

**Acid Deposition Monitoring Network
in East Asia (EANET)**

Data Report 2023

December 2024

Network Center for EANET

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CHAPTER 1

Introduction

1. Introduction

The Acid Deposition Monitoring Network in East Asia (EANET) was established as an initiative for regional cooperation among the participating countries, creation of a common understanding on the state of both air concentration and acid deposition problems and for providing useful inputs to policy makers at various levels.

Monitoring activities started during the preparatory phase activities of EANET from March 1998 to December 2000. Regular air concentration and acid deposition monitoring started in January 2001 with 10 participating countries, namely China, Indonesia, Japan, Malaysia, Mongolia, Philippines, Republic of Korea, Russia, Thailand, and Vietnam. Cambodia, Lao PDR, and Myanmar joined EANET in 2001, 2002 and 2005, respectively. There are currently 13 countries participating in the EANET activities.

Air concentration and acid deposition monitoring activities of EANET consist of five environmental items – wet deposition, dry deposition (air concentration), soil and vegetation, inland aquatic environment, and catchment-scale monitoring. Monitoring for wet and dry deposition is implemented to measure atmospheric concentrations and to evaluate fluxes of acidic substances to the land surface, while monitoring for soil and vegetation, inland aquatic environment and catchment-scale is carried out to assess adverse impacts on terrestrial and aquatic ecosystems. These monitoring data are used to evaluate the state of air concentration and acid deposition as well as impacts on ecosystems.

The participating countries are required to submit monitoring data and related information obtained from the monitoring activities to the Network Center for EANET (NC) by the end of June of each year based on the guidelines of EANET. The NC prepared a draft Data Report 2023 through the discussion with QA/QC managers from participating countries at the 25th Senior Technical Managers' Meeting (STM25). After verification by the experts of each monitoring field, the NC submitted the draft Data Report to the 24th session of Scientific Advisory Committee (SAC24) held in October 2024, and the Data Report 2023 was adopted. Following the comments and guidance at the SAC24, the NC elaborated and finalized the report.

The Data Report 2023 contains the data obtained from monitoring activities carried out in 2023.

CHAPTER 2

Network Description

2. Network Description

2.1 Classification of Monitoring Sites

EANET monitoring sites are classified into two basic categories, namely “air concentration/acid deposition monitoring sites” and “ecological survey sites”. Air concentration/acid deposition monitoring sites are ones for the collection of fundamental data on the temporal and spatial distribution of acid deposition as well as air concentration, and they are further classified into 3 sub-categories: remote sites, rural sites, and urban sites for specific objectives of monitoring. Ecological survey sites are those that provide basic data for assessing the effects of acidification on terrestrial ecosystems, and they are further classified into 2 sub-categories: basic survey sites and ecosystem analysis sites. The classification of the monitoring sites is shown in Table 2.1.

Table 2.1 Classification of monitoring sites

Site category	Site classification	Main purpose and siting criteria
Air concentration/acid deposition monitoring site for wet deposition and dry deposition monitoring	Urban site	- Assessment of the state of air concentration and acid deposition in urban areas - Urbanized and industrial areas, and the areas immediately outside the urban area - Data can be used for evaluation of air concentration and acid deposition effect on buildings and historical monuments or human health
	Rural site	- Assessment of the state of air concentration and acid deposition in rural areas and/or hinterlands - Data can be used for the evaluation of air concentration and acid deposition on agricultural crops, forests etc. - More than 20 km apart from large pollution sources like cities, power plants and highways
	Remote site	- Assessment of the state of air concentration and acid deposition in background areas - Data can be used for evaluation of long-range transport and deposition models - More than 50 km apart from large pollution sources like cities, power plants and highways - More than 500 m apart from main roads (less than 500 vehicles per day)
Ecological survey site for soil and vegetation, Inland aquatic environment, and catchment-scale monitoring	Basic survey site	- Accumulation of basic data on soil, forest, and inland aquatic environment and disclose trends in their properties - In the vicinity of the air concentration and acid deposition monitoring site
	Ecosystem analysis site	- Assessment of air concentration and acid deposition impacts on whole ecosystem through application of terrestrial ecosystem analysis and/or catchment analysis - Sensitive areas to changes in atmospheric acidity and ecologically conserved area

2.2 Monitoring Activities in 2023

Thirteen EANET countries, namely, Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Russia, Thailand and Vietnam participated in air concentration and acid deposition monitoring in 2023. A total of 65 sites are nominated for the air concentration/acid deposition monitoring, including 25 urban, 20 rural, and 20 remote sites. The map showing the locations of these sites with the classification information is provided in Figure 2.1. The details on the locations of these sites are presented in Table 2.2.



Figure 2.1 Locations of air concentration/acid deposition monitoring sites in 2023

Table 2.2 Locations of air concentration/acid deposition monitoring sites in 2023

Country	Site	Code* ¹	Classification	Latitude* ²	Longitude* ²	Altitude /m
Cambodia	Phnom Penh	KHA001	Urban	11°33'18"N	104°56'20"E	15
China	Chongqing - Haifu	CNA003	Urban	29°37'30"N	106°30'34"E	317
	- Jinyunshan	CNA004	Rural	29°49'42"N	106°22'43"E	871
	Xi'an - Shizhan	CNA005	Urban	34°14'33"N	108°57'10"E	415
	- Jiwozi	CNA007	Remote	33°51'06"N	108°48'52"E	1,837
	Xiamen - Hongwen	CNA008	Urban	24°28'47"N	118°09'47"E	39
	- Xiaoping	CNA009	Remote	24°51'23"N	118°02'55"E	530
	Zhuhai - Xiang Zhou	CNA010	Urban	22°16'22"N	113°31'46"E	29
	- Zhuxiandong	CNA011	Urban	22°12'24"N	113°31'00"E	18
	- Haibin-Park	CNA012	Urban	22°15'40"N	113°34'25"E	10
	Wuzhishan - Wuzhishan	CNA013	Remote	18°50'11"N	109°29'26"E	958
	Lijiang - Lijiang	CNA014	Remote	27°13'38"N	100°14'48"E	3410
Indonesia	Jakarta	IDA001	Urban	06°09'22"S	106°50'32"E	7
	Kototabang	IDA003	Remote	00°12'08"S	100°19'05"E	845
	Maros	IDA005	Rural	04°59'50"S	119°34'17"E	1
	Jembrana	IDA006	Rural	08°20'27"S	114°37'02"E	24
	Lombok	IDA007	Rural	08°38'10"S	116°10'15"E	52
Japan	Rishiri	JPA001	Remote	45°07'30"N	141°14'30"E	40
	Ochiishi	JPA002	Remote	43°09'43"N	145°29'50"E	49
	Sado-seki	JPA004	Remote	38°15'02"N	138°24'01"E	129
	Happo	JPA005	Remote	36°41'48"N	137°47'53"E	1,850
	Ijira	JPA006	Rural	35°34'14"N	136°41'51"E	140
	Oki	JPA007	Remote	36°17'19"N	133°11'06"E	90
	Yusuhara	JPA009	Remote	33°22'46"N	132°56'06"E	790
	Hedo	JPA010	Remote	26°51'58"N	128°14'55"E	60
	Ogasawara	JPA011	Remote	27°05'32"N	142°13'02"E	212
	Tokyo	JPA012	Urban	35°41'30"N	139°45'10"E	26
	Niigata-maki	JPA013	Rural	37°48'33"N	138°51'09"E	47
	Tsushima	JPA014	Remote	34°14'48"N	129°17'17"E	390
Lao PDR	Vientiane	LAA001	Urban	17°59'53"N	102°34'56"E	175
Malaysia	Petaling Jaya	MYA001	Urban	03°06'07"N	101°38'42"E	46
	Tanah Rata	MYA002	Rural	04°29'03"N	101°22'17"E	1,545
	Danum Valley	MYA003	Remote	04°58'53"N	117°50'37"E	426
	Kuching	MYA004	Urban	01°29'25"N	101°21'09"E	22
	Gunung Brinchang	MYA005	Remote	04°31'22"N	101°23'17"E	2,012
Mongolia	Ulaanbaatar	MNA001	Urban	47°53'39.54"N	106°52'57.19"E	1,275
	Terelj	MNA002	Remote	47°59'7.65"N	107°27'30.41"E	1,550
Myanmar	Yangon	MMA001	Urban	16°51'53"N	96°09'13"E	21

Table 2.2 Locations of air concentration/acid deposition monitoring sites in 2023 (continued)

Country	Site	Code*1	Classification	Latitude*2	Longitude*2	Altitude/m
Philippines	Metoro Manila					
	- Manila Observatory*3	PHA001	Urban	14°38'09"N	121°04'43"E	55
	- North Caloocan	PHA004	Urban	14°44'59.95"N	121°3'45.35"E	76
	Laguna - Los Baños*3	PHA002	Rural	14°09'53"N	121°15'00"E	25
	- Sta Rosa	PHA005	Rural	14°18'57.88"N	121°6'37.85"E	8
	Benguet					
	- Mt. Sto. Tomas*3	PHA003	Rural	16°21'23" N	120°33'33"E	1,500
	- Lower Session Road	PHA006	Rural	16°24'41.1" N	120°35'55.38" E	1,473
Republic of Korea	Ganghwa*3	KRA001	Rural	37°42'32"N	126°16'26"E	60
	Jeju*3	KRA002	Remote	33°17'32"N	126°09'43"E	37
	Imsil	KRA003	Rural	35°36'09"N	127°10'53"E	217
Russia	Mondy	RUA001	Remote	51°37'18"N	100°55'10"E	1,996
	Listvyanka	RUA002	Rural	51°50'47"N	104°53'34"E	646
	Irkutsk	RUA003	Urban	52°14'53"N	104°15'33"E	495
	Primorskaya	RUA004	Rural	43°37'45"N	132°14'13"E	85
Thailand	Bangkok	THA001	Urban	13°47'04"N	100°32'22"E	5
	Samutprakarn	THA002	Urban	13°39'58"N	100°36'21"E	4
	Pathumthani	THA003	Rural	14°02'46"N	100°42'43"E	6
	Khanchanaburi	THA004	Remote	14°47'05"N	98°36'05"E	130
	(Vajiralongkorn Dam)					
	Chiang Mai -Chang Phueak	THA006	Urban	18°50'26"N	98°58'11"E	329
	- Si Phum	THA007	Urban	18°47'27"N	98°59'24"E	313
	Nakhon Ratchasima					
	- Nai Mueang	THA009	Urban	14°58'46"N	102°05'53"E	184
Vietnam	Hanoi	VNA001	Urban	21°03'24"N	105°43'36"E	6
	Hoa Binh	VNA002	Rural	20°50'12"N	105°20'32"E	23
	Cuc Phuong	VNA003	Remote	20°18'01"N	105°41'38"E	155
	Da Nang	VNA004	Urban	16°02'35"N	108°12'24"E	5
	Can Tho	VNA005	Rural	10°05'18"N	105°41'45"E	2
	Ho Chi Minh	VNA006	Urban	10°47'04"N	106°42'00"E	5
	Yen Bai	VNA007	Rural	21°42'28"N	104°52'29"E	56

*1 Each code of the air concentration/acid deposition monitoring sites is assigned in accordance with the following rules.

e.g.) KH A 0 01

(a) (b) (c) (d)

(a): country code (2 digits)

(b): item code ("A" : air concentration/acid deposition monitoring)

(c): sub-serial number for ecological monitoring

(d): serial number for each country (2 digits)

*2 Each latitude and longitude are shown according to the World Geodetic System.

