

# **Synergies between Climate and Air Pollution**

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**Promoting Synergistic Approaches in Asia and the Pacific: Addressing the Triple Planetary**

**20 February 2024**

# **Contents**

- **Key opportunities and challenges for promoting synergies**
- **Developing robust planning and reporting frameworks**
- **Good practices and lessons learn**

# The Triple Planetary Crisis

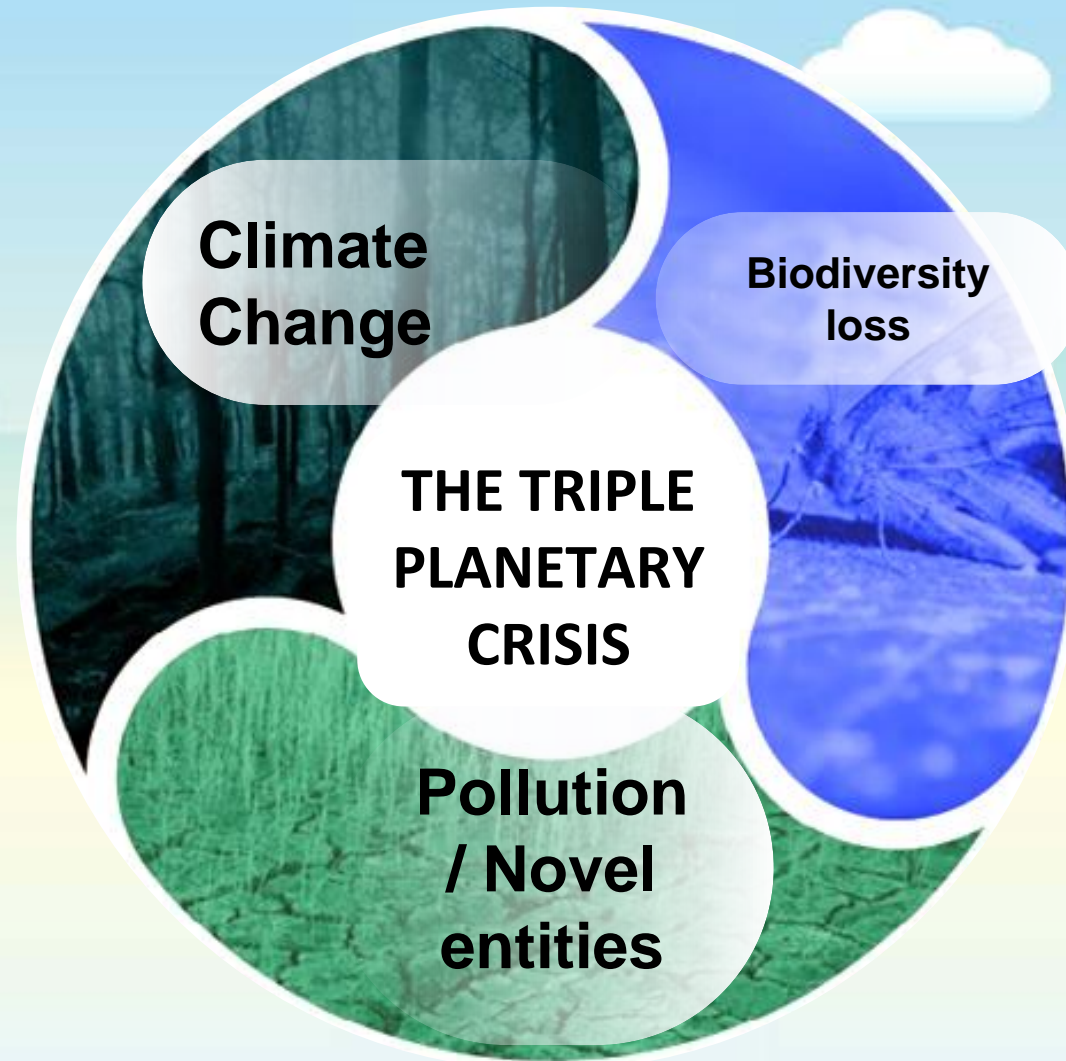
Natural resources underpin human consumption and production systems and are intertwined with climate, biodiversity and pollution/health.

UN  
environment  
programme

50  
1972-2022



International  
Resource  
Panel





## Conventional Pollution



# PM 2.5



## Novel Entities

### E-waste



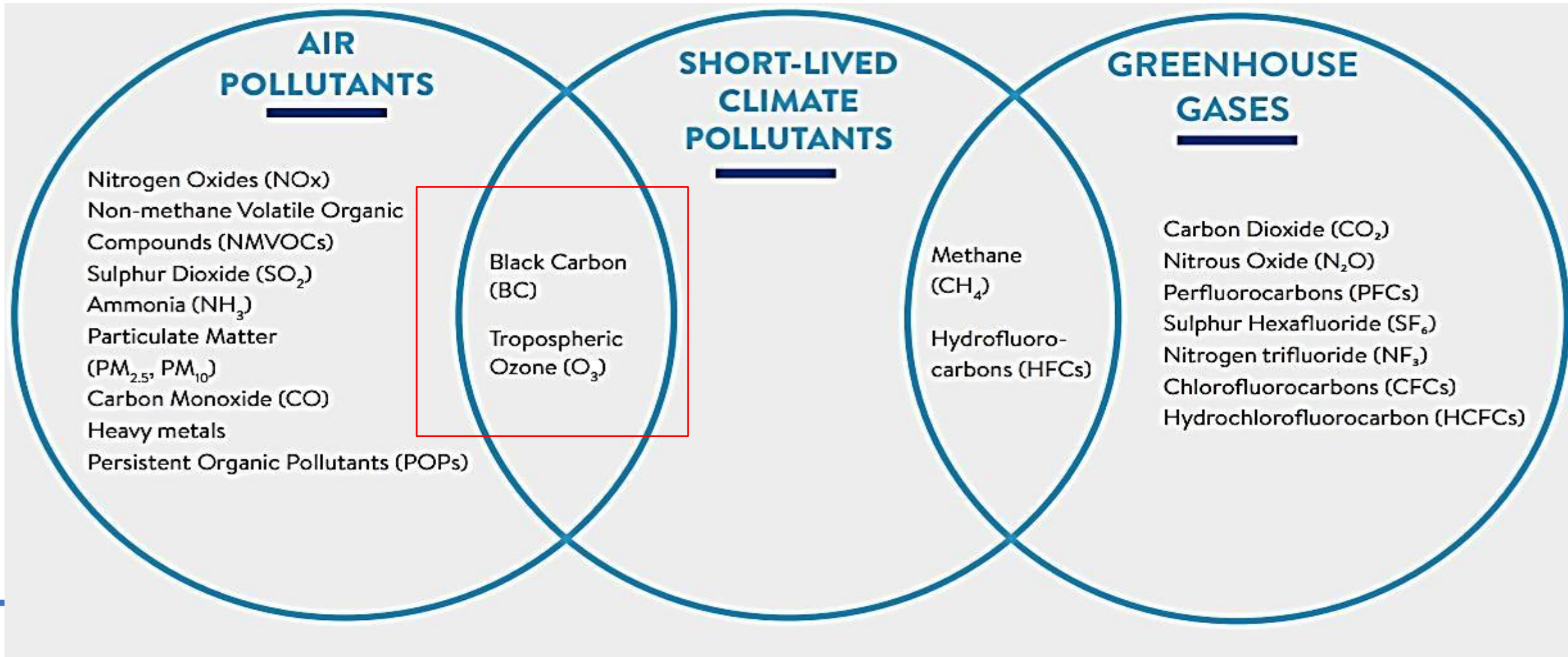
### Packaging



# Contents

- **Key opportunities and challenges for promoting synergies**
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# GHG and Air Pollution

