BEST PRACTICES IN AIR QUALITY ACTION PLANNING

MARCH, 2025

EXECUTIVE SUMMARY

The "best practices" air quality action report was undertaken by Environmental Compliance Institute with financial support from the Clean Air Fund through the Breath Cities Initiative. This report acknowledges that maximizing the impact of experiential knowledge through effective knowledge sharing enables countries and cities to benefit from exchange of experiences and solutions with one another thus developing robust and implementable Air Quality Action Plans. The aim of this report is to addresses the gap in documentation and sharing of "best practices" in air quality action planning in cities. This report adopts a criterion for selecting best practices developed by World Health Organization Regional Office for Africa, 2008 and Culture 21 which aligns to best practices in air quality management. It focuses on efficiency, effectiveness, relevance, ethical soundness, sustainability, reproducibility, involvement of partnerships, communities and political commitment. The report presents case studies to inform each "best practice". It recommends "best practices" in context of the planning area to ensure effectiveness, efficiency, relevance and sustainability.

ACKNOWLEDGEMENT

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CHAPTER 1: INTRODUCTION

Air pollution is a global public health emergency attributed to Ninety-one per cent of the world's population living in places where air quality exceeds the WHO limits. About seven million deaths – one in eight deaths worldwide – is due to air pollution-related related non-communicable diseases such stroke, lung cancer, chronic respiratory disease and heart complications, accounting for between a quarter and over one third and one quarter of those deaths (WHO, 2019). Air pollution is also responsible for more than 50% of childhood pneumonia deaths. It is a second leading environmental risk factor in Africa. This risks are attributed to rapid urbanization and economic growth especially in developing countries (WHO, 2025).

Strategic directions to combat this menace is through clean air action planning – proposing and implementing strategies, programmes, projects and activities that ensure good air quality in cities. Maximizing the impact of experiential knowledge through effective knowledge sharing enables countries and cities to benefit from exchange of experiences and solutions with one another thus developing roburst and implementable Air Quality Action Plans. However, a significant barrier to knowledge sharing and reapplication of experiences is limited information and knowledge documentation and sharing.

This report addresses the gap in documentation and sharing of "best practices" in air quality action planning in cities to promote sustainable and robust air quality action plans that address air pollution in cities.

CHAPTER 2: METHODOLOGY

This best practices report has been compiled through desktop studies that entailed search of practices informing air quality action planning in various jurisdictions. The search was undertaken in various electronic data bases that provided information on the practices. A criterion for selecting best practices developed by World Health Organization Regional Office for Africa, 2008 and Culture 21 was adopted with the criterion shown in table 3.1 below.

Table 3.1: Best Practices Selection Criteria

	Parameter	**Definition**
1.	Effectiveness	The practice must work and achieve results that are measurable
2.	Efficiency	The proposed practice must produce results with a reasonable level of resources and time
3.	Relevance	The proposed practice must address the priority air quality management issues in cities in developing Countries
4.	Ethical Soundness	The practice must respect the current rules of ethics for dealing with human populations
5.	Sustainability	The proposed practice must be implementable over a long period of time without any massive injection of additional resources.
6.	Reproducibility	The proposed practice, as carried out, must be replicable in cities. Especially in developing countries.
7.	Involvement of partnerships	The proposed practice must involve satisfactory collaboration between several stakeholders
8.	Community Involvement	The proposed practice must involve participation of the affected
9.	Political commitment	The proposed practice must have support from relevant national and City Authorities

CHAPTER 3: BEST PRACTICES

3.1 Introduction

This section discusses best practices in air quality action planning in line with the outlined criteria in the methodology section of this report.

3.2 Approaches to Best Practices in Air Quality Action Planning

3.2.1 Best practice 1: Evidence-based approach

This approach is based on use of data and research as a driver for Air Quality Action plan. It ensures that interventions and actions are effective and targeted to specified air quality challenge in an area. This is enabled through robust monitoring, modelling and assessment to understand the source, impact and effect of air pollution.

A critical step in developing air quality action plans is source identification. This entails data collection by determining the pollution origin and determine pollutant estimates by developing emission inventories, conducting source apportionment studies and conducting dispersion modelling (UNDP, 2024). The analyzed results are delivered as source contributions, source impacts or increments to show the influence of the emission sources (Thunis et.al, 2019). Air quality is data-driven to inform policy-decisions for the benefit of the public hence such approaches aid in planning.

