

Annex. Introduction of EANET Project and related information

1. EANET Project Fund and Project Guidelines

1.1 EANET Project Fund Mechanism

EANET has operated through the voluntary financial and human resource contributions of Participating Countries, together with contributions from other entities. During the implementation of the Fourth Medium-Term Plan (2021–2025), EANET promoted collaboration with partner organizations through joint projects and additional financial contributions. The significant efforts and contributions made by Participating Countries to EANET monitoring activities at the national level have been regularly acknowledged through the Sessions of the Intergovernmental Meeting (IG) and other communication channels.

To facilitate the implementation of project-based activities, EANET established the Project Fund, a dedicated financial mechanism for activities categorized as Project Activities. The Project Fund is financed through additional voluntary financial contributions, in-kind contributions from Participating Countries, and contributions from other entities. Activities designated as Project Activities are implemented using available resources from the Project Fund, unless otherwise decided by the IG.

Partner organizations, including individual Participating Countries, may provide financial or in-kind contributions to specific projects as co-financing. Projects requiring co-financing are approved and implemented only when the necessary support has been secured. The implementation of activities supported by the Project Fund is reviewed annually by the IG to determine whether they should continue in the following year.

The EANET Project Fund and its Project Guidelines, approved by the 23rd Intergovernmental Meeting (IG23) in 2021 and revised in 2024, provide the framework for developing and implementing co-financed EANET projects with partners within and beyond the region. Figure A1.1 illustrates the framework of the EANET Project Fund Mechanism.

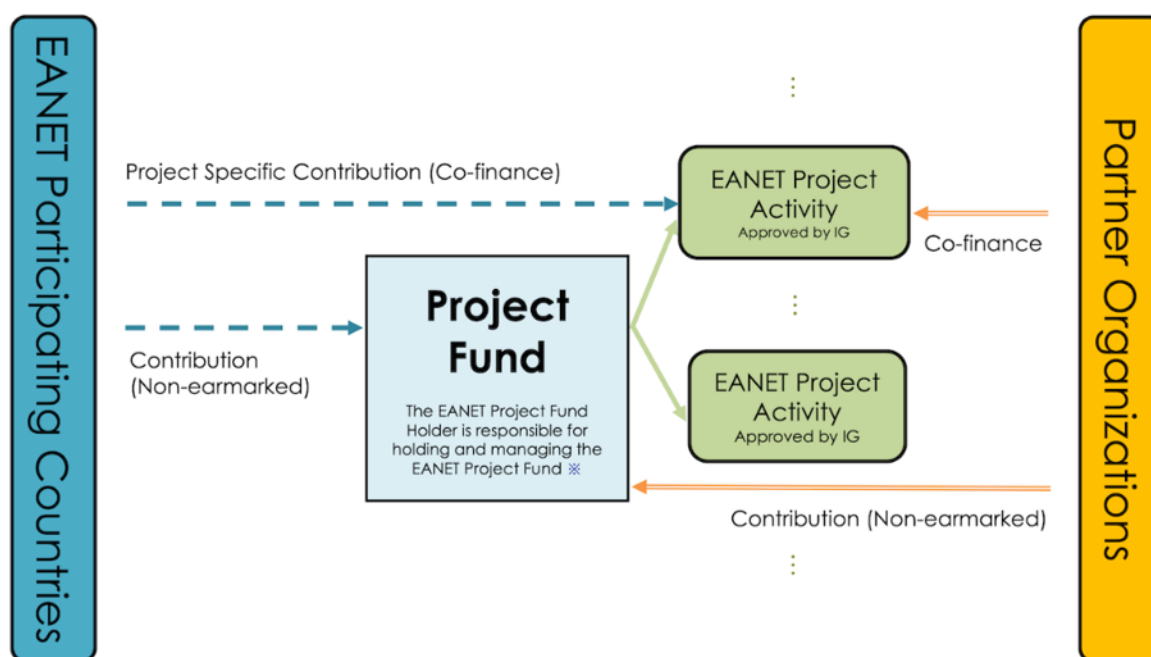


Figure A1.1. Framework of the EANET Project Fund Mechanism.

