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EANET NEWSLETTER

ACID DEPOSITION MONITORING NETWORK IN EAST ASIA

THIS EDITION

Building the future against air pollution

Amid the COVID-19 pandemic, EANET members have continued their efforts to cooperate and design the future of their Network.

From Working Group Meetings on Drafting the MTP 2021-2025 and Reviewing the Scope of Instrument, to key scientific publications such as the EANET Science Bulletin Volume 5, EANET activities and events have been very promising.

Curious about what we do? Discover more inside!

EDITORIAL PAGE

By Tomi Haryadi
Coordinator, Secretariat for the EANET

In the second half of 2020, the world is still struggling to cope with the impacts of the pandemic of COVID-19. This year, we are forced to organize all EANET key meetings virtually due to health reasons and travel restrictions. Nevertheless, amid the COVID-19 pandemic, we have successfully organized the Working Group Meetings on Drafting Medium Term Plan for the EANET (2021-2025) and Reviewing the Scope of Instrument back to back with each other at the beginning of July 2020 through a virtual platform.

The Working Group meetings were organized following the decision of the 21st Intergovernmental Meeting (IG 21) of EANET to prepare documents of MTP (2021-2025) and to discuss a further matter related to the expansion of the scope of EANET.

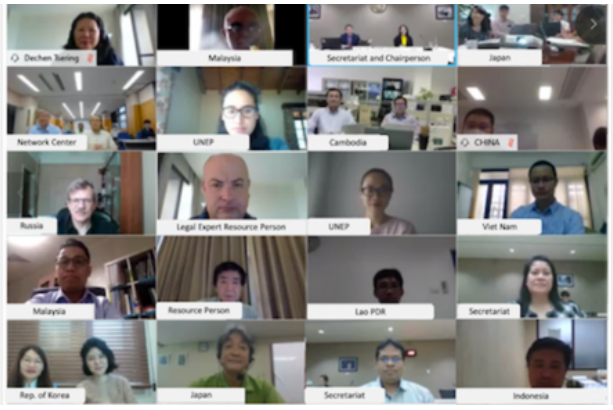
In the Working Group Meeting on Drafting MTP for the EANET (2021-2025), the Participating Countries reviewed the first draft of MTP (2021-2025) by referring to the current scope and possible future scope. The Session acknowledged the First Draft of Medium Term Plan for the EANET (2021-2025). It recommended the Secretariat and the Network Center to continue working on revising the draft MTP for the EANET (2021-2025), taking into account the discussion and suggestions at the Session, including on clear categorizing activities and finance mechanism.

During the Working Group Meeting on Reviewing the Scope of Instrument for the EANET, the Participating Countries had the opportunity to discuss the objectives and scope expansion of the Instrument, the possibility, options, and consequences of how to address air pollution with a view to it being addressed in the Instrument, with support of Legal Expert Resource person. The Session summarized that no objection was made by the Participating Countries regarding the expansion of the scope of the Instrument. At the end of the meeting, the Session acknowledged the reference documents provided at the meeting and requested the Secretariat and the Network Center to work on necessary preparation to support this.

Prior to approval at IG22, the draft MTP (2021-2025) will still be discussed at the 20th Session of the Scientific Advisory Committee Meeting (SAC 20) in September 2020 to receive inputs from the scientific and technical point of view and will be discussed in the Session 2 of the Working Group Meetings in October 2020.

The contribution of the Participating Countries in providing inputs in every development stage of the MTP (2021-2025) is crucial.

The EANET Working Group Meetings on Drafting the MTP (2021-2025) and Reviewing the Scope of Instrument



From June 29th to July 2nd 2020, National Focal Points or representatives of the Acid Deposition Monitoring Network in East Asia (EANET) and other international experts met virtually, simultaneously in 13 countries of East Asia, to discuss the future of the Network and reaffirm their common motivation to fight the adverse effects of acid deposition in the Region.

Amid the COVID-19 pandemic, EANET's Working Group Meeting on Drafting Medium Term Plan for the EANET (2021-2025) took place via a virtual platform. During the two-day meeting, over 50 participants from Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Republic of Korea, Russia, Thailand, Philippines and Viet Nam joined the EANET's Secretariat and Network Center to discuss draft versions of the Medium Term Plan for the EANET (2021-2025).

