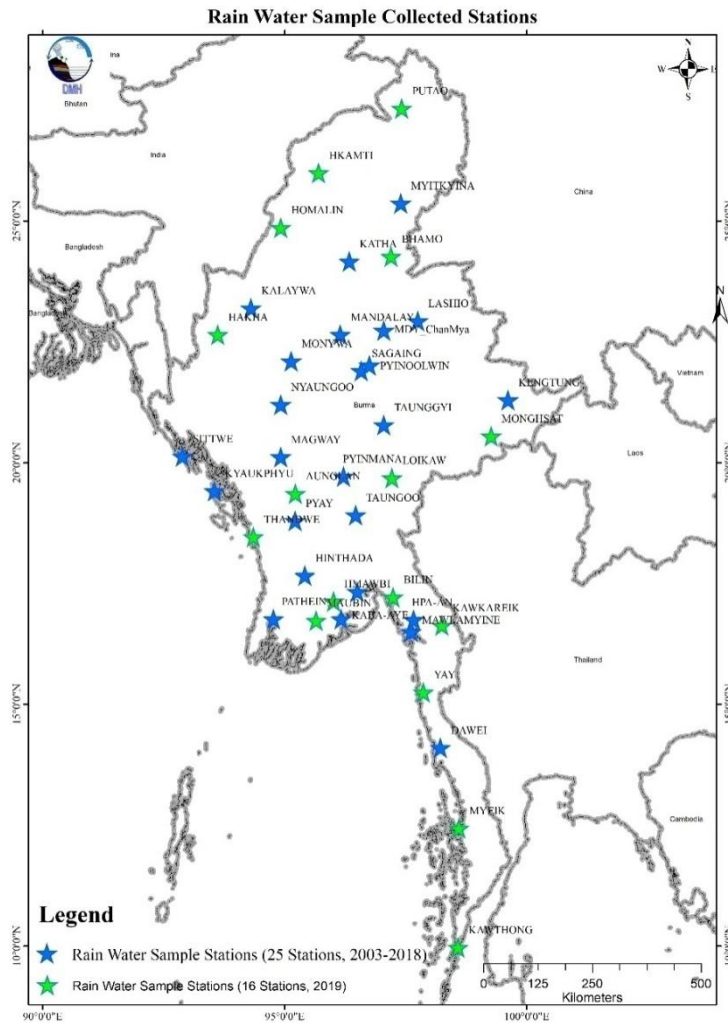


Implementation on Urban Air Pollution and Transboundary Haze Pollution in Myanmar

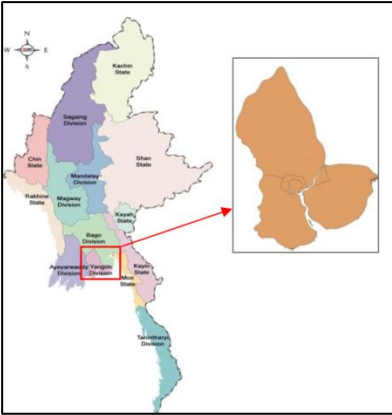
Kyu Kyu Sein
Department of Meteorology and Hydrology (DMH)
Ministry of Transport and Communications, Myanmar

- ✂ Introduction
- ✂ Problem and Current Situation
- ✂ Satellite data usage to monitor hotspot
- ✂ Current Efforts for National Level
- ✂ Limitation
- ✂ Conclusion



- Department of Meteorology and Hydrology (DMH) is started the acid deposition monitoring in rain water since 2003 with 9 stations.
- In 2005, DMH has joined Acid Deposition Monitoring Network in East Asia (EANET), and became the National Center of EANET.
- Monitoring stations increased up to 25 stations until March, 2019.
- Due to the transboundary haze pollution, 16 rain sample collection stations increased on April 2019, near border areas to monitor acid deposition.
- Total of 41 rain sample collection stations are operation to monitor acid deposition across Myanmar.

