

The Twenty-sixth Session of the Scientific Advisory Committee (SAC26) on the Acid Deposition Monitoring Network in East Asia (EANET) 20-22 October 2026, Kuala Lumpur, Malaysia (Hybrid)

Air Quality Management in Sri Lanka

Warnika Ranawaka Arachchi

Director (Air Quality, Noise and Vibration Monitoring)

Environmental Protection Division



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மத்திய சுற்றாடல் அதிகாரசபை
Central Environmental Authority



22.10.2026

Content

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- Central Environmental Authority
- Regulations imposed for Air quality management under the powers vested from National Environmental Act
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Central Environmental Authority

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(Our website: <http://www.cea.lk>)

- The Central Environmental Authority (CEA) was established in August 1981 under the provision of the National Environmental Act No:47 of 1980.
- The CEA was given wider regulatory powers under the National Environment(Amendment) Acts No:56 of 1988 and No:53 of 2000.

Vision : A clean and Green Environment through Service Excellency

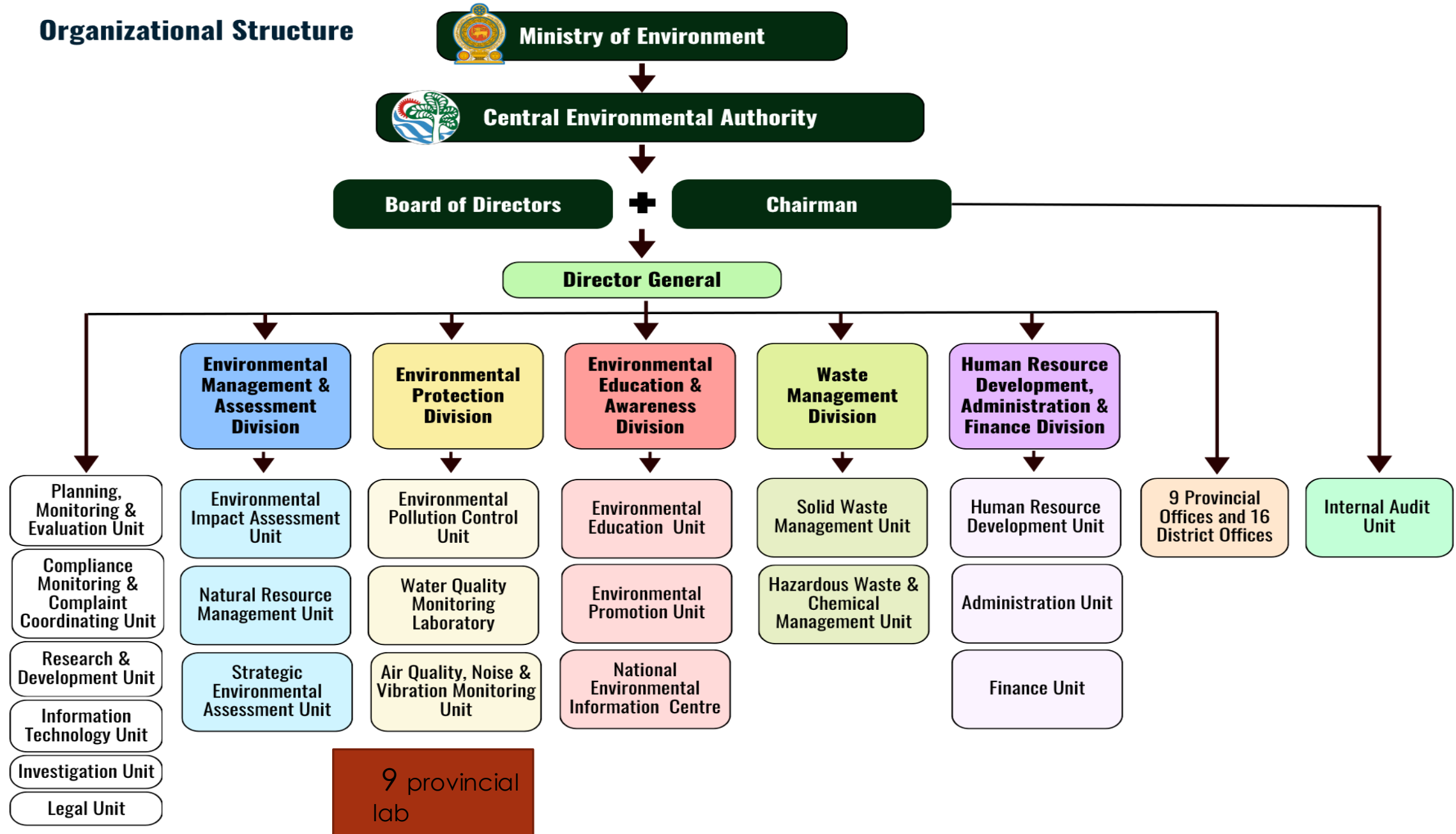
Mission : Flagship of the nation in protecting and managing the environment by coordination , public participation, enforcement , appropriate technological interventions, education and awareness

Objectives

- Protect, manage and enhance the environment
- Regulate, maintain and control the quality of the environment
- Prevent, abate and control pollution

Provide islanded service through Head office and 9 provincial offices and 16 District offices including provincial laboratories

Organizational Structure



Central Environmental Authority

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Provision of NEA for Air Quality -Part IV B

- 23J. Subject to section 23A of this Act with effect from the relevant date, no person shall discharge or emit waste into the atmosphere except in accordance with such standards or criteria as may be prescribed under this Act.
- 23K. (1) No person shall pollute the atmosphere or cause or permit the atmosphere to be polluted so that the physical, chemical or biological condition of the atmosphere is so changed as to make or reasonably be expected to make the atmosphere or any part thereof unclean, noxious, poisonous, impure, detrimental to the health, welfare, safety, or property or human beings, poisonous or harmful to animals, birds, wildlife, plant or all other forms of life or detrimental to any beneficial use of the atmosphere.

Regulations cited for Ambient Air Quality management under provisions of NEA

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Ambient Air Quality management

✓ The National Environmental (Ambient Air Quality) Regulations

No. 1562/22 - FRIDAY, AUGUST 15, 2008

<i>Pollutant</i>	<i>Averaging Time*</i>	<i>Maximum Permissible Level</i>		<i>+ Method of measurement</i>
		μgm^{-3}	<i>ppm</i>	
1. Particulate Matter - Aerodynamic diameter is less than $10\ \mu\text{m}$ in size (PM_{10})	Annual	50	—	Hi-volume sampling and Gravimetric or Beta Attenuation
	24 hrs.	100	—	
2. Particulate Matter - Aerodynamic diameter is less than $2.5\ \mu\text{m}$ in size ($\text{PM}_{2.5}$)	Annual	25	—	Hi-volume sampling and Gravimetric or Beta Attenuation
	24 hrs.	50	—	

Regulations cited for Ambient Air Quality management under provisions of NEA

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Ambient Air Quality management

✓ The National Environmental (Ambient Air Quality) Regulations

No. 1562/22 - FRIDAY, AUGUST 15, 2008

National Ambient Air Quality standards

Pollutant	Averaging Time*	Maximum Permissible Level		+ Method of measurement
		μgm^{-3}	ppm	
3. Nitrogen Dioxide (NO_2)	24 hrs.	100	0.05	Colorimetric using saltzman Method or equivalent Gas phase chemiluminescence
	8 hrs.	150	0.08	
	1hr.	250	0.13	
4. Sulphur Dioxide (SO_2)	24 hrs.	80	0.03	Pararosaniline Method or equivalent Pulse Fluorescent
	8 hrs.	120	0.05	
	1hrs.	200	0.08	
5. Ozone (O_3)	1 hr.	200	0.10	Chemiluminescence Method or equivalent Ultraviolet photometric
6. Carbon Monoxide (CO)	8 hrs.	10,000	9.00	Non-Dispersive Infrared Spectroscopy™
	1 hr.	30,000	26.00	
	Any time	58,000	50.00	

* Minimum number of observations required to determine the average over the specified period —

03 hour average - 03 consecutive hourly average

08 hour average - 08 hourly average

24 hour average - 18 hourly average

Yearly average - 09 monthly average with at least 02 monthly average each quarter

† By using Chemicals or Automatic Analysers.

