental pollution by mapping out air pollution in the City prone areas and install air quality monitoring equipment among other strategies.

Under sector sub-programs in Environmental Management and Protection Programme the CIDP has outlined increased air quality monitoring as a key output and number of air quality sampling kit procured as respective indicator. It has also outlined establishment and maintenance of city-wide Air quality monitoring & management network as a performance indicator for increasing climate resilience output with a total budget of 1 billion for the five-year term implementation (Nairobi City County CIDP, 2003).

### **3.5 General Performance in the Implementation of the 2019-2023 Air Quality Action Plan**

To evaluate the general performance in the implementation of Nairobi City County Air Quality Action Plan (2019- 2023) a scoring index matrix was adopted where the ratings were assigned scores as follows:

- Not undertaken = 0
- Below average = 1
- Ongoing/ average = 2
- Successful = 3

The means-score obtained indicates the general performance in implementation of the plan (Table 1)

**Table 1: Results of Scoring Index Matrix**

<b>S/ No</b>	<b>Action Description</b>	<b>Score</b>
1	Build capacity of NCCG officials to monitor and report air quality data	1
2	Establish Nairobi City's air quality baseline through rapid assessment cutting across seasons	0
3	Installing a network of air quality monitors in Nairobi City and in selected background locations to monitor key air pollutants of concern	1
4	Estimate the health and Environmental/climate change impacts of Nairobi City's air pollution and likely future trends	1
5	Develop and implement a communications strategy for disseminating air quality information to decision makers and the public in Nairobi City	3
6	Develop and implement a public participation strategy for air quality management in Nairobi City	0
7	Develop the Air Quality Policy for Nairobi City	3
8	Develop Air Quality Legislation for Nairobi City	3
9	Develop the Implementation Strategy for the Nairobi City Air Quality Legislation	0
10	Set up an air quality unit within the NCCG	3
11	Develop a training manual/toolkit/handbook for implementation and enforcement of air quality legislation	0
12	Train enforcement officers on air quality enforcement	0
13	Develop and implement an incentive based compliance promotion programme among the regulated community	0
14	Monitor compliance & enforce air quality requirements	1
15	Evaluate performance of the Action Plan, remediate and/or reinforce as necessary, building into the next Action Plan	2

S/ No	Action Description	Score
<b>Total</b>		18
<b>Means-Score</b>		1.2

Means-Score from the scoring index matrix is 1.13 which can be translated as 2. Implying the Nairobi City Government had an average performance in implementation of Nairobi City County Air Quality Action Plan 2019-2023.

### 3.5 Performance rating of the Nairobi City County Air Quality Action plan 2019-2023 contents with best practices

This section is informed by a summary of “best practices” in developing Air Quality Action Plans. Table 2 rates inclusion of various best practices in the content of the Plan. Incorporation of the best practice in the plan scores =1 while missing aspect of best practice scores = 0 (Zero).

The Means-Score is interpreted as follows:

0-0.25 = **Very poor**; 0.26-0.49 = **below average**; 0.5 = **Average**; 0.51-0.79 = **Above average**; 0.8-1 = **Excellent**

**Table 2: Performance rating with best practices (2019-2023 NCCAQAP)**

S/ No	Best practice description	Score
1	Evidence Based Approach	1
2	Setting target on pollution reduction per sector	0
3	Incorporate air quality objectives into waste management	0
4	Incorporate air quality objectives and actions transport plans	0
5	Incorporate air quality objectives in industrial emission reductions and energy production	0
6	Incorporate air quality objectives in development of urban agriculture strategies/ guidelines	0

S/ No	Best practice description	Score
7	Incorporate Air quality objectives in City's Planning CIDP, (Physical/Housing Plans/Building designs/Development control)	1
8	Adopting a community led approach and public participation	1
9	Public-Private Partnerships approach	1
10	Incorporating health and economic impacts of air pollution in the plan	1
11	Establishing Air Quality Action Planning in Law	1
12	Action Prioritization	1
13	Setting a monitoring & evaluation framework	0
<b>Total</b>		<b>7</b>
<b>Means-Score</b>		<b>0.54</b>

Means-Score from the performance rating matrix of Nairobi City County Air Quality Action Plan 2019-2023 with “best practices” is **0.54**. Implying that the first Air Quality Management Plan for Nairobi rated above average – on the lower rank. Thus there is much room for improvement.

## CHAPTER 4: STOCK-TAKING SUMMARY

### 4.1 Key Issues

This section Outlines key issues or barriers to implementation of 2019-2023 Nairobi City County Air Quality Action Plan.