Source: Department of Meteorology and Hydrology, Myanmar



Filter Pack Sampler



Wet only Sampler

- In 2006, Yangon (Kaba-Aye) was chosen as an Urban site for wet and dry deposition monitoring.
- Monitoring parameters:
 - pH & EC
 - Gaseous : SO_2 , NH_3 , HNO_3 , HCl
 - Cations : NH_4^+ , Na^+ , K^+ , Ca^{2+} , Mg^{2+}
 - Anions : SO_4^{2-} , NO_3^- , Cl^-
- PM_{2.5} monitoring was installed at Yangon, in 2018 with financial and technical supported by Asia Center for Atmospheric Research (ACAP) .
- In 2019, Atmospheric Mercury Sampler was installed at Yangon with financial and technical supported by Ministry of Environment Japan (MOEJ).



PM_{2.5} Monitor (March, 2018)



Mercury Monitor (August, 2019)

Causes of Fire in Myanmar:

- Forest Fire
- Agricultural Fire
- Open Burning
- Shifting Cultivation
- Waste Dumping Site
- Accidental Fire

Annual Fire Cases	
Year	Times
2015	170
2016	239
2017	120
2018	61
2019 (January to April)	90

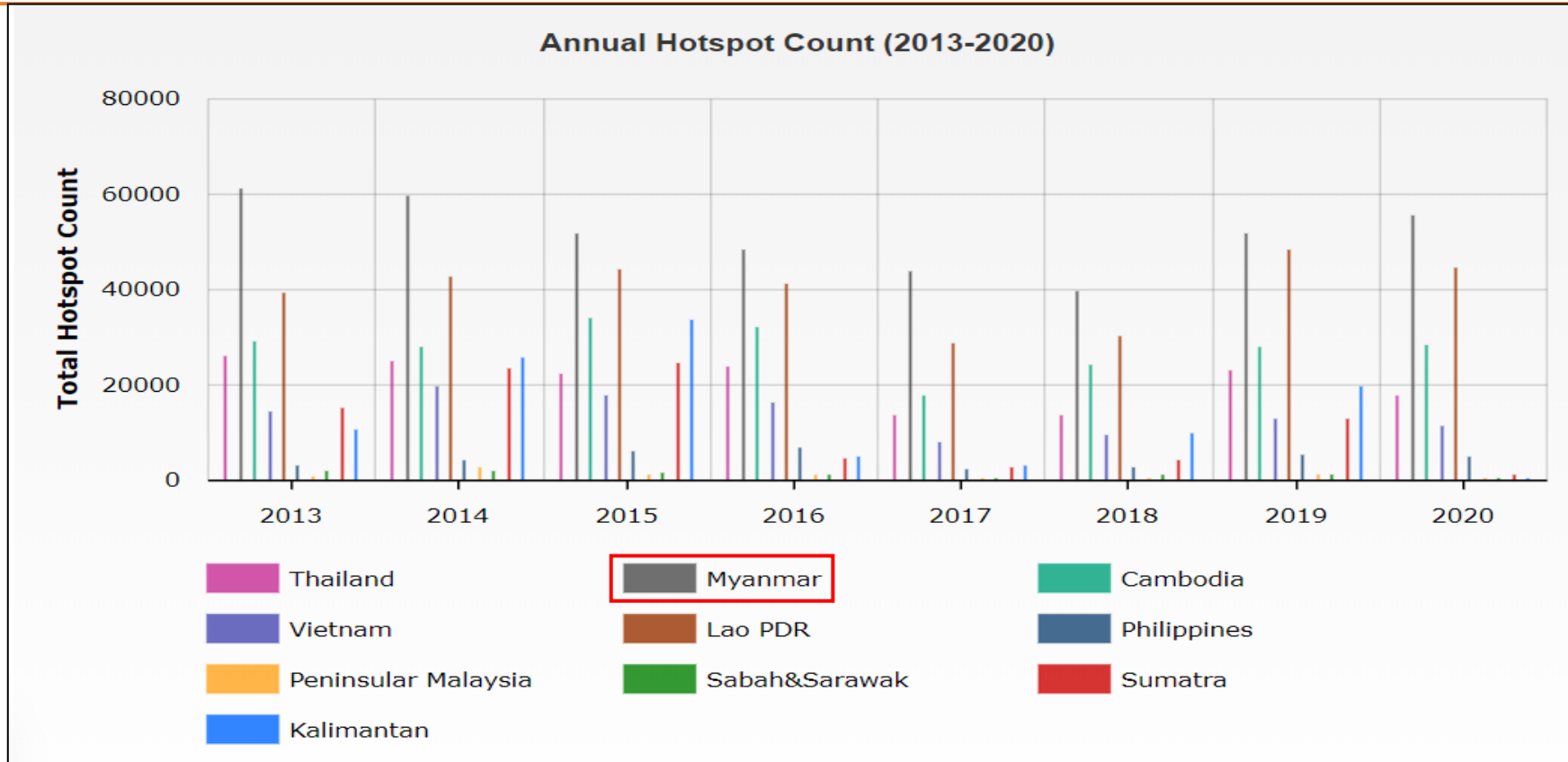


Haze Pollution at Myanmar and Thailand Boundary Areas:

- Tachileik District
- Monitoring from 13 March 2019 to present
- Ambient Air quality (PM2.5 & PM10) worsening continuously
- Government conducted the immediate actions to reduce haze pollution