In developing countries where financial resources are inadequate, using evidence based approach in air quality planning – which requires much resources due to expensive reference air quality monitors- seem impossible especially due to competing issues such as poverty and lack of good health care. However, some cities have leveraged on short term studies to inform air quality action plan – amid their inadequacies.

Case Study: Iloilo City in Philippines

- Performed short-term air quality monitoring to supplement available air quality data.
- Short-term air quality monitoring to determine the ambient air quality conducted at five sites across the city.
- Monitoring involved measurement of PM_{10}, Carbon dioxide, nitrogen dioxide and ozone using portable sensors.
- Result indicated exceedance of national 8-hour Ozone standards at three sites.
- Due to limited number of sampling days, it was recognized that these results are not representative.
- In assessing what challenges a clean air action plan need to address in the city, the short-term air quality monitoring results were considered in the context of socio-economic conditions and trends.

Lessons Learnt

- Whereas short term monitoring with "low cost sensors" is not representative it can inform a planning action.
- Evidence from continuous air quality measurements is required to inform a robust Air Quality Action Plan.

3.2.2 Best practice 2: Multi-sectoral approach by setting targets on pollution reduction

This approach entails identifying sources of air pollutants in various sectors of the economy, estimating their contribution to air pollution, comparing the pollution levels to World Health Organization standards or national standards and setting target to reduce the emission levels from each sector. The targets which address the exceedance based on hourly, diurnal, seasonal and annual variations are set incrementally since they involve change of practices and technologies which have financial implications and link to livelihoods and health. From this, the country may first designate an area as a non-attainment then develop emission reduction measures. The targets can be set on a multi-sectoral approach as per the activities within the designated areas, documented in baseline studies, categorized per sector as discussed below:

Sector 1: Incorporate air quality objectives and targets in waste management

Waste burning is considered an easier waste elimination option. However, it is attributed to inefficient solid waste management systems (GEF, 2024). While appreciating technologies such as hospital incinerators are key in pathogen elimination, the operation must be considered to uphold human and environmental health (Stockholm Convention Secretariat, 2008). Waste burning results in unintentional production of persistent organic pollutants, majorly dioxins, furans and polycyclic aromatic hydrocarbons which are carcinogens, particulate matter and heavy metals. To effectively manage these emissions, there is need for legislation defining the different waste streams which will then help in designing the appropriate discarding methods (GEF, 2024). Other practices such managing waste through open dumping also contributes to emissions due to decomposition or burning that occur due to natural flaring from gases emitted during decomposition or from deliberate burning of waste to reduce quantities. The

transboundary nature of air pollution also poses its complexities in ensuring compliance and enforcement measures.

Case study: Brazil Estrutural Landfill Transition

Key issues

- Closure of Open Dumpsite: The Estrutural landfill, Latin America's largest open dumpsite, was closed in 2018, stopping the burning of waste that released toxic gases like methane, CO_2, and particulate matter.
- Sanitary Landfill Replacement: A new landfill, equipped with methane capture systems, was established to prevent greenhouse gas emissions and improve air quality.
- Emission Reduction: The transition is expected to reduce at least 70% of the projected 1.4 million metric tons of CO_2-equivalent emissions by 2050, with methane capture systems mitigating emissions from decomposing waste.
- Health Improvements: The closure reduced toxic pollutants for nearby residents and waste pickers, decreasing respiratory illnesses and health risks.
- Environmental Benefits: The closure protected Brasília's water supply from contamination due to leachate and improper waste management.

Lessons Learned

- Air Quality Gains: Transitioning from open dumpsites to sanitary landfills with gas capture improves urban air quality by reducing harmful emissions.
- Climate Impact: Methane capture technologies are vital for mitigating greenhouse gases, linking air quality and climate policies.
- Health Benefits: Eliminating waste burning improves public health by reducing exposure to toxic pollutants.
- Infrastructure Investment: Significant investment in waste management technology and infrastructure yields long-term environmental benefits.
- Social Equity Challenges: Displacement of waste pickers highlights the need for inclusive policies to support affected communities during transitions.

