

Twenty-third Session of the Intergovernmental Meeting
on the Acid Deposition Monitoring Network in East Asia
24-25 November 2021, Virtual Meeting

Draft “Fourth Periodic Report on the State of Acid Deposition in East Asia (PRSAD4)”

Network Center

I. INTRODUCTION

1. The Nineteenth Session of the Scientific Advisory Committee (SAC19) approved the establishment of the Drafting Committee (DC) for the Fourth Periodic Report on State of Acid Deposition in East Asia (DC-PRSAD4) to prepare the implementation plan and other related works. After the endorsement of the Twenty-first Session of the Intergovernmental Meeting (IG21) on the Report on the Outcomes of the SAC19, including the establishment of the DC, the NC invited NFPs of the participating countries to nominate one expert from each participating country as a member of the DC.
2. The first DC (DC1) Meeting was held on 5th May 2020 and developed the format, contents, and lead authors and candidates of contributing authors for each chapter of PRSAD4. There were three parts: Part I: Regional Assessment, Part II: National Assessments, and Part III: Executive Summary, similar to the PRSAD3. The first Lead Authors Meeting (LAM1) held on 28th October 2020 discussed the detailed contents of PRSAD4.
3. The outputs from DC1 and LAM1 were reported to the Twentieth Scientific Advisory Committee on the Acid Deposition Monitoring Network in East Asia (SAC20) on 23-24 September 2020 virtually and the Twenty-second Intergovernmental Meeting on the Acid Deposition Monitoring Network in East Asia (IG22) held on 25-26 November 2020 on the Web.
4. The Second Lead Authors Meeting (LAM2) and the Second Meeting of DC (DC2) were held on 9th March 2021 and discussed each chapter of the draft regional assessment report of PRSAD4. Based on the result of LAM2 and DC2, the Third Lead Authors Meeting (LAM3) and the Third Meeting of DC (DC3) were held on 4 and 5 August 2021, respectively. The first draft of the regional assessment report and the national assessment report of PRSAD4 were discussed in each meeting.

II. OUTLINE OF THE FOURTH PERIODIC REPORT

5. The document will be prepared as a scientific assessment of the state of acid deposition in East Asia based on the data accumulated from the network. The decided title is “The Fourth

Periodic Report on the State of Acid Deposition in East Asia”.

6. The suggested period of monitoring data to be analyzed in the fourth periodic Report is from 2000 to 2019 (twenty years). However, the data from 2015-2019 can also be analyzed for evaluating the current status of acid deposition in the region.
7. It is suggested that the fourth periodic Report should consist of three parts. The first part is on regional assessment and the second part includes national assessments presented by participating countries voluntarily, and the third part is the Executive Summary.
8. It was suggested that the fourth periodic Report should be prepared to focus on trend analysis and, possibly, impact assessment of acid deposition in the region.
9. Each country prepared the National Assessment Report according to a format for national assessments, which the drafting committee prepares. The EANET data and other domestic data of each country could be used for the national assessment.

III. CONTENTS OF THE FOURTH PERIODIC REPORT

10. The draft contents of the Regional Assessment Report of the PRSAD4 were discussed among DC and the Lead Authors Meetings as presented in Annex 1.
11. The table of the Contents of the National Assessment Report and Executive Summary of the PRSAD4 is as Annex 2.

IV. IMPLEMENTATION PLAN

12. The implementation plan of the PRSAD4 is as Annex 3.

V. ACTIONS REQUIRED

13. The Twenty-third Session of the Intergovernmental Meeting (IG23) on the EANET is invited to review the draft of PRSAD4 and may wish to discuss, make comments, provide guidance and approve the document, as appropriate.

Draft Contents and Authors of the Fourth Periodic Report on the State of Acid Deposition in East Asia (PRSAD4)

PART I: National Assessment

Chapter 1. Introduction

LA: Dr. Erdenebat Eldev-Ochir

CA: Mr. Thiv Sophearith, Dr. Dodo Gunawan, Dr. Gantuya Ganbat, Mr. Jiro Sato, Dr. Zhu Meihua

- 1.1 Background (G. Ganbat, J. Sato, M. Zhu)
- 1.2 Brief Introduction of EANET (E. Eldev-Ochir)
- 1.3 Objectives (E. Eldev-Ochir, J. Sato, M. Zhu)
- 1.4 Institutional arrangement (T. Sophearith, M. Zhu)
- 1.5 EANET activities in 2000-2019 (D. Gunawan, J. Sato, M. Zhu)
- 1.6 References

Chapter 2. Data Quality

LA: Dr. Sergey A. Gromov

CA: Dr. Kyu Kyu Sein, Dr. Tamara V. Khodzher, Mr. Hiroshi Machida, Ms. Kumiko Nakamura, Dr. Tsuyoshi Ohizumi