1.2 EANET Project Cycle

The project cycle of the EANET Project consists of the following stages: The Preparation Stage, The Approval Stage, The Implementation Stage and The Completion Stage (Figure A1.2).

The Preparation Stage is for development of draft EANET Project Plan (EPP) which specifies objectives, activities, required resources, including the requested amount of the Project Fund, implementation arrangements, and other key factors. The development of the EPP may require consultations with potential partners to identify co-financing resources and assistance of the SEC and the NC. Only the EPPs that meet the EANET Project Criteria (see Section 1.3) can go to the Approval Stage.

At the Approval Stage, the draft EPP should be reviewed and agreed by all EANET Participating Countries (PCs) following the specific procedure, by Scientific Advisory Committee (SAC) of the EANET and IG and following the review of a potential Working Group. Based on consensus, the IG approves them selectively if appropriate, including the amount of the EANET Project Fund (EPF) to be allocated for each approved EPP, considering the availability of the EPF, donor contributions, and various factors such as priorities among PCs, objectives, and priorities of EANET identified in its Medium-Term Plan, comprehensively.

In the Implementation Stage, the activities specified in the EPP, approved by IG, will be implemented in line with the EPP, using the resources allocated from the EPF, and other resources including donor contributions and from Co-financers. Implementation of the EPP should consider the comments and suggestions made by the National Focal Points and SAC members and follow the guidance of the IG. Any revision to the EPP before or during its implementation should be consulted with all PCs. Only the revised EPP can be implemented once all revisions are agreed by all PCs.

At the Completion Stage, implemented activities, outputs, and outcomes of the Project, together with the financial statements, shall be summarized in the Project Completion Report (PCR) and reported to the IG for its review and endorsement. The PCRs are evaluated based on the achievement of the stated objectives, output(s) and potential achievement of the outcome(s), efficient use of funds, effective dissemination of project results, etc. Once the PCR is endorsed, it will be shared with relevant stakeholders.

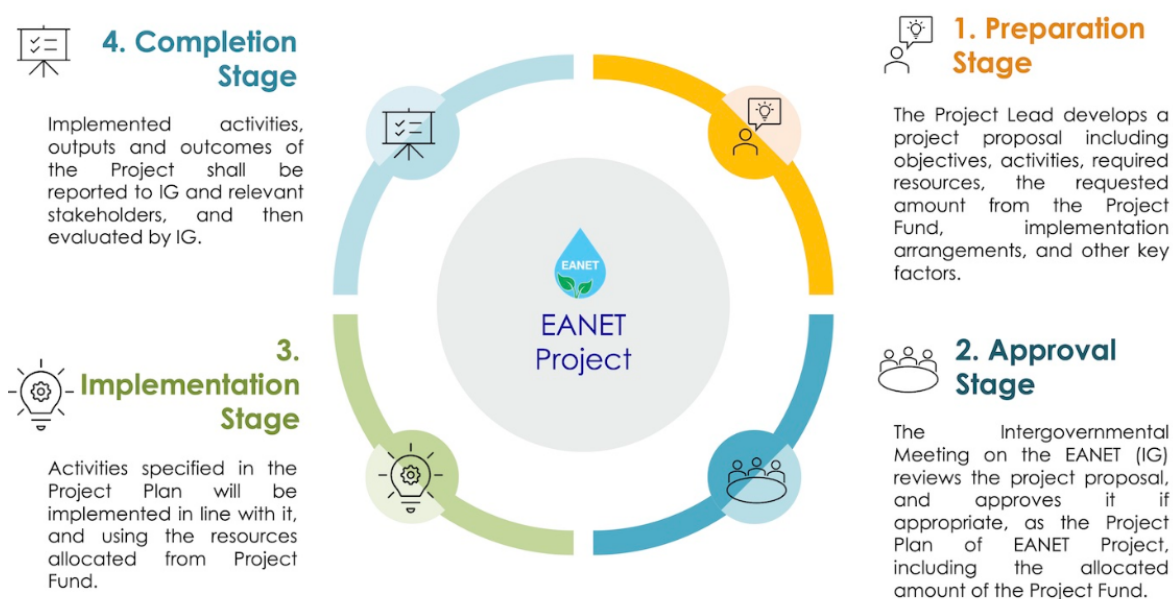


Figure A1.2. Framework of the EANET Project Fund Mechanism.