Sector 2: Incorporate air quality objectives and targets in city transport plans

Transport activities contributes significantly to health burden of air Pollution (Clean Air Fund, 2024; Glazier & Khreis, 2020). Mobile sources have widely combusted fuel that contributes to pollutant emissions. Other related factors include the age of the vehicle and the technology of the engine and associated emission systems. In declaration of an area as nonattainment, it is important to devise ways to reduce emissions. In transport sector, one way would be to set apart low emission

zones, which restrict or ban vehicles with attributes that accelerate pollution. By this, this can encourage the public sector as well as individual vehicle owners to consider changing their fleet to more viable ones (C40, 2025). Equally, incorporating standards in different regions can help in managing transport emission (KBS, 2025).

Case Study: Addis Ababa Air Quality Management Plan

- Launched in June 2021.
- Goal is to reduce $PM_{2.5}$ in Addis Ababa and its associated health burden and economic impact.
- The plan was developed by the Addis Ababa Environmental Protection and Green Development Commission (AAEPGDC) in collaboration with the United States Environmental Protection Agency (USEPA)
- One of the plans actions is to reduce transport emission, transition to clean mobility and non-motorized transport.

Lessons learnt

- Clean air quality objectives can be incorporated in transport planning through shared action and approach in both plans.
- Enforcement is required to ensure implementations of actions that reduce air pollution from transport sector.

Sector 3: Incorporate air quality objectives in industrial emission reductions and energy production

In ensuring economic sustainability, many industries engage in manufacturing of consumer goods. This is due to increasing population and needs such as employment and basic needs. While at it, there is extensive use of fossil fuels that contribute greatly to emissions (United Nations, 2025). To limit emissions in industry and energy, the adopted options are setting emission limits, incorporating emission control technologies within the process equipment and advocating for self-regulation through corporate social responsibilities.

Case study: Cities in Henan province

Key issues

- Emission Reduction Potential: Significant potential for reducing emissions of SO2, NOx, CO, PM10, PM2.5, VOCs, and CO2 through green upgrades in industrial parks.
- Energy Structure Adjustment: Transition from coal to cleaner energy sources, such as natural gas, as a key strategy for reducing emissions.
- Energy Efficiency Improvements: Enhancing energy efficiency in industrial processes offers substantial emission reduction potential.
- End-of-Pipe Technologies: Implementing advanced air pollutant treatment technologies is crucial for improving air quality.
- Spatial Variability: Air quality improvements varied across cities, highlighting the need for location-specific strategies.
- Industrial Parks as Key Targets: Energy-intensive industrial parks were identified as critical intervention points for emission reductions.

Lessons learnt

- Integrated Approaches: Combining strategies for reducing both air pollutants and CO2 can create synergistic benefits.
- Location-Specific Strategies: Tailoring interventions to the unique emission profiles and industrial structures of regions is essential.
- Energy Transition: Transitioning from coal to cleaner energy is crucial for improving both air quality and climate outcomes.
- Targeted Interventions: Focusing on high-emission facilities and sectors maximizes environmental benefits.
- Policy Support: Effective implementation of green measures requires supportive policy frameworks and continued innovation in clean technologies.
- Sustainability in Industrial Development: Balancing economic growth with environmental protection requires integrated strategies addressing multiple environmental objectives simultaneously (Hei et al., 2022).

Sector 4: Incorporate air quality objectives in development of urban agriculture strategies/ guidelines

With the increase in population over the decades, food security is key to sustain livelihoods. Urban agriculture has since then been widely practiced through farming and livestock rearing, leading to need for more land. Such advancements contribute to emissions production and acceleration of climate change impacts. A mitigation measure adopted in this sector is climate-smart agriculture that boost productivity, enhance resilience and reduce GHG emissions (World Bank Group, 2025). The emission estimations in urban agriculture, is done by developing a greenhouse gas emissions inventory and set targets for sectoral reductions (US EPA, 2025).

Case Study: Detroit's Urban Farms (USA)

Key Issues

- High levels of urban decay and abandoned lots
- Food insecurity and unemployment
- Need for policy support to sustain urban farming

Lessons learnt

- Repurposing vacant land for agriculture can improve food security and create jobs.
- Government incentives and zoning laws play a crucial role in supporting urban farming.
- Community engagement is essential for long-term success.

Case Study: Havana's Organopónicos (Cuba)

Key Issues

- Economic sanctions and food shortages
- Dependence on external food imports
- Need for sustainable and organic farming practices

Lessons learnt

- Government-supported organic farming can enhance food self-sufficiency.
- Integrating composting and crop rotation improves sustainability.
- Localized food production strengthens food security in crisis situations.