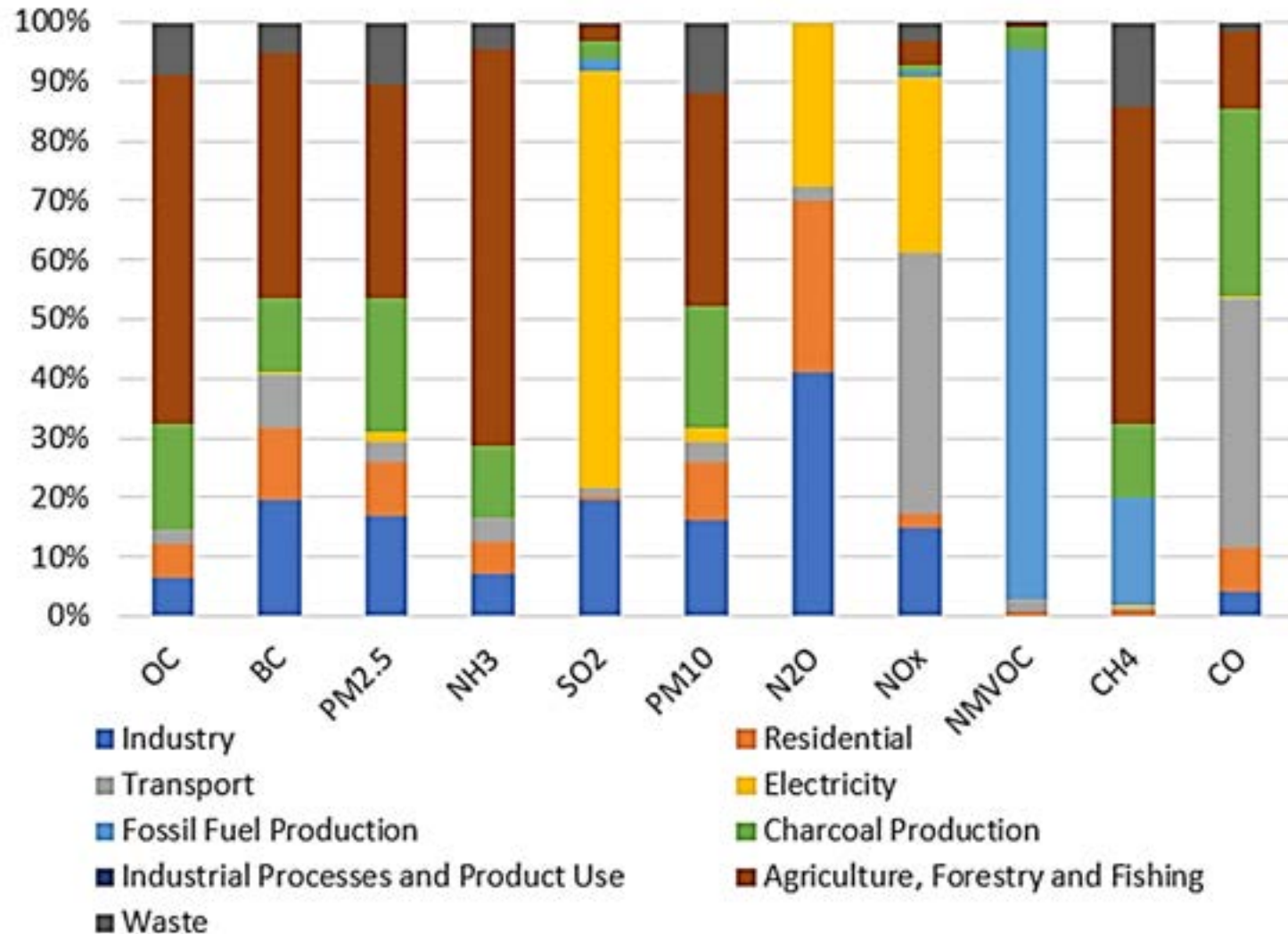




- ❑ Thailand joined CCAC in 2019
- ❑ Since joining have undertaken activities such as
  - ❑ Development of Emission Inventory for Inland Water Transport in 2020
  - ❑ Simultaneously Achieving Climate Change and Air Quality Goals in Thailand in 2023