Satellite data usage to monitor hotspot



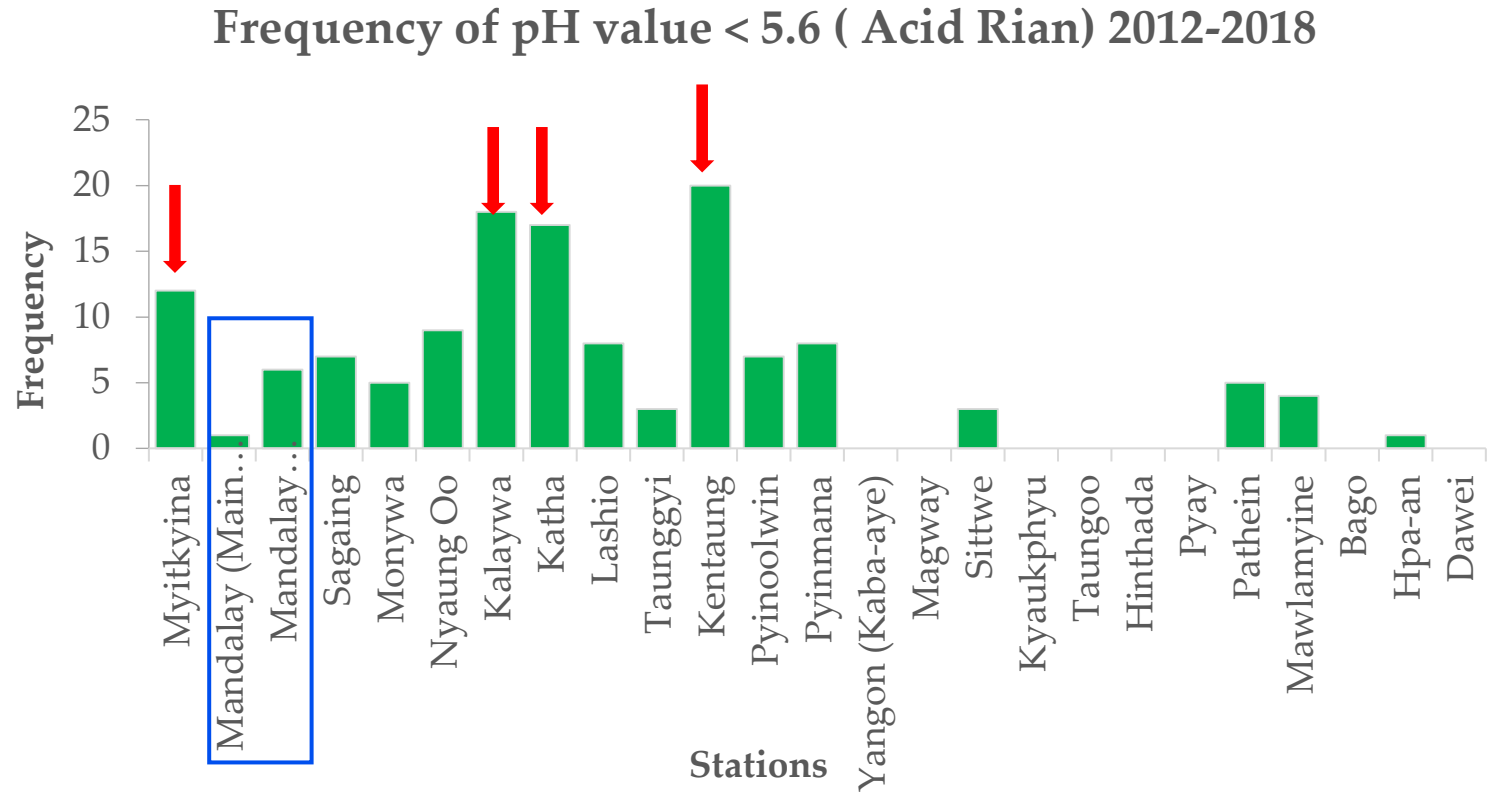
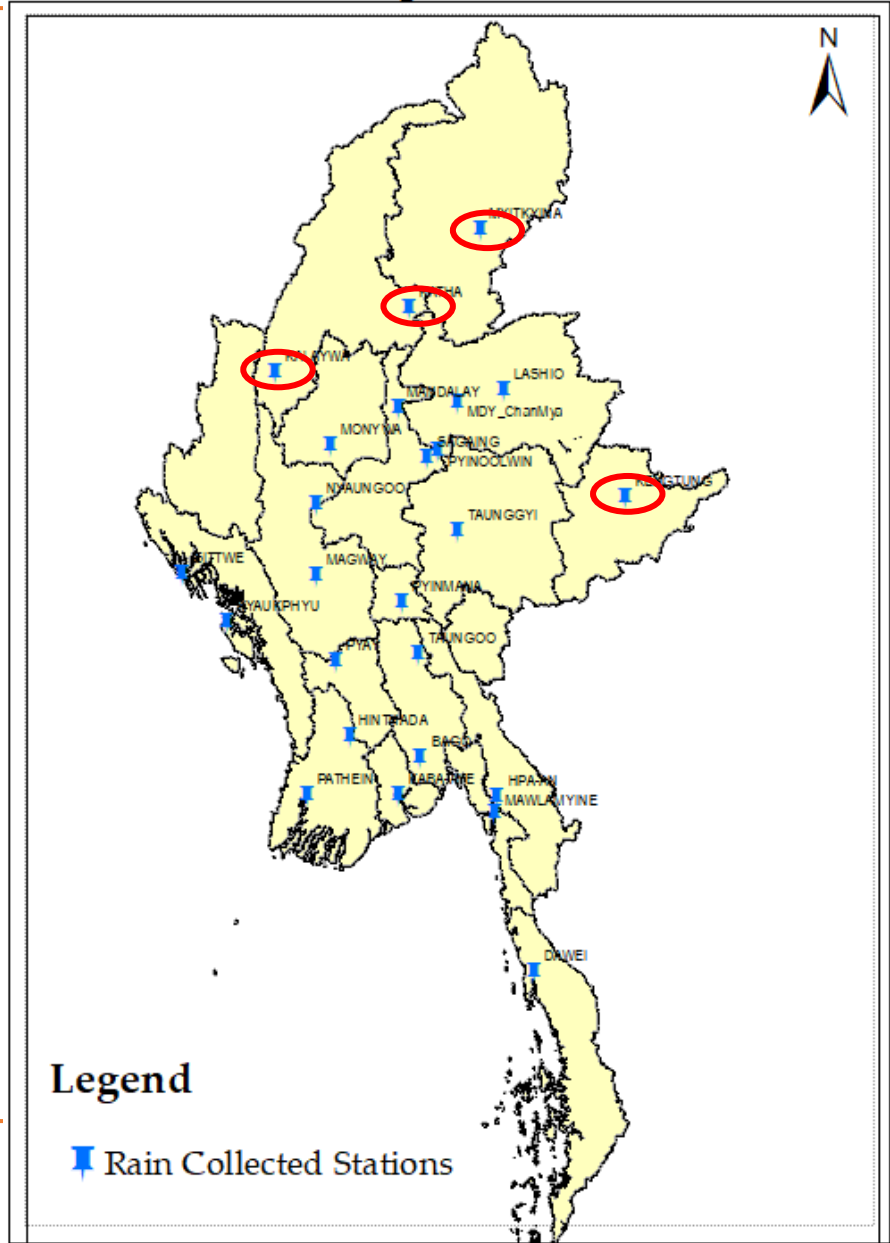
Year	Hotspot Count of Myanmar
2013	60,959
2014	59,788
2015	51,681
2016	48,180
2017	43,672
2018	39,805
2019	51,623
2020	55,338

