



AIR QUALITY MANAGEMENT IN CAMBODIA



DEPARTMENT OF AIR QUALITY AND NOISE MANAGEMENT

AUGUST, 2020

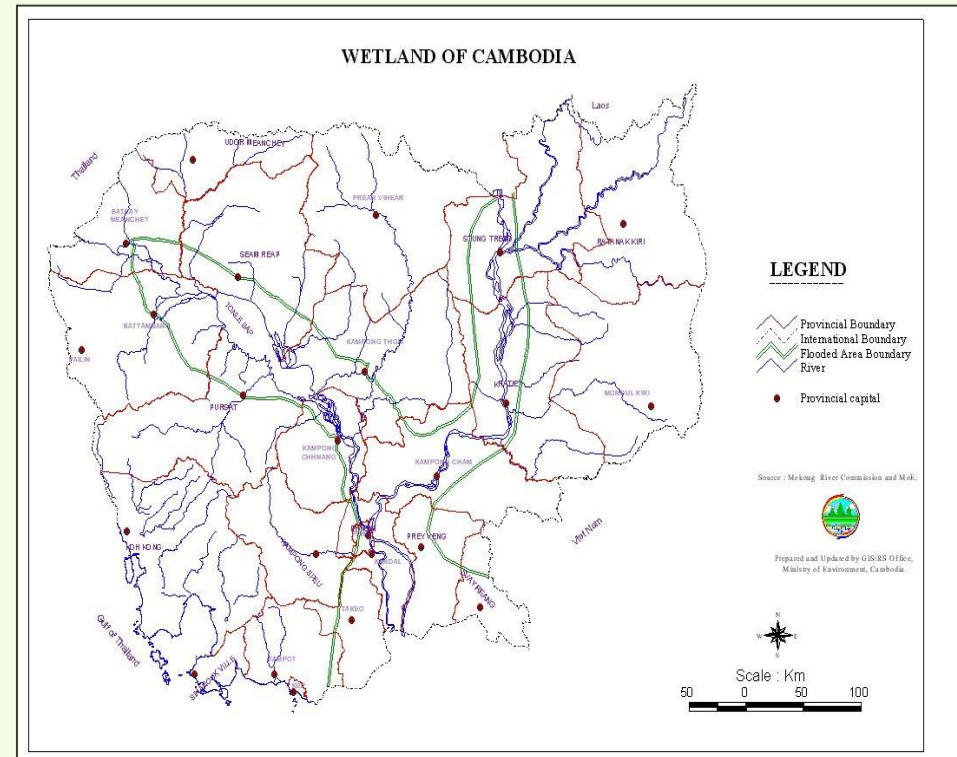
PRESENTATION OUTLINES

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- 1. Cambodia at a glance**
- 2. Sources of Air Pollution**
- 3. Air Pollution Monitoring Legal Documents**
- 4. MOE Practices on Air Pollution Monitoring**
- 5. Challenges**

1. CAMBODIA AT A GLANCE

- Total area: 181,035 km²
- Population: about 16 Million people with growth rate: 1.54%
- GDP per capita: 1,561\$ (2018)
- The total boundary of the country is 2,600 km of which approximately 5/6 is land and 1/6 or 435 km is coastline.
- There are approximately 86% of total land area lies with the Mekong catchment area.



Two seasons:

- Dry season: **Nov. to April**
- Rainy season: **May to Oct.**

2. SOURCES OF AIR POLLUTION

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- **Mobile Sources:** transportation is the major sources of air pollution in City.
- **Stationery Sources:** industrial sectors, small and medium enterprises, generators, boilers, etc.
- **Construction and Infrastructures:** construction of building, road construction, sewage system, transportation of materials...etc
- **Other Sources:** agricultural waste burning, Solid waste burning, combustion fuels, wildfires, forest fires lawns, yard burning, garbage burning, open field burning of solid waste and construction waste landfills.

SOURCES OF AIR POLLUTION



3- LEGAL DOCUMENTS RELATED TO AIR POLLUTION MONITORING

Since in 1996, MOE has formulated policies, laws and environmental legal regulations to ensure environmental quality, for instance:

- ▶ Law on Environmental Protection and Natural Resources Management (1996)
- ▶ Sub-Decree on Air Pollution Control and Noise Disturbance (2000)
- ▶ Technical Guideline on Air Pollution Control from Industries (2018)
- ▶ Technical Guideline on Noise Disturbance and Vibration Monitoring from Explosive Activities (2018)
- ▶ Circular on Measure to Prevent and Reduce the Ambient Air Pollution (2020)

AMBIENT AIR QUALITY STANDARD

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No.	Parameter	1 Hour Average mg/m ³	8 Hour Average mg/m ³	24Hour Average mg/m ³	1 Year Average mg/m ³
1	Carbon Monoxide (CO)	40	20	-	-
2	Nitrogen Dioxide (NO ₂)	0.3	-	0.1	-
3	Sulfur Dioxide (SO ₂)	0.5	-	0.3	0.1
4	Ozone (O ₃)	0.2	-	-	-
5	Lead (Pb)	-	-	0.005	-
6	Total Suspended Solid(TSP)	-	-	0.33	0.1
7	PM _{2.5}			0.050	0.025
8	PM ₁₀			0.120	0.050