1.3 EANET Project Criteria

As described in Section 1.2, the draft EPP in the Preparation Stage must meet the EANET Project Criteria in order to go to the Approval Stage. The required criteria are as follows:

- Activities should be within the EANET Scope.
Ref. The EANET Scope is defined in the the Instrument for Strengthening the Acid Deposition Monitoring Network in East Asia (EANET) and the Annex to the Instrument.
The Instrument for the EANET:
<https://www.eanet.asia/wp-content/uploads/2023/03/Instrument-for-Strengthening-the-EANET-adopted-at-IG12-in-2010.pdf>
The Annex to the Instrument:
<https://www.eanet.asia/wp-content/uploads/2023/03/Supplementary-Document-Annex-to-EANET-Instrument-adopted-at-IG23-in-2021.pdf>
- The EPP is in line with the principles defined in these Guidelines.
- The EPP clearly and reasonably indicates its objectives, activities, the rationale to implement, tangible expected outputs, and outcomes.
- More than half of EANET PCs (at least 7) are identified as beneficiaries directly and/or indirectly.
- Contents of the EPP are considered and developed using criteria stated in ANNEX 3.
- Necessary resources other than from the EPF are secured or highly likely to be secured, while the allocation of EPF is the matter of the IG's decision.
- At least one Co-Financer in-kind, is secured or highly likely to be secured. In the case of a small project of which the total amount of required resources is 30,000 USD or less, a financial contribution other than from the EPF is not always required, while in-kind contribution is encouraged.
- In principle, the Project period is around one year. Some types of projects can set their period up to 3 to 5 years, provided that such a Project has a mechanism to be reviewed by IG on the implementation of the Project for IG's decision to continue or terminate.

The Preparation Stage has following steps:

1. Project Concept Note (Voluntary)
2. Project Concept Note/Plan published online (Voluntary)
3. Submission of Project Plans
4. Project Plans Preview
5. Project Plans sent for internal review
6. National Focal Points and Science Advisory Committee Members' prepare comments
7. Compilation of Project Plans to be submitted
8. Intergovernmental Meeting (IG) on the EANET Approval

At each step, an assessment is conducted to determine whether the proposal meets the EANET Project Criteria.

2. Overview of the EANET Project Activities in 2022-2024

As described in Section 1.1, The EANET Project Fund mechanism was approved by the Twenty-third Session of the Intergovernmental Meeting on the Acid Deposition Monitoring Network in East Asia in November 2021. The Annual Reports of the EANET Projects and Annual Reports of the EANET Project Fund are available since 2022 at the EANET website (<https://www.eanet.asia/eanet-projects/>).

Table A1.1 provides the list of EANET Projects conducted during 2022-2024. The EANET Projects conducted during the period are categorized in Objective 1 (Monitoring of acid deposition including related chemical substances with quality assurance and quality control (QA/QC)) and Objective 3 (Promotion of capacity building) of the Fourth Medium-Term Plans of the EANET (2021-2025). For Objective 1, studies on ecological impacts of atmospheric deposition, source apportionment of PM_{2.5}, and methodologies of low-cost sensor including development of LCS Hybrid Air Quality Monitoring Network (HAQMN). For Objective 3, many types of capacity building activities were conducted such as for VOC monitoring, emission inventory, nitrogen management, etc. Research Fellowship program and its successor project Next Generation Leadership Program in East Asia were also conducted as EANET Project for Objective 3.

Table A1.1. EANET Projects conducted during 2022-2024. (Note that the project numbers are not consecutive because they were assigned at the time of proposal, and the numbers corresponding to projects that were not approved are therefore missing.)