- 2.1 Introduction (S. Gromov, T. Ohizumi, H. Machida)
- 2.2 General procedures of QA/QC (H. Machida, K. Nakamura)
- 2.3 Evaluation of Inter-laboratory Comparison Projects (T. Khodzher, H. Machida, K. K. Sein)
- 2.4 Evaluation of the measurements (S. Gromov, T. Ohizumi, K. Nakamura)
- 2.5 Conclusion and recommendations (S. Gromov, K. K. Sein, H. Machida)
- 2.6 References

Chapter 3. Wet and Dry Deposition of Acidic Substances in East Asia

LA: Dr. Le Ngoc Cau, Prof. Kazuhide Matsuda

CA: Engr. Arcely C. Viernes, Dr. Ekaterina A. Zhadanovskaya, Ms. Alisa M. Trifonova-Yakovleva, Dr. Tsuyoshi Ohizumi, Dr. Huo Mingqun, Dr. Akie Yuba

- 3.1 Introduction (L. N. Cau)

- 3.2 Methodology for sample collection and analysis (A. Yuba, M. Huo, T. Ohizumi)
- 3.3 Precipitation chemistry in East Asia (A. C. Viernes, M. Huo, A. Yuba, T. Ohizumi)
- 3.4 Spatial and temporal variation of wet deposition in East Asia (E. A. Zhadanovskaya, M. Huo, A. Yuba, T. Ohizumi)
- 3.5 Dry deposition assessment methodology (K. Matsuda)
- 3.6 Spatial and temporal variation of total (dry and wet) deposition in East Asia (K. Matsuda, L. N. Cau, A. M. Trifonova-Yakovleva, M. Huo, A. Yuba)
- 3.7 Summary and recommendations (K. Matsuda, L. N. Cau, T. Ohizumi)
- 3.8 References

Chapter 4. Gas and Aerosol Pollution in East Asia

LA: Jin-Soo Park, Fan Meng

CA: Hu Min, Fan Meng, Jin-Soo Park, Min-Seok Bae, et al.

- 4.1 Introduction
- 4.2 Spatial variation of air concentration (Hu Min and Fan Meng or more)
- 4.3 Temporal variation of air concentration (by Min-Seok Bae and Jin-Soo Park or more)
- 4.4 Assessment of gas and aerosol pollution in East Asia
- 4.5 Conclusion
- 4.6 References

Chapter 5. Impacts on Ecosystems in East Asia

LA: Prof. Atsushi Kume

CA: Prof. Yunting Fang, Prof. Zhaozhong Feng, Prof. Wilfredo M. Carandang, Dr. Roland Kueh Jui Heng, Dr. Hiroyuki Sase, Dr. Reiko Urakawa, Ms. Ekaterina S. Zhigacheva, Mr. Masayuki Morohashi, Mr. Hiroki Yotsuyanagi

- 5.1 Introduction (Kume, Carandang, Sase)
- 5.2 Soil and Vegetation Monitoring (Chief: Kume)
- 5.3 Inland water chemistry and trend (YT Fang, Sase, Yotsuyanagi)
- 5.4 Catchment Analysis (Chief: Sase)
- 5.5 Summary of the chapter (Kume, Carandang, Sase)
- 5.6 Reference

Chapter 6. Relevant Studies of Atmospheric Environment Assessment in EANET Region

LA: Dr. Toshimasa Ohara

CA: Prof. Atsushi Kume, Prof. Kayo Ueda, Dr. Hiroyuki Sase, Dr. Ken Yamashita, Dr. Junichi Kurokawa, Dr. Zhu Meihua, Dr. Yuusuke Kiriyama, Prof. Xerxes T. Seposo, Dr. Kenichi Sato, Dr. Syuichi Itahashi

- 6.1 Introduction (T. Ohara)
- 6.2 Observational studies for EANET region (K. Sato, S. Itahashi, H. Sase)
- 6.3 Emission Inventories (J. Kurokawa, T. Ohara)
- 6.4 Chemical transport modeling studies (J. Kurokawa, Y. Kiriyama, S. Itahashi)
- 6.5 Ecosystem impact assessment studies (A. Kume, H. Sase)
- 6.6 Health Impact studies (K. Ueda, K. Yamashita, X. T. Seposo)
- 6.7 Other international initiatives on air pollution (M. Zhu, S. Itahashi)
- 6.8 Cross-chapter analysis of acid deposition
- 6.8 Conclusions (all)
- 6.9 References

Chapter 7. Conclusion and Recommendations for Future Activities

LA: Dr. Shiro. Hatakeyama

CA: Ms. Nongnout Phanphongsa, Mr. Mohan Kumar Sammathuria, Dr. Yang Xiaoyang, Dr. Ken Yamashita, Dr. Hiroyuki Sase, Dr. Hiroaki Minoura, Dr. Tsuyoshi Ohizumi