- Highest amount in annual hot spot count compared to other ASEAN countries
- Preventive measures are needed.
- Not only Forest Fire and other types of Fires, but also transboundary haze are needed.

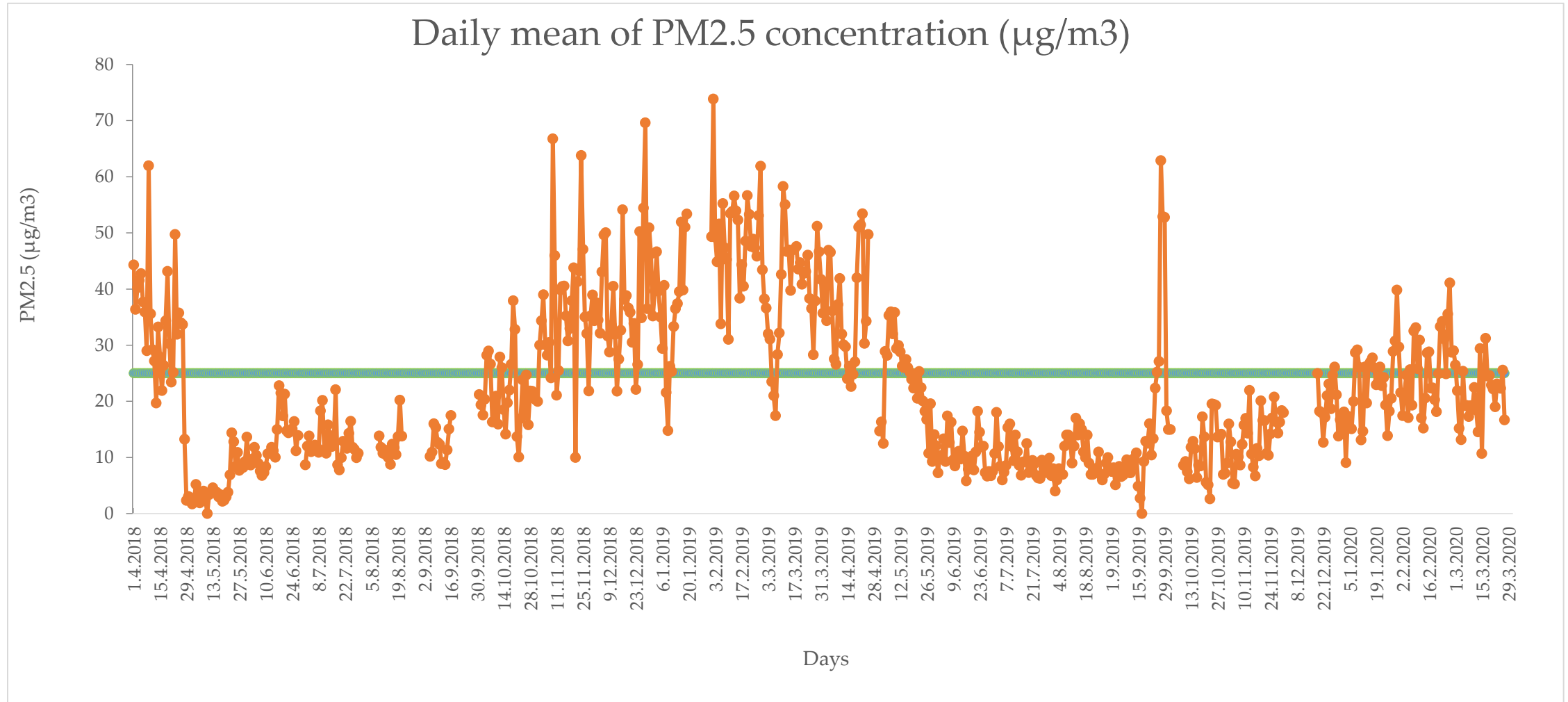
Source: ASEAN Specialised Meteorological Centre (ASMC)

