EANET NEWSLETTER
ACID DEPOSITION MONITORING NETWORK IN EAST ASIA

VOLUME 25 - JULY 2020

THIS EDITION

Editorial page - 2

EANET in a glimpse - 3-9
- The EANET Working Group
- Meetings on Drafting the MTP (2021-2025) and Reviewing the Scope of Instrument
- EANET Science Bulletin Vol. 5
- Scientific Outputs by the Task Force on Soil and Vegetation Monitoring of EANET
- Understanding Rain and Acid Deposition Phenomenon in Indonesia
- EANET Research Fellowship Programme
- The First Meeting of PRSAD4 Drafting Committee
- New EANET Brochure and Fact Sheets of Participating Countries

Events - 10

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!
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.
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.
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
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.

For the study, Chen used NASA’s satellite data and chemical transport models. She found a good correlation (slope 1.15 and a correlation coefficient of 0.79) between satellite NO2 and Modeled NO2. The study reported an increase in tropospheric NO2 by 4.26% in 2014 compared to that of 2013. The impacts of meteorological conditions and NOx emissions on the increase of tropospheric NO2 in 2014 were 2.95% and 1.31%, respectively. The meteorological fields contributed a 3.57% increase in tropospheric NO2 in 2015. The study concluded that NOX emission increased in 2014 and decreased in 2015 during the summer, compared to the level of 2013.

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 for the Acid Deposition Monitoring Network in East Asia (EANET) and the Asia Center for Air Pollution Research (ACAP) for financial support and observation data.

Read the full article by Chen et al. in the EANET Science Bulletin Volume 5.
The First Meeting of the Drafting Committee (DC) for the Fourth Periodic Report on the State of Acid Deposition in East Asia (PRSAD4) was held on 12 May 2020 via a video conference software organized by the Network Center (NC) for the Acid Deposition Monitoring Network in East Asia (EANET) in Niigata, Japan.

The DC members from 13 participating countries of the EANET, namely, Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Russia, Thailand, and Viet Nam, participated in the Meeting. The NC, the EANET Secretariat, resource persons, and observers also participated in the Meeting.

The NC as the DC Secretariat presented the Overview of the first, second, and the third Periodic Report on the State of Acid Deposition in East Asia, the Objectives of DC and draft Procedure to Prepare the PRSAD4, and the draft Contents of the PRSAD4. The DC Secretariat presented the Election of the Members of Lead Authors Meeting (LAM) for the PRSAD4 and the Draft List of Lead Authors and Contributors in each chapter.

The development of PRSAD4 continues and will be finalized in 2021.
The Secretariat for the Acid Deposition Monitoring Network in East Asia (EANET) and the Network Center for the EANET have released the latest versions of the participating countries’ Fact Sheets and EANET Brochure.

**Country Fact Sheets**

Regrouping 13 East Asian countries under its umbrella, Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Republic of Korea, Russia, Thailand and Viet Nam, EANET has released, in April 2020, the latest updated version of its participating countries’ Fact Sheets. Composed of detailed, yet condensed, descriptions of the current situation and progress of the air quality state in each country, the Fact Sheets assess the main sources of pollution and the related trends. The documents also describe the monitoring sites per country, their locations, monitoring parameters, and types (wet deposition, dry deposition, inland aquatic environment, soil, and vegetation) and the monitoring results. Finally, the Fact Sheets highlight each country’s awareness activities, relevant policies, and future plans to tackle air pollution at a national level. All country Fact Sheets are available for download in open access and in their entirety, as well as the Summary of Fact Sheets.

**The EANET Brochure**

At the same time, EANET has released the latest version of its Brochure. The 15-pages’ document first sets out the environmental and regional context in which the Intergovernmental Initiative has emerged, justifying the need for regional cooperation to prevent the increasing trends of air pollution in East Asia, before entering into details on the definition of the region’s major pollutants and the mechanism of acid deposition. The Intergovernmental regional network’s objectives, major activities, and institutional framework are described, as well as the monitoring activities and EANET’s major achievements since 2001.

Find out more about EANET by downloading the Brochure.
EANET Meetings, Events and Training in 2020

- The 21st Senior Technical Manager’s Meeting (STM21), 7 August 2020, virtual meeting
- The 20th Session of the Scientific Advisory Committee (SAC20), 23-24 September 2020, virtual meeting
- The Working Group Meeting on Drafting MTP for the EANET (2021-2025) and Reviewing the Scope of Instrument (Session 2), 20-22 October 2020, virtual meeting
- The 22nd Session of the Intergovernmental Meeting (IG22), 25-26 November 2020, virtual meeting
- EANET Individual Training Course, TBC
- EANET Research Fellowship Programme in 2020, TBC

CONTACT INFORMATION

Secretariat for the EANET
United Nations Environment Programme
Asia and the Pacific Office
2nd Floor, United Nations Building
Rajdamnern Avenue, Bangkok 10200
Thailand
Tel: +662 288 1627
Fax: +662 288 2829
Email: eanetsecretariat@un.org
EANET website: www.eanet.asia
UNEP website: www.unenvironment.org/asia-and-pacific/restoring-clean-air/eanet

Network Center for the EANET
Asia Center for Air Pollution Research (ACAP)
1182 Sowa, Nishi-ku
Niigata-shi, 950-2144
Japan
Tel: +81-25-263-0550
Fax:+81-25-263-0566
EANET website: www.eanet.asia
ACAP website: www.acap.asia