STANDARD OF SULFUR CONTENT IN FUEL

Types of Standard	Types of Fuel	Sulfur Content Contained in Fuel	Date of implementation
Type 3 (EURO III)	Petroleum	Less than 150 PPM (<150 ppm)	From 1 st January 2020
	Diesel	Less than 350 PPM (<350 ppm)	
Type 4 (EURO IV)	Petroleum and Diesel	Less than 50 PPM (<50 ppm)	From 1 st January 2021
Type 5 (EURO V)	Petroleum and Diesel	Less than 10 PPM (<10 ppm)	From 1 st January 2024

EMISSION STANDARD FOR PASSENGER CAR

Types of Standard	Types of Standard	Date of Implementation	CO	HC	NOx	HC+ NOx	PM
Euro 4	Petroleum	From 1st January 2022	1.0	0.10	0.08		
	Diesel		0.50		0.25	0.30	0.025
Euro 5	Petroleum	From 1st January 2027	1.0	0.1	0.06		0.005
	Diesel		0.5		0.18	0.23	0.005

EMISSION STANDARD FOR MOTORCYCLES AND TRICYCLES

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Types of Standard	Types of Engine	Date of Implementation	CO	HC	NOx	HC+NOx	PM
Motorcycles							
Type 3 (Euro III)	<150CC	From 1st	2.0	0.8	0.15		
	≥150CC	January 2023	2.0	0.3	0.15	-	-
Tricycles							
Type 3 (Euro III)	SI	From 1st January 2027	4.0	1.0	0.25	-	-
	CI		1.0	0.15	0.65	-	0.1

SI (Spark Ignition Engine) CI (Compression Ignition Engine)

4- MOE PRACTICES ON AIR POLLUTION MONITORING

- ❑ From 2017 to 2020 the DAQNM of MOE installed air quality monitoring in 41 locations, **15 in Phnom Penh** and **26 locations in 23 provinces**.
- ❑ The equipment mainly monitors key parameters including PM2.5, PM10, CO, NO2, SO2 and O3
- ❑ Air quality monitoring data have been recorded and posted in **MOE Facebook Page** and **LED Screen** in front of the MOE building
- ❑ **The air quality information is released daily**
- ❑ The data on air quality is transferred from sever of the company who procured the air monitoring equipment

AIR QUALITY MANAGEMENT IN CAMBODIA

The map illustrates the geographical distribution of 18 sampling points across Cambodia. The points are marked with green dots and are distributed across various provinces and districts, including Preah Vihear, Kampong Cham, Kampong Speu, Kampong Thom, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, Kampong Cham, and Kampong Cham. The map also shows the Tonle Sap and the Gulf of Thailand.

AIR QUALITY MONITORING EQUIPMENT



PM2.5 Unit



Grimm (PM2.5 & PM10)



Ozone Unit



Grim (PM2.5, PM10, SO2, NO2, CO, O3)



Pursat DoE
OCEAN (PM2.5, PM10, Meteorology)