Assess on: 6 August 2020

Frequency of Acid Rain during 2012-2018

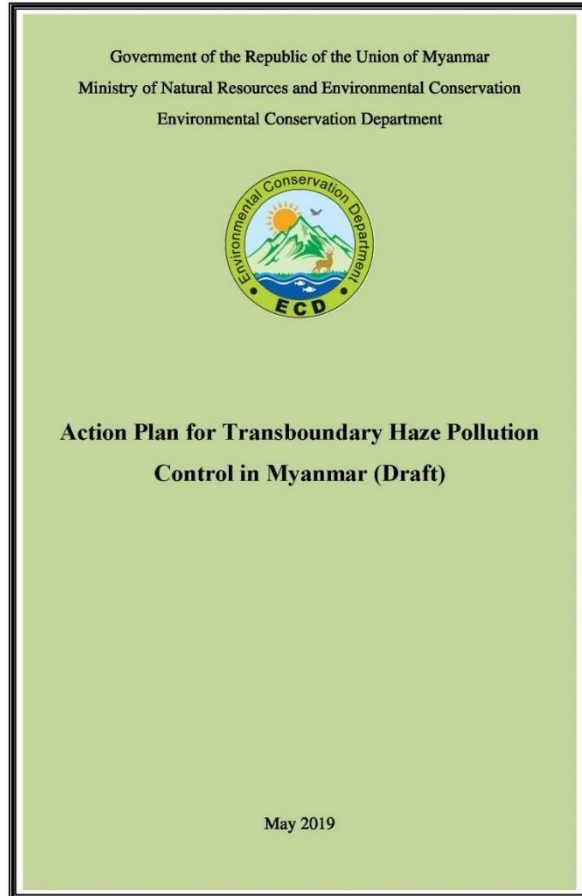


PM2.5 concentration at Yangon site



Implementing Departments and Organizations for Action Plan for Transboundary Haze Pollution Control