National Ambient Air Quality Standards Sri Lanka

	Parameter	Unit	WHO guideline AQG-2021	WHO guideline AQG-2005	SL NAQS	US NAQS
24hr	PM _{2.5}	µg/m ³	25(IT2) - annual	50(IT2) - annual	25 (IT2) - annual	35
24hr	PM ₁₀	µg/m ³	50(IT2) - annual	100(IT2) - annual	50 (IT2) - annual	150
1hr	O ₃	ppb	51		100	70
8hr	CO	ppb	8733		9000	9000
1hr	NO ₂	ppb	106		130	100
24hr	SO ₂	ppb	15		30	1hr/75

Ambient Air Quality Standards - Comparison

PM 2.5

Standard	WHO Guideline	USA	Japan / S. Korea	UK / France / Germany	Sri Lanka / WHO IT-2	China	India
Annual	5	9	15	20	25	35	40
Daily	15	35	35	25	50	75	60

PM10

Standard	WHO Guideline	UK / France / Germany	Sri Lanka / WHO IT-2 / Japan or S. Korea	India	USA	China
Annual	15	40	50	60	-	70
Daily	45	50	100	100	150	150

Regulations cited for Air Quality management under provisions of NEA

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Main Local Air pollution sources

- **Transport (≈55–60%)** – Largest contributor due to rapid increase in vehicles and traffic congestion
- **Industry & Power (≈20–25%)** – Includes factories, thermal power plants, and fuel combustion
- **Domestic sources (≈15%)** – Cooking, waste burning, and small-scale emissions

Regulations cited for Air Quality management under provisions of NEA

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Stationary Sources Emission Management

□ The National Environmental (Stationary Sources Emission Control) Regulations, No. 01 of 2019 by Extra Ordinary Gazette Notification No. 2126/36 dated 05 .06. 2019

❖ Instrument/Equipment Based Standards

- Thermal Power Plants
- Standby Generators
- Boilers
- Thermic Fluid Heaters
- Incinerators
- Cupolas, Blast Furnaces, Coke Ovens, Basic Oxygen Furnaces, Electric (induction & arc) furnaces
- Cement Kilns

Regulations cited for Air Quality management under provisions of NEA

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Stationary Sources Emission Management

❖ Pollutant based Standards

Pollutant	Process/Source	Emission Limit Combustion	Emission Limit Non Combustion
Particulate Matters (PM)	Any	150mg/Nm ³	100mg/Nm ³
Smoke	Any	25% Opacity	25% Opacity
Carbon Monoxide (CO)	Any	900mg/Nm ³	1100mg/Nm ³
Sulfur Dioxide (SO ₂)	Sulfuric acid manufacturing plants	2 kg/Metric ton of Sulfuric acid production	
	Any Other	1000mg/Nm ³	800mg/Nm ³
Nitrogen Oxides (NO _x)	Nitric acid manufacturing plants	1.5kg/Metric ton of Nitric acid production	
	Any Other	500mg/Nm ³	-
Total Volatile Organic Compounds (TVOC)	Any	20ppm	10ppm

Regulations cited for Air Quality management under provisions of NEA

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Stationary Sources Emission Management

❖ Fugitive Emission control standard

- Fugitive Dust Emission Standards
- Fugitive Non-Methane Volatile Organic Compounds (NMVOC) Emission Standards
- Fugitive Acid Mist and Ammonia Emission Standards
- Asbestos Fiber Emission Standard

These regulation implement by the CEA through

- Environmental Protection Licensing scheme – Prescribe industries (around 1000 air polluting industries among the 50,000 prescribe industries are regulated)
- Environmental Impact Assessment procedure – Prescribe activities
- Environmental Clearance - Siting of Prescribe industries

Regulations cited for Air Quality management under provisions of NEA

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Vehicle Emission Management

☐ The National Environmental (Air, Fuel and Vehicle Importation Standards) Regulations No 01 2003 and its amendments (5)

- Extra Ordinary Gazette Notification No. 1137/35 dated 23.06.2000
- Extra Ordinary Gazette Notification No. 1295/11 dated 30 .06. 2003
- Extra Ordinary Gazette Notification No. 1557/20 dated 09 .07. 2008
- Extra Ordinary Gazette Notification No. 1887/20 dated 05.11.2014
- Extra Ordinary Gazette Notification No. 2094/42 dated 12.07.2018
- Extra Ordinary Gazette Notification No. 2083/3 dated 06.08.2018

Preparation of Combined Gazette -in progress

Regulations cited for Air Quality management under provisions of NEA

Vehicle Emission Management

- ❑ The National Environmental (Air, Fuel and Vehicle Importation Standards) Regulations No 01 2003 and its amendments (5)
 - Part 1 : Vehicle **Exhaust** Emission Standard- Permissible air emission limits for all vehicles operate in the Sri Lanka .It mandate that vehicle must not exceed these limits and outline the process for vehicle emission testing centres to certify compliance
 - Part 11: Fuel standard- Specifying the quality for petrol , Auto Diesel and super Diesel
 - Part 111: Vehicle Exhaust emission standard for vehicle importation- emission standard for vehicle being imported into the Sri Lanka

Regulations cited for Air Quality management under provisions of NEA

Vehicle Emission Management

- ❑ **The National Environmental (Air, Fuel and Vehicle Importation Standards) Regulations No 01 2003 and its amendments (5)**

Responsibility:

- Department of Motor Traffic /Ministry Of Transport
- Department of Imports and Export Control
- Ceylon Petroleum Cooperation

Implementation strategy :

- Establishment of Vehicular Emission Testing centers in 2008 - 2013 island wide
- Vehicle emission testing program
- Vehicle Emission testing Trust Fund (VETTF)
- Objectives of (VETTF)
 - Air quality Monitoring to check the effectiveness of the program
 - Air quality management related to the transport sector (Traffic management)

Regulations cited for Air Quality management under provisions of NEA

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Management of air pollution due to open burning of refuse and other combustible matters inclusive of plastics

- ❑ The National Environmental (Prohibition of open burning of refuse and other combustible matters inclusive of plastics) Regulations No. 1 of 2017.

**Extra Ordinary Gazette
Notification No. 2034/36 -
FRIDAY SEPTEMBER 01, 2017**

- No person shall burn openly or cause to, allow or allow the open burning of refuse or other combustible matters inclusive of plastics.
- Any person who does not follow the regulations above shall be liable to an offence and punishable under Section 31 of the National Environmental Act, No. 47 of 1980

Implementation with support of Sri Lanka Police

National Environmental Action Plan 2022-2030

10 Strategies under *Air Quality Management Theme*

1. **Strengthen policy, legal and institutional framework**

Improve regulations, standards, and enforcement mechanisms for air quality management.

2. **Strengthen air quality monitoring systems**

Expand and upgrade monitoring networks and data systems.

3. **Develop and maintain emission inventories**

Establish comprehensive emission databases for major pollution sources.

4. **Control emissions from transport sector**

Improve vehicle emission standards, inspection systems, and promote cleaner transport.

5. **Control industrial emissions**

Enforce emission standards for industries and promote cleaner production technologies.

National Environmental Action Plan 2022-2030

6. **Promote clean energy and fuel quality improvements**

Encourage low-sulfur fuels, renewable energy, and energy-efficient technologies.

7. **Control open burning and area sources**

Regulate waste burning, biomass burning, and other diffuse pollution sources.