2022	
Objective 1: Monitoring of acid deposition including related chemical substances with quality assurance and quality control (QA/QC)	
2022-02	Promotion of studies on the effects of acid deposition, including other priority chemical species on plants and ecosystems, especially on biogeochemical cycles on a catchment scale as well as regional impact assessment
2022-04	Workshop on national air-quality monitoring systems and methodologies with other related partners
2022-05	Research on expanding the regional air quality monitoring using the low-cost sensor and improving the capacity to the monitoring data to policymaking
2022-06	Promotion of studies on estimation of the source of air pollution of PM _{2.5}
Objective 3: Promotion of capacity building	
2022-10	Promotion of capacity building for personnel of the participating countries, including training courses, capacity building workshops, etc. for monitoring
2022-12	Promotion of research and technical cooperation on emission inventory to support the capacity building
2022-14	Intensive training for city government officials on air quality monitoring and related skills
2022-15	Learning Opportunity of IIASA Study on Urban and Rural Relations in atmospheric environment
2022-16	Promotion of studies on atmospheric simulation models to assess the trend of national and regional acid deposition, including related substances in East Asia through workshops, training courses, etc.
2022-17	Organize workshops or seminars for practitioners to learn the relationships mainly between atmospheric environment and human health, and atmospheric environment and ecosystem, and how to minimize the adverse effects in designing measures
2022-18	Learning Opportunity on Reducing Emissions from Open Burning (Alternatives to Burning Bans)
2023	

Objective 1: Monitoring of acid deposition including related chemical substances with quality assurance and quality control (QA/QC)	
2023-01	Studies on the effects of atmospheric deposition on ecosystems, from a catchment scale to a regional scale as a methodological study
2023-03	Methodology Study for Development of LCS Hybrid Air Quality Monitoring Network (HAQMN)
2023-04	PM _{2.5} source apportionment in pilot cities of EANET for recommendations on feasible reduction policy
Objective 3: Promotion of capacity building	
2023-02	The Feasibility for promoting VOCs related Capacity Building in the EANET
2023-05	Promotion of capacity building for personnel of the participating countries on monitoring
2023-06	The webinar workshop for capacity building on emission inventory for combustion sources
2023-07	Seminars for Acid Deposition/Air Pollution effects on human health and ecosystem
2023-08	Research Fellowship program
2024	
Objective 1: Monitoring of acid deposition including related chemical substances with quality assurance and quality control (QA/QC)	
2024-01	Studies on the effects of atmospheric deposition on ecosystems, from a catchment scale to a regional scale as a methodological study
2024-03	Methodology Study for Development of LCS Hybrid Air Quality Monitoring Network (HAQMN)
2024-04	PM _{2.5} source apportionment in pilot cities of EANET for recommendations on feasible reduction policy
Objective 3: Promotion of capacity building	
2024-02	Promoting VOCs related Capacity Building in the EANET
2024-05	The collaboration of Technical and Training (TNT) and capacity building program for personnel of the Participating Countries on monitoring
2024-06	Webinar for emission inventory of VOCs and its application for policy consideration
2024-07	Seminar for Particulate Matter Problem including Haze in Southeast Asia
2024-08	Next Generation Leadership Program in East Asia
2024-10	Stocktaking and Methodological Assessment Emissions Inventories and Source Apportionment of Air Pollution in Southeast Asia
2024-12	Seminar on Sustainable Nitrogen Management

3. Perspectives of EANET Projects in the Fifth Medium-Term Plans of the EANET (2026-2030)

EANET Projects may freely propose activities on any topic, provided that they meet the EANET Project Criteria described in Section 1.3. However, EANET Projects are expected to address topics that are given priority within EANET and to undertake activities that respond to the needs of the EANET Participating Countries.

To provide a reference for considering such activities, the EANET Medium-Term Plan provides a list of potential project activities under each of the following three Outcomes expected from EANET activities:

1. Increased understanding on the state of air pollution and atmospheric deposition in East Asia is built through strengthened monitoring.
2. Decision-makers at local, national and regional levels have increased access to evidence-based, policy-relevant information.
3. Cooperation on the issues related to air pollution and atmospheric deposition in the region is increased.

The list of potential project activities is presented in Table A1.1. This initial list is based on informal consultations with selected development organizations, Participating Countries, and includes previously approved EANET project plans. The project activities could be initiated as pilot demonstration activities, as appropriate.