Case Study: Singapore's High-Tech Urban Farms

Key Issues

- Extremely limited agricultural land
- Dependence on food imports
- High demand for food security through technology

Lessons learnt

- Vertical farming and hydroponics can enhance food production in small spaces.
- Government investment in agricultural innovation is key to long-term sustainability.
- Technology-driven farming can reduce reliance on imports and improve food resilience.

Sector 5: Incorporate Air quality objectives in City's Planning (Physical/Housing Plans/Building designs/Development control)

The Paris Agreement advocates for reduction of greenhouse gases and maintain earth's temperatures to below 1.5 ^{0}C to avert the effects of climate change (United Nations, 2025). Countries are working towards achieving net zero. To achieve this, countries can incorporate in planning policies the aspect of sustainable practices to reduce pollution by acting as sinks. This can be achieved through climate-resilient urban planning such as green building standards, integrate renewable energy for buildings, use of sustainable building materials, and mitigate against dust pollution during construction (UNEP, 2025).

Case Studies on Urban Air Quality and Mobility Solutions

1. London, United Kingdom

Key Issues

- High levels of NO_2 pollution due to vehicle emissions.
- Need for improved public transport and alternative mobility options.

Lessons learnt

- Implementing Ultra-Low Emission Zones (ULEZ) is effective in reducing air pollution.
- Investing in public transport and non-motorized transport infrastructure significantly decreases vehicle emissions.

2. Bogotá, Colombia

Key Issues

- Heavy reliance on private vehicles leading to high air pollution levels.
- Limited infrastructure for sustainable urban mobility.

Lessons learnt

Lessons learnt

- Bus Rapid Transit (BRT) systems, such as TransMilenio, help reduce private car usage and lower emissions.
- Weekly road closures (Ciclovía) promote sustainable transport and healthier lifestyles.

3. Copenhagen, Denmark

Key Issues

- Need to reduce carbon emissions from urban transport.
- Ensuring urban development supports environmental sustainability.

Lessons learnt

- Prioritizing bicycle infrastructure leads to a significant reduction in transportation emissions.
- Green urban planning, including green roofs and parks, enhances air quality and urban livability.

3.2.3 Best practice 3: Multi-stakeholder approach

Approach 1: Adopting a community led approach and public participation

Community based/ led approach refer to process of purposefully including or integrating persons who are either directly or indirectly a stakeholder to a cause (World Vision, 2022). It may imply in the whole process of in inception, formulation, implementation and monitoring of the Air Quality Action plan. The benefits of this approach includes; opportunity to leverage on wide range of skill set which may not be inherent in the core planning team, help to deal with community problems

and establish familiar cultural patterns and support structures which helps with sustainability (UNHCR, 2008).

Citizen science is a widely used tool in engaging local communities in air quality monitoring to address the needs and concerns of the community. This is coupled with availability of low cost sensors deployed in their neighborhoods and acceleration of environmental justice (Manshur et al. 2023; UNEP, 2024). To increase transparency in the monitoring results and effects to community, educational campaigns and public forums for information exchange and policy issues is of essence. The empowered community meaningfully engage in formulation, implementation and monitoring of Air Quality Action Plan.

Case Study: Hong Kong's Clean Air Plan 2035

- The plan preparation involved community from needs assessment, identification of key pollution sources to development and monitoring of the plan.
- Plan focused on green transport, livable environments, comprehensive reduction, clean energy, scientific management and regional collaboration

Lessons Learnt:

A successful clean air action plan must be driven by the community it aims to serve.

Approach 2: Public-Private Partnerships

Policy implementation on air quality issues on a greater scope requires finances and skills in the relevant area of interest. While focusing on multi-sectoral approaches, there are diverse initiatives that can be implemented but require

extra effort. Philanthropies and other financial aids come in handy to support local authorities achieve their targets through set actions. These initiatives further require political goodwill and public inclusion for success.

Public-private partnerships provide opportunity to leverage on private sector expertise and investments that address air quality management challenges thus leading to more efficient and sustainable solutions. Its benefits include but not limited to: provision of financial resources, technical expertise, operational efficiency, risk sharing and innovations in management of air quality.

Case study: Bangladesh – Environmental Sustainability and transformation Project

- Degraded environment due to rapid population growth and economic development in Bangladesh.
- Inadequate finance leading to comparatively very low allocation of budget to tackle environmental pollution – including air quality.
- Through support of the World Bank, Bangladesh Environmental Sustainability Transformation (BEST) project focused on increasing private participation in green investment through innovative Credit Guarantee Funds (CGF) by World Bank, ADB and private of up to 70%.
- The funds Supports investment in pollution reduction, focusing on municipal waste management, Brick Kiln sector and Roof Top Solar system. It is anticipated that the financed project would reduce health risk associated with outdoor air pollution for low-income populations and women.