8. **Strengthen urban air quality management**

Integrate air quality considerations into urban planning and development.

9. **Enhance public awareness and stakeholder participation**

Conduct awareness programs and involve communities and private sector.

10. **Strengthen research, capacity building and data sharing**

Promote scientific studies, training, and information dissemination.

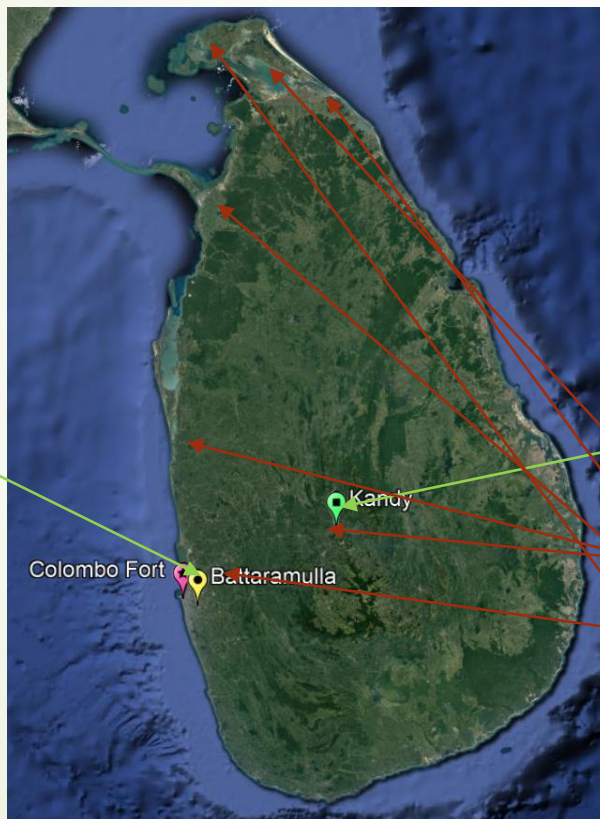
Ambient Air quality monitoring in Sri Lanka -CEA

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Existing Ambient Air quality monitoring locations



Battaramulla AAQM Site
Western Province
Donated by VETP



Kandy AAQM
Site Central
province
Donated by
VETP

AQ Air sensors (Donated by UNEP)

- Rathnapura
- Chilaw
- Colombo
- Kilinochchiya
- Ampara
- Mulathiya
- Jaffna

Ambient Air quality monitoring in Sri Lanka

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- ☐ CO analyzer SERINUS 30
- ☐ NO₂ Analyzer SERINUS 40
- ☐ Ozone Analyzer SERINUS 10
- ☐ SO₂ analyzer SERINUS 50
- ☐ PM Spirant BAM Particulate monitors

Automated Continuous Ambient Air Quality Monitoring Stations consist of



meteorological parameters
wind speed and wind direction
relative humidity
solar radiation
ambient pressure and ambient temperature

National Air Quality Index

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Air Quality Index (AQI)

AQI is a measurement of air pollutant concentrations in ambient air pollution and their associated health risks. AQI use to declare the information of the air quality level and it calculate based on the most commonly found pollutants that have a significant impact.

AQI Color	Level of Concern	Index
Green	Good	0 - 50
Yellow	Moderate	51 - 100
Orange	Slightly Unhealthy	101 - 150
Red	Unhealthy	151 - 200
Purple	Very Unhealthy	201 - 300
Maroon	Hazardous	301 - 500

Publications in CEA web: <http://cea.lk/web/en/publication>
PDF in CEA website: <http://bit.ly/AQI-SL>

Category	Health Message	
	At-risk population	General population
Good	Enjoy outdoor activities.	Ideal air quality for outdoor activities.
Moderate	Continue day-to-day activities, with a caution.	Continue usual outdoor activities.
Slightly Unhealthy	Reduce outdoor activities, avoid strenuous outdoor activities.	Continue day-to-day activities, with a caution.
Unhealthy	Avoid outdoor activities. Limit the pollutant exposure.	Reduce outdoor activities. Limit the pollutant exposure.
Very Unhealthy	Avoid outdoor activities. Limit the pollutant exposure. Get medical advice.	Avoid outdoor activities. Limit the pollutant exposure.
Hazardous	Avoid outdoor activities. Limit the pollutant exposure. Get medical advice. Be alert.	Avoid outdoor activities. Limit the pollutant exposure. Get medical advice.
Beyond AQI	Health risk is too high and follow the instructions for "Hazardous".	

National Air Quality Network - Sri Lanka



Dashboard

About

Monitoring

AQI

FAQ

EN

AirShare - National Air Quality Network, Sri Lanka

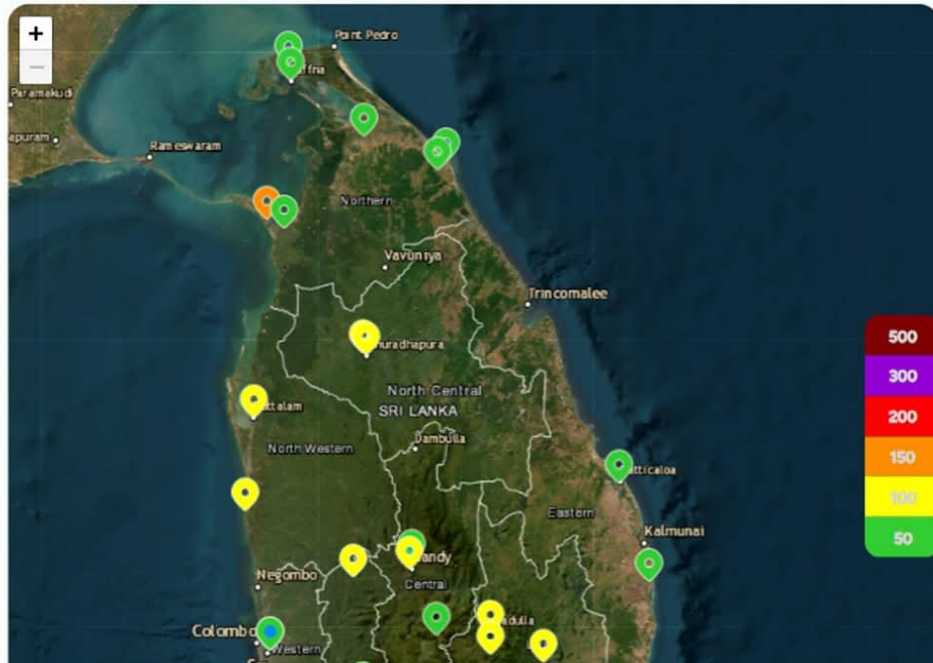
Real-Time & Historical Air Quality Data and Insights for Sri Lanka

Equipment Type: All

Measured By: All

Ranking: All

Disclaimer: The real-time data displayed on this website is intended for awareness purposes only. For decision-making or research and development, please consult the appropriate authorities for verified information.



What Is AQI?

Air quality is determined by pollution levels, focusing on six key 'criteria pollutants' that significantly impact health, wildlife, and ecosystems. Understanding air quality levels helps prevent health issues, protect the environment, and guide regulations to improve air conditions.

