

**8th Annual Asia-Pacific Mercury Monitoring Network
Partners Meeting
12-16 August 2019 Jakarta, Indonesia**

**Environmental monitoring network
in Mongolia**

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and Environment Monitoring**



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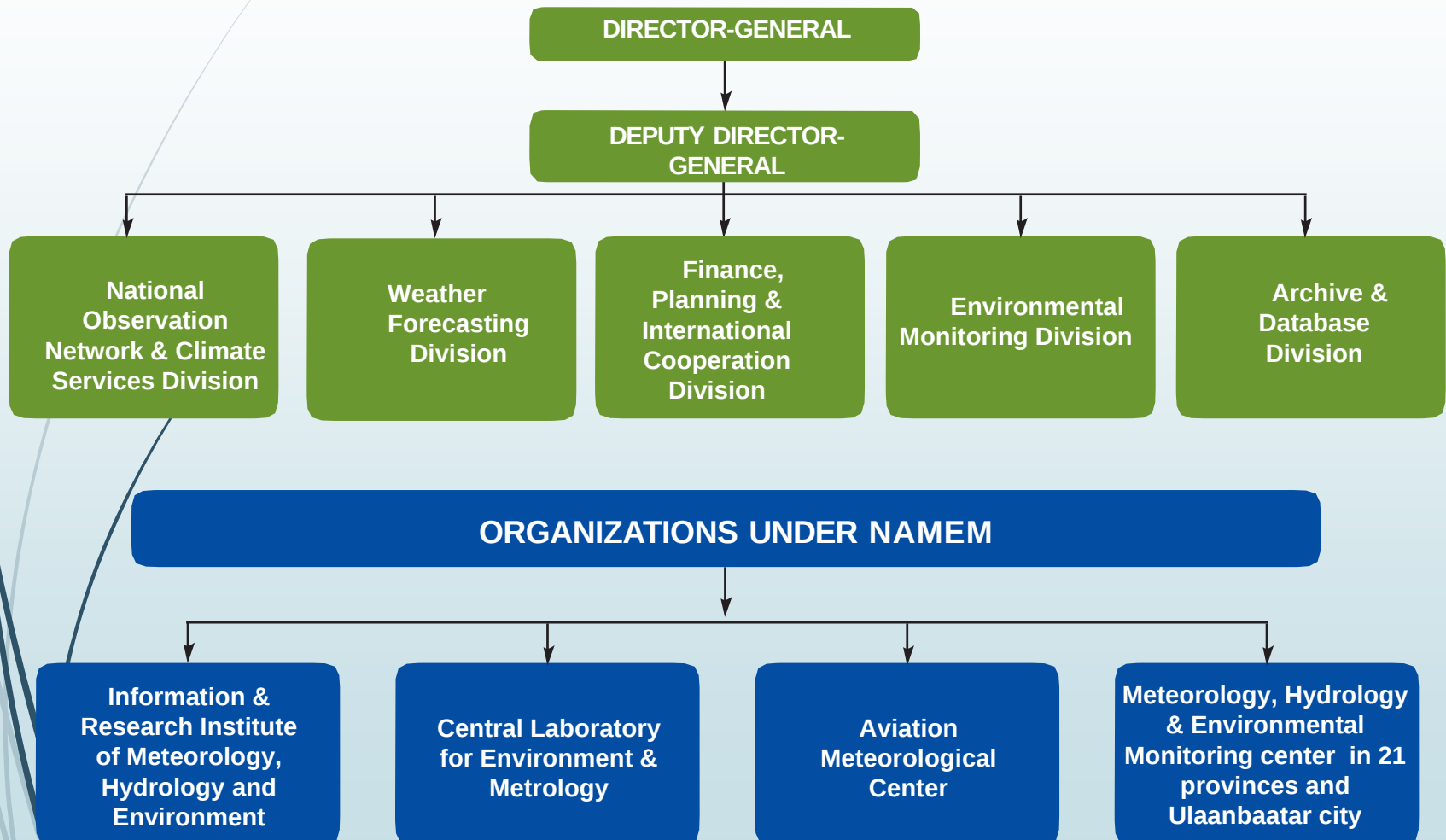
1. Overview of NAMEM
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The mission of the NAMEM

to monitor state of water, weather and environmental, to provide actual and preventive data and information for social immediate needs, to warn from probable natural disasters.