PASSIVE Tube (CO, NOx, SO2) Previously Used

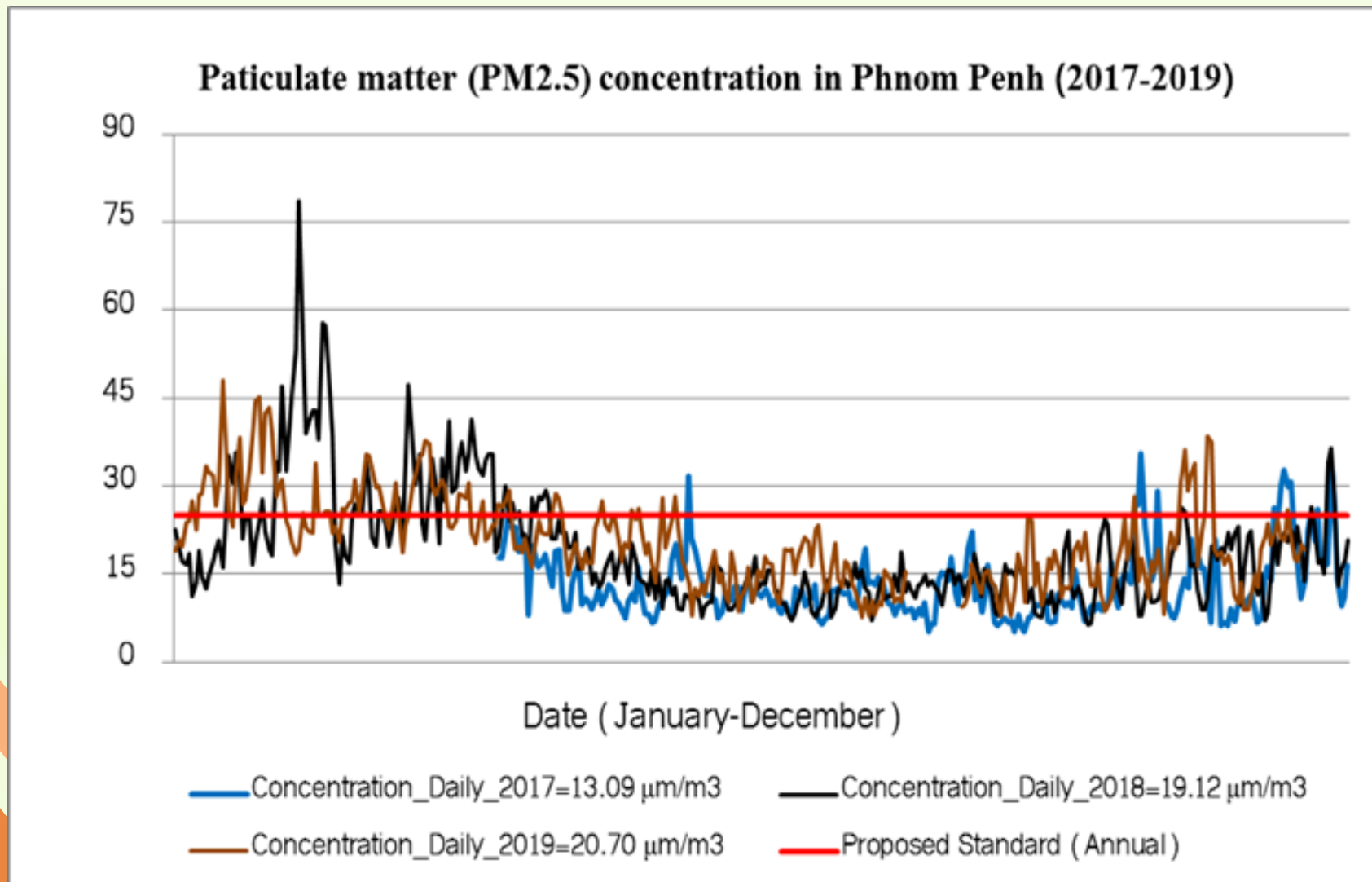
AIR QUALITY MONITORING INSTALLATION

AIR QUALITY MANAGEMENT
IN CAMBODIA

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AIR QUALITY MONITORING IN CAMBODIA 2017-2019



5- CHALLENGES

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1. No data platform for monitoring and storing the data of air quality
2. Insufficient laboratory facilities to monitor and control environmental quality
3. Limited capacity and experiences for staff, mainly those are in charge of monitoring and controlling the air quality
4. Insufficient legal and technical guidelines and action plan on air pollution management
5. lack of technical assistance and air quality management experts
6. lack of cooperation between ministries in promoting information and data sharing



ក្រសួងបរិស្ថាន
MINISTRY OF ENVIRONMENT



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Thank you for your attention!



Let's save our
environment!



ក្រសួងបរិស្ថាន

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

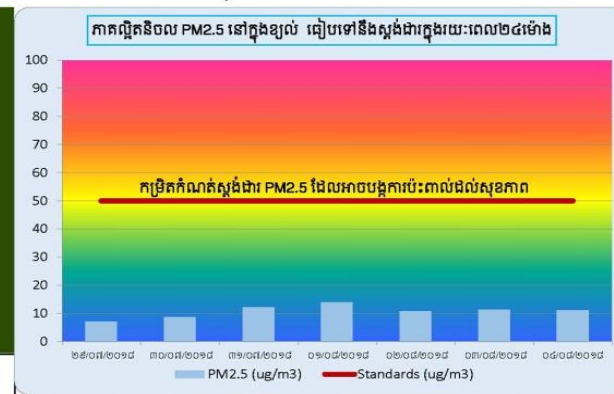
សេចក្តីជូនដំណឹង

អំពីស្ថានភាពគុណភាពខ្យល់នៅក្នុងរាជធានីភ្នំពេញ
ចាប់ពីថ្ងៃទី២៩ ខែកក្កដា ដល់ ០៤ ខែសីហា ឆ្នាំ២០១៨

(កម្រិតភាគល្អិតនិចល PM2.5 នៅក្នុងខ្យល់ជាមធ្យម ១៤,០៣ $\mu\text{g}/\text{m}^3$ ធៀបទៅនឹង
កម្រិតស្តង់ដារ PM2.5 គឺ ៥០ $\mu\text{g}/\text{m}^3$ ក្នុងរយៈពេល២៤ម៉ោង)



ឧបករណ៍ត្រួតពិនិត្យ PM2.5



PM2.5 គឺជាភាគល្អិតនិចលតូចៗនៅក្នុងខ្យល់ ដែលមានអង្កត់ផ្ចិតតូចជាង ២,៥ មីក្រុង។ ភាគល្អិតនិចលនេះមានប្រភពមកពីការដុតឥន្ធនៈឥន្ធុស្សី និងកំទេចចូលផ្សេងៗទៀត។ ភាគល្អិតនិចលនេះអាចស្រូបចូលទៅដល់សួត និងពេលខ្លះដល់សរសៃឈាម ដែលអាចបង្កការប៉ះពាល់ដល់សុខភាពមនុស្ស ប្រសិនបើការស្រូបចូលនេះកើនឡើង។