The Opening Remarks, delivered by Dr Dechen Tsering, Regional Director and Representative, United Nations Environment Programme for Asia & the Pacific, emphasized that the global pandemic "COVID-19" has allowed us to reflect and re-assess our actions toward nature and reminds us of the importance of the health of people and the planet. The Welcome Remarks, delivered by Dr Shiro Hatakeyama, Director General, Asia Center for Air Pollution Research, reasserted the importance of the Working Group Meeting to recommend the future direction of the EANET.

During these discussions, gathering mostly government officials from Asian Ministries of the Environment, the EANET considered activities and budget for the next five years. As a conclusion, and given the importance of the task, meeting attendees decided to continue discussions during the Second Session of Working Group Meeting, to be held in October 2020.

The Working Group Meeting on Reviewing the Scope of Instrument for the EANET also took place via a virtual platform, regrouping a little less than 50 participants, from EANET's Participating Countries, most of which had also participated in the two previous meeting days. The purpose of this meeting was to discuss the objectives and scope of the EANET's Instrument and the possibility of expanding this scope further. In addition to the Environmental government officials, several Resource persons joined the meeting, among which a Legal Expert Resource Person, to explain in details the legal options and consequences of how to expand the current scope of Instrument.

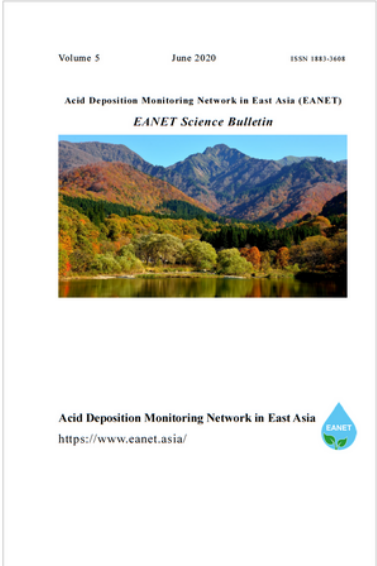
As a conclusion, meeting attendees prepared recommendations to be submitted to the next Intergovernmental (IG) Meeting, to be held in November 2020.

EANET Science Bulletin Vol. 5

The Network Center for the EANET has released the latest version of the Science Bulletin, Vol. 5.

Volume 5 of the EANET Science Bulletin is published to share the scientific findings from the research activities within EANET and to provide a platform for scientists from participating countries to publish their scientific and technical research results relevant to the EANET activities. This volume is comprised of the Reports of the EANET Fellowship Program (2016-2018), Joint Projects of the EANET with Participating Countries, as well as Scientific and Technological Research Papers from Participating Countries.

Find out more by downloading the Science Bulletin vol. 5.



EANET Science Bulletin vol. 5.

Scientific Outputs by the Task Force on Soil and Vegetation Monitoring of EANET

The Task Force on Soil and Vegetation Monitoring of EANET has published a review on air pollution and tree and forest decline in East Asia.

Task Forces established under the Scientific Advisory Committee (SAC) of the EANET are leading scientific assessment and research activities on acid deposition, air pollution, and their effects. The Task Force on Soil and Vegetation Monitoring of EANET has been conducting scientific assessment and research activities based on the “Strategy Paper for Future Direction of EANET on Monitoring of Effects on Agricultural Crops, Forest and Inland Water by Acidifying Species and Related Chemical Substances”. As one of the activities in line with the strategy paper, the regional condition of forest decline and its relationship with air pollution have been compiled as the scientific review led mainly by Task Force members from Japan, China, Russia, and Malaysia based on scientific literature published in the respective countries.

Tree and forest declines related to air pollution have been observed with industrialization in the countries of Northeast Asia and their causes have been shifting depending on the time period.

Firstly, a direct effect of SO2 was the main cause, however, causes have been shifting to acidification and nitrogen deposition, and then ozone, particulate matter (PM), and the interlinkage with climate change. Haze phenomena due to forest fires have been increasing in tropical and boreal forests and emitted PM inhibits photosynthesis.In recent years, chronically high ozone concentrations may have had adverse effects on tree physiology in conjunction with climate change. Under the changing climate, no apparent effect of air pollution on tree decline was reported recently. However, monitoring air pollution is important to identify the cause of tree decline.

Further economic growth in Southeast Asia is projected. The expansion of the monitoring network in tropical and boreal forests has been proposed in the review. Also, it was pointed out that countermeasures, such as restoration of urban trees and rural forests, would be important to ensure future ecosystem services. The review work was started as one of the activities of the Task Force on Soil and Vegetation Monitoring of the EANET.