Organizational structure of NAMEM



Activities of the NAMEM

- To provide national network of meteorology and environmental monitoring with integrated professional and methodological guidance
- to plan and implement the meteorology and environmental monitoring network
- to ensure uniformity of domestic and international data exchange and compliance with integrated standards and measurement technology

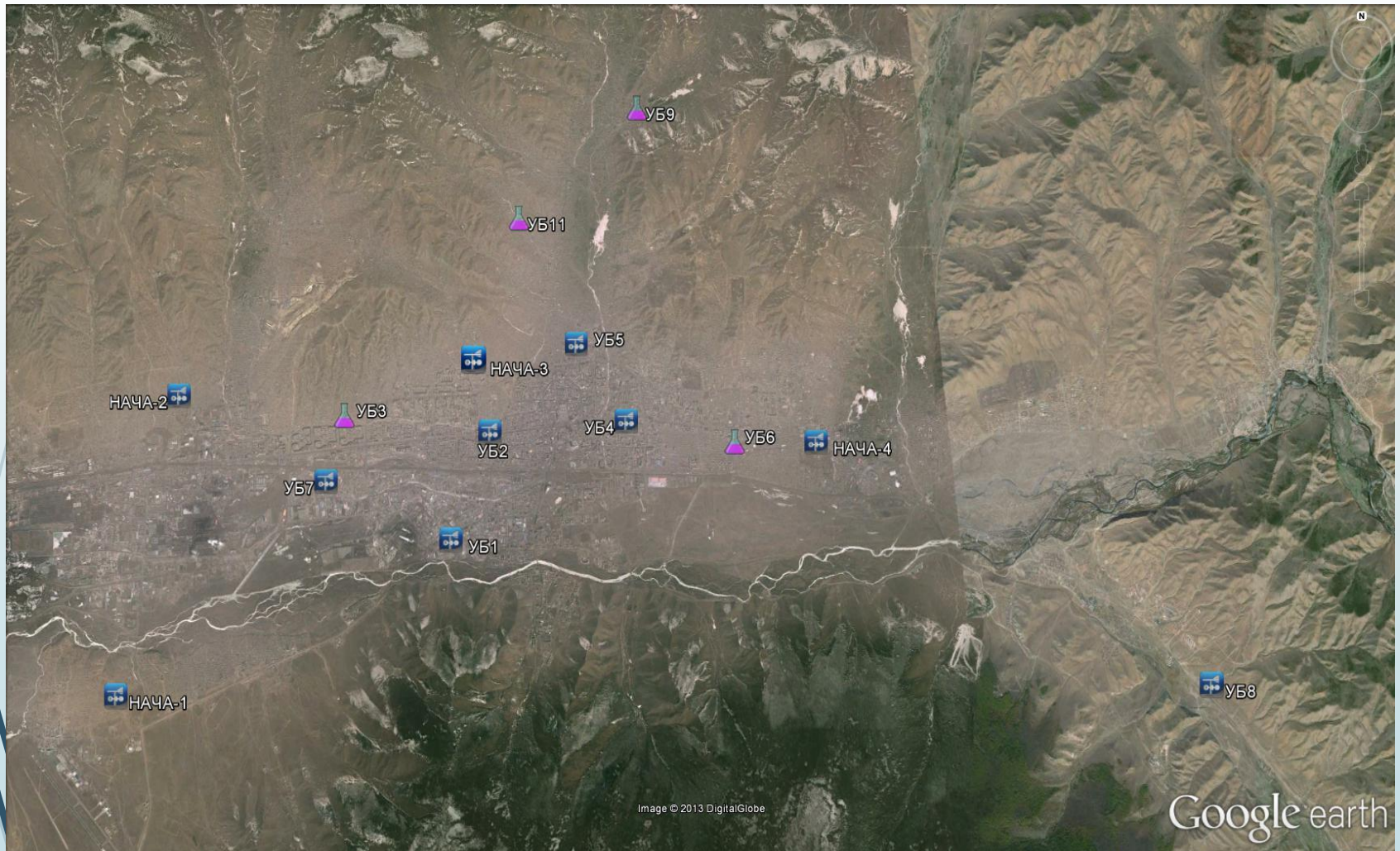
Environmental monitoring network in Mongolia