Lessons Learnt:

- Involvement of private sector in funding air quality priority action programmes may require innovative financing like CGF that incentivize them to invest directly or indirectly in air pollution control.

Case Study: Nairobi City County

- Nairobi City County adopted a strategic approach to work with partners in implementing its Air Quality Action Plan 2019-2023.
- Partnered with Stockholm Environmental Institute, Environmental Compliance institute and UNEP in formulation of Air Quality Act, Air quality Policy and the 2019-2023 Air Quality Action Plan.
- Partnered with AirQo on data collection infrastructure that led to city wide installation of low cost sensors for indicative real-time data collection and providing communication of the same by cloning their sensors to City website.
- Partnered with WRI to increase awareness on air quality within the city, to formulate an ad hoc framework that provides a platform that brings together stakeholders in Air Quality space within the city to contribute to air quality management, install two reference monitors within the city to support data collection and enhance air quality monitoring infrastructure in the City
- Currently partnering with Clean Air Fund through the Breath Cities initiative on developing City owned Air Quality Data Management System and publicly accessible data portal. Partnership also include in the areas of supporting review of Nairobi City County Air Quality Plan 2019-2023, supporting formulation of air quality regulations, training of City County

Environmental Officers on Air Quality through Geo-Health Hub Eastern Africa hosted by the University of Nairobi as well among other initiatives.

Lessons Learnt:

- Partnerships are key to success - They contribute essential resources, expertise, and technology, that address both data collection and action on air quality.
- Partnerships is a key step in overcoming institutional barriers that inhibit implementation of actions in air quality management plans.
- Partnerships enhances public engagement and accountability which ensures efficiency and effectiveness in implementation of Air Quality Management Plan since the community is involved.

3.2.4 Best practice 4: Incorporating health and economic impacts of air pollution in the plan

Economic assessments of the health burden associated to air pollution enables the decision makers to comprehend the cost of gains and losses caused by the quality of the air. These assessments help in determining if the policy measures set for management of air pollution are likely to reduce disease burden attributed to pollutants (UNEP, 2025). Inclusion of both health and economic perspectives in air quality action planning is a best practice because it highlights on quantifiable benefits of implementing clean air strategies, involves a broader stakeholder engagement, ensures equity considerations and aligns with principles of sustainable development thus easing policy action justification and promoting

holistic planning. This enriched action plan can inform policy in areas such as clean energy options, zoning and city's master plan development (WHO, 2025).

Case Study: City of London 1952 Smog

- The great smog of 1952; report of over 4,000 deaths and others suffering from respiratory related challenges
- Studies undertaken revealed correlation between air pollution and respiratory illness, cardiovascular diseases and overall mortality rates
- Cities began integrating air quality issues into the planning process.
- It was recognized that urban environment play a big role in public health outcomes
- Introduction of zoning laws in physical planning
- Later there was introduction of low emissions zone

Lessons Learnt

- Linking health and economic impacts of air pollution to planning leads to formulation of implementable actions/ strategies.
- Linking and economic impact of air pollution to action planning elicit quick response to strategic actions by the Authorities.

Case Study: Jakarta, Indonesia - Impacts of Air Pollution on Health and Cost of Illness

Health Impact Assessment

- Jakarta conducted a comprehensive comparative risk assessment linking $PM_{2.5}$ and ozone exposure to specific adverse health outcomes.
- The assessment identified over 7,000 childhood health issues, 10,000 deaths and 5,000 hospitalizations annually attributable to air pollution.

- The study established clear causal relationships between specific pollutants and health outcomes, creating a robust evidence base for intervention.

Economic Cost Analysis

- The city quantified an annual economic burden of USD 2.94 billion resulting from air pollution-related health impacts.
- This economic assessment included direct healthcare costs from treating pollution-related illnesses.
- The analysis incorporated productivity losses from workdays missed due to illness.
- Long-term economic impacts from premature mortality were factored into the calculations.
- The economic burden represented a significant portion of the city's GDP, highlighting air pollution as both a health and economic development issue.