The study was also supported by JSPS KAKENHI Grant Number JP19H00955. The studies in Russia were funded by the Russian Fund Fundamental Researches, the projects numbers are 03- 04-49565, 05-04-97219, 05-05-97259, 12-04-31036, by the Russian Fund Fundamental Researches and Irkutsk Region Government, the project 14-44-04067, by the Siberian Branch of the Russian Academy of Sciences, the Integration Project 17 with using equipment of “Baikal analytical center”, Irkutsk.

Read the full scientific review: Takahashi et al. 2020. Air pollution monitoring and tree and forest decline in East Asia: A review Science of the Total Environment 742, 140288

Understanding Rain and Acid Deposition Phenomenon in Indonesia

The Indonesian Meteorological, Climatological, and Geophysical Agency, BMKG, in collaboration with the Ministry of Environment and Forestry Indonesia, KLHK, and the IPB University, organized a webinar on “Rain and Acid Deposition Phenomenon in Indonesia” on Tuesday, 14 July 2020. The Acid Deposition Monitoring Network in East Asia (EANET) Secretariat Coordinator and EANET’s Representatives for Indonesia joined the event online to introduce the Network and its activities in Indonesia.

500 participants from different regions of Indonesia attended the webinar, eager to learn about the impacts on the environment of acid deposition in Indonesia.

The Webinar was opened by a Keynote Speech delivered by Ir. Herman Hermawan, Senior Policy expert, KLHK. It was followed by a presentation by Dr. Ir. Dodo Gunawan, Head of Center of Information and Climate Change, BMKG, and member of EANET’s Scientific Advisory Committee (SAC), focusing on the “Quality of Chemical Composition of Rainwater in Indonesia”.

Prof. Dr. Ir. H. Hari Sukadi Alikodra, Professor of Faculty of Forestry, IPB University, delivered a presentation on “Rain and Phenomenon of Acid Deposition in Indonesia: Potential Impact on Agriculture and Food Security”. After that, Mr. Djurit Teguh Prakoso, Head of Sub Directorate at KLHK and EANET Contact Person for Indonesia, delivered a presentation on “Policy Control on Air Pollution and Acid Deposition”.

To introduce EANET and its contribution to the region, Mr. Tomi Haryadi, Coordinator, Secretariat for the EANET, delivered a presentation on “EANET: Intergovernmental Cooperation on Acid Deposition in Asia Region”. Lastly, Ms. Retno Puji Lestari, Researcher at KLHK and also EANET National QA/QC Manager for Indonesia, delivered a presentation on Acid Deposition Monitoring in Indonesia.

Interested in finding out more about acid deposition data in Indonesia? Download the Indonesian Country Fact Sheet on policies and practices concerning acid deposition and visit EANET’s site information page to read more about EANET’s monitoring sites in Bandung, Jakarta, Kototabang, Maros and Serpong.

EANET Research Fellowship Programme (2016-2018) – Comparison of Observed and Modeled Nitrogen Dioxide Accounting Meteorological Conditions and Oxides of Nitrogen Emissions in China

EANET's fellowship program aims at funding researchers from EANET participating countries to carry out research pertaining to acid deposition at the Network Center in Japan. *Cuihong Chen* from China was awarded the EANET fellowship for 2016. *Chen* studied the comparison of observed and modeled nitrogen dioxide (NO2) from 2013 to 2015, during summer, accounting sensitivity of meteorological conditions, and oxides of nitrogen (NOx) emission constraints.

NOx is an important trace gas in the atmosphere, emitted mainly from anthropogenic sources, such as the combustion of fossil fuels. It plays a key role in atmospheric chemistry by involving in the formation of ozone and secondary particulate matter. Over the past several years, NOx emissions in China have been increasing rapidly and are resulting in serious atmospheric pollution problems, such as acidic rain, atmospheric haze, and high ozone concentration. This in turn causing harm to human health, environment, and ecosystem. Therefore, identifying NOx emission sources and efforts to minimize the emissions are necessary. *Chen*'s research findings provided a good insight into the relationship between satellite observation and modeling of NO2.

The reduction of NO2 in 2015 was mainly due to the decline of NOX emissions in China because of the implementation of emission reduction and control measures. The researcher suggested that uncertainty in satellite data and model simulation are needed to be reduced by the development of a non-linear relationship approach in future studies.

The authors acknowledged the Network Center