*3 The site names and classification were changed in 2024 as follows (The samplers and measurement equipment were not relocated at all):

Code	Before	After
PHA001	Metro Manila	Metoro Manila - Manila Observatory
PHA002	Los Baños	Laguna - Los Baños
PHA003	Mt. Sto. Tomas, Remote	Benguet - Mt. Sto. Tomas, Rural
KRA001	Kanghwa	Ganghwa
KRA001	Cheju(Kosan)	Jeju

The current status on basic survey sites for ecological monitoring and their nearest air concentration/acid deposition monitoring sites are shown in Table 2.3. Soil and vegetation monitoring and inland aquatic environment monitoring are conducted at 33 plots in 10 countries and 19 lakes/rivers in 11 countries, respectively. Most of the ecological monitoring sites are corresponded to the air concentration/acid deposition monitoring sites. Moreover, both soil and vegetation monitoring and inland aquatic environment monitoring are conducted in the vicinity of 4 air concentration/acid deposition monitoring sites in China, 2 sites in Japan, 1 site in Mongolia, 2 sites in Philippines, 2 sites in Russia, 1 site in Thailand, and 1 site in Vietnam. It is expected that the air concentration and acid deposition monitoring data collected at their nearest monitoring sites will be used for interpretation of the data on ecological monitoring.

Table 2.3 Basic survey sites for ecological monitoring and their nearest air concentration/acid deposition monitoring sites

Country	Site for air concentration/acid deposition monitoring	Plot for soil and vegetation monitoring	Code for soil and vegetation monitoring* ¹	Site for inland aquatic environment monitoring	Code for inland aquatic environment monitoring* ¹
Cambodia	-	-	-	Sras Srang Lake	KHI002
China	Chongqing - Jinyunshan	Jinyunshan	CNS004	Jinyunshan Lake	CNI004
	Xi'an - Jiwozi	Dabagou	CNS007	Jiwozi River	CNI007
	Xiamen - Xiaoping	Xiaoping	CNS009	Xiaoping Dam	CNI209
	Zhuhai - Zhuxiandong	Zhuxiandong	CNS011	Zhuxiandong Stream	CNI111
Indonesia	Serpong	Bogor Research Forest (Dramaga Experimental Forest)	IDS002	-	-
	Bandung	-	-	Patengang Lake	IDI004
	-	-	-	Gunung Lake	IDI006
Japan	Happo	Sekido-san	JPS005	Futago-ike Lake	JPI005
		Horyu-zan	JPS105		
	Ijira	Ijira	JPS006	Ijira Lake	JPI006
		Yamato	JPS106		
Lao PDR	Vientiane	-	-	Nam Houm Lake	LAI001
Malaysia	Petaling Jaya	Pasoh Reserve Forest 1	MYS001	-	-
		Pasoh Reserve Forest 2	MYS101	-	-
		Pasoh TEAM Plot 1	MYS201	-	-
		Pasoh TEAM Plot 8	MYS202	-	-
	Danum Valley	-	-	Baru River	MYI103
	-	UPMKB Rehabilitated Forest Planted in 1991	MYS005	-	-
		UPMKB Rehabilitated Forest Planted in 2008	MYS105	-	-
	-	-	-	Kuala Tahan	MYI006

Table 2.3 Basic survey sites for ecological monitoring and their nearest air concentration/acid deposition monitoring sites (continued)

Country	Site for air concentration/acid deposition monitoring	Plot for soil and vegetation monitoring	Code for soil and vegetation monitoring* ¹	Site for inland aquatic environment monitoring	Code for inland aquatic environment monitoring* ¹
Mongolia	Ulaanbaatar	Bogdkhan Mountain	MNS001	-	-
	Terelj	Terelj Mountain	MNS002	Terelj River	MNI002
Philippines	Manila Observatory	La Mesa Watershed	PHS001		
	Los Baños	Mt. Makiling	PHS002	Pandin Lake	PHI102
		UP Quezon, Land Grant	PHS102		
	Mt. Sto Tomas	Boneco Long Term Ecological Research Site	PHS003	Ambulalakaw Lake	PHI003
Republic of Korea	Imsil	Mt. Naejang	KRS003	-	-
Russia	Irkutsk	Irkutsk	RUS003	-	-
	Listvyanka	Bolshie Koty	RUS002		
		Pereemnaya river catchment	RUS102	Pereemnaya River	RUI102
	Mondy	Ilchir Lake	RUS001	-	-
		Okinskoe Lake	RUS101		
		Solar Observatory	RUS201		
	Primorskaya	Primorskaya	RUS004	Komarovka River	RUI004
Thailand	Khanchanaburi (Vajiralongkorn Dam)	Vajiralongkorn Dam	THS004	Vajiralongkorn Dam	THI004
		Vajiralongkorn Puye	THS104		
Vietnam	Hoa Binh	Cave of Heaven	VNS002	Hoa Binh Reservoir	VNI002
		Thang Ranh	VNS102		

*1 Each code of ecological monitoring sites is assigned in accordance with the following rules.

e.g.) CN S 0 04

(a) (b) (c) (d)

(a): country code (2 digits) (b): item code (“S”: soil and vegetation monitoring, “T”: inland aquatic environment monitoring)

(c): sub-serial number when there are multiple ecological monitoring sites in the nearest air concentration/acid deposition monitoring site

(d): 2-digit serial number corresponding to its nearest air concentration/acid deposition monitoring site

(If there is no nearest air concentration/acid deposition monitoring site within 50 km, another new serial number is assigned after the existing air concentration/acid deposition monitoring site in its country.)

Table 2.4 shows the sites for catchment-scale monitoring.

Table 2.4 Site for catchment-scale monitoring

Country	Site for air concentration /acid deposition monitoring	Site for catchment-scale monitoring	Code for catchment-scale monitoring ^{*1}
Japan	Ijira	Lake Ijira catchment	JPC006
Philippines	Manila Observatory	La Mesa Watershed	PHC001

*1 Each code of the catchment-scale monitoring sites is assigned in accordance with the following rules.

e.g.) JP C 0 06

(a) (b) (c) (d)

(a): country code (2 digits) (b): item code (“C”: catchment-scale monitoring)

(c): Sub-serial number when there are multiple ecological monitoring sites in the nearest air concentration/acid deposition monitoring site

(d): 2-digit number corresponding to its nearest air concentration/acid deposition monitoring site

(If there is no nearest air concentration/acid deposition monitoring site within 50 km, another new serial number is assigned after the existing air concentration/acid deposition monitoring site in its country.)

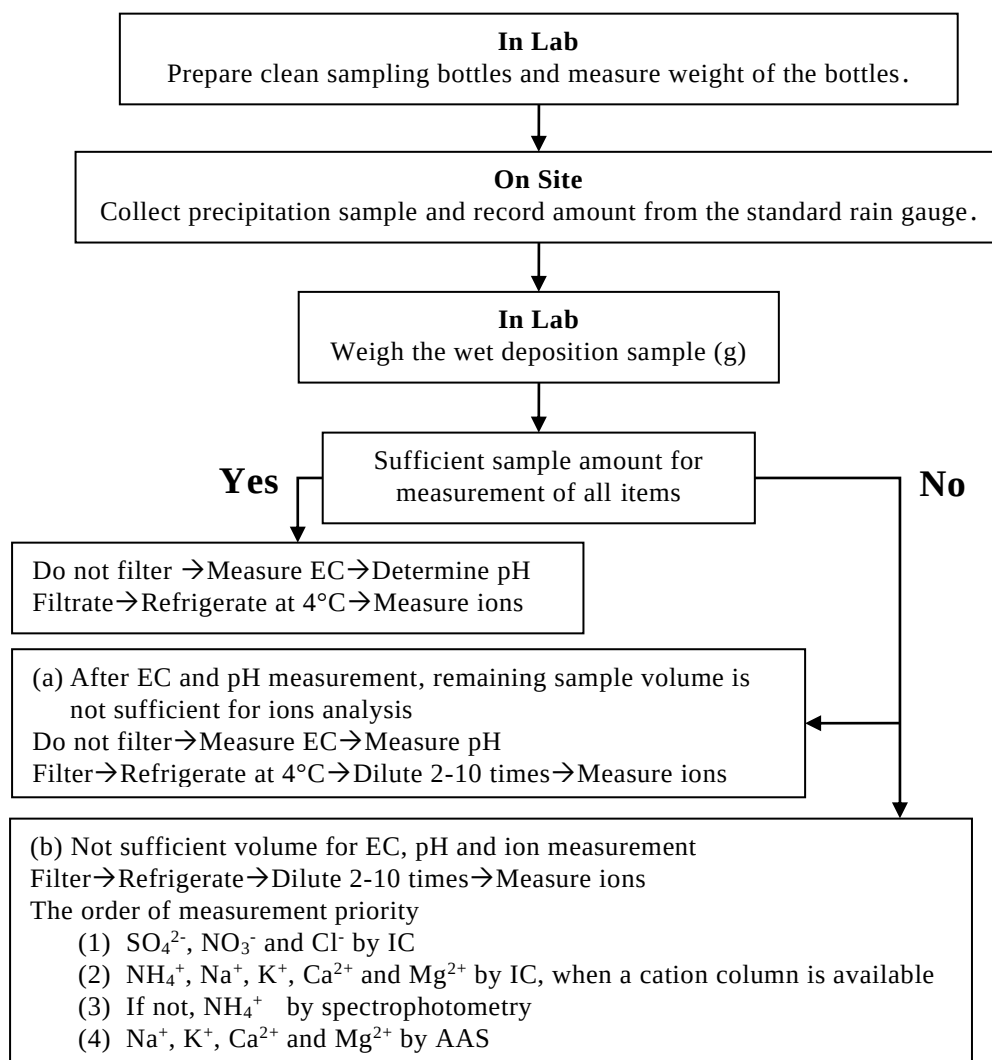
CHAPTER 3

Wet Deposition Monitoring

3. Wet Deposition Monitoring

3.1 Method

Each participating country is required to carry out acid deposition monitoring using common methodologies as specified in “*Guidelines for Acid Deposition Monitoring in East Asia, Technical Manual for Wet Deposition Monitoring in East Asia -2010*”, which was issued by the Network Center for EANET in November 2010 to obtain comparable, high quality monitoring data. Figure 3.1 shows the flow chart that summarizes the procedures for sampling and chemical analysis by the participating countries.