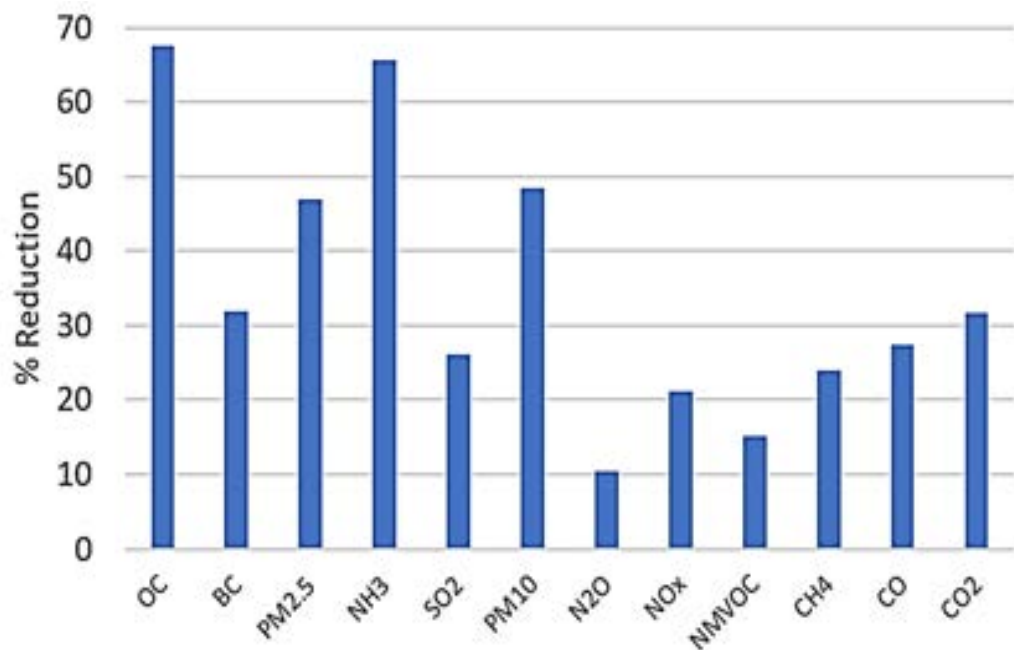


# Contribution of key source sectors to national total emissions in 2020 in Thailand





# Percentage reduction in national total air pollutant, short-lived climate pollutant and greenhouse gas emissions



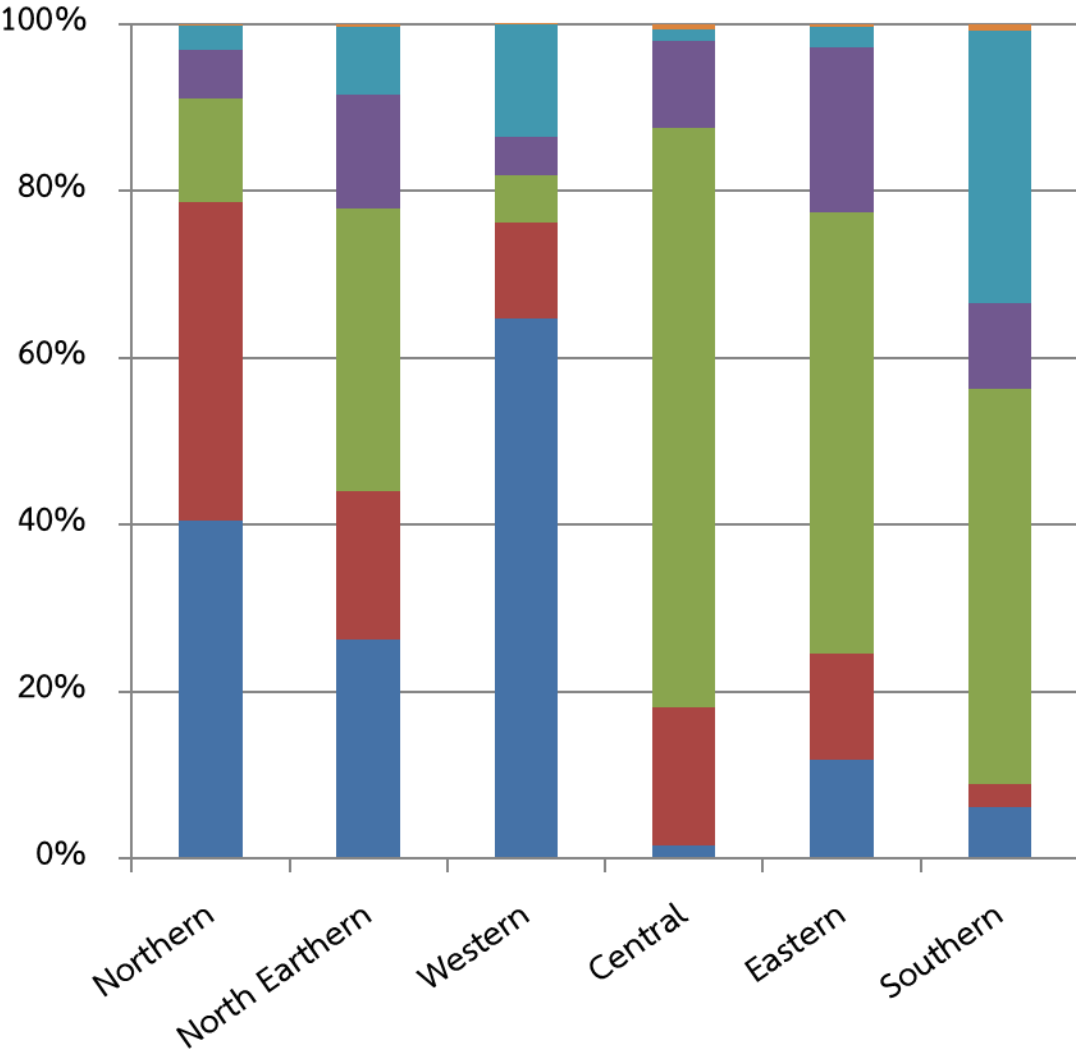
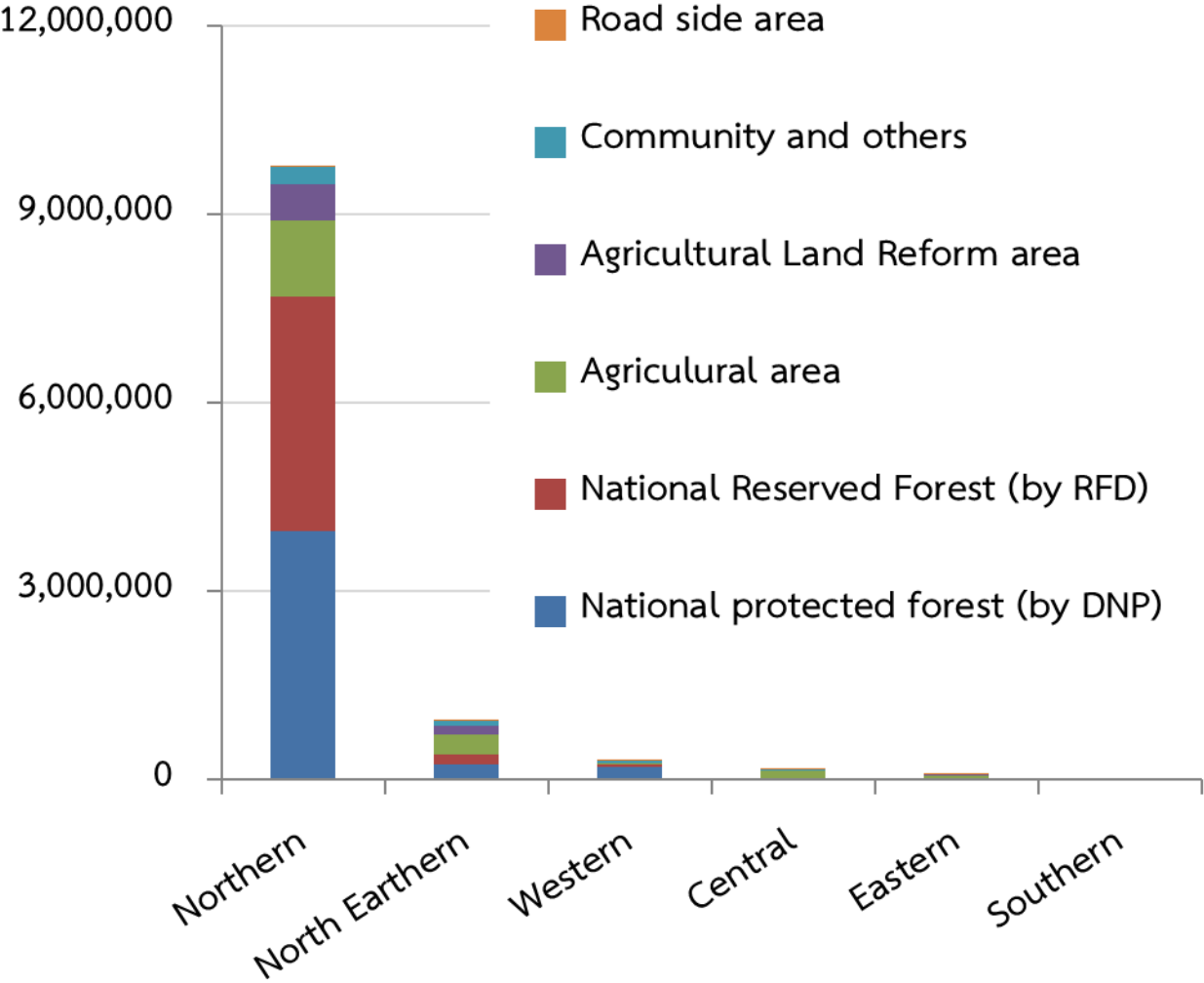
(Percentage reduction from the effective implementation of all 19 policies and measures in 2030 compared to the baseline scenario).