No	Monitoring network	Stations, point
1	Environmental monitoring laboratories	22
2	Surface water quality monitoring	194
3	Soil quality monitoring	390
4	Radioactive monitoring	37
5	Acid deposition monitoring	2
6	Waste water monitoring	31
7	Air quality monitoring	37
8	Soil quality monitoring for evaluation desertification	1550

Air quality monitoring network in Mongolia



Location of the air quality monitoring station of Ulaanbaatar



Air quality monitoring network

	Pollutant	Automatic method		Wet chemical method & laser dust equipment	
		In Ulaanbaatar	In Provinces	In Ulaanbaatar	In Provinces
1	SO2	7	-	3	27 (3 times per day)
2	NO2	7	-	3	27 (3 times per day)
3	CO	7	3	-	-
4	PM10	7	2	-	5 (2 per week, 24 hours)
5	PM2.5	3	-	-	-
6	O3	4	-	-	-

Wet & dry deposition monitoring site

Urban site- Ulaanbaatar

Longitude 106° 54' E,
Latitude 47° 55' N,
Altitude 1275m a.s.l



Remote site - Terelj

Longitude 107° 29' E,
Latitude 47° 59' N,
Altitude 1550 m a.s.l



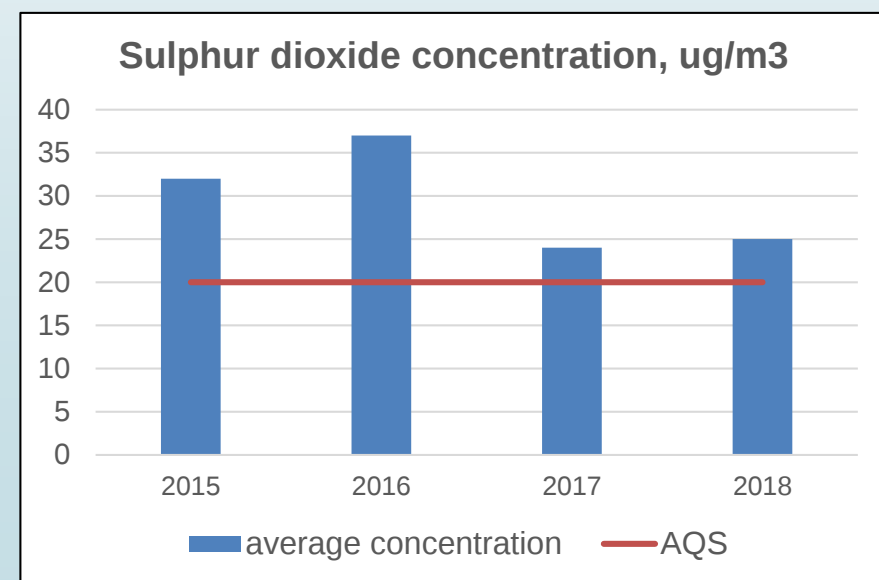
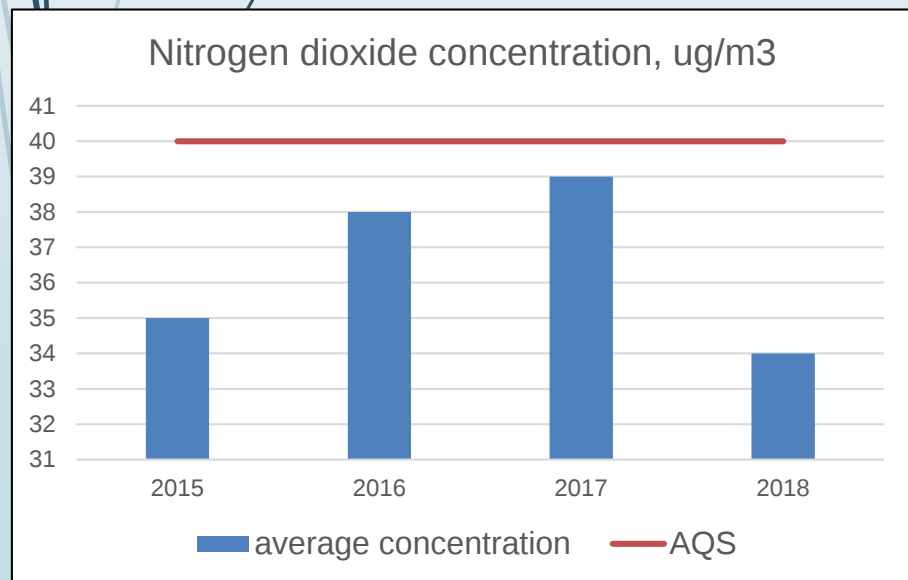
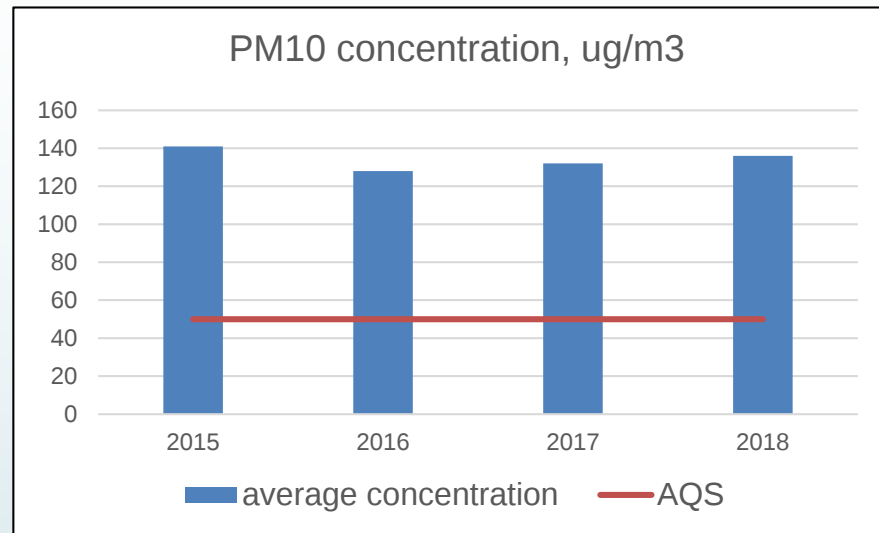
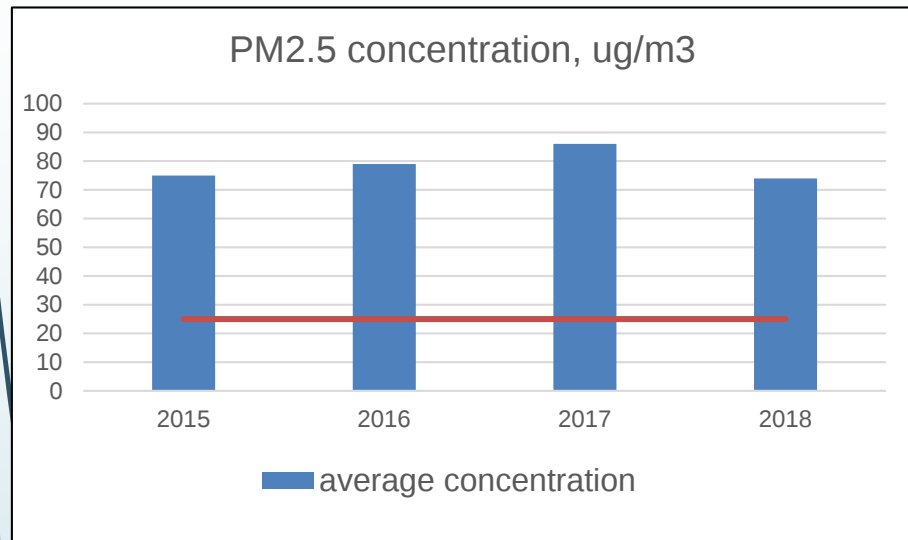
Dry & wet deposition monitoring program