* EC: Electric conductivity, IC: Ion chromatography

Figure 3.1 Flow chart of sampling and chemical analysis of Wet Deposition

3.1.1 Field Operation

The wet-only sampler is recommended for the collection of the precipitation samples. This instrument is designed to collect precipitation samples during the period of rainfall which is detected by an equipped rain sensor that opens the lid on the collecting bucket or funnel. The lid of this instrument closes to avoid any collection into the collecting bucket or funnel, when no rainfall is detected by the sensor.

On the other hand, when a manual sampler is used to collect the precipitation since an automatic instrument is not available, the sampling shall be done by ensuring the sample collection only during rainfall period.

Precipitation chemistry samples are always at risk of degradation. Refrigeration is recommended to prevent the degradation. If refrigeration cannot be used, biocides such as thymol should be used to prevent microbial uptake and conversion of organic acids, especially in tropical region.

On the other hand, the special care for the sampling of wet deposition in the higher latitude region during winter seasons should be done. The collection of the wet deposition samples may encounter difficulties due to low ambient temperature particularly when the temperature falls below -10 to -20°C.

3.1.2 Laboratory Operation

Procedures for the analysis of major constituent in wet deposition sample according to the “*Technical Manual for Wet Deposition Monitoring in East Asia -2010*” are shown in Table 3.1. Ion chromatography is recommended as the major analytical method which has been adopted by the participating countries for chemical analysis of both anions and cations contained in precipitation samples. Atomic absorption/emission spectrometry for Na^+ , K^+ , Ca^{2+} , and Mg^{2+} , and spectrophotometry for NH_4^+ are the secondary methods for the determination of these ions. Laboratories that use other non-recommended methods with insufficient analytical sensitivity, such as titration method, will encounter problems of unsatisfactory detection limit.

The EANET Data quality objective (DQO) values are defined in the “*Technical Documents for Wet Deposition Monitoring in East Asia -2010.*” And DQO values about Detection limits are shown in Table 3.2.

3.1.3 Data Management

Each laboratory has to submit the analyzed data of the precipitation samples to the National Center. Each National Center is expected to submit the compiled data in the required format to the Network Center for EANET (NC) by the end of June in the following year. All the data have to be checked by calculating values of ion balance (R_1) and conductivity agreement (R_2). If a sample or individual datum has problems including “insufficient sample volume” or “low precision”, the flags corresponding to the problems should be recorded onto the data sheet. Participating countries can refer to QA/QC part of the EANET document on “*Technical Manual for Wet Deposition Monitoring in East Asia -2010.*”

3.1.4 Meteorological Measurements

It is recommended that monitoring sites incorporate collocated meteorological measurements including wind direction/speed, temperature, humidity, precipitation amount and solar radiation. Meteorological data can also be acquired from the nearest standard meteorological station (meeting the requirements of the national weather service). Local meteorological data are very useful when dealing with the interpretation of unusual precipitation events.

Meteorological statistics at the monitoring sites are shown in Appendix 2 at the end of the report.

Table 3.1 Recommended analytical method for the measurement of major constituent in wet deposition samples

Analytical items	Method
Electric conductivity (EC)	Conductivity cell method ^{*1}
pH	Glass electrode ^{*1}
Cl^- , NO_3^- , SO_4^{2-} , NO_2^- , F^- , PO_4^{3-}	Ion chromatography, Spectrophotometry
NH_4^+	Ion chromatography, Spectrophotometry (Indophenol Blue) ^{*2}
Na^+ , K^+ , Ca^{2+} , Mg^{2+}	Ion chromatography Atomic absorption/emission spectrometry
HCO_3^-	Ion chromatography, Alkalinity method, HPLC
Organic acids	Ion chromatography

^{*1} Measuring at constant 25°C with a temperature-controlled bath is recommended.

^{*2} An alternative analysis method should be used if thymol is used as a biocide during sample collection.

Table 3.2 DQO values about Detection limits

Items	Detection limits ($\mu\text{mol L}^{-1}$)
SO_4^{2-}	0.3
NO_3^-	0.5
Cl^-	0.5
NH_4^+	0.8
Na^+	0.3
K^+	0.3
Ca^{2+}	0.2
Mg^{2+}	0.3

3.1.5 Overview of the Statistics and Definition

An overview of the statistics and definitions used is given below.

Weighted average: the precipitation amount weighted average concentration ($\mu\text{mol L}^{-1}$) over the summary period.

Calculated as:

$$\hat{C} = \Sigma(C_i P_i) / \Sigma P_i$$

where $\hat{C}$: precipitation amount weighted average concentration ($\mu\text{mol L}^{-1}$)

C_i : measured valid concentration for sample i ($\mu\text{mol L}^{-1}$)

P_i : precipitation amount for the same sample i with valid concentration (mm)

Deposition amount: the wet deposition amount (mmol m^{-2}) for the summary period.

Calculated as:

$$\text{Deposition amount} = \hat{C} \times (\text{total precipitation amount for the summary period}) / 1000$$

The concentrations for the sampling periods with missing data have consequently been assumed to be equal to the weighted average of the summary period.

Non-sea-salt sulfate and non-sea-salt calcium ($\mu\text{mol L}^{-1}$): Equal to the measured sulfate (calcium) in the sample minus the sulfate (calcium) contributed by sea salt. Sea salt sulfate (calcium) is estimated from the concentration of sodium and the component ratio of sea water.

$$[\text{nss-SO}_4^{2-}] = [\text{SO}_4^{2-}] - 0.06028 [\text{Na}^+]$$

$$[\text{nss-Ca}^{2+}] = [\text{Ca}^{2+}] - 0.02161 [\text{Na}^+]$$

(Na⁺ : 468.3 mmol L⁻¹, SO₄²⁻ : 28.23 mmol L⁻¹, Ca²⁺ : 10.12 mmol L⁻¹; Ref.: *Guide to maritime observation, Oceanographic Society of Japan*)

Data completeness:

- (i) **Percent precipitation coverage length (%PCL):** Percentage of days with measured precipitation plus no precipitation days in the summary period. Calculated as:

$$\%PCL = [(\text{Number of days in the summary period}) - (\text{Number of days with missing or unknown precipitation})] / (\text{Number of days in the summary period}) \times 100$$

- (ii) **Percent total precipitation (%TP):** Percentage of total precipitation amount over the summary period represented by valid component measurements. Calculated as:

$$\%TP = (\text{Sum of precipitation amounts for samples with valid sample component measurements}) / (\text{Sum of precipitation amounts for all samples}) \times 100$$

- (iii) **Data completeness criteria for monthly and annual summaries:**

$$\%PCL > 80\% \text{ and } \%TP > 80\%$$

The low values on data completeness were caused by some trouble, such as contamination of sample and malfunction of the wet-only sampler or the rain gauge.

Ion balance (R₁):

Calculated as:

$$R_1 = (C - A) / (C + A) \times 100 (\%)$$

where C: total cation equivalent concentration (μeq L⁻¹)

A: total anion equivalent concentration (μeq L⁻¹)

$$C = 10^{(6-pH)} + \sum(C_{Ci}V_i)$$

where C_{Ci} : the concentration of i-th cation (μmol L⁻¹)

V_i : the valence of the given ion

$$A = \sum(C_{Ai}V_i)$$

where C_{Ai} : the concentration of i-th anion (μmol L⁻¹)

Required criteria for R₁ :

The required ion balances of precipitation analyses are given in Table 3.3.

Table 3.3 Required criteria for R₁

(C+A) (μeq L ⁻¹)	R ₁ (%)
<50	± 30
50 – 100	± 15
>100	± 8

Conductivity agreement (R₂) :

Calculated as:

$$R_2 = (\Lambda_{\text{calc}} - \Lambda_{\text{meas}}) / (\Lambda_{\text{calc}} + \Lambda_{\text{meas}}) \times 100 (\%)$$

where Λ_{calc} : the calculated conductivity (mS m⁻¹)

Λ_{meas} : the measured conductivity (mS m⁻¹)

$$\Lambda_{\text{calc}} = \sum (C_i \Lambda_i^0) \times 10^{-4}$$

where C_i : the ionic concentration of i-th ion (μmol L⁻¹)

Λ_i^0 : the molar conductivity at infinite dilution and 25°C (Scm² mol⁻¹)

$$\Lambda_{\text{calc}} = \{ 349.7 \times 10^{(6-\text{pH})} + 80.0 \times 2c(\text{SO}_4^{2-}) + 71.4c(\text{NO}_3^-) + 76.3c(\text{Cl}^-) + 73.5c(\text{NH}_4^+) + 50.1c(\text{Na}^+) + 73.5c(\text{K}^+) + 59.5 \times 2c(\text{Ca}^{2+}) + 53.0 \times 2c(\text{Mg}^{2+}) \} / 10000$$

where $c()$: the ionic concentrations (μmol L⁻¹)

Required criteria for R₂:

The required conductivity comparison criteria are given in Table 3.4.

Table 3.4 Required criteria for R₂

Λ_{meas} (mS m ⁻¹)	R ₂ (%)
<0.5	± 20
0.5 – 3	± 13
>3	± 9

3.1.6 Terms and Abbreviations

Terms and abbreviations are given in Table 3.5.

Table 3.5 Terms and abbreviations

	Terms and abbreviations	Definition
For all data	Data in hatched cell (■)	Rejected monthly (annual) value by the criteria. [%PCL≤80% and/or %TP≤80%]
	[--]	Precipitation was 0 mm.
	[*]	The constituent was rejected or not measured although precipitation was not 0 mm. [%TP=0%]
	[**]	Precipitation was not measured. [%PCL=0%]
	[***]	No data or no measurement
	Black cell (■)	Monitoring was not carried out.
For precipitation amount weighted average concentrations	Max	Maximum monitoring data for a year.
	Min	Minimum monitoring data for a year.
For concentration of ions except H ⁺	[<0.2]	The values were lower than each DQO value about Detection limit ([<0.2]: Ca ²⁺ , [<0.3]: SO ₄ ²⁻ , Na ⁺ , K ⁺ and Mg ²⁺ , [<0.5]: NO ₃ ⁻ and Cl ⁻ , [<0.8]: NH ₄ ⁺). nss-SO ₄ ²⁻ and nss-Ca ²⁺ refer to Detection limit of SO ₄ ²⁻ and Ca ²⁺ respectively.
	[<0.3]	
	[<0.5]	
	[<0.8]	
For deposition	[0.00]	Deposition amount was zero. (Precipitation was 0 mm.)
	[<0.01]	Calculated deposition amount was lower than 0.01mmol m ⁻² .
For results of ion balance (R ₁) and conductivity agreement check (R ₂)	Sample (N)	Number of samples.
	R ₁ (N)	Number of samples measured and calculated ion balance (R ₁).
	R ₁ (AA)	Number of samples within allowable ranges for R ₁ .
	R ₂ (N)	Number of samples measured and calculated conductivity agreement (R ₂).
	R ₂ (AA)	Number of samples within allowable ranges for R ₂ .
	R ₁ &R ₂ (N)	Number of samples measured and calculated both R ₁ and R ₂ .
	R ₁ &R ₂ (AA)	Number of samples within allowable ranges of both R ₁ and R ₂ .