AQI Category

- Good** (0 to 50)
Ambient air quality is considered to be healthy
- Moderate** (51 to 100)
Acceptable Air Quality with minor pollution level
- Slightly Unhealthy** (101 to 150)
At-risk population may experience health effect.
- Unhealthy** (151 to 200)
Everyone may begin to experience negative health effects.
- Very Unhealthy** (201 to 300)
People exposed to the concern air

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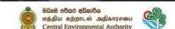
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மத்திய சுற்றுலாடல் அதிகார சபை
Central Environmental Authority



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Financial support - VETTF

Annual Averages over 2019-2021

Air Pollutant	Unit	Mean Concentration - 2019		Mean Concentration - 2020		Mean Concentration - 2021	
		Battaramulla	Kandy	Battaramulla	Kandy	Battaramulla	Kandy
O ₃	ppb	13.68	11.74	15.72	15.71	16.54	17.04
CO	ppb	629	673	537	612	508	513
NO ₂	ppb	11.41	13.36	11.18	8.72	21.45	11.98
SO ₂	ppb	5.77	1.69	6.87	1.19	4.25	1.02
PM _{2.5}	µg/m ³	21.36	16.49	21.18	15.10	27.95	14.97
PM ₁₀	µg/m ³	40.35	42.68	35.66	38.66	43.55	37.51

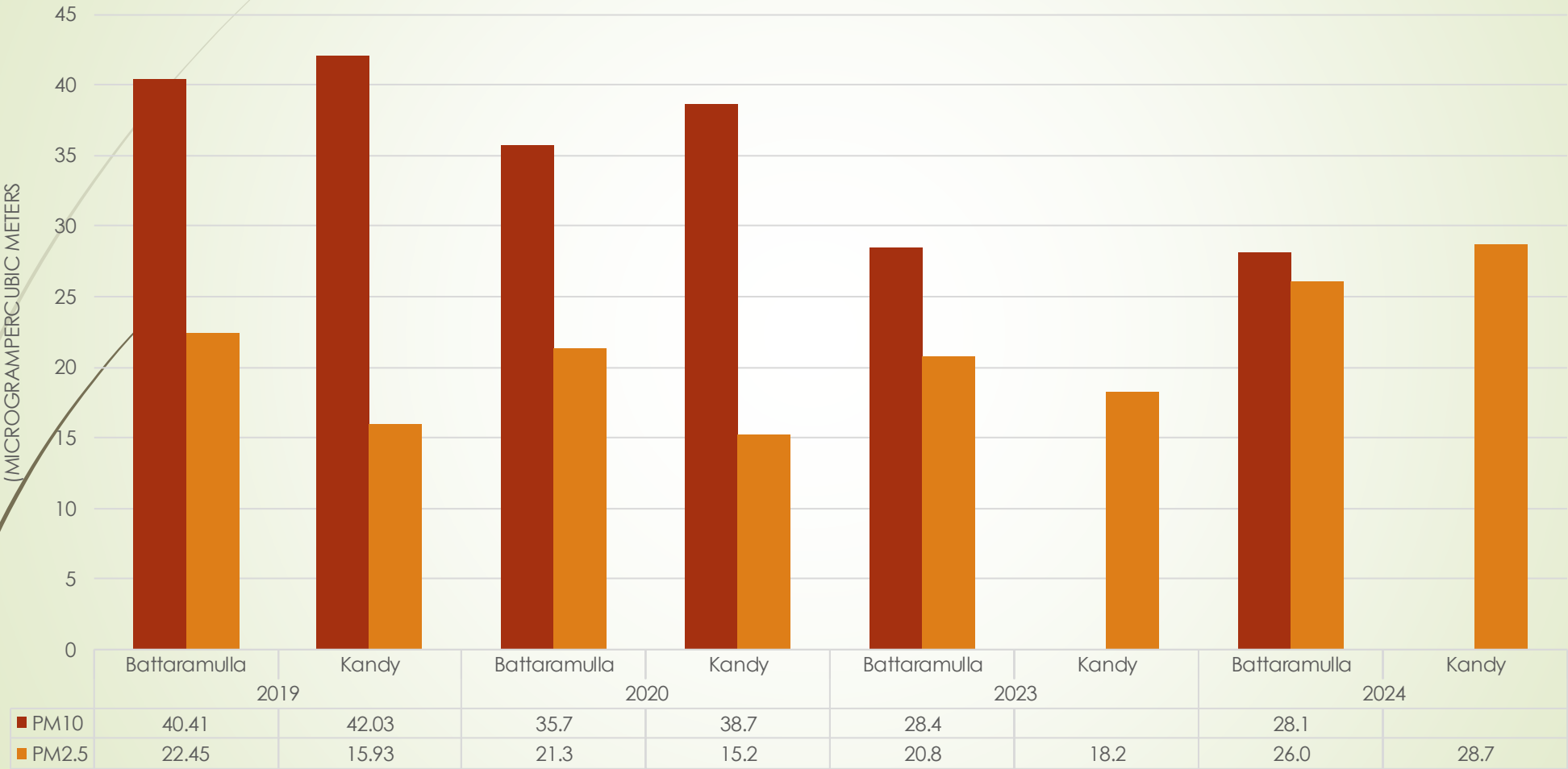
★ Calculations were not done for 2022 due to insufficient data

Annual Averages over 2023-2025

Air Pollutant	Unit	Mean Concentration - 2023		Mean Concentration - 2024		Mean Concentration - 2025	
		Battaramulla	Kandy	Battaramulla	Kandy	Battaramulla	Kandy
O ₃	ppb	8.9	7.2	11.09	2.35	12	5
CO	ppb	433.6	699.2	342.9	566.11	*	890
NO ₂	ppb	5.2	17.4	7.76	11.53	5	11
SO ₂	ppb	11.1	0.1	6.21	0.57	6	2
PM _{2.5}	µg/m3	20.8	18.2	26.01	28.73	26	21
PM ₁₀	µg/m3	28.4	*	28.06	46.05	43	*