Policy Development Based on Health-Economic Data

- Jakarta used the health and economic data to prioritize specific air quality interventions with the highest return on investment.
- The city integrated these findings into their urban planning framework.
- Policymakers leveraged the economic cost data to justify investments in air quality improvement infrastructure.
- The health impact data helped identify which populations and areas were most vulnerable, allowing for targeted interventions.
- The comprehensive assessment supported cross-sectoral collaboration between health, transport, and urban planning departments.

Monitoring and Implementation Systems

- Jakarta established an enhanced air quality monitoring network to track progress and continue gathering data.
- The city implemented targeted regulations for major pollution sources identified through the assessment.

- Public health tracking systems were integrated with air quality data to monitor real-time health outcomes.
- Regular reassessment procedures were established to evaluate the effectiveness of interventions.

Lessons Learnt

Value of Local Data Integration

- Locally specific health and economic data proved significantly more effective for policy advocacy than generic estimates.
- Integrating local air quality data with local health statistics created a more compelling case for action.
- Local economic impact assessments resonated strongly with policymakers and stakeholders.
- City-specific data helped counter arguments against air quality regulations by clearly demonstrating the local benefits.

Lessons Learnt

Economic Framing Strengthens Political Support

- Framing air pollution as an economic issue, not just an environmental or health concern, broadened political support.
- Quantifying economic losses helped justify the costs of implementing air quality improvement measures.
- The economic impact data attracted support from business communities and economic development agencies.
- The dual-benefit narrative of reducing healthcare expenditures while improving economic productivity proved particularly effective.

Lessons Learnt

Cross-Sectoral Collaboration is Essential

- Jakarta's experience demonstrated that effective air quality management requires collaboration across health, transport, environmental, and economic planning departments.
- Breaking down institutional silos was critical to developing integrated solutions.
- Data sharing across departments improved the quality and applicability of analyses.
- Joint planning sessions facilitated more comprehensive and effective interventions.

Lessons Learnt

Public Communication of Health-Economic Impacts

- Clearly communicating the health and economic impacts to the public increased support for potentially disruptive interventions.
- Translating technical data into accessible formats helped build public understanding and support.
- Personal health impact messaging motivated behavioral changes more effectively than abstract environmental messaging.
- Economic impact messaging was particularly effective with business stakeholders and middle-class residents.

Lessons Learnt

Need for Continuous Monitoring and Adaptation

- Jakarta learned that air quality management requires ongoing monitoring and adaptation rather than one-time interventions.
- Regular reassessment of health and economic impacts guided iterative policy improvements.
- Establishing baseline data and progress metrics was essential for maintaining political momentum.
- Building monitoring capacity proved as important as the initial interventions themselves.

Lessons Learnt

Importance of Equity Considerations

- The health and economic impact assessment revealed disproportionate effects on lower-income communities.
- This finding highlighted the need for equity-focused interventions rather than city-wide uniform approaches.
- Targeting resources toward most-affected communities improved the overall cost-effectiveness of interventions.
- Addressing environmental justice concerns strengthened public support for broader air quality initiatives.

3.2.5 Best practice 5: Establishing Air Quality Action Planning in Law

Establishment of air quality action planning process in law - both at national level and local level legally mandates air quality action plans. This practice provides an effective framework for addressing air pollution and protecting public health through establishment of standards and legal consequences for non-compliance. The law ensures enforcement power, accountability in addressing emissions, meaningful public engagement, long term commitment in emission reduction, standardized monitoring and reporting and compliance to international agreements.

The procedure for air quality plan formulation, implementation and review with clear regulations, standards and guidelines should be established in law to address weak/ no enforcement, unaccountability and placation.

Case Study: Nairobi City County

- The Kenyan Constitution 2010 devolved air quality management to Counties.
- All the counties in Kenya had no county air quality management act other than the by-laws on public health which addressed issues of nuisance.
- Nairobi City through partners developed an air quality action plan but did not have a policy, law and regulation specifically addressing air quality management.
- The lack of the policy & legal framework to address air quality in Nairobi City partly limited the formulation, implementation and review of the plan.
- Through partnerships with UNEP, Stockholm Environmental Institute (SEI), Environmental Compliance Institute (ECI) and other stakeholders the city developed an air quality policy and the Nairobi City County Air Quality Act 2022.
- Currently the city is developing the Nairobi City County Air quality regulation that is anticipated to outline the air quality action planning process and air quality standards for the city.
- These efforts are geared towards having clear legal framework to address air quality management in the city.