No.	Subsector	Mitigation Measure
1	Transport	Implementation of Euro 5 and 6 Emission standards and fuel quality in 2025 and 2027.
2	Transport	Switching diesel buses to be electric buses (BMTA) about 500 buses in December 2021 and replace all 6,500 diesel buses by CNG and Electric buses in 2024.
3	Transport	The Government has promoted EVs in Thailand with the target in 2030 as following: motorcycle 650,000, light passenger car 440,000, bus 33,000, truck 34,000 including 1450 charging stations with 12,000 charging ports.
4	Transport	Retrofit Program (The government planned to install a DPF to the used diesel bus and truck which are being 10-15 years average)
5	Residential	More efficient charcoal stoves
6	Residential	Energy Efficiency
7	Services	Energy Efficiency
8	Industry	Energy Efficiency
9	Crop	Zero agricultural residue burning
10	Solid Waste	Zero waste burning
11	Electricity	Renewable Electricity Expansion: 74% renewable electricity generation by 2050
12	Transport	Electric Vehicle expansion: 60% of passenger vehicles are electric by 2050
13	Residential	Switching from LPG to electricity for cooking
14	Fossil Fuel Production	Minimise fugitive methane emissions
15	Solid Waste	Methane capture from landfill sites
16	Liquid waste	Methane capture from wastewater management sites
17	Rice Production	Alternate wetting and drying implemented for rice production
18	Livestock	Reduce enteric fermentation emissions from livestock
19	Forest	Forest fire control

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# Burned area (Rai) in different parts of Thailand during 1 Jan – 31 May 2023





# Thailand PM<sub>2.5</sub> mitigation measures in 2024

## Target setting

- Focus on burn scar
- Concentrate on hotspot reduction

## Budget allocation

- Encourage private sector involvement
- Reform budget allocation system

## Transboundary AP

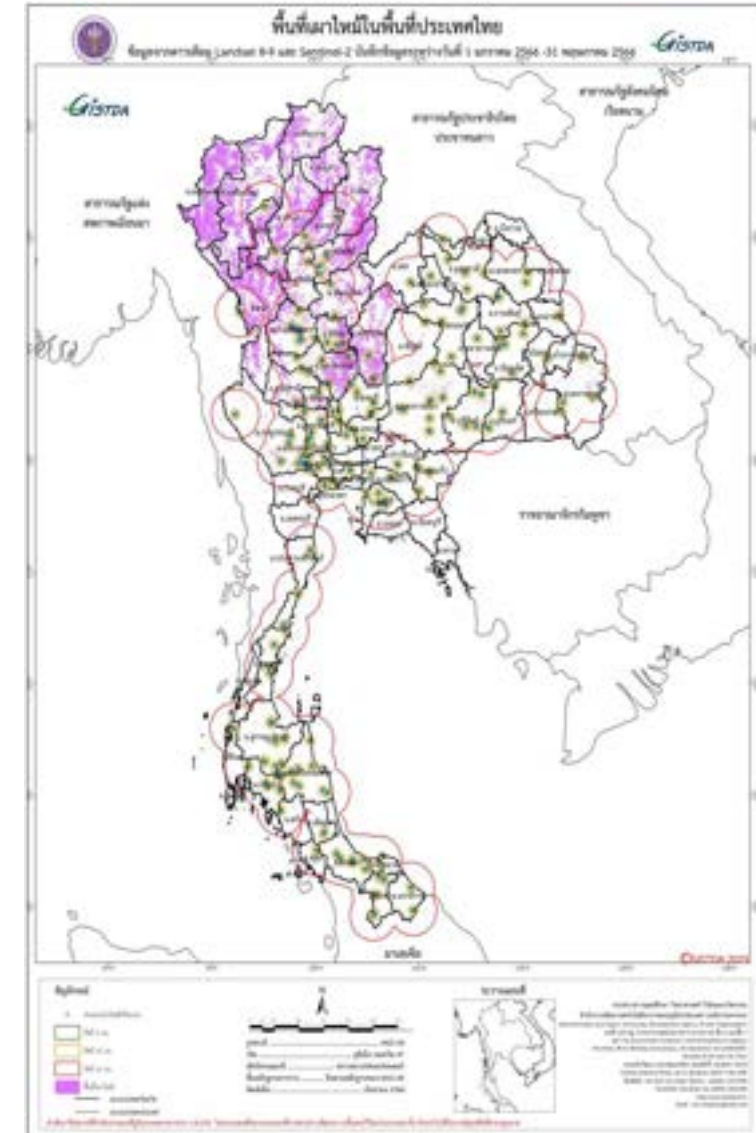
- Promote trilateral cooperation
- Introducing international merchandise trading condition

## Public relation

- Increase frequency
- Hit the target
- Send out warning message

## Management Mechanisms

- National policy and measures level
- Local implementation level



# Thailand PM<sub>2.5</sub> mitigation measures in year 2024

## MAIN TARGET AREAS

- 1. Burned areas in 20 targeted forest areas decrease 50%
- 2. Burned areas in targeted agricultural areas decrease 50%

## OTHER TARGET AREAS

- 1. Burned areas in the rest of forest areas decrease 20%
- 2. Burned areas in the rest of agricultural areas decrease 10%
- 3. Emission control of PM<sub>2.5</sub> in urban/community areas



Regional	<u>OUTPUTS</u>	
	Decrease of avg. PM <sub>2.5</sub> (%)	Decrease of days Exceeding Standard PM <sub>2.5</sub> (%)
17 provinces in Northern Thailand	40	30
Bangkok Metropolitan Region (BMR)	20	5
North eastern part of Thailand	10	5
Central part of Thailand	20	10