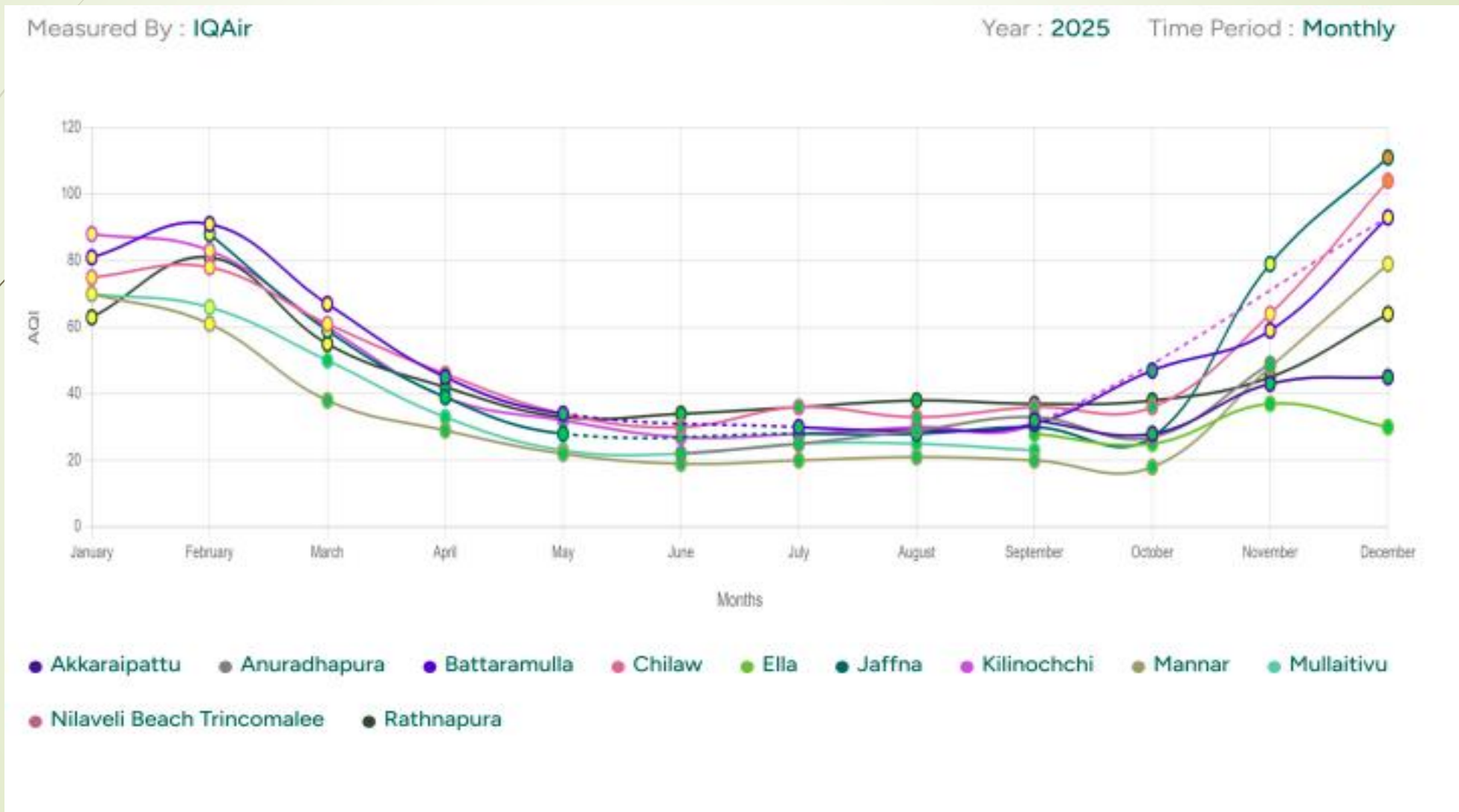
Air quality status

Annual averages of PM

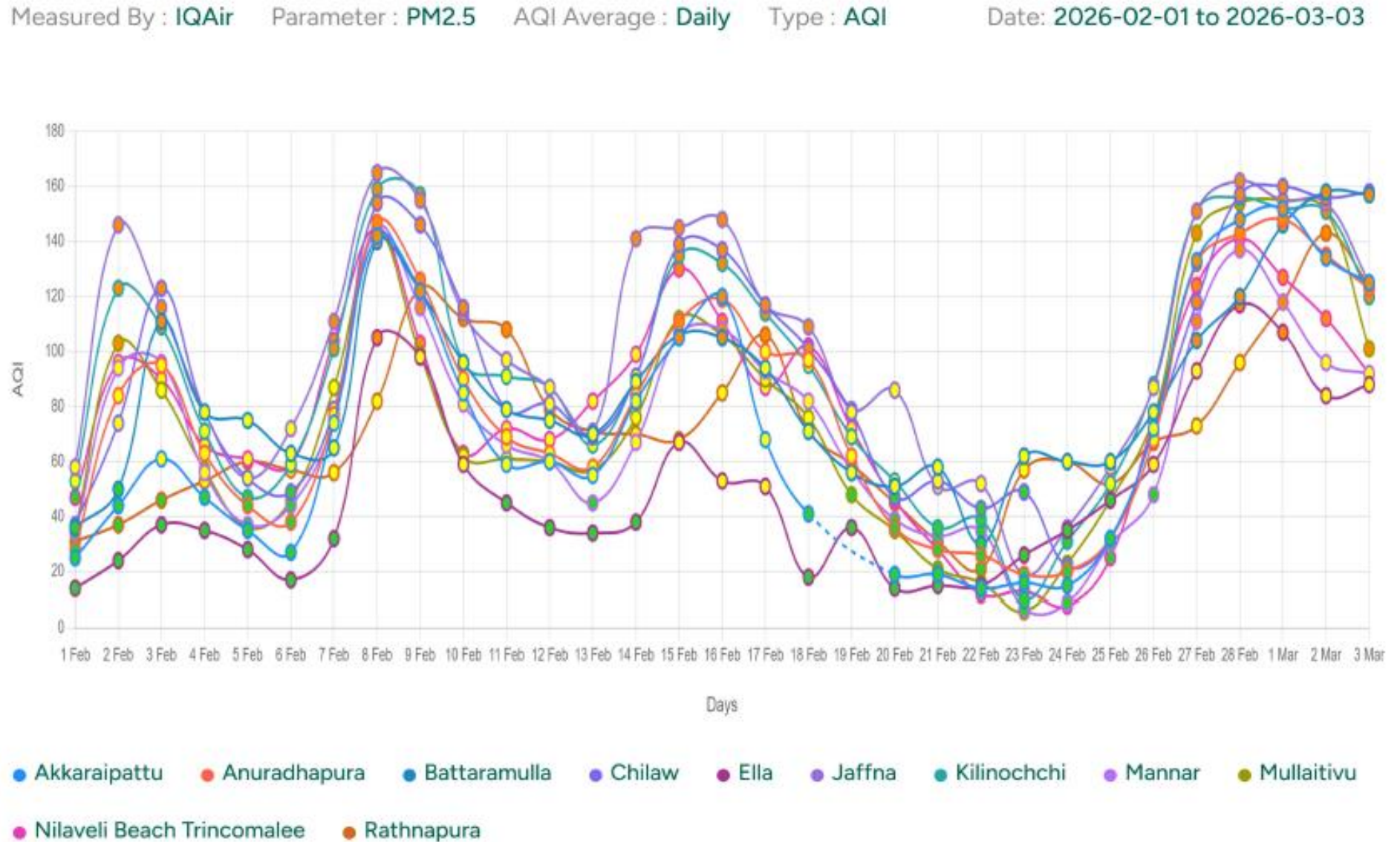


PM 10 Annual Average – 100 Micro Gram per cubic meters
PM 2.5 Annual Average – 50 Micro Gram per cubic meters

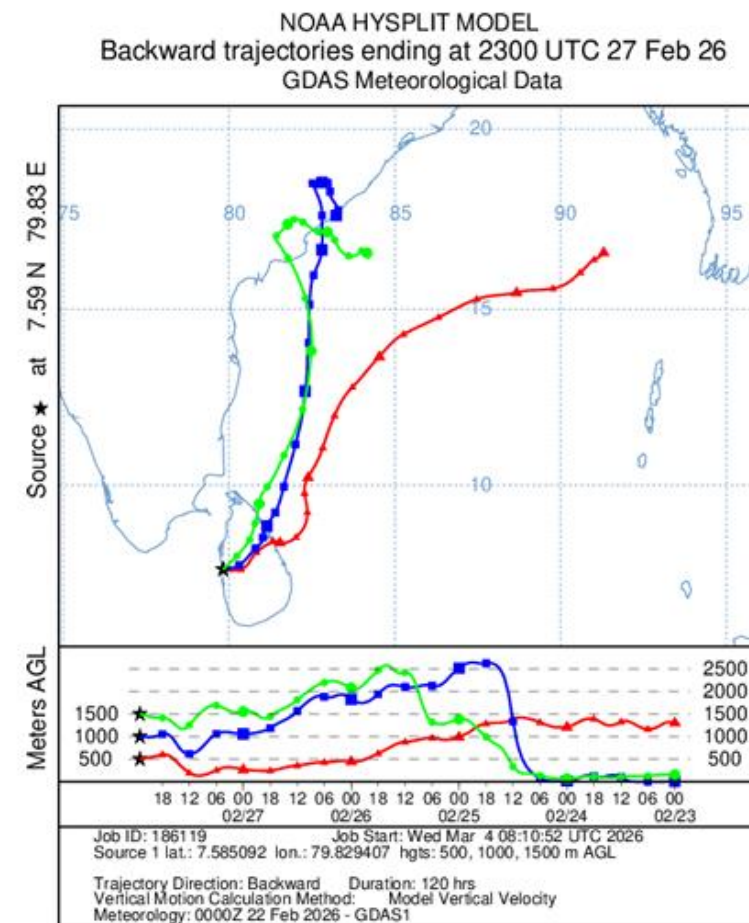
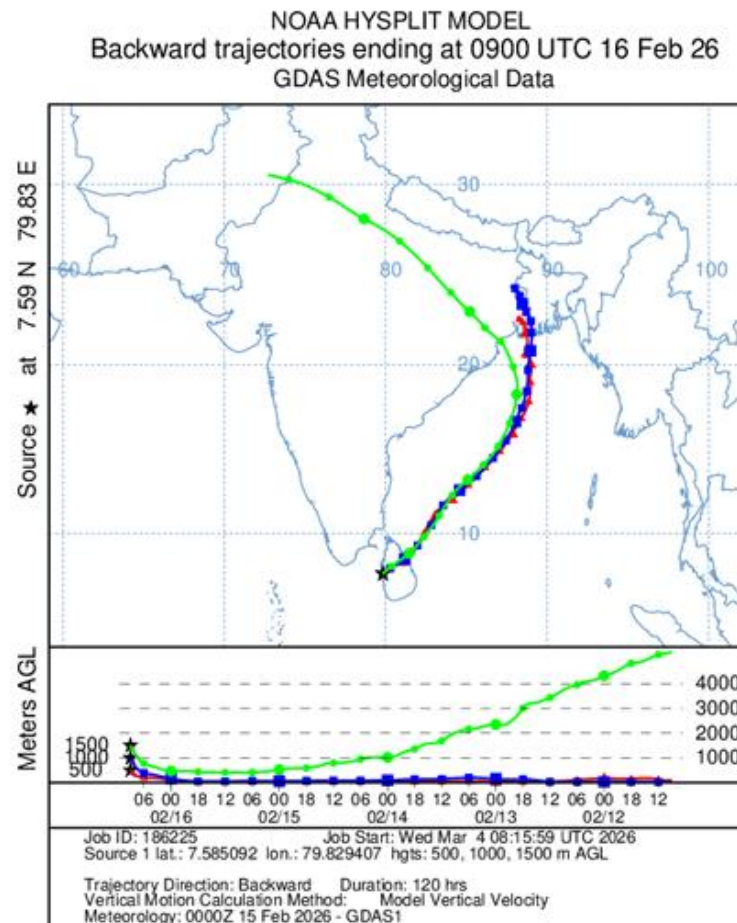
Air Quality Monitoring data -2025 across the country throughout the year