- **Inadequate funding:** whereas the CIDP 2023 – 2027 has allocated Ksh. 1 billion to address air quality management and climate related issues, the amounts disbursed/ availed for implementation of action is very low due to budget cuts from treasury. There is also increased funding cuts from donors which has affected implementation of some planned action especially on capacity building environmental officers on air quality, procuring air quality monitoring equipment and other “not undertaken” actions.
- **Sustainability of Air Quality Monitoring:** Whereas partners have supported the City in acquisition of 2 No. of regulatory monitors, its evident that the knowledge and skill transfer on air quality measurement and monitoring is not effective since the City environmental officers who are the implementers of the Air Quality Action Plan are not meaningfully involved in maintenance, data collection and analysis. Currently, the city officers have no access to the two sites. Meaning they are losing opportunity for apprenticeship.

The high cost of maintaining the reference monitors requires adequate allocation and actual disbursement of maintenance funds to sustain the reference monitors owned by the city. Lack of the financing affects sustainability of monitoring programme.

- **Inadequate capacity to monitor and report on air quality data.** Most City environmental officers lack the knowledge and skill of monitoring and

reporting on air quality data. This gap needs to be addressed innovatively in the next planning cycle.

- **Lack of set targets for air pollution reduction per priority sector.** This leads to untargeted actions which are not effective, efficient and more often than not non-implementable.
- **Misaligned air quality objectives to sectoral plans.** This enhances ineffectiveness and inefficiency in the implementation of planning actions which could otherwise be leveraged through other sectoral plans.
- **Lack monitoring & Evaluation framework for Air Quality Action Plan.** There should be an inbuilt mechanism within county processes to ensure internal monitoring of the implementation of the Air Quality Action plan. This will provide the opportunity to undertake corrective measures within the plan implementation timeline. Thus enhancing efficiency and contributing to sustainability.
- **Need to establish Nairobi City's air quality baseline through rapid assessment cutting across seasons.** This exercise informs the plan resulting to proposed actions that are implementable and targeted hence ensuring efficient and effective utilization of resources available to implement the Air Quality Action Plan.
- **Need to install more city owned air quality monitors and its information management system for reporting on air quality within the city.** This will enable the city to take evidence backed actions for betterment of the air quality and general healthy environment for Nairobians.

- **Need to develop and implement a public participation strategy for air quality management in Nairobi City.** This will ensure that the formulation of air quality action plan is more inclusive resulting to enhanced public awareness on air quality management and voluntary compliance through innovative local solutions.
- **Develop a training manual/toolkit/handbook for implementation and enforcement of air quality legislation.** This will result to harmonized implementation and enforcement thus achieving the goal and objectives of clean air action planning.
- **Train enforcement officers on air quality enforcement.** This will ensure effective enforcement of air quality standards and enhance compliance. Thus ensuring a clean and healthy environment.
- **Develop and implement an incentive-based compliance promotion programme among the regulated community.** This will enhance compliance and ensure sustainability.
- **Develop the Implementation Strategy for the Nairobi City Air Quality Legislation.** This will ensure consistency and coherence in formulation of legislation. To avoid duplication, overlaps and omissions – this strategy will thus enhance coordination.

## Conclusions

### 4.2 Lessons Learnt

- Partnerships are key in ensuring successful implementation of the Air Quality Action Plan.

- Formation of City Wide Air Quality working group that bring on board all stakeholders and community ensures successful implementation of Air Quality Action Plan.
- Mapping stakeholder interest and power is an important ingredient in formulating an engagement framework for the operation of an air quality working group network.
- Community involvement in formulation and implementation of an air quality action plan enhances awareness and provides opportunity to tap into local solutions for managing air quality within a community or a City.
- Integrated planning enhances successful implementation of Air Quality Action Plan. However, the difference between budgeted sum and disbursements inhibit implementation of the plan.
- Preparation of Air Quality action plan before the preparation of an integrated plan provide opportunity to incorporate the air quality management objectives and actions in the CIDP.

## **Recommendations**

- Enhance the Capacity of City's Environmental Officers to monitor and report on air quality.
- Set air pollution targets in each priority sector
- Align sectoral plans to air quality objectives.
- Establish a monitoring and evaluation framework for Nairobi City County Air Quality Action Plan.
- Undertake inter-seasonal baseline assessment.
- Established and incentive-based compliance promotion programme among the regulated community.



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