Lessons Learnt

- Establishing policies, laws and regulations requires partnerships and meaningful public participation.
- Effective implementation of air quality action plan requires a robust air quality legal framework.

3.2.6 Best practice 6: Action Prioritization

The whole aspect of adopting best practices is pegged on actions based on specific objectives and strategies for air quality action planning. These are tied to a defined timeframe, reviewed over the set time. The achievement of actions is based on mid-term or end-term reviews to determine its appropriateness.

Action prioritization in Air Quality Action planning is considered a best practice since it ensures effective and efficient utilization of resources by focusing on actions/ measures with greatest pollution reduction, maximizing health benefit while optimizing costs. In this case critical issues are given priority instead of spreading efforts thinly across various issues/ initiatives.

Case Study: Durham City Air Quality Action Plan (2017)

- The city undertook a baseline study on air quality within its jurisdiction and modeled possible future Scenarios which was shared with the technical working group.
- Potential options to improve local air quality were identified and discussed with City's working group on air quality management.
- The working group provided essential information needed to undertake appraisals of the proposed options to improve local air quality.
- The proposed options were then discussed with the parallel corporate steering group who approved options to be taken forward to the initial appraisal and subsequent development of actions.
- The options were modelled to calculate change in pollutants concentration that could be theoretically achieved in each relevant sector.
- Options that would have most benefit to local air quality effects were determined.

- A scoring was used to identify options that could be taken forward for inclusion in the Air Quality Management Plan. Some of the parameters considered include; predicted changes in air quality at sensitive locations, overall acceptability, cost, time scales, as well as other related potential effects such as noise, climate change and social inclusion.
- A number of options were not taken forward to be developed as Actions due to low overall appraisal scores or significant constraints.

Lessons Learnt

- An objective scoring criteria informed by views of the city working group, composed of relevant stakeholders, led to prioritizing options that were implementable.
- The prioritized actions ensured cost optimization, health benefit and pollution reduction.
- The process of determining scoring criteria to guide prioritization ensured social inclusivity which promoted community awareness and championship of the prioritized actions.

3.2.7 Best practice 7: Setting a monitoring & evaluation framework

Having the sector-specific estimates needs updated information overtime. By this, cities can develop continuous emission monitoring networks to inform if the measures put in place are feasible or not. The data received can then be used to evaluate the whole planning process and recommend areas of improvement (UNEP, 2025).

An elaborate monitoring & evaluation framework should be established. This framework should enable monitoring of all the aspects of the plan. Effective frameworks define clear goals and objectives, identifies relevant indicators, establish data collection methods, assign roles and responsibilities, and plan for analysis and reporting. The evaluation should be an ongoing process to enable identification of gaps and documentation of successes which are key in formulation/ revision of implementation strategies during the implementation of the plan or after lapse of implementation period.

Case Study: Air Quality Management Framework for South Africa, 2007

- The government established an air quality management framework for the country.
- It covered in detail – issues of approach to air quality governance and tools of implementation of national framework among other critical aspects of air quality management
- On tools of implementation, issues of air quality information management system detailing South Africa Air Quality information system, problem identification and prioritization, strategy development, impact management, compliance monitoring- with clear indicators, enforcement and cross cutting principles are clearly set out.
- This framework enabled monitoring and evaluation of set-out actions in air quality action plans.
- The assessment of progress being achieved in line with predetermined goals and objectives and integration of data from different sources to determine whether goals are being met through comprehensive appraisal of short- and long-term impacts for recommendation design was enabled by this framework.
- However, the framework was weak in monitoring human health impacts as a result of air pollution.

Lessons Learnt:

- A robust Air Quality management monitoring & evaluation framework should integrate evaluation of health of comes related to air pollution.
- The implementation of an air pollution M&E framework with specific focus to include consideration of health and vulnerability ensures that efforts consuming time, money and human capacity will not continue without appropriate assessment.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Air Quality Action Plans should be prepared – guided by best practices in order to ensure that the goal, objectives, strategies and planning actions are achievable and implementable. Documentation of best practices should be an ongoing practice since it provides the opportunity to share knowledge and create room for innovation in their application. Thus ensuring continuous improvement in planning and managing air quality for a clean and healthy environment.

Recommendation

- Apply best practices in context of the planning area to ensure effectiveness, efficiency, relevance and sustainability.
- To apply any best practice there is need to buy-in community and commitment of political leaders.

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