3.1.7 Monitoring Sites

Precipitation samples are collected on a daily basis at 37 out of 58 sites, while weekly collection are performed at 21 sites, as presented in Table 3.6. The analytical methods used in the laboratories for measuring the precipitation samples are presented in Table 3.7.

Moreover, Table 3.7 shows also additional items which are analyzed in some sites. R_1 and R_2 were calculated for these sites including the additional items.

Table 3.6 Sampling frequencies for wet deposition monitoring in 2023

Country	Site	Classification	Sampling Interval	Starting Month	
Cambodia	Phnom Penh ^{*1}	Urban	Weekly	April 2004	
China	Chongqing	- Haifu	Urban	Daily	January 2008
		- Jinyunshan	Rural	Daily	April 1999
	Xi'an	- Shizhan	Urban	Daily	April 1999
		- Jiwozi	Remote	Daily	April 1999
	Xiamen	- Hongwen	Urban	Daily	April 1999
		- Xiaoping	Remote	Daily	April 1999
	Zhuhai	- Xiang Zhou	Urban	Daily	April 1999
		- Zhuxiandong	Urban	Daily	December 1999
	Wuzhishan	- Wuzhishan	Remote	Daily	January 2019
Lijiang	- Lijiang	Remote	Daily	January 2019	
Indonesia	Jakarta ^{*1}	Urban	Weekly	April 1998	
	Kototabang ^{*1}	Remote	Weekly	April 1998	
	Maros ^{*1}	Rural	Weekly	January 2008	
	Jembrana ^{*1}	Rural	Weekly	January 2019	
	Lombok ^{*1}	Rural	Weekly	January 2019	
Japan	Rishiri	Remote	Daily	April 1998	
	Ochiishi	Remote	Daily	January 2003	
	Sado-seki	Remote	Daily	April 1999	
	Happo	Remote	Daily	April 1998	
	Ijira	Rural	Weekly	June 1999	
	Oki	Remote	Daily	April 1998	
	Yusuhara	Remote	Daily	December 1999	
	Hedo	Remote	Daily	December 1999	
	Ogasawara	Remote	Daily	May 1999	
	Tokyo	Urban	Daily	April 2007	
	Niigata-maki	Rural	Daily	January 2019	
	Tsushima	Remote	Daily	January 2019	
Lao PDR	Vientiane	Urban	Daily	October 2003	
Malaysia	Petaling Jaya	Urban	Weekly	April 1998	
	Tanah Rata	Rural	Weekly	January 1999	
	Danum Valley	Remote	Weekly	January 2005	
	Kuching	Urban	Weekly	January 2008	
	Gunung Brinchang ^{*1}	Remote	Weekly	September 2020	
Mongolia	Ulaanbaatar	Urban	Daily	August 1998	
	Terelj	Remote	Daily	September 1998	
Myanmar	Yangon	Urban	Weekly	January 2007	

Table 3.6 Sampling frequencies for wet deposition monitoring in 2023 (continued)

Country	Site	Classification	Sampling Interval	Starting Month
Philippines	Metro Manila - Manila Observatory ^{*1,2}	Urban	Weekly	April 1999
	Laguna - Los Baños ^{*2}	Rural	Weekly	April 1999
	Benguet - Mt. Sto. Tomas ^{*2}	Rural	Weekly	October 2006
Republic of Korea	Ganghwa ^{*2}	Rural	Daily	March 1999
	Jeju ^{*2}	Remote	Daily	April 1999
	Imsil	Rural	Daily	January 2001
Russia	Mondy ^{*1}	Remote	Daily	May 1999
	Listvyanka	Rural	Daily	January 2000
	Irkutsk	Urban	Daily	January 2000
	Primorskaya	Rural	Daily	February 2002
Thailand	Bangkok	Urban	Daily	April 1999
	Samutprakarn	Urban	Daily	January 2004
	Pathumthani	Rural	Daily	March 1999
	Khanchanaburi ^{*1}	Remote	Daily	April 1999
Vietnam	Hanoi	Urban	Weekly	August 1999
	Hoa Binh	Rural	Weekly	August 1999
	Cuc Phuong	Remote	Weekly	January 2009
	Da Nang	Urban	Weekly	January 2009
	Can Tho	Rural	Weekly	January 2014
	Ho Chi Minh	Urban	Weekly	January 2014
	Yen Bai	Rural	Weekly	May 2015

*1 Wet deposition monitoring data of Phnom Penh, Jakarta, Kototabang, Maros, Jembrana, Lombok, Gunung Brinchang, Benguet - Mt. Sto. Tomas, Mondy, and Khanchanaburi were not submitted.

*2 The name of the conventional 5 sites have been changed since 2023 (see Cpt. 2).

Table 3.7 Analytical methods and additional items in 2023

Country	Site	Analytical methods			Additional items (Analytical methods)
		Anions	NH ₄ ⁺	Other Cations	
China	Chongqing	- Haifu	IC, TI	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
		- Jinyunshan	IC, TI	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
	Xi'an	- Shizhan	IC, TI	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
		- Jiwozi	IC, TI	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
	Xiamen	- Hongwen	IC	IC	F ⁻ (IC)
		- Xiaoping	IC	IC	F ⁻ (IC)
	Zhuhai	- Xiang Zhou	IC	IC	F ⁻ (IC)
		- Zhuxiandong	IC	IC	F ⁻ (IC)
	Wuzhishan	IC	IC	IC	F ⁻ (IC)
	Lijiang	IC	IC	IC	F ⁻ (IC)

Table 3.7 Analytical methods and additional items in 2023 (continued)

Country	Site	Analytical methods			Additional items (Analytical methods)
		Anions	NH ₄ ⁺	Other Cations	
Japan	Rishiri	IC	IC	IC	NO ₂ ⁻ (IC)
	Ochiishi	IC	IC	IC	
	Sado-seki	IC, TI	IC	IC	F ⁻ , Br ⁻ , NO ₂ ⁻ (IC)
	Happo	IC	IC	IC	
	Ijira	IC	IC	IC	NO ₂ ⁻ (IC)
	Oki	IC	IC	IC	
	Yusuhara	IC	IC	IC	F ⁻ , NO ₂ ⁻ , PO ₄ ³⁻ (IC)
	Hedo	IC	IC	IC	
	Ogasawara	IC	IC	IC	NO ₂ ⁻ (IC)
	Tokyo	IC	IC	IC	NO ₂ ⁻ (IC)
	Niigata-maki	IC	IC	IC	
	Tsushima	IC	IC	IC	
Lao PDR	Vientiane	IC	IC	IC	F ⁻ , Br ⁻ (IC)
Malaysia	Petaling Jaya	IC	IC	IC	F ⁻ , HCOO ⁻ , CH ₃ COO ⁻ , (COO ⁻) ₂ (IC)
	Tanah Rata	IC	IC	IC	F ⁻ , HCOO ⁻ , CH ₃ COO ⁻ , (COO ⁻) ₂ (IC)
	Danum Valley	IC	IC	IC	F ⁻ , HCOO ⁻ , CH ₃ COO ⁻ , (COO ⁻) ₂ (IC)
	Kuching	IC	IC	IC	F ⁻ , HCOO ⁻ , CH ₃ COO ⁻ , (COO ⁻) ₂ (IC)
Mongolia	Ulaanbaatar	IC	IC	IC	
	Terelj	IC	IC	IC	
Myanmar	Yangon	IC	IC	IC	
Philippines	Metro Manila	IC, TI	IC	AAS,	HCO ₃ ⁻ (TI)
	- Manila Observatory			AES	F ⁻ , Br ⁻ , NO ₂ ⁻ , PO ₄ ³⁻ (IC)
	Laguna - Los Baños	IC, TI	IC	AAS, AES	HCO ₃ ⁻ (TI) F ⁻ , Br ⁻ , NO ₂ ⁻ , PO ₄ ³⁻ (IC)
Republic of Korea	Ganghwa	IC	IC	IC	
	Jeju	IC	IC	IC	
	Imsil	IC	IC	IC	
Russia	Listvyanka	IC, SP, TI	SP	AAS	HCO ₃ ⁻ (TI), F ⁻ , Br ⁻ (IC), NO ₂ ⁻ (SP), PO ₄ ³⁻ (SP)
	Irkutsk	IC, SP, TI	SP	AAS	HCO ₃ ⁻ (TI), F ⁻ , Br ⁻ (IC), NO ₂ ⁻ (SP), PO ₄ ³⁻ (SP)
	Primorskaya	SP, TI	SP	AAS	
Thailand	Bangkok	IC	IC	IC	PO ₄ ³⁻ , HCOO ⁻ , CH ₃ COO ⁻ (IC)
	Samutprakarn	IC	IC	IC	PO ₄ ³⁻ , HCOO ⁻ , CH ₃ COO ⁻ (IC)
	Pathumthani	IC	IC	IC	NO ₂ ⁻ , PO ₄ ³⁻ , HCOO ⁻ , CH ₃ COO ⁻ (IC)

Table 3.7 Analytical methods and additional items in 2023 (continued)

Country	Site	Analytical methods			Additional items (Analytical methods)
		Anions	NH ₄ ⁺	Other Cations	
Vietnam	Hanoi	IC	IC	IC	F ⁻ (IC)
	Hoa Binh	IC	IC	IC	F ⁻ (IC)
	Cuc Phuong	IC, TI	IC	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
	Da Nang	IC, TI	IC	IC	HCO ₃ ⁻ (TI), F ⁻ (IC)
	Can Tho	SP, TI	SP	AES	F ⁻ (SP)
	Ho Chi Minh	SP, TI	SP	AES	F ⁻ (SP)

AAS: Atomic absorption spectrometry, AES: Atomic emission spectrometry,
IC: Ion chromatography, SP: Spectrophotometry, TI: Titration

3.2 Results of Monitoring

The monthly summaries of each monitoring site in 2023 are shown in Table 3.8 through Table 3.65. The annual summaries of wet deposition monitoring in 2023 are shown in Table 3.66 through Table 3.68. The summaries contain the precipitation amount weighted average, data completeness (%PCL, %TP) and the wet deposition amount.

Results of ion balance (R_1) and the conductivity agreement (R_2) of each monitoring site are shown in Table 3.69. The summaries of annual data from 2009 to 2023 are shown in Table 3.70 through Table 3.94. Figure 3.2 to Figure 3.59 are plots of R_1 and R_2 for each site. The following information is provided to describe the figures:

(1) Ion Balance (R_1)

- (C + A) is logarithmic scale
- Horizontal bar : The allowable range of R_1 in each concentration range

(2) Conductivity Agreement (R_2)

- (Λ_{meas}) is logarithmic scale
- Horizontal bar : The allowable range of R_2 in each conductivity range

Results of the additional items are shown in Table 3.95 through Table 3.102.

