Review of Medium-Term Plan (MTP) for the EANET (2016-2020) and next MTP for the EANET (2021-2025)

1. Review of Medium-Term Plan (MTP) for the EANET (2016-2020)

This session reviewed the activities during January 2016 to June 2019 for the period of the MTP for the EANET (2016-2020) based on the activity of Myanmar. The objectives of the MTP for the EANET (2016-2020) will be achieved through the seven specific objectives(Plan, Dynamics, Ecosystems, & Mai, 2016);

1) **Monitoring of acid deposition:**Conduct monitoring of acid deposition including related chemical substances; review for data quality and completeness; and data management.
2) **Strengthening current monitoring:** Strengthening current monitoring activities through research, capacity building and increasing number of monitoring sites to generate additional data.
3) **Promotion of activities other than monitoring:** Promotion of information exchange on clean air technologies, emission inventories, and research activities.
4) **Providing policy relevant information:** Develop policy relevant reports and publications based on analysis of the monitoring data collected.
5) **Promotion of public awareness:** Promote public awareness through knowledge dissemination and outreach based on the monitoring data collected and analyzed and the policy relevant reports developed.
6) **Enhancement of intergovernmental cooperation:** Provide a forum for cooperation on the issues related to acid deposition among participating countries and support future development of EANET.
7) **Enhancement of cooperation and collaboration:** Enhancement of cooperation efforts, including South-South collaboration among participating countries and with outside organizations on the EANET objectives.

During the MTP for the EANET (2016-2020), the following activities are identified as major achievements and outputs of Myanmar in order to implement the objectives of EANET (2016-2020) MTP;

1) Regularly conduct monitoring of acid deposition including wet and dry deposition using filter pack method, and $PM_{2.5}$ monitoring based on Standard Operation

Procedure (SOP) of EANET, and provide monitoring data to Asia Center for Air Pollution Research (ACAP) annually.

2) Installed $PM_{2.5}$ monitoring station at Kaba-aye, Yangon during 2018 to monitor air quality with finical and technical support from ACAP.
3) Carried out instrumental maintenance with the guidance of ACAP.
4) Extended 16 rain sample collection stations during 2019, that close to neighboring countries to monitor acid deposition due to transboundary air pollution. Total of 41 rain sample collection stations are in operation to monitor acid deposition across Myanmar since 2013.
5) Preparing report and publication based on analysis of the monitoring data of air concentration to submit EANET Science Bulletin (Volume 5).
6) Participating on capacity building through annual trainings, workshop, meeting, awareness forum, and technical transfer conducted by EANET as well as, Scientific Advisory Committee (SAC), Inter Governmental (IG) and other special meetings such as, Working Group on Future Development (WGFD), Periodic Report on the State of Acid Deposition in East Asia (PRSAD), etc, in annually.
7) Ongoing project on identification of appropriate candidate sites for the monitoring on soil and aquatic environment.

Moreover, the government of the Republic of the Union of Myanmar currently adopts the National Environmental Policy in 2019 with the vision "A clean environment, with healthy and functioning ecosystems, that ensures inclusive development and wellbeing for all people in Myanmar" and the mission "To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental considerations into polices, laws, regulations, plans, strategies, programmes and projects in Myanmar"("Action Plan for Transboundary Haze Pollution Control in Myanmar (Draft) Action Plan for Transboundary Haze Pollution Control," 2019).

However, some of the objectives of EANET (2016-2020) MTP need to be implemented such as, scientific information to policy makers, scientists and the public, identification of the potential damage areadue to acid deposition and other priority chemical species and theirs effects, information exchange on Clean Air Technology (CAT) and impact assessment through seminar and workshop, providing information and policy recommendations to policy makers based on assessment of acid deposition and air quality results to achieve better air quality in East Asia.

Furthermore, Myanmar, as a member of EANET, would like to recommend to extend accurate monitoring of acid deposition and air pollution monitoring stations to provide research activities including development of modeling and emission inventories and policy development towards Sustainable Development Goals (SDGs). Enhancing capacity building, research activities and strengthening technological among the participating countries and the other regions need to be considered.

2. Ideas for the Next MTP for the EANET (2021-2025)

2.1 Proposed Ideas

Air pollution caused be forest fires and its associated recurring transboundary haze pollution is one of the top priority environmental problems to be solved at national, regional and globallevels.According to the United Nation Environmental Programme (UNEP, 2018), over 4 million people dying prematurely each year due to exposure from indoor and outdoor air pollution with the highest numbers in South and East Asia. Thus, air pollution becomes harmful to everyone particularly in the most affect and vulnerable on children and pregnant women. Moreover, air pollution hurts the economy in terms of damages infrastructure, cultural and historical monuments, affects vital national income, reduces the ability of ecosystems to perform functions such as provision of food and water security, and costs money in remediation, restoration or healthcare. Furthermore, air pollution is also about climate change that effecting everyday in our life. UN Environment Assembly (UNEA) 2014 and 2017 (1st UNEA 2014 and 3rd UNEA 2017) wrote promoting prevention air quality, and preventing and reducing air pollution to improve air quality globally as Global Commitment.Air pollution is considered as top priority requiring to do immediate action among the local, regional and globally. In this regard, EANET participating countries necessary to approach the following areas as the priority areas in the next MTP for the EANET (2021-2025) to solve emerging acid deposition and air pollution problems.