Air Quality Monitoring data from Jan – Feb 2026

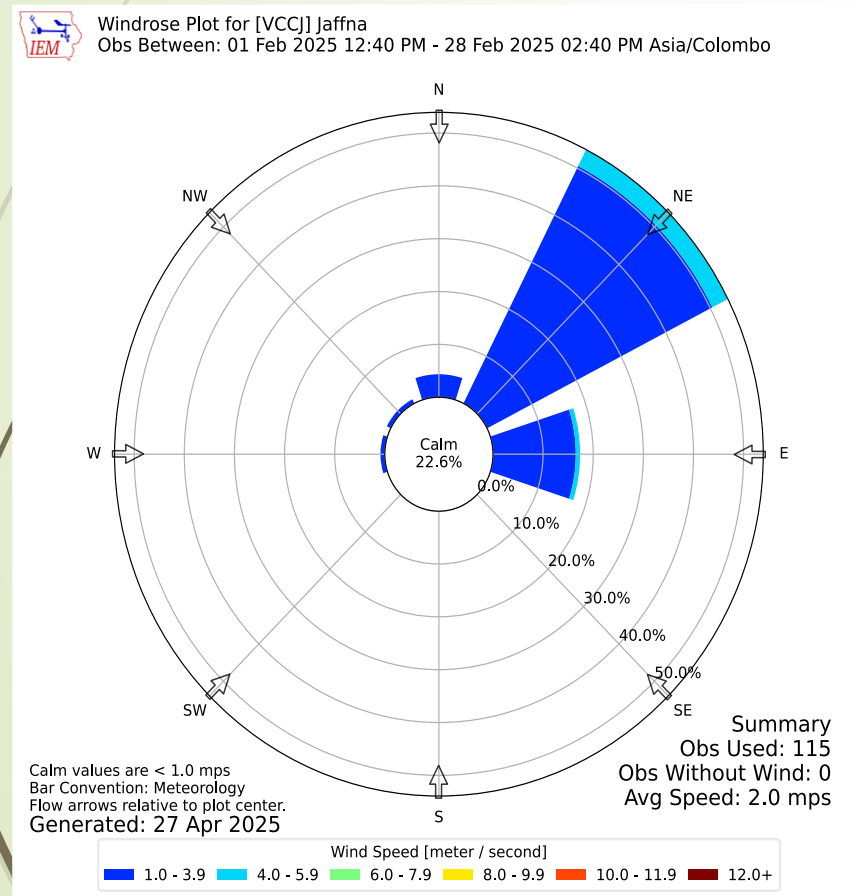


Backward Trajectory Analysis for recorded highest air pollutant 16-02-2026 and 27-02-2026 at Above Ground Level 100m, 500m, 1000m for Chilaw

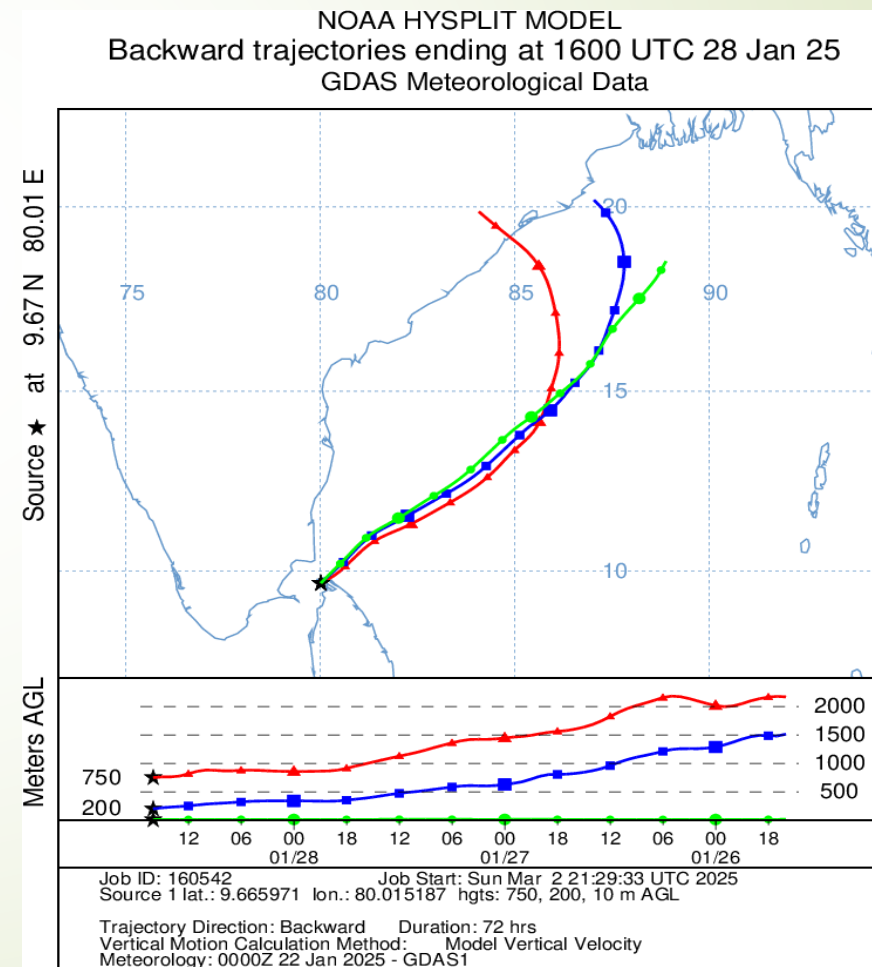


Backward Trajectory Analysis for recorded highest air pollutant during the Jaffna air quality monitoring -2025

Windrose. January 2025
(Courtesy: mesonet.agron.iastate.edu)