Items	Monitoring site	Monitoring interval	Monitoring parameters
Wet deposition	Ulaanbaatar Terelj	May to October	pH, EC, SO_4^{2-} , NO_3^- , Cl^- , NH_4^- , Na^+ , K^+ , Ca^{2+} , Mg^{2+}
Dry deposition	Ulaanbaatar Terelj	Weekly Biweekly	Gases: SO_2 , HNO_3 , HCl , NH_3 Aerosol: SO_4^{2-} , NO_3^- , Cl^- , NH_4^- , Na^+ , K^+ , Ca^{2+} , Mg^{2+}
Inland aquatic environment	Terelj river	6 times per a year	pH, EC, alkalinity, SO_4^{2-} , NO_2^- , NO_3^- , Cl^- , NH_4^- , Na^+ , K^+ , Ca^{2+} , Mg^{2+} , PO_4^{3-}
Soil	Ulaanbaatar	Every 3-5 years	pH (H ₂ O), pH (KCL), Exchangeable acidity

Air Quality standard, MNS4585:2016

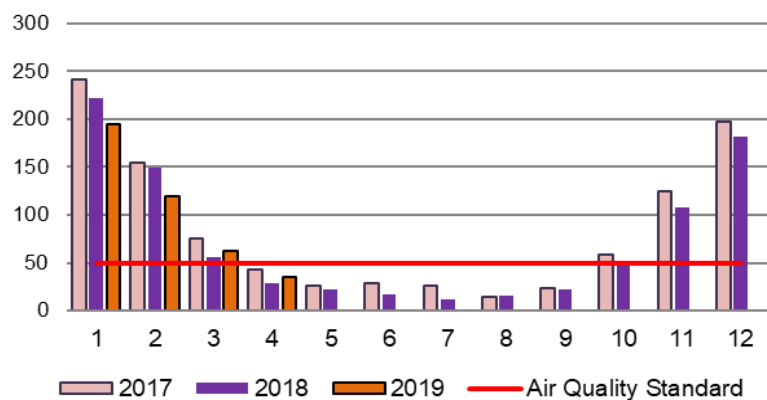
Pollutant	Method of measurement	20 minutes	8 hours	24 hours	Annual
SO ₂	1. Pulse U.V. Fluorescence method 2. Photometric method	450 ug/m ³	-	50 ug/m ³	20 ug/m ³
NO ₂	1. Chemiluminescence Method 2. Griss-Zaltsmany method	200 ug/m ³	-	50 ug/m ³	40 ug/m ³
CO	Non-dispersive Infrared Method	60000ug/m ³	10000ug/m ³	-	-
PM10	Beta Ray Absorption Method	-	-	100 ug/m ³	50 ug/m ³
PM2.5		-	-	50 ug/m ³	25 ug/m ³
O ₃	U.V. Photometric Method		100 ug/m ³		
Hg		5ug/m ³ /30min/		2ug/m ³	1ug/m ³