1) Promotion of current monitoring activities of the EANET, particularly Ozone and PM2.5 including capacity building, better instrument maintenance, and data quality assurance and quality control (QA/QC).

2) Extension of the monitoring network of PM2.5 and ozone and analysis of their impacts on global warming/climate change including research cooperation and communication

3) Promotion of the capacity building for participating countries including training courses and workshops

4) Increasing of number of EANET monitoring sites

5) Estimation of source of pollution of PM2.5 including all main pollutants, provide data and exchange of experience and relevant information among members countries to promote scientific and technical research activities related to acid deposition and air pollution.

6) Development of Real Time Air Quality ($PM_{2.5}$) Monitoring Network with supported by donor agencies (Looking for Financial assistance from donor agencies)

7) Analyzing of the Air pollution analysis by using remote sensing technique with support by donor agency

8) Strengthening of the cooperation and develop strategy for addressing transboundary air pollution and develop partnership activities among the EANET participating countries and outside countries to mitigate the transboundary air pollution for purposes of protection of human health and ecosystem.

9) Moving towards low-Sulphur fuels, including fine particulate matter (PM), nitrogen oxide, ground level ozone, volatile organic compounds (VOCs) with development of policy, strategy and regulations and technical support.

10) Necessary to implement 25 solutions of clean air measures for Asia Pacific region including policy and technology measure to meet development goals.

11) Importance of monitoring and measuring progress time to time and partnerships to scale up impacts of air pollution.

12) Promotion of public awareness on acid deposition, other priority chemical species, and PM2.5 including their causes and effects, control and mitigation measures.

2.2 Benefits for EANET Countries

Establishment of the next MTP for the EANET (2021-2025) will create a common understanding of the state of the acid deposition and air pollution problems in East Asian region and outside countries as well as will provide useful inputs for decision making at local, national, and regional levels in order to reduce or prevent adverse impacts on human health and environment to implement SDGs.

2.3 Arrangements of the Ideas

Regarding the implementation of next MTP for the EANET (2021-2025), the proposed ideas will be proposed by annual government budget of 2021-2025, budget from the EANET participating countries, additional budget from donor agencies, implementing joint research project by cooperation and collaboration with national and international agencies to achieve Sustainable Development Goals (SDGs). To implement MTP for the EANET (2021-2025):

1) Most of the activities will be implemented by Secretariat and the NC for the EANET and will follow by Communication and cooperation with the National Focal Points (NFPs), SAC members and related organizations and initiatives
2) Implementation of Capacity building and public awareness activities through training workshop and fellowship
3) Improvement of the data management system for provision of the EANET data
4) Analysis of the Air pollution by using remote sensing technique
5) Providing support to the participating countries
6) Enhancement of cooperative efforts among participating countries and with outside organizations on the EANET objectives
7) Implementing joint research project by cooperation and collaboration with national and international agencies.
8) Some activities will need the financial assistance from donor agencies,

2.4 Challenges

Implementation of the next MTP for the EANET (2021-2025) could face some difficulties such as;

1) Limitation on the temporal and spatial information including data availability and quality, instrumental devices and monitoring network to find solutions to the problem,
2) Dispersion of air pollution in urban area and transboundary air pollution become limited due to increasing population, vehicles, urbanization, and forest fires, open burning and other types of fires,
3) Inadequate financial commitment and allocation of resources to tackle both acid deposition and air pollution monitoring, particularly in most polluted areas and sensitive areas,
4) Necessary to develop technical staff to undertake activities such as capacity building, analysis and station maintenance, and
5) Lack of the implementation of pollution control laws, strategies, guidelines and compliance as well as emission inventories, public education and public participation.

2.5 Ways to Overcome the Challenges

To overcome the above challenges,the following actionsneed to be considered to prevent and reduce air pollution issues;

1) All major emission sectors from major air pollutants need to be well controlled under the guidance of standard emission factor,
2) Optimizing on the structure of energy, industry, and transportation are the way to control air quality cooperation with relevant agencies,
3) Strengthened scientific and technological supports are essential to design and implement of action plan on air pollution control,
4) Promoting policy formulation, providing technical support and training, establishing and supporting partnerships with local governments and private sectors,
5) Improve financial resources of EANET participating countries, encourage participation of stakeholder and international institutions, and civil society organizations to diversify the modality of financial and in-kind contributions, and

6) Routine monitoring should address multiple purposes, e.g. compliance assessment, effectiveness of air quality action plans, routine health monitoring and assessment, and impact assessments by integrating of advanced measurement technique, strategies, data integration and analysis tools.