Backward Trajectory, Jan 28

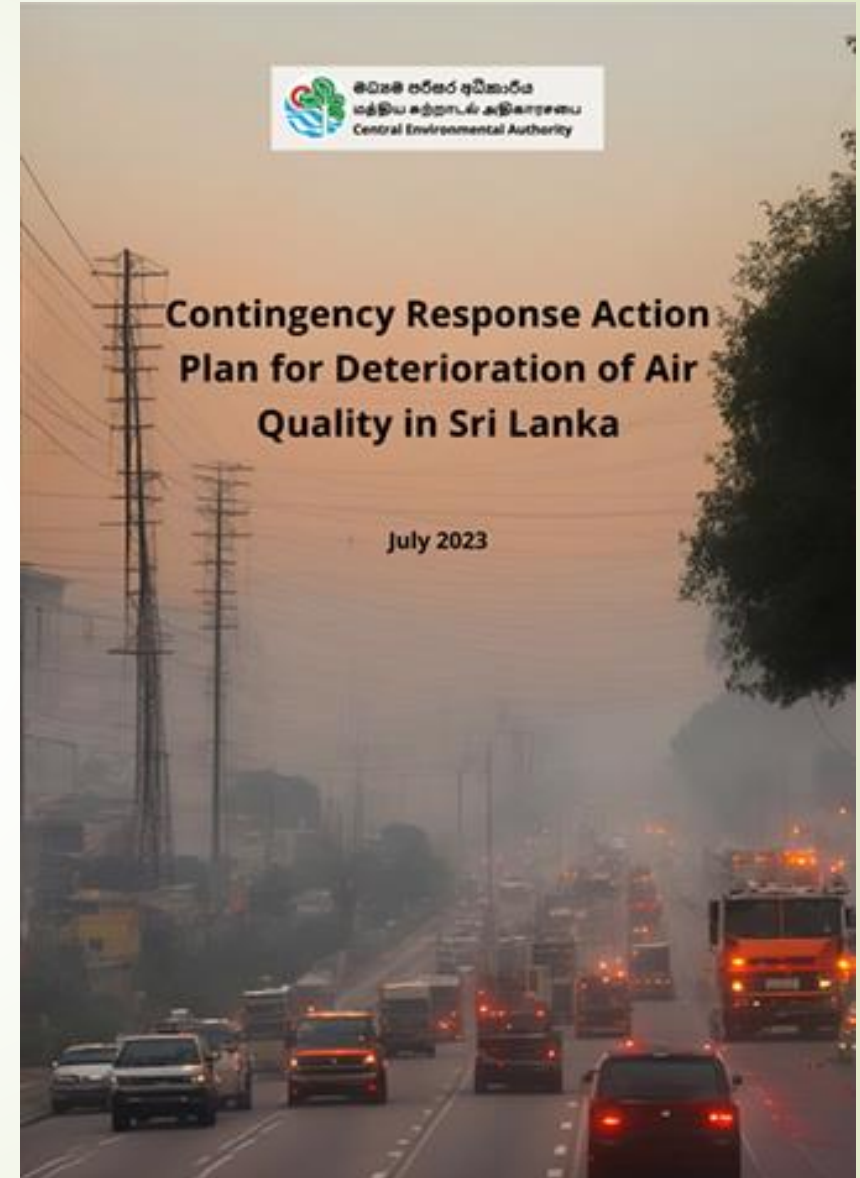




Transboundary air pollution

- Backward trajectory analysis clearly illustrates the transport pathways and directions of air pollutants reaching Sri Lanka ,with the influence of the Northeast Monsoon, pollutants are transported over long distances into the country from other regions
- This indicates that transboundary pollution plays a major role, significantly contributes to local air quality deterioration, accounting for more than 70% of particulate pollution levels during peak periods.
- This transboundary pollution phenomenon is a significant challenge for regulators, since a large portion of the pollution originates outside national boundaries and is beyond direct domestic control.

Contingency Response Action Plan for Deterioration of Air Quality in Sri Lanka (CRAP-DAQ-SL)



Who Contributed for preparation of CRAP Plan



- Ministry of Administration, Home Affairs & Provincial Councils & Local Government
- Ministry of Environment
- Ministry of Education
- Ministry of Health
- Ministry of Industries
- Ministry of Public Security
- Environmental Protection Division of Police
- Central Environmental Authority
- Urban Development Authority
- National Building Research Organization
- Department of Meteorology
- Department of Motor Traffic
- Disaster Management Centre
- Vehicular Emission Testing Programme
- State Media of Government

Objective of the CRAP

- This Contingency Response Action Plan for Air Quality Deterioration of Sri Lanka (CRAP-AQ-SL) provides the basis for preventing ambient air pollutants concentrations from reaching levels which could endanger public health, or to abate such concentrations should they occur.
- Its purpose is to establish new criteria for determination of the existence of an emergency episode whilst meeting the requirements of National Environmental Action Plan 2022-2030 (NEAP). Thus, it prevents the excessive buildup of air pollutants during air pollution episodes.
- This emergency plan mainly focuses on particulate matter (PM10 & PM2.5) which contributes to the degradation of air quality as the prime criteria air pollutant during past decades in Sri Lanka based on regulatory and scientific data
- To prevent public exposure
- To control local pollution

Emergency Declaration

➤ Alert (Stage I) Episode

Pollutant	Threshold conc.	Threshold AQI	Color code	Averaging Time
PM 2.5	75 $\mu\text{g}/\text{m}^3$	150	Red	24-hour average
PM 10	150 $\mu\text{g}/\text{m}^3$	150		

➤ Warning (Stage II) Episode

Pollutant	Threshold conc.	Threshold AQI	Color Code	Averaging Time
PM 2.5	150 $\mu\text{g}/\text{m}^3$	200	Purple	24-hour average
PM 10	275 $\mu\text{g}/\text{m}^3$	200		