Table A1.2. Initial list of potential project activities in the Fifth Medium-Term Plans of the EANET (2026-2030)

Potential project activities of Outcome 1: Increased understanding on the state of air pollution and atmospheric deposition in East Asia is built through strengthened monitoring	
1.	Updating and applying air quality monitoring and data analysis methodologies through pilot project at city/community level ● Literature reviews and workshops to integrate the latest scientific advancements of air quality monitoring ● Updating air quality monitoring protocols to elaborate methodologies for assessment of air pollution ● Building awareness of new monitoring technologies of air pollutants among PCs ● Comprehensive PM_{2.5} composition measurements and source apportionment of PM_{2.5}
2.	Additional data collection for atmospheric and ecological monitoring through pilot project at city/community level by using EANET ground site data ● Gathering extended datasets of atmospheric and ecological monitoring to understand the flow of NO_x, NH₃, and their ionic species in ecosystems from catchment scale to regional scale, collaborating with national/international research projects and initiatives
3.	Investigating the impact of precipitation on particulate matter components: Enhancing monitoring and data analysis in EANET
4.	Capacity building and experience exchange on use of satellite observations, LCS and artificial intelligence to enhance and supplement monitoring capabilities
5.	Regional and national capacity building program on air quality monitoring and ecological impact assessment in EANET
6.	Atmospheric deposition monitoring for protection of cultural sites and historical landmarks
7.	Supplementary technical support for sustainability of monitoring sites – depending on PC request and needs
Potential project activities of Outcome 2: Decision-makers at local, national and regional levels have increased access to evidence based policy relevant information	

1.	Methodology of advanced analysis of air pollution and atmospheric deposition through pilot project at city/community level for scientific understanding such as: ● Analysis of PM_{2.5} component data for understanding chemical characteristics and emission sources of PM_{2.5} ● Analysis of O₃-NO_x-VOCs sensitivity for understanding causes of ozone increases ● Analysis of status, trend and characteristics of open biomass burning ● Integrated analysis of NO_x, NH₃, and their ionic species, including air concentration, atmospheric deposition, and the flow in ecosystems
2.	Additional survey and assessment for science- and evidence-based policy consideration through pilot project at city/community level such as: ● Assessment of the state of NO_x and NH₃ for nitrogen management ● The survey focuses on the current and potential co-benefits of air pollution control, including multiple atmospheric pollutants, as well as social, economic, energy, and technological developments. ● Assessment of effects of air pollution control measures on PM_{2.5} and O₃ using air quality models and emission scenarios including future projection ● Survey on demands on outputs from EANET and potential new directions in perspective of policy consideration
3.	Data-Driven Prediction and Cause Analysis of Acid Deposition Research ● Complete multi-source data integration, design the LSTM-RF model framework with SHAP interpretability analysis module, and submit a technical proposal report. ● Predict spatiotemporal characteristics of acid deposition using the LSTM-RF model, conduct cause analysis through SHAP module, and deliver a regional case study report along with an open-source Python prediction toolkit (including API documentation). ● Simulate various emission reduction scenarios using the LSTM-RF model, quantitatively evaluate improvement effects on acid deposition parameters, and formulate a differentiated control strategy recommendation report for East Asia to support precision governance decision-making.
4.	Assessment of acid rain impacts on peat fire risks and policy guidance, such as: ● Analysis of acid-driven changes in peat soil conditions increasing fire likelihood and severity (e.g., weakened vegetation, reduced peat accumulation, and microbial shifts) ● Evaluation of ecosystem vulnerability and recovery delays under acidification ● Development of short- and long-term policy recommendations to mitigate transboundary haze risks driven by forest fires in Southeast Asia
Potential project activities of Outcome 3: Cooperation on the issues related to air pollution and atmospheric deposition in the region is increased	
1.	Regional cooperation and capacity building on the development and enforcement of air quality policy and regulations
2.	Regional cooperation and methodology exchange on air pollution treatment methods for key emission sectors/ sources (which could include major industries such as cement and steel; mobile emission sources; open burning of agricultural crop residues, etc.)
3.	Capacity building programme on air pollutant emissions inventory development and development of methodology and guidelines for national emission inventory for Southeast Asia
4.	Capacity building and experience exchange on use of artificial intelligence (AI) for air quality monitoring information and communication systems
5.	Integrating Southeast Asian perspectives into the EANET Capacity Building Program: This proposes to include the Asian Institute of Technology in cooperation with the Pollution Control Department of the Ministry of Natural Resources and Environment of Thailand, as one of the host institutions supporting the training of EANET Participating Countries on air quality management

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