## BENEFITS

- 1. QUALITY OF PEOPLE LIFE
- 2. TOURISM
- 3. REDUCE REHABILITATION COSTS

# Thailand PM<sub>2.5</sub> mitigation measures in 2024

## Forest Fire Management

- Revise set of regulation for forestry dry leaves



## Open burning in Agricultural area

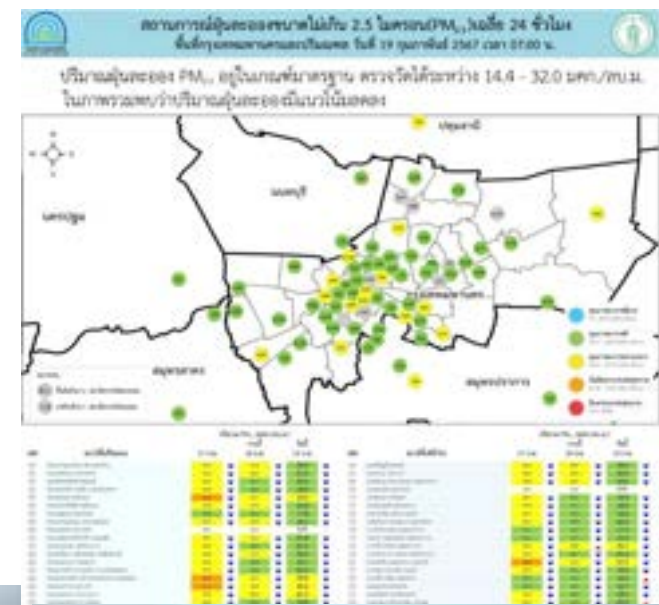
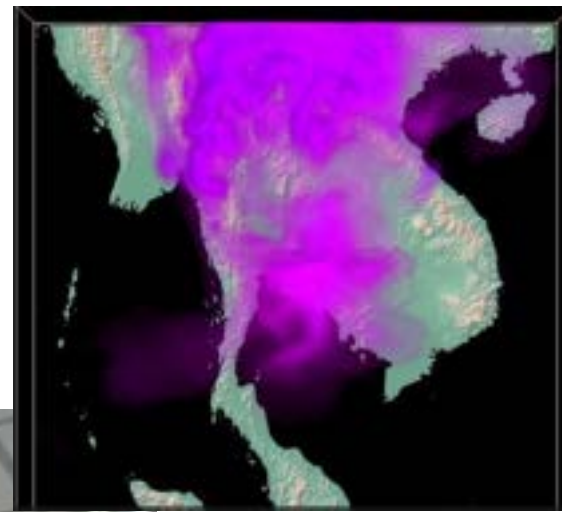
- Development of Traceability system for burns car detection
- Implementation of GAP PM<sub>2.5</sub> Free for agricultural products
- Promote incentive measures for burn free agricultural products
- Support culture change for agricultural plantation and promote no-burning agricultural concept



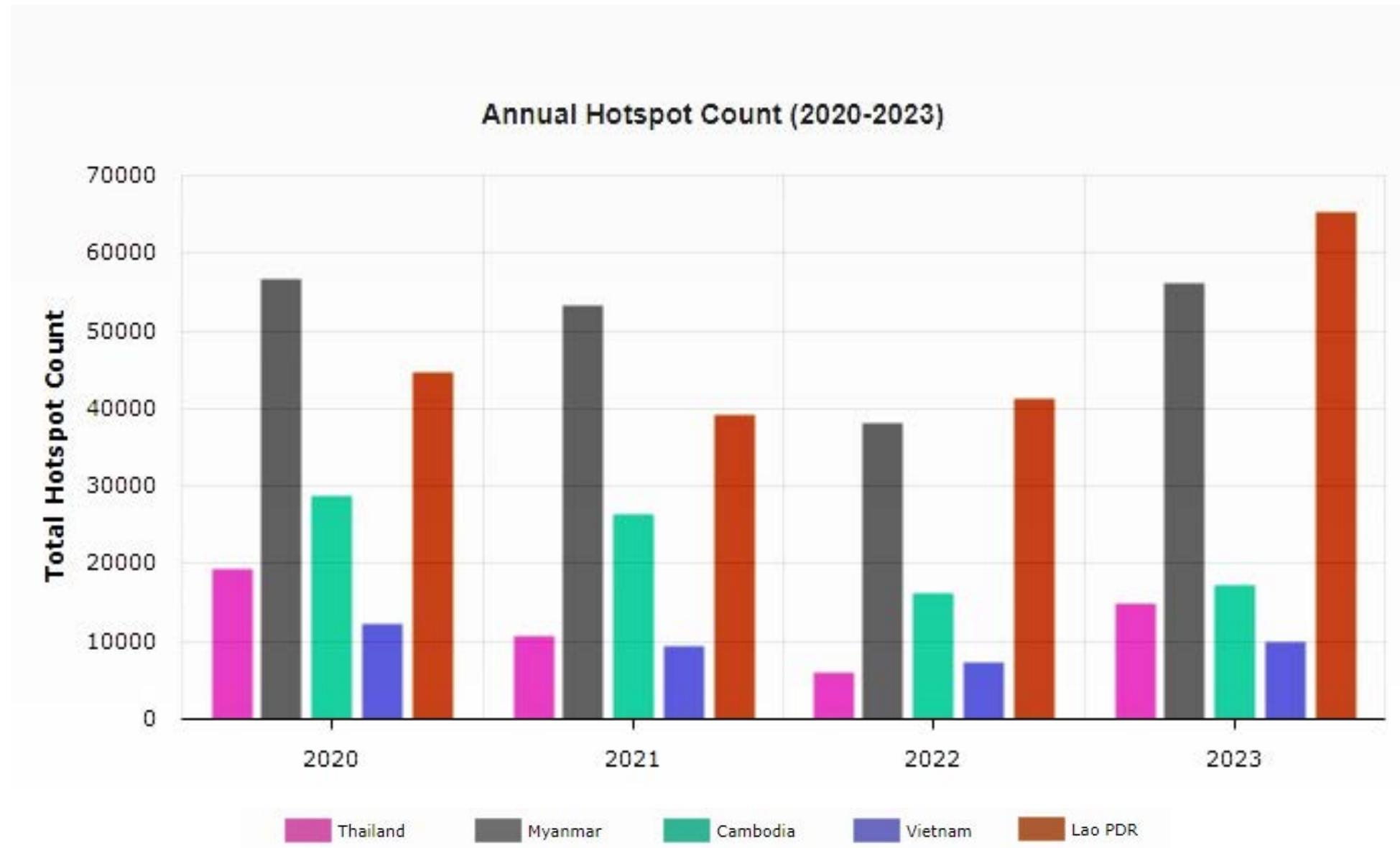
## Introduction of Clean Air Act in Thailand