Note that the annual data before 2009 are disclosed in EANET homepage and the data in 2000 were obtained during the preparatory-phase activities of EANET.

EANET homepage URL <https://monitoring.eanet.asia/document/public/index>

Table 3.8 Monthly results

Site: Phnom Penh

Country: Cambodia

Code: KHA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.9 Monthly results

Site: Haifu

Country: China

Code: CNA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	175	174	247	62.9	380	21.8	47.6	116	116	17.5	0.664	6.18	10.2	10.6
Feb	75.5	74.9	128	14.2	216	8.77	9.41	64.0	63.8	8.53	0.630	6.20	5.18	20.4
Mar	58.0	57.5	85.0	11.7	164	9.34	6.23	54.2	54.0	6.11	0.690	6.16	3.80	40.4
Apr	39.3	39.0	53.2	9.06	106	4.86	4.80	31.1	31.0	3.91	0.885	6.05	2.74	122
May	31.0	30.8	61.8	5.78	130	3.19	3.55	34.9	34.8	3.54	0.493	6.31	2.87	93.3
June	15.1	15.0	32.0	4.16	72.2	1.90	1.23	16.5	16.4	2.41	0.626	6.20	1.51	153
July	9.88	9.73	18.4	3.66	34.0	2.54	1.24	11.6	11.5	1.34	1.04	5.98	0.852	439
Aug	36.5	35.2	66.9	27.1	113	21.7	18.2	153	153	21.1	0.327	6.49	5.92	62.5
Sept	16.3	16.0	23.3	5.72	48.4	5.20	2.07	15.1	14.9	1.92	1.08	5.97	1.21	184
Oct	19.6	19.4	33.4	4.08	64.9	2.44	1.44	11.9	11.8	1.50	1.12	5.95	1.37	156
Nov	41.1	40.9	67.9	6.78	162	3.39	3.12	26.5	26.4	3.00	1.11	5.96	3.15	48.9
Dec	91.2	90.6	254	21.2	407	8.33	10.5	79.8	79.6	9.62	0.218	6.66	8.75	22.9
Annual	24.0	23.8	41.9	7.04	80.8	4.53	3.50	27.1	27.0	3.43	0.893	6.05	2.02	1353
Max.	363	360	394	178	591	106	172	420	418	62.5	6.46	7.01	18.8	
Min.	2.50	2.16	5.00	1.40	3.90	0.400	0.500	4.50	4.46	0.800	0.0977	5.19	0.258	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.85	1.84	2.62	0.667	4.02	0.231	0.504	1.23	1.23	0.185	<0.01
Feb	1.54	1.53	2.62	0.290	4.41	0.179	0.192	1.31	1.30	0.174	0.0128
Mar	2.34	2.32	3.43	0.474	6.62	0.377	0.252	2.19	2.18	0.247	0.0279
Apr	4.80	4.77	6.51	1.11	13.0	0.594	0.588	3.80	3.79	0.478	0.108
May	2.89	2.88	5.77	0.540	12.1	0.298	0.331	3.26	3.25	0.330	0.0460
June	2.31	2.29	4.90	0.639	11.1	0.292	0.189	2.53	2.52	0.370	0.0960
July	4.34	4.27	8.07	1.61	14.9	1.11	0.543	5.09	5.06	0.589	0.456
Aug	2.28	2.20	4.18	1.70	7.04	1.35	1.14	9.56	9.53	1.32	0.0204
Sept	3.00	2.94	4.27	1.05	8.88	0.954	0.380	2.76	2.74	0.352	0.199
Oct	3.05	3.02	5.19	0.634	10.1	0.380	0.223	1.85	1.84	0.233	0.174
Nov	2.01	2.00	3.32	0.332	7.92	0.166	0.153	1.30	1.29	0.146	0.0542
Dec	2.09	2.08	5.81	0.485	9.31	0.191	0.241	1.83	1.82	0.220	<0.01
Annual	32.5	32.1	56.7	9.52	109	6.13	4.73	36.7	36.6	4.64	1.21

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.10 Monthly results

Site: Jinyunshan

Country: China

Code: CNA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	82.0	81.4	165	24.3	211	11.0	11.1	49.1	48.9	8.03	25.3	4.60	6.23	10.1
Feb	77.8	77.4	131	12.2	185	6.07	8.83	46.5	46.4	7.98	13.5	4.87	5.09	29.2
Mar	57.3	57.0	81.3	7.81	109	4.99	4.58	78.7	78.6	6.01	14.5	4.84	4.15	52.0
Apr	27.0	26.9	34.0	3.62	63.2	1.29	2.42	16.9	16.9	3.10	1.90	5.72	1.60	140
May	37.4	37.2	48.3	5.70	122	2.08	3.21	22.5	22.4	3.21	0.736	6.13	2.57	56.3
June	18.5	18.1	23.0	4.78	55.2	6.93	1.33	12.8	12.6	2.45	1.88	5.73	1.29	184
July	10.8	10.8	19.5	1.86	32.1	1.13	0.726	7.10	7.07	1.92	2.11	5.68	0.811	428
Aug	18.9	18.8	30.8	3.95	49.7	2.32	0.974	12.4	12.3	2.35	5.33	5.27	1.36	74.1
Sept	17.0	16.9	19.8	2.69	35.1	1.88	0.589	7.99	7.95	2.57	11.5	4.94	1.30	184
Oct	18.2	18.1	27.6	3.99	38.0	2.21	1.10	8.62	8.57	2.38	13.5	4.87	1.39	143
Nov	39.0	38.9	72.1	5.83	119	2.03	2.73	16.5	16.4	2.65	12.1	4.92	2.78	44.4
Dec	83.1	82.9	201	16.2	219	3.63	5.48	47.5	47.5	6.80	44.8	4.35	6.86	3.4
Annual	21.6	21.5	32.3	3.85	55.2	2.63	1.60	14.5	14.4	2.70	5.99	5.22	1.53	1347
Max.	210	209	695	44.9	643	127	44.8	422	422	21.4	257	7.60	23.4	
Min.	2.50	2.42	5.50	1.10	<0.8	0.400	0.300	3.50	3.48	0.400	0.0251	3.59	0.239	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.829	0.822	1.67	0.245	2.13	0.111	0.112	0.496	0.494	0.0811	0.256
Feb	2.27	2.26	3.83	0.357	5.40	0.177	0.258	1.36	1.36	0.233	0.393
Mar	2.98	2.96	4.23	0.406	5.65	0.259	0.238	4.09	4.09	0.312	0.755
Apr	3.77	3.76	4.74	0.505	8.81	0.180	0.338	2.36	2.36	0.433	0.265
May	2.10	2.10	2.72	0.321	6.90	0.117	0.180	1.27	1.26	0.181	0.0414
June	3.41	3.33	4.24	0.880	10.2	1.28	0.245	2.35	2.33	0.451	0.347
July	4.64	4.61	8.35	0.797	13.7	0.482	0.311	3.03	3.02	0.819	0.901
Aug	1.40	1.39	2.28	0.293	3.68	0.172	0.0721	0.917	0.913	0.174	0.395
Sept	3.12	3.10	3.63	0.494	6.45	0.345	0.108	1.47	1.46	0.471	2.11
Oct	2.60	2.58	3.93	0.568	5.41	0.314	0.157	1.23	1.22	0.339	1.93
Nov	1.73	1.73	3.20	0.259	5.30	0.0902	0.121	0.731	0.729	0.118	0.537
Dec	0.282	0.282	0.683	0.0552	0.744	0.0124	0.0186	0.162	0.161	0.0231	0.152
Annual	29.1	28.9	43.5	5.18	74.4	3.54	2.16	19.5	19.4	3.63	8.07

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.11 Monthly results

Site: Shizhan

Country: China

Code: CNA005

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	286	281	178	99.3	168	79.8	15.5	376	374	28.2	0.0356	7.45	13.1	11.0
Mar	35.1	33.9	12.3	34.5	143	19.8	5.61	169	168	7.22	0.0509	7.29	5.46	39.5
Apr	22.4	21.9	32.4	10.9	76.0	9.61	4.86	183	183	9.55	0.0177	7.75	4.70	65.5
May	24.2	24.1	35.7	4.22	105	2.63	4.53	87.0	86.9	4.97	0.0911	7.04	3.42	149
June	18.1	16.2	4.27	2.58	68.2	32.2	0.871	52.5	51.8	1.18	0.115	6.94	2.07	129
July	29.1	23.1	10.3	90.0	103	99.4	4.65	41.2	39.0	5.04	0.124	6.91	3.35	127
Aug	10.0	9.93	23.3	1.95	122	1.28	0.898	35.1	35.0	2.21	0.0578	7.24	2.09	216
Sept	10.7	10.6	22.8	2.43	177	1.50	1.27	13.1	13.0	1.18	0.0483	7.32	2.24	218
Oct	12.1	11.2	14.7	2.70	145	14.6	1.71	14.2	13.9	1.35	0.0773	7.11	2.06	76.6
Nov	17.7	16.7	7.30	6.06	143	16.0	3.55	37.2	36.9	5.44	0.0851	7.07	2.81	16.9
Dec	46.6	45.0	118	37.3	166	26.8	8.40	126	125	13.0	0.0891	7.05	5.51	7.8
Annual	20.6	19.3	22.6	16.2	123	20.5	2.67	57.6	57.2	3.58	0.0746	7.13	2.89	1056
Max.	357	351	211	186	266	206	20.1	479	477	51.0	0.263	7.95	17.4	
Min.	5.00	4.98	2.50	1.00	3.20	0.400	0.400	4.80	4.79	<0.3	0.0112	6.58	0.910	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	3.15	3.10	1.95	1.09	1.85	0.878	0.171	4.13	4.12	0.310	<0.01
Mar	1.38	1.34	0.484	1.36	5.67	0.781	0.222	6.66	6.64	0.285	<0.01
Apr	1.47	1.43	2.12	0.712	4.98	0.630	0.318	12.0	12.0	0.626	<0.01
May	3.62	3.59	5.33	0.630	15.7	0.393	0.677	13.0	13.0	0.742	0.0136
June	2.34	2.09	0.552	0.333	8.81	4.17	0.113	6.78	6.69	0.152	0.0149
July	3.69	2.93	1.31	11.4	13.1	12.6	0.590	5.23	4.95	0.640	0.0157
Aug	2.16	2.14	5.02	0.421	26.3	0.276	0.194	7.56	7.55	0.476	0.0125
Sept	2.33	2.31	4.97	0.529	38.6	0.327	0.276	2.85	2.84	0.258	0.0105
Oct	0.926	0.858	1.13	0.206	11.1	1.12	0.131	1.09	1.06	0.104	<0.01
Nov	0.299	0.283	0.123	0.102	2.42	0.270	0.0600	0.629	0.623	0.0919	<0.01
Dec	0.363	0.351	0.919	0.291	1.29	0.209	0.0655	0.980	0.976	0.101	<0.01
Annual	21.7	20.4	23.9	17.1	130	21.7	2.82	60.9	60.4	3.79	0.0787