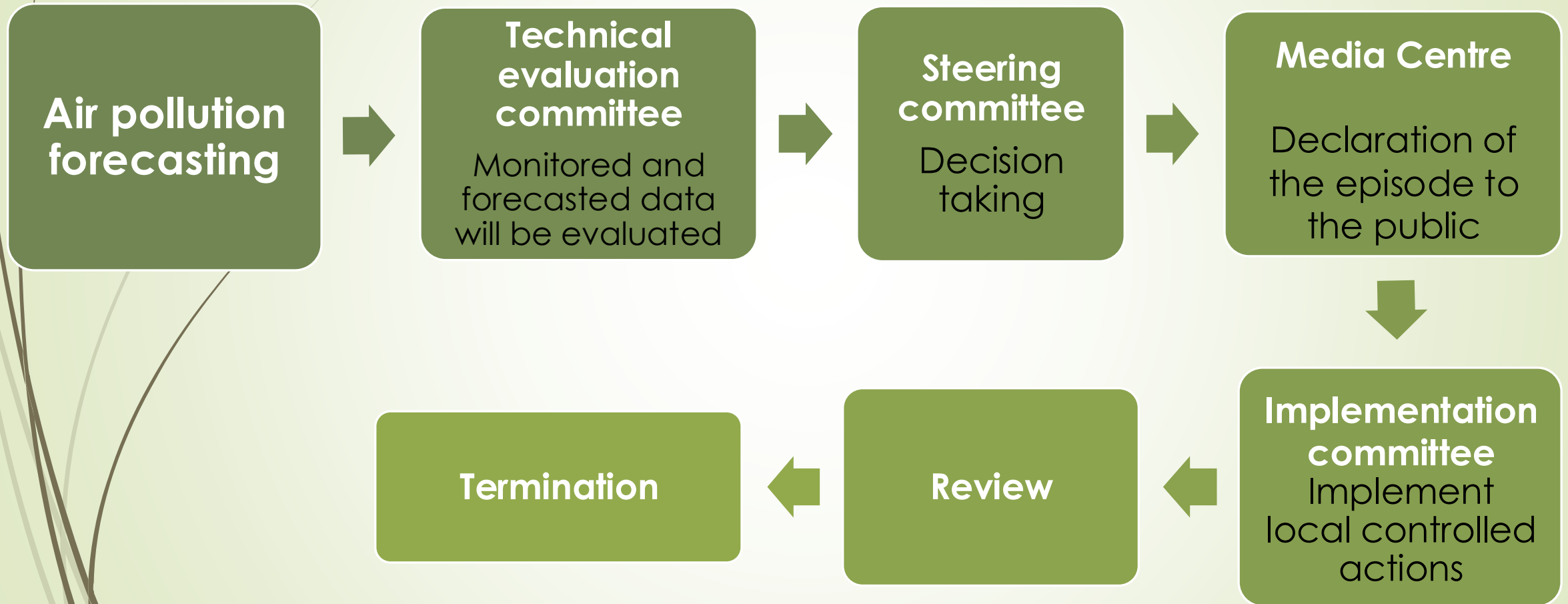
➤ Emergency (Stage III) Episode

Pollutant	Threshold Conc.	Threshold AQI	Color Code	Averaging Time
PM 2.5	250 $\mu\text{g}/\text{m}^3$	300	Maroon	24-hour average
PM 10	450 $\mu\text{g}/\text{m}^3$	300		

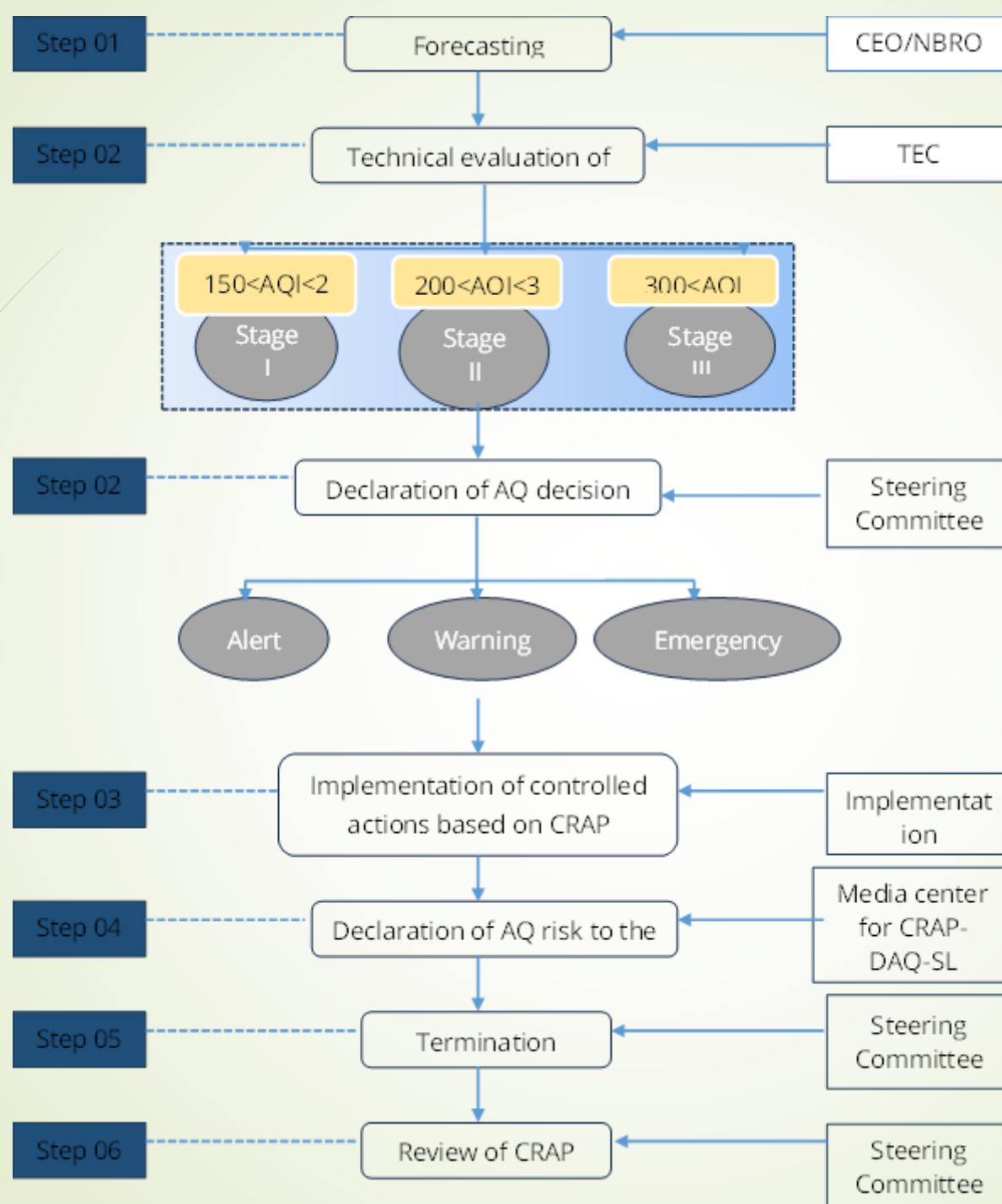
When the CRAP apply

- This plan includes, at a minimum, provisions for taking action necessary to prevent ambient PM concentrations **at any location** in **any region/city** from reaching higher trigger levels and such location is known as **"declared area"** hereafter.
- As set forth in this plan, three trigger levels (stages) are established for PM_{2.5} and PM₁₀ pollution episodes: Alert level (150 µg/m³), Warning level (200 µg/m³), and Emergency level (300 µg/m³). Corresponding actions for each specified trigger level would be identified and will be implemented **when the ambient PM hourly concentration measurements reach the specified trigger levels**. These elements and actions should provide for rapid short-term emission reductions at each trigger level, to avoid high PM_{2.5} & PM₁₀ concentrations from reaching significant harm levels during an episode.

How the action plan works



Workflow



Implementation challengers

- Lack of forecasting facility
- Lack of regional cooperation
- Inadequate Monitoring network

Earlier International Cooperation Projects on Air Quality Management in Sri Lanka.

- Malé Declaration on Control and Prevention of Air Pollution and Its Likely Trans boundary Effects for South Asia
- Capacity Development for the evidence –based improvement of strategies and policies on air quality management in Colombo Mega police Area –Three party agreement with Ministry of Environment , Franc development Agency and Airparif (Technical expert) 2023-2025.Objective is to reinforce the capacity of the Sri Lankan authorities regrading AQM and to allow , in time, the identification local needs in terms of investment project for air quality management

Research Activities collaborated by CEA

Project 1

- Comprehensive Assessment of PM2.5 Sources, Long-Range Transport, and Health Implications in Colombo and Kandy, Sri Lanka.

Project 2

- Attribution of Risks Associated with Black Carbon Driven by Combined Local and Regional Contributions in Sri Lanka.

University of Chinese
Academy of Sciences,
University of Peradeniya,
Central Environmental
Authority

These collaboration aims to strengthen scientific understanding of air pollution sources, transport pathways, and associated health impacts in Sri Lanka

Project 3

- Investigation of Indoor air quality in school and households in diverse environment condition in selected regions

Education university of Hong
Kong
Central Environmental Authority

Future Plans

- Strengthening of Ambient Air quality Monitoring net work deploying 50 micro sensors island wide
- Establishment of forecasting facility
- Revision of Regulations (Ambient air quality regulation/ Source emission control regulation..etc)

Expectation from the EANET

- Capacity building /Knowledge sharing on
 - Air quality monitoring mechanisms
 - Data validation procedures
 - Site selection criteria
 - Data Analysis and interpretation
 - VOC measurement/Fiber measurement
 - Acid rain Analysis



Thank you