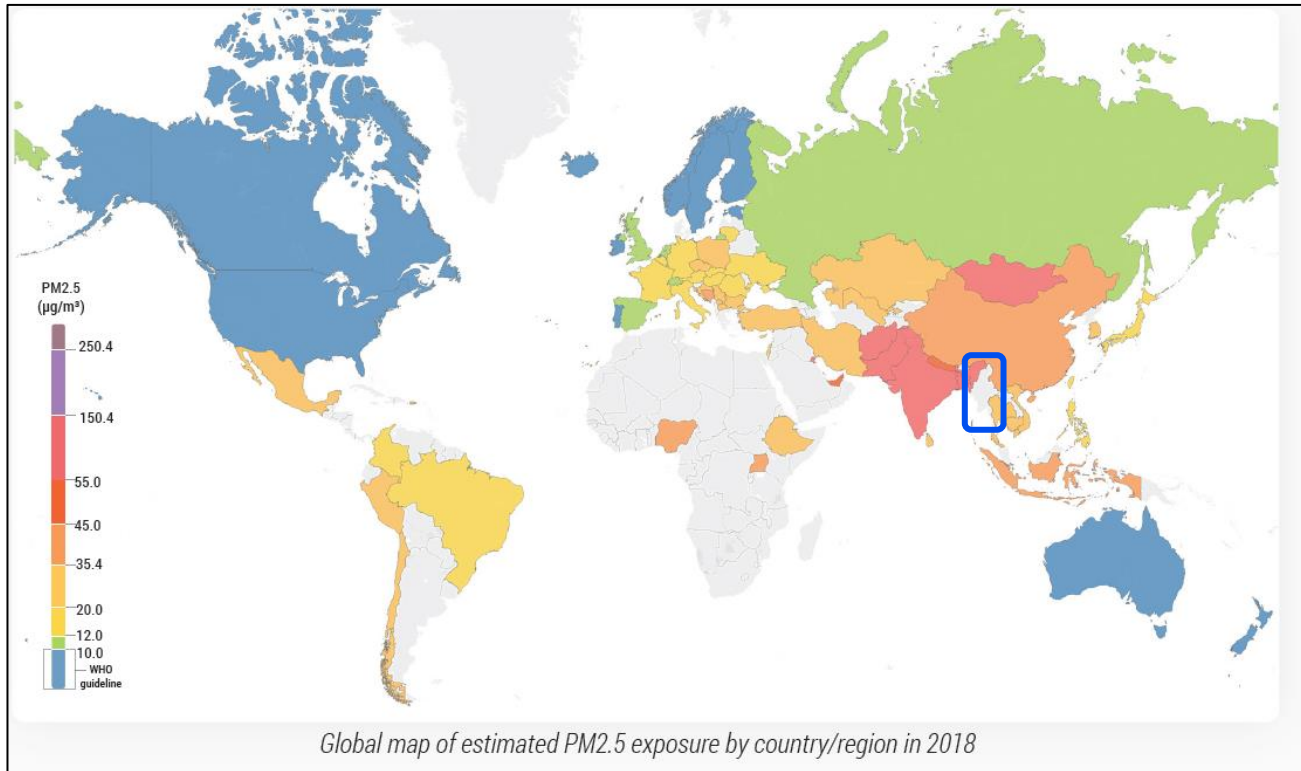
- General Administrative Department
- Fire Services Department
- Department of Agriculture
- Department of Agriculture Land Management and Statistics
- Department of Meteorology and Hydrology
- Department of Disaster Management
- Department of Public Health
- Department of ASEAN Affairs
- Forest Department
- Dry Zone Greening Department
- City Development Committees
- Environmental Conservation Department



- “Integrated National Strategic Action Plan on Fire Management in Myanmar” (April 2019 to December 2019) - Cooperation with Food and Agriculture Organization (FAO) aiming to develop Integrated Strategy and Action Plan on Fire Management in Myanmar.
- “Sustainable Management of Peat Land Ecosystems in Mekong Countries” (2019-2022) – Cooperation with International Union for Conservation of Nature (IUCN) aiming to develop policy, framework, strategies and action plans for sustainable peat land management.
- Proposed Project for Ambient Air Quality Assessment along Mekong River Area in Shan State (2020-2022) – Aiming to monitor the Transboundary Haze Pollution.
- Proposed Project for Improvement of Capability of Air Quality Monitoring in Myanmar – Proposed to Japan Government for Financial and Technical Assistance.

Myanmar signed ASEAN Agreement on Transboundary Haze Pollution (AATHP) with ASEAN member states in June 2002, thus completing the legal process of fully enacting this agreement.

Limitations



- Real Time Monitoring Station is limited.
- Public awareness and driving action on to combat air pollution in long term plan is limited.
- Technology and capacity building is limited to monitor accurate forest fires and others fires hot spots using satellite images.
- Information dissemination of forest fire.

Conclusion

- DMH is mainly focus on the Early warning to the public, therefore, it is necessary to monitor/forecast air quality.
- Due to the limitation of ground data in nation-wide, utilizing satellite information could be the best way to monitor air quality.
- Validation of satellite data with ground monitoring , the accurate outcomes could provide forecasting and warning service as well as the decision makers to implement environmental policy that national priorities need.
- Climate change and air quality are closely related, however necessary to establish tools for rapid translation of research findings for decision-making that connects air pollution and climate change responses to health and environmental outcomes from national to regional level.
- Reducing and eliminating various sources of air pollution is key to protect public health – as well as helping to fight climate change.

Beat Air Pollution



Thank You!