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.12 Monthly results

Site: Jiwozi

Country: China

Code: CNA007

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	21.6	18.1	26.8	20.5	11.3	58.5	22.1	99.2	97.9	29.9	0.0244	7.61	3.61	14.3
Feb	21.3	20.7	25.5	10.6	8.40	10.3	2.50	99.3	99.1	2.70	0.0417	7.38	2.20	6.5
Mar	17.6	16.9	26.8	15.7	11.5	10.9	3.39	72.5	72.3	8.57	0.0561	7.25	2.31	26.5
Apr	19.8	19.3	26.1	27.0	7.95	7.84	2.22	101	100	1.86	0.0635	7.20	2.39	108
May	12.3	11.4	18.0	22.0	12.0	14.0	10.3	39.6	39.3	5.06	0.196	6.71	1.33	89.0
June	20.7	19.5	21.7	35.1	16.9	20.0	8.93	26.4	26.0	9.40	1.04	5.98	1.34	56.0
July	12.9	12.7	12.3	20.1	28.2	3.16	5.86	14.6	14.5	2.65	0.641	6.19	0.919	215
Aug	19.8	19.2	19.5	7.73	17.2	8.32	5.89	9.95	9.77	9.01	3.55	5.45	1.05	132
Sept	15.2	14.4	12.7	25.4	20.3	11.9	4.99	37.3	37.0	10.6	0.209	6.68	1.50	90.0
Oct	20.2	19.4	13.6	25.2	18.3	12.5	4.52	33.7	33.4	4.28	0.570	6.24	1.31	58.2
Nov	43.7	42.9	17.7	35.9	13.7	12.1	11.9	35.2	34.9	21.8	1.93	5.71	1.92	38.0
Dec	31.3	30.3	21.0	35.0	11.6	17.3	13.6	28.6	28.2	11.0	0.833	6.08	1.55	14.0
Annual	18.1	17.4	17.7	21.9	18.0	10.2	6.46	37.0	36.8	6.83	0.976	6.01	1.44	847
Max.	47.1	47.0	38.1	49.7	45.7	82.9	26.6	126	125	32.5	7.41	7.69	4.19	
Min.	5.60	4.05	1.50	1.10	1.10	0.400	1.40	7.50	7.28	<0.3	0.0204	5.13	0.650	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.309	0.258	0.383	0.293	0.162	0.836	0.316	1.42	1.40	0.427	<0.01
Feb	0.138	0.134	0.166	0.0689	0.0546	0.0670	0.0163	0.645	0.644	0.0176	<0.01
Mar	0.466	0.448	0.711	0.417	0.305	0.289	0.0898	1.92	1.92	0.227	<0.01
Apr	2.13	2.08	2.82	2.92	0.857	0.845	0.239	10.9	10.8	0.201	<0.01
May	1.09	1.02	1.60	1.95	1.07	1.24	0.917	3.52	3.50	0.451	0.0175
June	1.16	1.09	1.21	1.96	0.949	1.12	0.500	1.48	1.45	0.526	0.0580
July	2.76	2.72	2.65	4.33	6.06	0.679	1.26	3.14	3.13	0.569	0.138
Aug	2.60	2.53	2.57	1.02	2.27	1.10	0.775	1.31	1.29	1.19	0.467
Sept	1.36	1.30	1.15	2.29	1.82	1.07	0.449	3.35	3.33	0.951	0.0188
Oct	1.17	1.13	0.793	1.46	1.06	0.729	0.263	1.96	1.94	0.249	0.0332
Nov	1.66	1.63	0.671	1.37	0.520	0.461	0.454	1.34	1.33	0.830	0.0734
Dec	0.439	0.424	0.294	0.491	0.163	0.242	0.190	0.400	0.395	0.154	0.0117
Annual	15.3	14.8	15.0	18.6	15.3	8.68	5.47	31.3	31.2	5.79	0.826

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.13 Monthly results

Site: Hongwen

Country: China

Code: CNA008

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	7.48	6.45	17.9	24.6	1.47	17.1	1.95	10.2	9.79	3.52	7.92	5.10	0.955	1.7
Feb	6.33	6.11	11.7	3.73	5.52	3.51	2.33	5.09	5.02	2.67	2.90	5.54	0.592	12.3
Mar	20.5	20.0	37.9	9.04	57.8	7.48	3.84	11.6	11.4	3.11	8.25	5.08	1.73	8.7
Apr	22.1	20.5	42.0	33.9	51.0	25.7	2.75	6.11	5.56	3.92	20.2	4.69	1.97	100
May	10.9	10.1	32.9	15.6	38.7	14.4	1.68	5.49	5.18	2.75	6.26	5.20	1.40	53.7
June	5.75	5.01	14.7	10.8	10.2	12.2	1.16	6.02	5.75	2.48	3.03	5.52	0.712	63.9
July	10.8	9.09	18.1	33.8	5.95	28.4	2.03	18.2	17.5	4.61	0.811	6.09	1.06	22.5
Aug	7.91	7.06	18.0	16.0	13.3	14.2	1.40	7.88	7.58	2.79	4.52	5.34	0.840	225
Sept	4.52	3.54	10.4	13.6	4.10	16.2	1.47	4.87	4.52	2.82	3.59	5.45	0.603	322
Oct	24.4	22.9	43.2	35.5	71.5	25.1	2.82	28.8	28.2	5.42	1.19	5.93	2.26	10.9
Nov	22.9	19.4	68.9	55.2	61.7	58.3	10.5	56.8	55.5	9.17	0.891	6.05	3.24	3.9
Dec	11.6	10.4	44.7	23.4	34.4	18.7	2.82	22.8	22.3	4.58	0.457	6.34	1.54	2.9
Annual	8.83	7.82	19.4	17.5	16.9	16.7	1.72	7.04	6.67	3.03	5.91	5.23	0.956	827
Max.	65.2	64.0	227	87.6	277	83.0	10.5	56.8	55.5	11.3	42.7	6.50	5.72	
Min.	2.60	2.34	6.13	3.10	<0.8	2.65	1.05	3.25	3.19	1.75	0.316	4.37	0.350	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.0127	0.0110	0.0304	0.0417	<0.01	0.0290	<0.01	0.0173	0.0166	<0.01	0.0135
Feb	0.0778	0.0752	0.144	0.0458	0.0679	0.0432	0.0286	0.0627	0.0617	0.0329	0.0357
Mar	0.178	0.174	0.330	0.0786	0.503	0.0651	0.0334	0.101	0.0995	0.0271	0.0718
Apr	2.22	2.06	4.21	3.40	5.12	2.58	0.276	0.613	0.557	0.393	2.03
May	0.588	0.541	1.77	0.837	2.08	0.771	0.0903	0.295	0.278	0.147	0.336
June	0.367	0.320	0.940	0.687	0.651	0.780	0.0742	0.385	0.368	0.159	0.194
July	0.243	0.204	0.408	0.761	0.134	0.640	0.0457	0.409	0.395	0.104	0.0182
Aug	1.78	1.58	4.05	3.60	2.99	3.18	0.315	1.77	1.70	0.626	1.02
Sept	1.46	1.14	3.34	4.37	1.32	5.21	0.473	1.57	1.46	0.908	1.15
Oct	0.266	0.249	0.471	0.387	0.780	0.273	0.0308	0.314	0.308	0.0591	0.0129
Nov	0.0894	0.0757	0.269	0.215	0.241	0.227	0.0410	0.221	0.216	0.0358	<0.01
Dec	0.0335	0.0303	0.130	0.0678	0.0999	0.0542	<0.01	0.0660	0.0648	0.0133	<0.01
Annual	7.30	6.47	16.1	14.5	14.0	13.8	1.42	5.82	5.52	2.51	4.89

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.14 Monthly results

Site: Xiaoping

Country: China

Code: CNA009

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	9.17	6.10	17.9	48.7	6.11	50.9	3.33	12.0	10.9	5.83	1.62	5.79	1.41	17.7
Feb	7.20	5.95	23.5	10.7	26.7	20.7	2.82	7.42	6.98	3.19	2.86	5.54	1.01	25.4
Mar	8.74	8.49	24.2	3.43	26.6	4.07	2.73	3.15	3.06	1.90	10.7	4.97	1.14	76.6
Apr	13.2	12.3	26.4	22.3	30.2	14.2	1.91	3.03	2.72	2.74	29.6	4.53	1.70	106
May	16.0	15.5	52.6	9.09	63.0	8.72	2.29	8.94	8.75	2.51	11.9	4.92	1.84	78.9
June	13.1	12.7	36.4	6.41	46.6	7.35	1.65	4.96	4.80	2.06	16.3	4.79	1.58	182
July	7.25	6.44	14.8	19.0	14.8	13.4	1.27	4.95	4.66	2.27	3.14	5.50	0.702	142
Aug	11.3	10.8	34.4	13.1	39.3	6.91	5.45	8.33	8.18	2.80	5.66	5.25	1.15	222
Sept	6.32	5.59	24.1	9.51	23.7	12.2	1.68	8.64	8.38	2.89	2.13	5.67	0.840	98.1
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	15.2	14.4	49.4	18.3	78.0	12.1	3.06	10.7	10.4	3.32	1.06	5.97	1.76	22.1
Annual	10.9	10.2	30.4	13.0	35.4	10.5	2.72	6.39	6.17	2.57	10.2	4.99	1.26	971
Max.	44.5	42.5	142	82.0	174	71.7	16.7	40.3	39.7	7.92	58.9	6.31	4.70	
Min.	0.521	0.330	5.48	<0.5	<0.8	1.35	0.872	1.40	1.35	1.42	0.490	4.23	0.240	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.162	0.108	0.317	0.863	0.108	0.900	0.0590	0.212	0.193	0.103	0.0287
Feb	0.183	0.151	0.598	0.272	0.679	0.526	0.0717	0.189	0.177	0.0811	0.0726
Mar	0.669	0.650	1.85	0.262	2.04	0.312	0.209	0.241	0.234	0.145	0.818
Apr	1.39	1.30	2.79	2.36	3.19	1.50	0.202	0.320	0.288	0.289	3.12
May	1.26	1.22	4.15	0.717	4.97	0.688	0.180	0.705	0.690	0.198	0.939
June	2.39	2.31	6.64	1.17	8.49	1.34	0.301	0.905	0.876	0.375	2.98
July	1.03	0.914	2.10	2.69	2.11	1.90	0.181	0.703	0.662	0.323	0.447
Aug	2.50	2.41	7.64	2.91	8.72	1.53	1.21	1.85	1.82	0.620	1.25
Sept	0.620	0.548	2.36	0.933	2.33	1.20	0.165	0.848	0.822	0.283	0.209
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.335	0.319	1.09	0.403	1.72	0.266	0.0675	0.236	0.230	0.0732	0.0234
Annual	10.5	9.93	29.5	12.6	34.4	10.2	2.64	6.21	5.99	2.49	9.90