- 7.1 Introduction (X. Yang, S. Hatakeyama)
- 7.2 Summary
 - 7.2.1 Data Quality (Chapter 2) (N. Phanphongsa)
 - 7.2.2 Wet and Dry Deposition of Acidic Substances in East Asia (Chapter 3) (M. K. Sammathuria)
 - 7.2.3 Gas and Aerosol Pollution in East Asia (Chapter 4) (H. Minoura)
 - 7.2.4 Impacts on Ecosystems in East Asia (Chapter 5) (H. Sase)
 - 7.2.5 Relevant Studies of Atmospheric Environment Assessment in EANET Region (Chapter 6) (K. Yamashita)
- 7.3 Recommendations for future activities * (X. Yang, T. Ohizumi, S. Hatakeyama)
- 7.4 References

Table of the Contents of the National Assessment Report and Executive Summary

PART II: National Assessment

Participating countries:

<i>Cambodia,</i>	<i>Myanmar,</i>
<i>China,</i>	<i>Philippines,</i>
<i>Indonesia,</i>	<i>Republic of Korea,</i>
<i>Japan,</i>	<i>Russia,</i>
<i>Lao PDR,</i>	<i>Thailand,</i>
<i>Malaysia,</i>	<i>Vietnam.</i>
<i>Mongolia,</i>	

(Modification of structure can be made by each country)

Chapter 1. Basic Information on National Monitoring Activities

- 1.1 Outline of the activities on acid deposition and National Monitoring Plan
- 1.2 Monitoring program
- 1.3 Monitoring Stations
- 1.4 Sampling and Measurements

Chapter 2. Acid Deposition and Air Pollution in Each Participating Country and Their Environmental Impacts

- 2.1 State of acid deposition and air pollution
- 2.2 State of the inland aquatic environment
- 2.3 State of soil and vegetation
- 2.4 State of catchment monitoring
- 2.5 Overall analysis

Chapter 3. Review of National Air Quality Management including Acid Deposition

Chapter 4. Conclusion or Summary

PART III: Executive Summary

- ◆ The third part, which mainly summarizes the first part, is created as a document of tens of pages.

ANNEX 3

Implementation Plan of the Fourth Periodic Report on the State of Acid Deposition in East Asia (PRSAD4)

Year	Month	Activities/Events	Deliverables
2019	October	SAC19	Proposal on the establishment of the DC of PRSAD4 to SAC19 by the NC
	November	IG21	Report of the SAC19
	December -January	Nomination of DC member from NFPs to NC	List of the DC member
2020	February	Circulation of the list of the DC members to all NFPs. NC arranges the 1 st DC meeting.	List of the DC member
	May	<u>1st DC Meeting</u>	Draft Table of Contents of PRSAD4 Names and contacts of the DC members Names of the LA of Regional Assessment Report Names of Contributors to the National Assessment Report Work Schedule
	May	Report of 1 st DC meeting send to the DC member	Report of 1 st DC meeting
	May	Provision of EANET dataset until 2018 to the DC member	Monitoring dataset (2015-2018)
	September	SAC20 The Chairperson of the DC reports the progress of PRSAD4	DC Chairperson's Report to SAC20
	October	IG22 The Chairperson of SAC reports the progress of PRSAD4 to IG22	SAC Chairperson's Report to IG22
	October	<u>1st LA Meeting</u>	Comments from the LA meeting
	October	Reports of 1 st LA meeting send to the LA members	Report of 1 st LA meeting
	November	Provision of monitoring dataset (2019) to the DC member	Monitoring dataset (2019)
2021	December -February	The compilation, editing, and communications with the LA and Contributors	Preliminary draft of some sections of PRSAD4
	March	<u>2nd DC Meeting</u> <u>2nd LA Meeting</u>	Comments from the DC and the LA meetings
	March	Reports of 2 nd meetings sent to the DC members	Reports of 2 nd meetings
	March -April	Preparation of First Draft of PRSAD4	First Draft of PRSAD4
	May	Circulation of First Draft among	Comments from the DC

		the DC and the LA members, Contributors for comments	and the LA members, Contributors
	May-June	Revision of First Draft to include comments from the DC and the LA members, Contributors	Second Draft of PRSAD4
	July	Circulation and revision of Second Draft to include comments from the DC and the LA members and Contributors Drafting of Executive Summary	Third Draft of PRSAD4 and <u>Draft Executive Summary</u> (not yet prepared)
	August	3rd DC Meeting 3rd LA Meeting	Comments from the DC and the LA meetings
	August	Reports of 3 rd meetings sent to the DC members	Reports of 3 rd meetings
	August	Revision of the Third Draft of PRSAD4 and Executive Summary to include comments from the DC and the LA meetings	Final Draft of PRSAD4
	October	Circulation of the Final Draft of PRSAD4 and Executive Summary to the DC members and SAC members for approval	Final Draft of PRSAD4 and Executive Summary
	October	SAC21 (26th-28th) Presentation of Final Draft of PRSAD4 and Executive Summary to SAC21	Final Draft of PRSAD4 and Executive Summary
	November	IG23 (24th-25th) The NC reports the outcomes of SAC21, including the final draft of PRSAD4 to be approved by IG23.	Final Draft of PRSAD4 including Executive Summary (to be approved by IG23)
	December	Language Check	Final Draft of PRSAD4 checked by a language expert
	December	Printing and distribution of PRSAD4	