# Air Quality Data Center

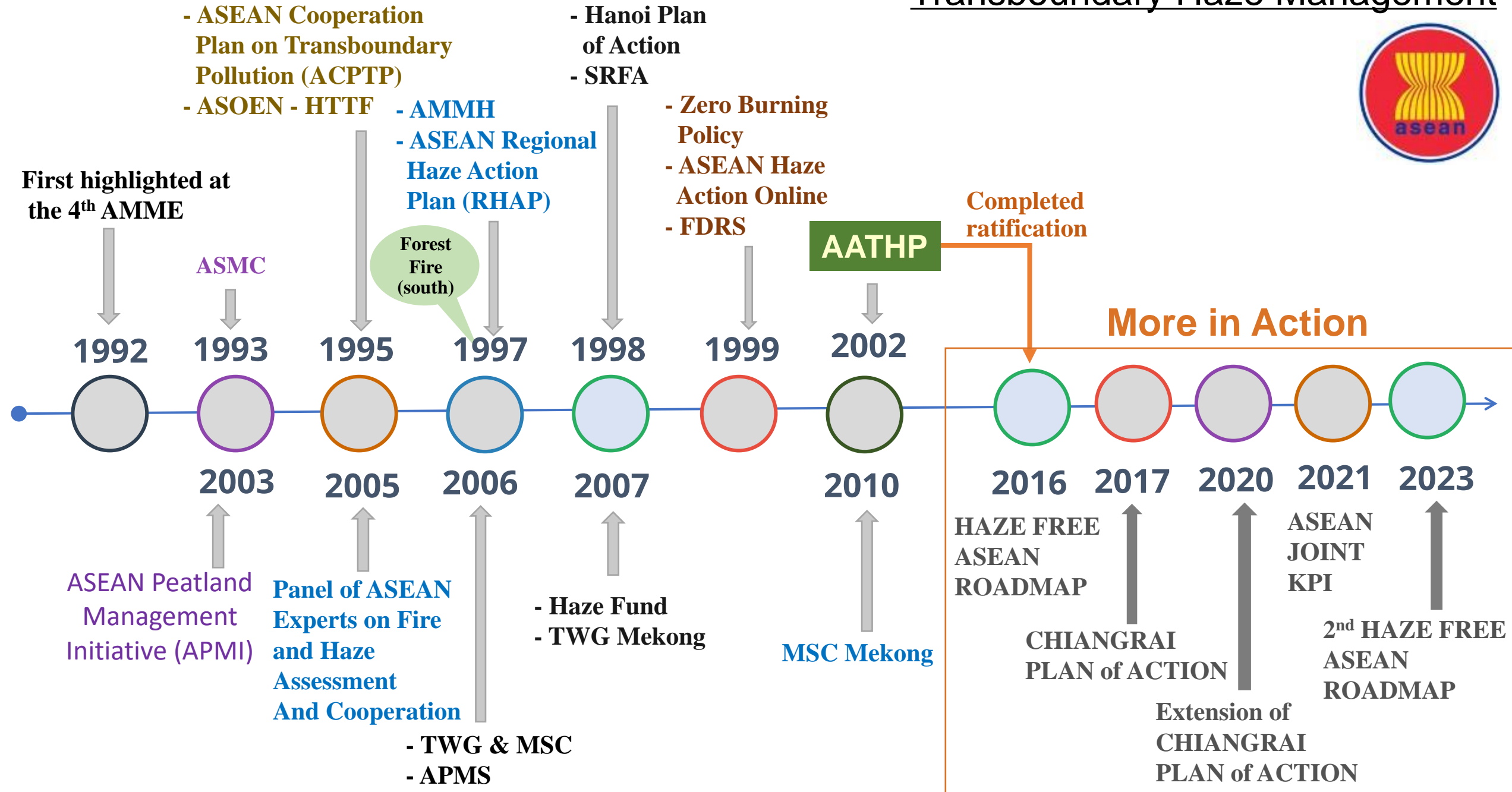


# Transboundary Haze in Mekong Sub-region



Data from ASEAN Specialised Meteorological Centre (ASMC) (updated to October 2023)

# Transboundary Haze Management



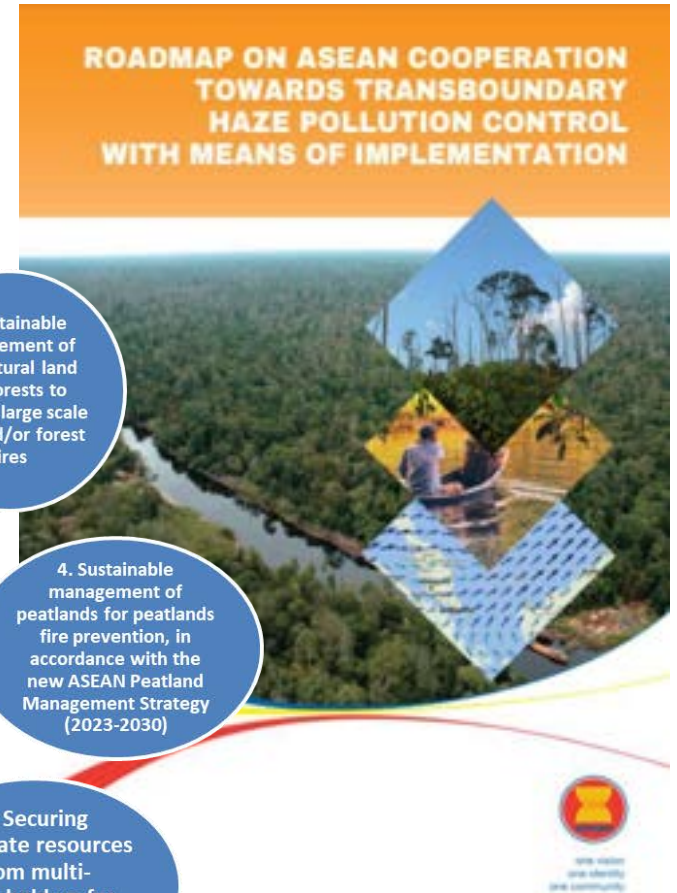


# Action by Thailand to Address Transboundary Haze Pollution

- Haze Free ASEAN Roadmap in year 2016
- Chiang Rai Plan Of Action in year 2017
- CLEAR Sky Strategy in year 2023

***The Second Roadmap for ASEAN  
Cooperation on Transboundary Haze  
Pollution Control  
with Means of Implementation***