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.15 Monthly results

Site: Xiang Zhou

Country: China

Code: CNA010

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	16.6	14.1	51.5	50.1	58.9	41.2	2.03	14.2	13.3	5.56	3.49	5.46	2.09	18.5
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	21.2	19.4	54.8	34.5	60.8	29.6	4.20	18.9	18.3	4.29	22.2	4.65	2.66	103
Apr	29.1	27.1	57.9	37.3	79.5	33.1	6.44	67.1	66.3	6.28	2.41	5.62	3.26	70.7
May	13.2	12.0	33.6	21.4	35.4	19.0	2.13	40.3	39.9	3.41	3.80	5.42	1.83	175
June	6.44	5.62	17.3	15.6	20.5	13.5	0.691	6.81	6.52	2.02	2.50	5.60	0.757	363
July	7.14	4.88	13.1	41.7	16.6	37.5	1.25	9.38	8.57	4.24	1.56	5.81	1.08	313
Aug	6.71	6.15	15.9	11.0	27.7	9.41	1.05	13.9	13.7	1.87	1.08	5.97	0.908	186
Sept	3.95	2.82	6.94	21.7	7.10	18.7	0.752	7.28	6.87	2.08	2.56	5.59	0.682	698
Oct	5.54	4.86	11.4	15.2	13.1	11.4	0.452	5.73	5.49	1.31	2.84	5.55	0.705	179
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	14.6	12.5	89.0	81.2	43.8	34.8	42.7	29.9	29.2	5.35	9.12	5.04	3.00	2.7
Annual	7.81	6.58	17.6	23.6	21.0	20.4	1.35	13.4	12.9	2.70	3.37	5.47	1.07	2109
Max.	78.7	68.1	361	302	381	280	42.7	143	141	31.7	75.9	7.39	10.5	
Min.	1.46	1.38	3.55	3.10	2.77	0.435	<0.3	0.250	<0.2	<0.3	0.0407	4.12	0.202	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.307	0.261	0.953	0.927	1.09	0.762	0.0375	0.263	0.246	0.103	0.0646
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	2.19	2.00	5.65	3.55	6.26	3.05	0.433	1.95	1.88	0.442	2.28
Apr	2.06	1.92	4.10	2.63	5.62	2.34	0.455	4.74	4.69	0.444	0.170
May	2.31	2.11	5.89	3.75	6.20	3.32	0.372	7.05	6.98	0.596	0.665
June	2.34	2.04	6.26	5.67	7.43	4.92	0.251	2.47	2.37	0.733	0.908
July	2.23	1.53	4.11	13.0	5.19	11.7	0.391	2.93	2.68	1.33	0.489
Aug	1.25	1.14	2.95	2.04	5.16	1.75	0.195	2.59	2.55	0.349	0.201
Sept	2.75	1.97	4.85	15.2	4.95	13.0	0.525	5.08	4.80	1.45	1.79
Oct	0.992	0.870	2.05	2.71	2.35	2.04	0.0809	1.03	0.982	0.235	0.509
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.0394	0.0337	0.240	0.219	0.118	0.0940	0.115	0.0808	0.0788	0.0144	0.0246
Annual	16.5	13.9	37.0	49.7	44.4	43.1	2.86	28.2	27.2	5.69	7.10

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.16 Monthly results

Site: Zhuxiandong

Country: China

Code: CNA011

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	13.8	10.5	35.0	60.1	24.8	54.2	1.49	13.5	12.3	7.47	9.62	5.02	2.00	18.6
Feb	16.0	12.7	68.4	63.2	38.8	55.2	4.09	17.0	15.8	7.40	21.4	4.67	2.75	0.9
Mar	32.1	28.8	91.9	64.1	103	54.9	5.79	15.0	13.8	7.45	38.4	4.42	4.41	74.3
Apr	28.1	25.6	54.0	45.1	76.9	41.6	6.10	16.8	15.9	6.69	9.46	5.02	2.64	73.5
May	15.0	13.8	38.7	23.0	49.6	20.7	2.41	11.7	11.2	3.36	6.70	5.17	1.55	152
June	6.00	5.17	13.4	15.6	11.3	13.9	0.687	4.73	4.43	1.85	6.77	5.17	0.745	394
July	6.70	3.74	11.2	55.3	9.89	49.1	1.56	7.08	6.02	5.52	3.54	5.45	1.21	305
Aug	7.59	6.79	15.0	14.6	21.1	13.3	1.19	9.68	9.39	2.44	1.37	5.86	0.822	138
Sept	4.38	3.25	7.81	22.2	7.70	18.8	0.890	7.36	6.95	2.10	2.13	5.67	0.673	736
Oct	8.00	6.88	20.5	21.3	16.5	18.6	0.704	6.64	6.24	2.40	6.01	5.22	0.970	240
Nov	59.5	47.1	213	217	62.1	206	14.8	103	98.3	34.6	11.2	4.95	7.43	1.5
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	8.29	6.82	18.3	27.9	19.4	24.5	1.42	7.93	7.40	3.10	5.50	5.26	1.08	2133
Max.	100	79.9	279	378	316	370	17.1	103	98.3	47.3	105	7.23	13.6	
Min.	1.87	1.71	4.35	3.67	1.66	1.30	<0.3	0.499	0.471	<0.3	0.0589	3.98	0.214	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.257	0.196	0.651	1.12	0.461	1.01	0.0277	0.251	0.230	0.139	0.179
Feb	0.0144	0.0114	0.0615	0.0569	0.0349	0.0497	<0.01	0.0153	0.0142	<0.01	0.0192
Mar	2.38	2.14	6.83	4.76	7.65	4.08	0.430	1.12	1.03	0.554	2.86
Apr	2.07	1.88	3.97	3.31	5.65	3.06	0.449	1.23	1.17	0.492	0.696
May	2.29	2.10	5.89	3.49	7.54	3.14	0.367	1.78	1.71	0.510	1.02
June	2.36	2.03	5.27	6.14	4.46	5.46	0.271	1.86	1.74	0.730	2.67
July	2.04	1.14	3.40	16.9	3.01	15.0	0.477	2.16	1.83	1.68	1.08
Aug	1.05	0.937	2.06	2.01	2.91	1.84	0.164	1.34	1.30	0.336	0.189
Sept	3.22	2.39	5.75	16.4	5.66	13.8	0.655	5.41	5.12	1.54	1.57
Oct	1.92	1.65	4.91	5.11	3.95	4.45	0.169	1.59	1.50	0.575	1.44
Nov	0.0893	0.0707	0.319	0.325	0.0931	0.309	0.0223	0.154	0.148	0.0518	0.0168
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	17.7	14.5	39.1	59.5	41.4	52.2	3.03	16.9	15.8	6.62	11.7

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.17 Monthly results

Site: Wuzhishan

Country: China

Code: CNA013

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	*	*	*	*	*	*	*	*	*	*	0.399	6.40	0.981	100
June	2.79	2.42	7.63	8.61	10.1	6.16	2.57	4.46	4.33	1.89	0.733	6.13	0.414	60.7
July	6.11	5.79	11.4	7.42	12.0	5.28	2.15	5.79	5.68	2.23	0.844	6.07	0.693	85.1
Aug	1.29	0.962	5.23	3.60	9.33	7.64	2.26	4.49	4.32	1.19	0.679	6.17	0.430	136
Sept	1.76	1.54	2.01	4.15	8.84	3.71	2.24	2.83	2.75	<0.3	0.714	6.15	0.364	237
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	1.30	0.565	3.50	5.90	<0.8	12.2	0.800	<0.2	<0.2	<0.3	0.871	6.06	0.400	44.7
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	2.38	2.06	4.93	5.13	8.87	5.83	2.15	3.63	3.52	0.838	0.688	6.16	0.520	664
Max.	8.56	8.19	13.2	15.8	36.7	33.0	10.0	8.00	7.90	2.92	1.55	7.17	1.40	
Min.	0.550	<0.3	1.10	2.20	<0.8	2.20	<0.3	<0.2	<0.2	<0.3	0.0676	5.81	0.200	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	*	*	*	*	*	*	*	*	*	*	0.0400
June	0.170	0.147	0.463	0.523	0.615	0.374	0.156	0.271	0.263	0.114	0.0445
July	0.520	0.493	0.971	0.631	1.02	0.449	0.183	0.493	0.483	0.190	0.0718
Aug	0.175	0.131	0.711	0.489	1.27	1.04	0.308	0.611	0.589	0.163	0.0924
Sept	0.418	0.365	0.477	0.982	2.09	0.879	0.532	0.671	0.652	<0.01	0.169
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.0581	0.0252	0.156	0.264	<0.01	0.545	0.0358	<0.01	<0.01	<0.01	0.0389
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	1.58	1.37	3.27	3.40	5.89	3.87	1.43	2.41	2.34	0.556	0.457

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	0	0	0	0	0	0	0	0	0	0	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.18 Monthly results

Site: Lijiang

Country: China

Code: CNA014

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	3.96	3.32	19.2	8.39	9.11	10.6	4.51	8.00	7.77	0.400	0.812	6.09	0.457	18.4
June	3.15	3.08	5.95	4.97	10.7	1.21	0.661	33.6	33.6	1.92	0.229	6.64	0.543	78.6
July	4.37	4.18	8.00	4.29	15.5	3.20	0.591	12.3	12.3	1.05	0.342	6.47	0.557	68.6
Aug	2.23	2.16	5.05	2.44	12.4	1.23	1.17	5.39	5.37	0.962	1.08	5.97	0.302	136
Sept	4.44	4.41	4.66	4.59	14.1	0.481	0.665	5.00	4.99	1.19	1.01	6.00	0.398	126
Oct	1.70	1.68	2.04	1.73	8.46	0.426	0.400	6.36	6.35	2.07	0.759	6.12	0.287	36.1
Nov	0.700	0.676	1.60	1.20	6.10	0.400	0.400	12.7	12.7	1.20	0.126	6.90	0.300	6.0
Dec	2.44	2.40	3.31	6.71	4.47	0.741	0.627	24.1	24.1	2.95	0.119	6.92	0.599	10.3
Annual	3.28	3.19	5.75	3.94	12.3	1.59	0.919	11.6	11.5	1.30	0.749	6.13	0.414	480
Max.	22.4	22.4	20.0	53.9	59.9	52.2	20.5	189	189	9.90	2.34	7.66	1.65	
Min.	<0.3	<0.3	<0.5	<0.5	<0.8	<0.3	0.400	0.700	0.691	0.400	0.0219	5.63	0.150	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.0729	0.0611	0.354	0.154	0.168	0.196	0.0830	0.147	0.143	<0.01	0.0149
June	0.248	0.242	0.467	0.391	0.839	0.0949	0.0520	2.64	2.64	0.151	0.0180
July	0.300	0.287	0.549	0.294	1.07	0.220	0.0406	0.846	0.842	0.0722	0.0235
Aug	0.303	0.293	0.685	0.331	1.68	0.166	0.158	0.732	0.728	0.131	0.147
Sept	0.559	0.555	0.586	0.578	1.77	0.0605	0.0836	0.629	0.627	0.149	0.127
Oct	0.0614	0.0605	0.0735	0.0626	0.305	0.0154	0.0144	0.230	0.229	0.0746	0.0274
Nov	<0.01	<0.01	<0.01	<0.01	0.0366	<0.01	<0.01	0.0762	0.0761	<0.01	<0.01
Dec	0.0252	0.0247	0.0341	0.0691	0.0460	<0.01	<0.01	0.249	0.248	0.0304	<0.01
Annual	1.57	1.53	2.76	1.89	5.91	0.763	0.441	5.55	5.53	0.622	0.359