Annual concentration of air pollutants in Ulaanbaatar, 2015-2018 year

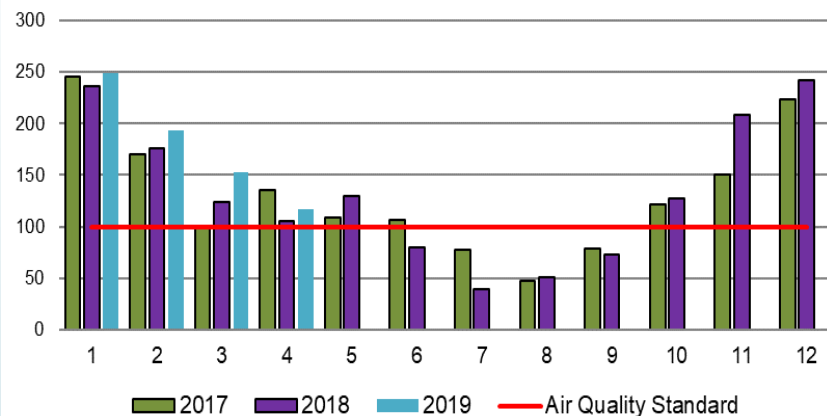


Monthly concentration of air pollutants in Ulaanbaatar, 2017-2019year

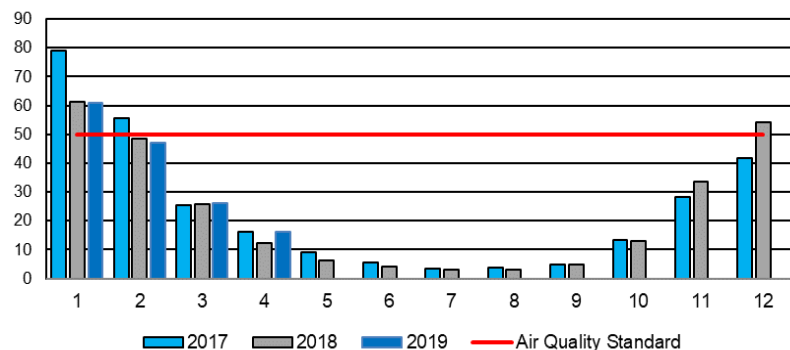
PM2.5 concentration, ug/m3



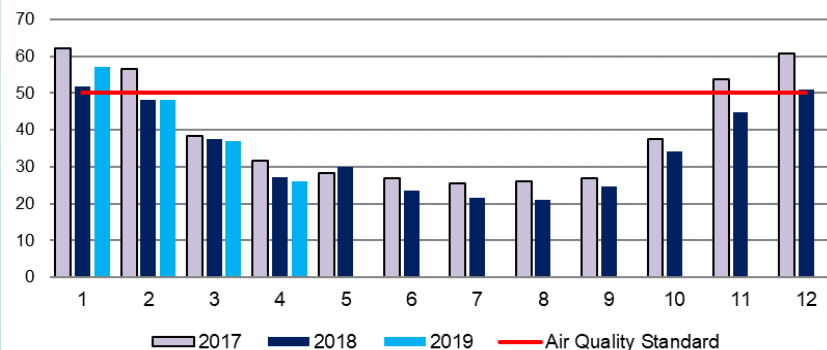
PM10 concentration, ug/m3



Sulphur dioxide concentration, ug/m3

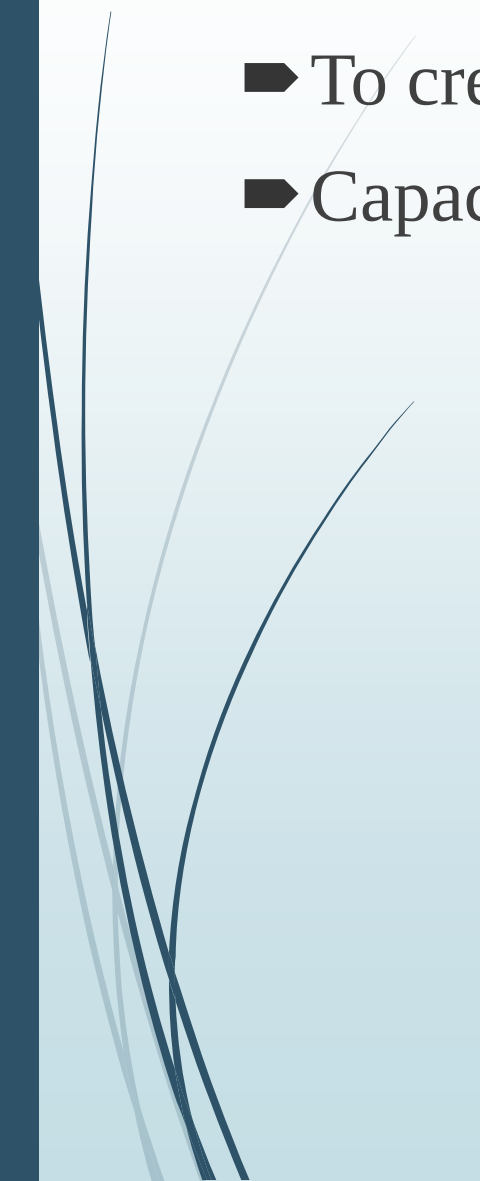


Nitrogen dioxide concentration, ug/m3





The plan of NAMEM

- To create the mercury monitoring site
 - Capacity building
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Thank you