**2023-2030**

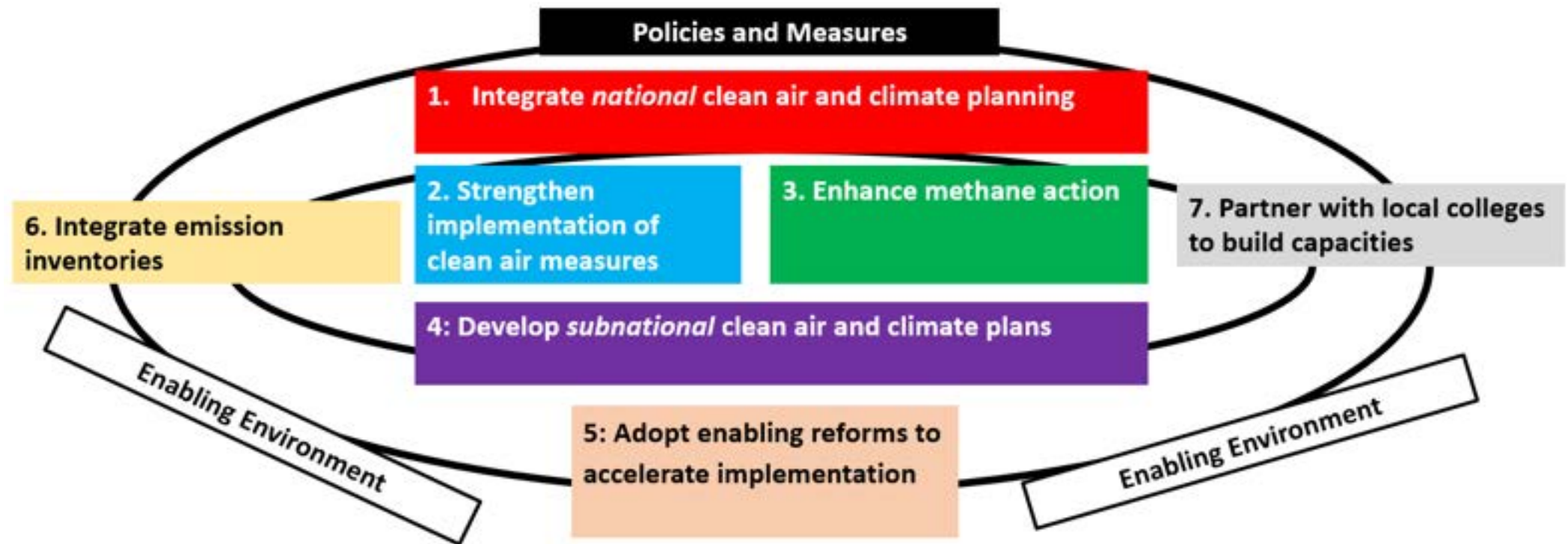


# Contents

- Key opportunities and challenges for promoting synergies
- Developing robust planning and reporting frameworks
- **Challenges, good practices and lessons learn**

# Summary of recommendations to increase actions on integrated air pollution and climate change mitigation in Thailand

## Package of 7 Recommendations for Thailand





# Achievement

## Air quality management 2023-2024

New PM<sub>2.5</sub> ambient air quality standard was promulgated in 1 June 2023

New AQI was announced on 16 May 2023

EURO 5 Diesel fuel (sulfur content <10 ppm) is available to the market in 1 January 2024

28 November 2023 Cabinet approved in Clean Air Act in principle

19 December 2023 Cabinet approved 2024 PM<sub>2.5</sub> mitigation measures

26 December 2023 The Thailand Board of Investment (BOI) announced incentives to companies helping local communities to reduce PM<sub>2.5</sub> from forest fire



# Challenges in Air Quality Management



- 17 northern provinces  
( $PM_{2.5}$  : Jan - May)
- Bangkok and vicinity area  
( $PM_{2.5}$  : Oct - March)
- Southern Provinces  
( $PM_{2.5}$  : July - Sep)
- Rock grinding and Rock Mine in Saraburee Province  
( $PM_{10}$ )
- Industrial Complex Rayong Province  
( $VOCs$ )

# Challenges in Air Quality Management

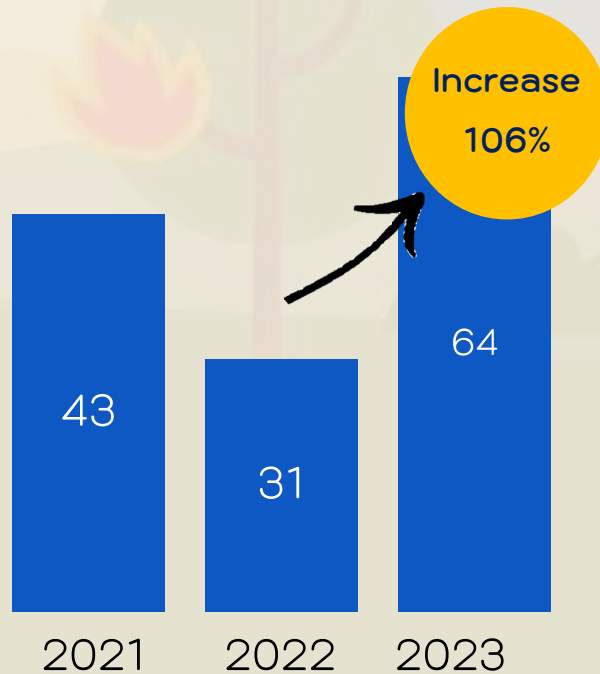


17 Northern Provinces

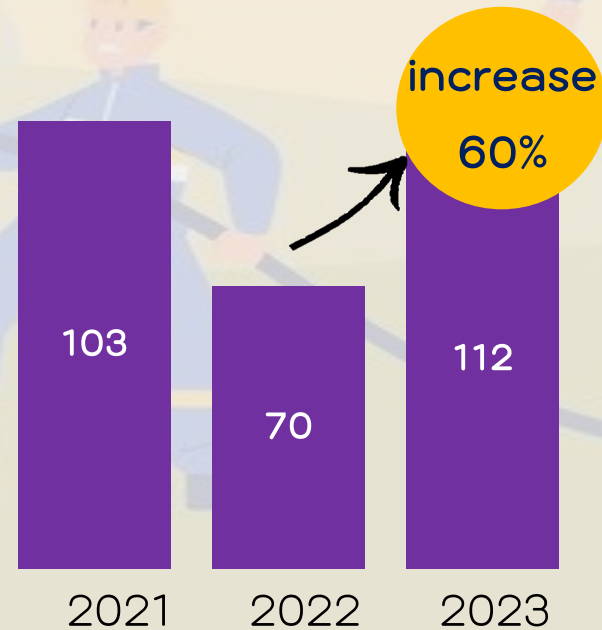
(PM<sub>2.5</sub>)



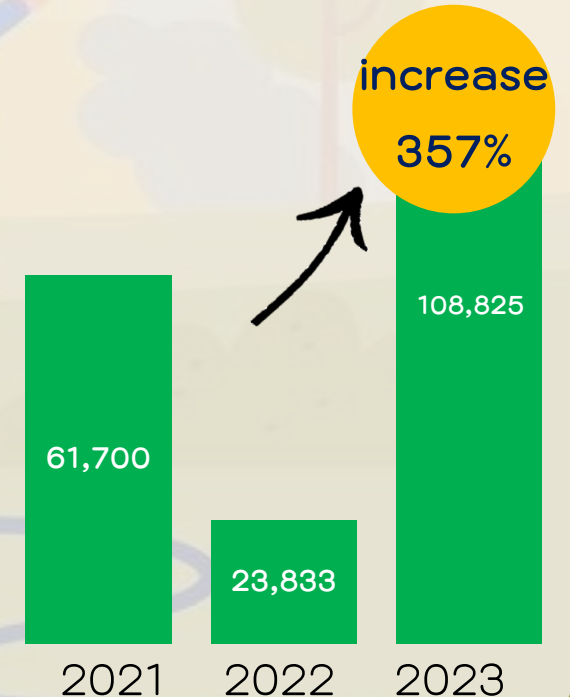
PM<sub>2.5</sub>  
24 hours average  
(microgram/cubic meters)



Days PM<sub>2.5</sub>  
Exceed standard  
(days)



Hotspot  
17 Provinces  
(hotspots)



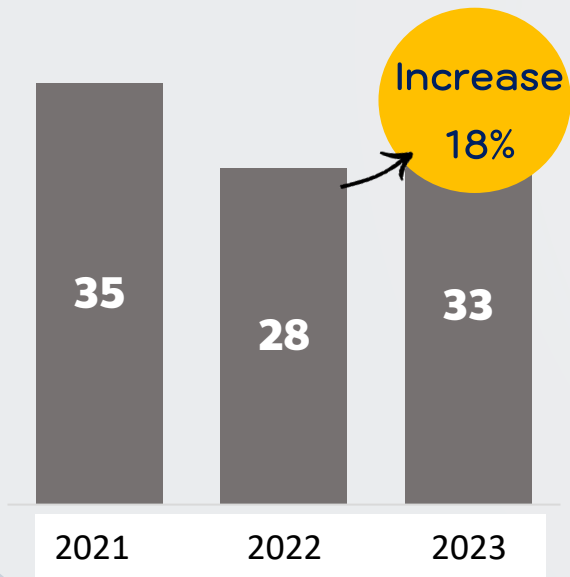
\*Data from 1 November – 31 March at 00.00 hr.



