EANET-Clean Air Asia Workshop on Emission Inventory Development for the Management of Emissions from the Transport Sector

Date: November 23, 2022 | 1:00-5:00 PM (GMT+8) | Venue: Diamond Hotel, Manila City

Hybrid Event; Online link: **https://bit.ly/EANET-CAA-TransportEI**

BACKGROUND

Air pollution has been a long-standing global issue because of its adverse effects on air quality, climate, and health. Exposure to air pollution is the 4th leading cause of premature deaths in the world, and majority of the health burden is borne by developing countries in Asia[1]. One of the steps in managing air quality is the conduct of an emissions inventory (EI) which lists all emission sources in a geographical area and their respective contribution to air pollution. The EI results provide quantified values of where pollution comes from, providing a data-driven approach to developing policies that can control emission sources.

The transport sector remains as one of the most significant sources of air pollution[2,3], especially in urban cities. In developing an EI for mobile sources, priority measures to address emissions from specific types of vehicles, fuel, and the engine can be developed. Data from the EI can provide baseline information that is crucial in tracking improvements in air quality due to emission reduction measures.

In line with the with goal of building the capacity of Asian governments on air quality management, the Acid Deposition Monitoring Network in East Asia (EANET) and its Network Center have been collaborating with Clean Air Asia in the development of knowledge products and training programs such as the *IBAQ Guidance Framework for Better Air Quality in Asian Cities* and the *Emission Inventory Manual for Mongolia*. On November 23, 2022, EANET and Clean Air Asia is organizing a workshop on emission inventory development for the management of emissions from the transport sector, to help policymakers better understand the use of EI for science-based air quality management.

TRAINING OBJECTIVES
The objective of this training is to help government officials and policy/decision makers understand the role of emission inventory in air quality management, particularly in the transport sector. The specific objectives are the following:
- To provide an overview of how emission inventories are done and discuss the role of an emission inventory in air quality management
- To strengthen the capacity of government officials and policymakers in interpreting and utilizing the data from emission inventories
- To share the lessons learned from different cities that have used emission inventories in implementing reduction measures in their region

TARGET PARTICIPANTS (By-invitation only)
- Attendees to the 24th Intergovernmental Meeting
- Representatives from EANET partner countries
- Representatives from the Department of Environment and Natural Resources and City Environment Offices in the host country
- International and local academic experts on emissions data management and analysis
- *Participants to the face-to-face sessions are limited and by-invitation only. Virtual participants can attend via Zoom through this link: https://bit.ly/EANET-CAA-TransportEI.*

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[1] Health Effects Institute. (2020). State of the Global Air Report 2020
[2] Heydari S. et al (2020). Estimating traffic contribution to particulate matter concentration in urban areas using a multilevel Bayesian meta-regression approach.
[3] Hopke P. et al (2020). Global review of recent source apportionments for airborne particulate matter

AGENDA (Total Duration: 4 hrs)

SCHEDULE OF ACTIVITIES	
Opening Remarks **Welcome Remarks** 1:00 – 1:15 PM *(15 min)*	**Mr. Herbert Fabian**, Coordinator of the Secretariat for the Acid Deposition Monitoring Network in East Asia (EANET) **Dr. Shiro Hatakeyama**, Asia Center for Air Pollution Research (ACAP) Director General
Workshop Introduction and Objectives, Pre-test 1:15 – 1:25 PM *(10 min)*	Workshop overview and pre-training evaluation survey Moderator: **Ms. Faye Denna**, Clean Air Asia Senior Researcher

Introduction to Emission Inventory
1:25 – 1:45 PM
 	
(20 min)
	The general principle of emission inventory, including an explanation of the calculation process and outputs focusing on transportation, will be discussed.
	Key things to be presented:
	    a. Definitions and basic approach on EI development
	    b. Overview of EI tools
	    c. Challenges and opportunities on data gathering and processing for EI development
	
	Speaker: **Ms. Everlyn Tamayo**, Air Quality Specialist, Clean Air Asia

EI Data Analysis and Interpretation towards action 1:45 – 2:25 PM *(40 min)*	In this session, the use of the EI data in identifying emission targets and reduction measures, and tracking changes with respect to the implemented actions, will be explored. Simple calculation formula and examples of EI outputs will also be presented. *Speaker:* **Dr. Didin Agustian Permadi**, ITENAS
Hands-on exercise: Using EI results to inform policy 2:25 – 3:10 PM *(45 min)*	Simple exercises will be given to the participants to give them a better grasp of the use of EI data as a basis for policy development. The exercises are expected to be situational with simple data analysis (developed spreadsheet with ready data will be provided) Moderators: **Dr. Permadi, Ms. Denna, Ms. Tamayo, Ms. Espita** from Clean Air Asia
Break 3:10 – 3:25 PM *(15min)*	
Reduction measures (transport) 3:25 – 3:45 PM *(20 min)*	In this session, the policies and measures to reduce emissions from transport will be presented. Speaker: **Ms. Kathleen Dematera-Contreras,** Clean Air Asia
Case Studies on the use of Emission Inventory in Air Quality Management 3:45 – 4:30 PM	Cities in Indonesia and China that have performed emission inventories, developed and implemented reduction measures, and tracked the changes in the

	emissions in their area will share their experience and learnings from the process.
(15 min each)	
Q&A 4:30 – 4:50 PM *(20 min)*	Panelists: • Ms. Everlyn Tamayo, Clean Air Asia • Dr. Didin Agustian Permadi, ITENAS • Prof. Shaojun Zhang, Tsinghua University
Synthesis and Closing 4:50 – 5:00 PM *(10 min)*	Meeting summary and Post-training evaluation **Engr. William Cuñado**, Director of DENR – Environmental Management Bureau