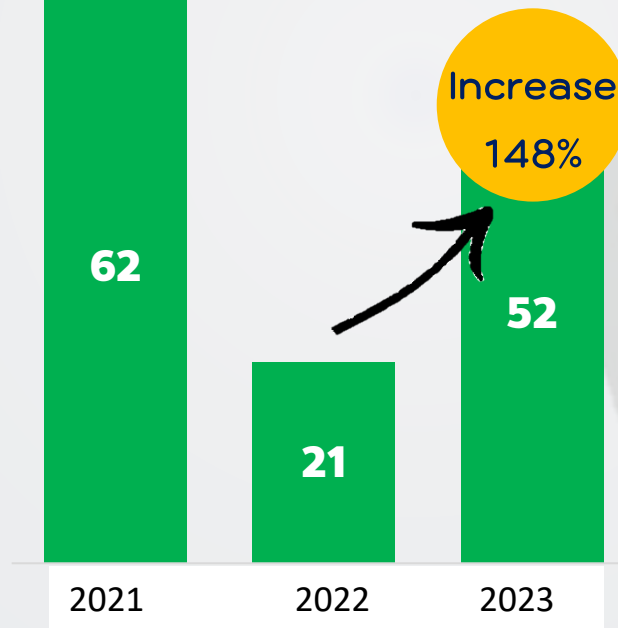
# Challenges in Air Quality Management

● Bangkok and vicinity area  
( $PM_{2.5}$ )

$PM_{2.5}$   
24 hours average  
(microgram/cubic meters)



Days of  $PM_{2.5}$   
Exceed standard  
(day)



\*Data from 1 November – 31 March at 00.00 hr.



# Challenges in Air Quality Management

- $PM_{10}$  at Rock grinding mill, Cement and lime plant, Mine, Quarry Industrial area

📍  $PM_{10}$  increasing trend in morning and night

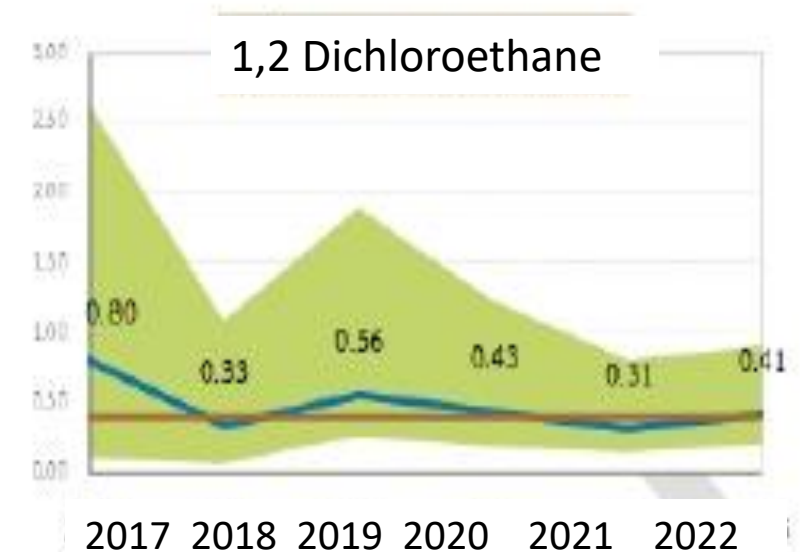
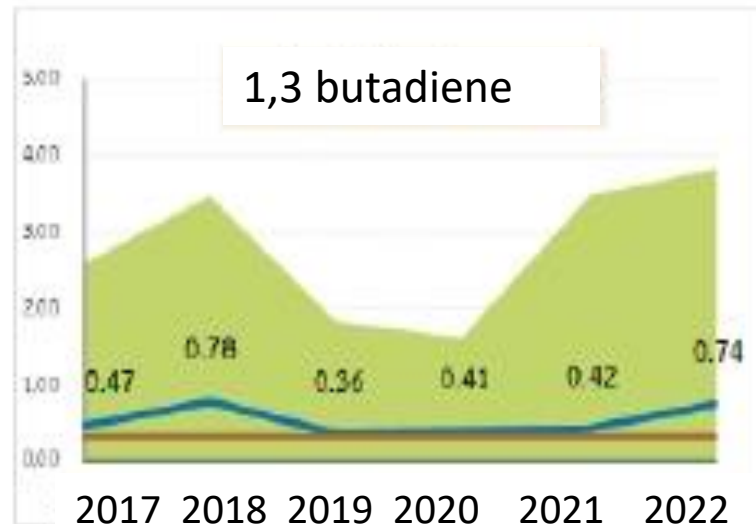
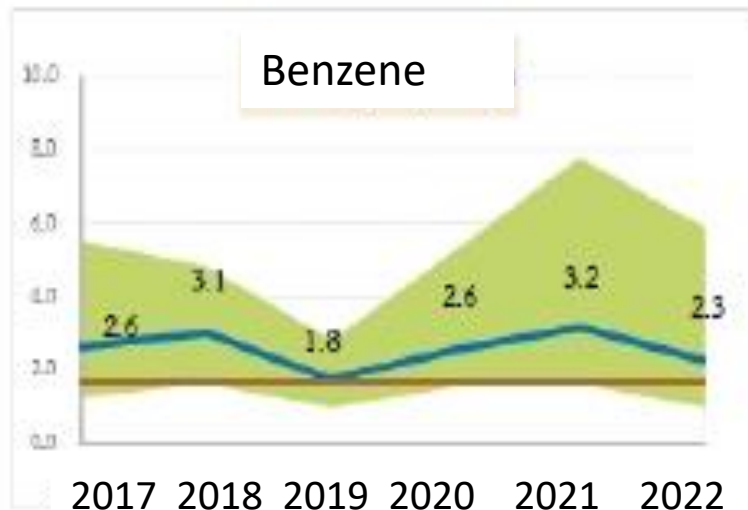
📍 Major emission from rock grinding mill, cement plant, lime stone plants rock mining and quarry industrial area and related activities



# Challenges in Air Quality Management

## ● VOCs around Petrochemical industrial Complex

- 📍 2022 -> 1,2 Dichloroethane and 1,3-butadiene **increase** from 2021 , Benzene **decrease** from 2022
- 📍 VOCs Reduction and Controls from industrial and transportation sectors



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Thank You