GENERAL GUIDANCE FOR PARTICIPANTS
• Participants are advised to read through the following resource materials for information on topics that will be discussed in the training: - Emissions inventories and modeling: https://learning-cleanairasia.org/guidance-area/emissions-inventories-and-modeling/ • Attendees are advised to use a laptop during the training to maximize participation in the country discussions (virtual board will be accomplished) and hands-on exercises (will include simple calculations that can be done in MS Excel, calculator, or on paper). • After the training, kindly ensure to accomplish the post-training assessment for the completion of the training (link to be provided via email) • Training certificates and copies of presentation slides will be provided after the training and the accomplishment of the post-training survey.

SPEAKERS and MODERATORS	
	Mr. Bert Fabian, EANET Bert Fabian is the Coordinator of the Secretariat for the Acid Deposition Monitoring Network in East Asia (EANET) since June 2022. Bert joined UNEP as a Programme Officer in 2013 leading UNEP's Sustainable Mobility Unit activities in Asia Pacific supporting more than 15 countries in developing policies on transport, air pollution and climate change.
	Dr. Shiro Hatakeyama, Asia Center for Air Pollution Research (ACAP) Dr. Shiro Hatakeyama has been serving as the director of ACAP since 2019. Prior to being the director, he was a Professor (and now a Professor Emeritus) at Tokyo University of Agriculture and Technology and was the president of the Center for Environmental Science in Saitama.
	Ms. Faye Denna, Clean Air Asia Faye Denna plays a key role in the development, implementation and review of Clean Air Asia projects. She has a bachelor's degree in Chemistry from the University of the Philippines Diliman, and Masters in Earth Sciences and Environmental Engineering from Gwangju Institute of Science and Technology, South Korea.
	Ms. Everlyn Tamayo, Clean Air Asia Everlyn Tamayo is Clean Air Asia's Air Quality Specialist, and has been working on atmospheric pollution analysis and air quality management, and the use of data analysis and capacity building to inform policy development towards improved air quality. She plays a key role in the development, implementation, and review of air quality activities and projects of Clean Air Asia by providing technical guidance in current and emerging air quality issues in the region, such as the use of emission inventory results in dispersion modeling and development of clean air action plans.
	Dr. Eng. Didin Agustian Permadi, Institut Teknologi Nasional Dr. Didin Permadi is an assistant professor at the Environmental Engineering Department, National Institute of Technology (ITENAS) Bandung, Indonesia. He has worked on numerous projects focused on air pollution and climate change. His research of interest is mainly on the application of a 3-dimensional chemistry transport model, emission inventory, environmental impact assessment and monitoring through ground and satellite-based measurements.

	Kathleen Dematera-Contreras Kathleen Dematera-Contreras leads the Sustainable Transport Program of Clean Air Asia. She supports the management, implementation, and coordination of projects of Clean Air Asia and provides required technical and administrative support to guide specialists and researchers to effectively implement projects. Her work focuses on the areas of clean fuels and vehicles, fuel economy, low-emission urban development, active transportation, green freight and logistics, and electric mobility. Kathleen holds a bachelor's degree in Economics and a master's degree in Environmental Management.
	Prof. Shaojun Zhang, Tsinghua University Dr. Shaojun Zhang serves as an associate professor of the School of Environment, Tsinghua University. Prior to Tsinghua's position, he was an Atkinson Research Fellow at Cornell University, and a postdoctoral associate with University of Michigan and Ford Motor Company. His research examines the environmental impacts of emissions from road transportation systems on air quality, climate and public health. He has published more than 80 peer-reviewed journal articles, such as featured publications in Nature Sustainability, PNAS, and One Earth. He is an editorial board member for the journal Transportation Research Part D: Transportation and Environment. He obtained bachelor and doctoral degrees of engineering, both from Tsinghua University.
	Ms. Dang Espita-Casanova, Clean Air Asia Dang oversees program development and strategic planning for Clean Air Asia's impact initiatives on transport, energy, and urban air quality. She worked for government, private, and non-profit organizations in the early years of her professional career, with more than 10 years of training and experience in environmental pollution chemistry and management. She has led projects focusing on capacity building of governments for air quality management through policy guidance and direct technical assistance on air quality monitoring, emissions inventory and modeling, health impact assessment, air quality communication, and development of clean air action plans. Dang is a licensed chemist, holding a bachelor's degree and masters units in Chemistry from the University of the Philippines.