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.19 Monthly results

Site: Jakarta

Country: Indonesia

Code: IDA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.20 Monthly results

Site: Kototabang

Country: Indonesia

Code: IDA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.21 Monthly results

Site: Maros

Country: Indonesia

Code: IDA005

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.22 Monthly results

Site: Jembrana

Country: Indonesia

Code: IDA006

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.23 Monthly results

Site: Lombok

Country: Indonesia

Code: IDA007

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.24 Monthly results

Site: Rishiri

Country: Japan

Code: JPA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	*	*	*	*	*	*	*	*	*	*	*	*	*	59.5
Feb	*	*	*	*	*	*	*	*	*	*	*	*	*	36.5
Mar	88.7	72.9	220	302	323	263	16.6	64.7	59.0	35.4	0.263	6.58	10.4	38.5
Apr	11.2	9.20	14.3	37.5	15.0	32.6	1.77	7.45	6.75	4.61	5.80	5.24	1.29	80.5
May	11.7	9.86	16.7	33.5	23.5	30.4	1.50	9.60	8.94	4.86	3.14	5.50	1.20	29.3
June	12.8	11.0	23.0	35.2	38.4	30.2	1.74	5.87	5.22	4.10	4.62	5.34	1.46	88.3
July	11.7	10.3	12.6	27.1	16.7	23.3	0.981	1.44	0.941	2.79	13.2	4.88	1.33	148
Aug	6.09	3.86	5.63	43.1	4.83	36.9	1.04	1.30	0.505	4.22	7.99	5.10	1.12	326
Sept	4.95	2.50	5.98	45.8	3.87	40.6	1.33	1.76	0.878	4.63	5.34	5.27	1.10	181
Oct	21.6	8.70	22.2	250	25.1	214	7.31	9.01	4.38	25.3	7.07	5.15	4.32	151
Nov	21.4	6.04	11.6	294	14.8	254	7.23	8.92	3.43	29.0	5.21	5.28	4.64	187
Dec	*	*	*	*	*	*	*	*	*	*	*	*	*	104
Annual	12.3	6.78	12.8	106	15.5	91.2	3.00	4.81	2.84	10.7	7.12	5.15	2.17	1428
Max.	129	101	220	1325	323	1133	30.1	75.2	73.9	131	57.5	6.58	19.1	
Min.	0.460	<0.3	0.766	1.02	<0.8	0.934	<0.3	<0.2	<0.2	<0.3	0.263	4.24	0.232	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	*	*	*	*	*	*	*	*	*	*	*
Feb	*	*	*	*	*	*	*	*	*	*	*
Mar	3.42	2.81	8.48	11.6	12.4	10.1	0.640	2.49	2.27	1.36	0.0101
Apr	0.899	0.741	1.15	3.02	1.21	2.63	0.142	0.600	0.543	0.371	0.467
May	0.343	0.289	0.489	0.980	0.688	0.892	0.0441	0.281	0.262	0.142	0.0919
June	1.13	0.967	2.03	3.11	3.39	2.67	0.154	0.518	0.461	0.362	0.408
July	1.73	1.52	1.87	4.01	2.47	3.45	0.145	0.214	0.139	0.413	1.95
Aug	1.98	1.26	1.83	14.0	1.57	12.0	0.340	0.424	0.164	1.37	2.60
Sept	0.896	0.453	1.08	8.29	0.700	7.35	0.241	0.318	0.159	0.838	0.966
Oct	3.26	1.31	3.35	37.8	3.79	32.3	1.10	1.36	0.661	3.82	1.07
Nov	3.99	1.13	2.16	54.9	2.76	47.5	1.35	1.67	0.640	5.42	0.971
Dec	*	*	*	*	*	*	*	*	*	*	*
Annual	17.5	9.69	18.3	151	22.2	130	4.29	6.86	4.05	15.3	10.2

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Mar	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	96.8
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	100
June	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	100
July	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	100
Aug	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	100
Nov	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	100
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Annual	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	99.7

Terms and abbreviations are given in Table 3.5.

Table 3.25 Monthly results

Site: Ochiishi

Country: Japan

Code: JPA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.*
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	*	*	*	*	*	*	*	*	*	*	*	*	*	0.5
Feb	*	*	*	*	*	*	*	*	*	*	*	*	*	33.0
Mar	*	*	*	*	*	*	*	*	*	*	*	*	*	73.0
Apr	*	*	*	*	*	*	*	*	*	*	*	*	*	105
May	*	*	*	*	*	*	*	*	*	*	*	*	*	45.0
June	*	*	*	*	*	*	*	*	*	*	*	*	*	90.5
July	*	*	*	*	*	*	*	*	*	*	*	*	*	116
Aug	*	*	*	*	*	*	*	*	*	*	*	*	*	53.5
Sept	*	*	*	*	*	*	*	*	*	*	*	*	*	141
Oct	*	*	*	*	*	*	*	*	*	*	*	*	*	47.5
Nov	*	*	*	*	*	*	*	*	*	*	*	*	*	64.0
Dec	*	*	*	*	*	*	*	*	*	*	*	*	*	37.5
Annual	*	*	*	*	*	*	*	*	*	*	*	*	*	806
Max.	*	*	*	*	*	*	*	*	*	*	*	*	*	
Min.	*	*	*	*	*	*	*	*	*	*	*	*	*	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	*	*	*	*	*	*	*	*	*	*	*
Feb	*	*	*	*	*	*	*	*	*	*	*
Mar	*	*	*	*	*	*	*	*	*	*	*
Apr	*	*	*	*	*	*	*	*	*	*	*
May	*	*	*	*	*	*	*	*	*	*	*
June	*	*	*	*	*	*	*	*	*	*	*
July	*	*	*	*	*	*	*	*	*	*	*
Aug	*	*	*	*	*	*	*	*	*	*	*
Sept	*	*	*	*	*	*	*	*	*	*	*
Oct	*	*	*	*	*	*	*	*	*	*	*
Nov	*	*	*	*	*	*	*	*	*	*	*
Dec	*	*	*	*	*	*	*	*	*	*	*
Annual	*	*	*	*	*	*	*	*	*	*	*

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	39.3
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sept	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual	0	0	0	0	0	0	0	0	0	0	0	0	0	11.5

Terms and abbreviations are given in Table 3.5.

*Due to the lack of original precipitation data, those of the nearest meteorological station are alternatively put for the reference.

Table 3.26 Monthly results

Site: Sado-seki

Country: Japan

Code: JPA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	58.7	16.2	30.9	808	30.9	708	16.2	26.0	10.9	82.4	11.1	4.95	11.9	69.0
Feb	39.9	16.0	33.1	448	35.3	398	9.67	20.4	11.9	48.2	11.4	4.94	6.42	54.3
Mar	16.3	12.5	17.2	71.5	21.1	62.9	2.08	5.59	4.23	7.37	10.5	4.98	1.98	99.5
Apr	10.9	6.85	9.47	79.2	12.0	66.5	2.23	6.80	5.37	8.16	5.09	5.29	1.57	88.5
May	6.50	4.86	8.63	30.6	5.70	27.3	0.951	2.72	2.13	3.35	6.35	5.20	0.940	204
June	3.66	2.78	8.89	16.9	6.63	14.7	0.571	1.29	0.977	1.84	6.57	5.18	0.715	125
July	3.75	2.90	5.60	16.3	5.59	14.1	0.532	1.51	1.20	1.85	4.49	5.35	0.619	201
Aug	7.20	5.47	11.9	30.9	8.94	28.6	0.800	1.42	0.798	3.36	16.2	4.79	1.48	15.3
Sept	6.98	4.81	8.21	41.3	4.73	36.1	1.02	1.50	0.717	4.08	9.68	5.01	1.23	178
Oct	16.7	7.33	12.8	182	11.0	155	3.71	4.63	1.28	17.3	10.7	4.97	3.12	80.6
Nov	21.0	7.48	15.6	259	14.5	224	5.32	8.02	3.18	25.5	8.75	5.06	4.38	167
Dec	23.2	6.15	10.7	327	8.91	283	6.22	8.43	2.31	32.2	8.54	5.07	4.77	169
Annual	15.1	6.68	12.3	160	11.2	139	3.42	5.97	2.97	16.1	8.09	5.09	2.74	1451
Max.	432	94.5	243	7975	144	6912	146	167	82.7	813	75.9	7.07	105	
Min.	0.400	<0.3	0.500	0.900	<0.8	0.800	<0.3	0.300	<0.2	<0.3	0.0859	4.12	0.170	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	4.05	1.12	2.13	55.8	2.13	48.8	1.12	1.80	0.749	5.68	0.766
Feb	2.17	0.872	1.80	24.3	1.92	21.6	0.526	1.11	0.645	2.62	0.621
Mar	1.62	1.24	1.71	7.12	2.10	6.25	0.207	0.556	0.421	0.733	1.05
Apr	0.961	0.606	0.838	7.01	1.06	5.88	0.198	0.602	0.475	0.722	0.451
May	1.32	0.989	1.76	6.24	1.16	5.56	0.194	0.555	0.435	0.683	1.29
June	0.458	0.347	1.11	2.12	0.829	1.84	0.0714	0.162	0.122	0.230	0.821
July	0.753	0.582	1.13	3.27	1.12	2.83	0.107	0.303	0.242	0.372	0.903
Aug	0.110	0.0837	0.181	0.473	0.137	0.437	0.0122	0.0216	0.0122	0.0513	0.248
Sept	1.24	0.854	1.46	7.33	0.840	6.40	0.181	0.266	0.127	0.724	1.72
Oct	1.34	0.591	1.03	14.7	0.886	12.5	0.299	0.373	0.103	1.40	0.863
Nov	3.51	1.25	2.61	43.3	2.43	37.5	0.891	1.34	0.532	4.27	1.46
Dec	3.93	1.04	1.81	55.3	1.51	47.9	1.05	1.42	0.390	5.44	1.44
Annual	21.8	9.69	17.8	232	16.3	202	4.96	8.66	4.31	23.4	11.7

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	94.6	94.6	94.6	100
Feb	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	92.9	92.9	92.9	100
Mar	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	98.5	98.5	98.5	100
Apr	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	97.2	97.2	97.2	100
May	100	100	100	100	100	100	100	100	100	100	97.9	97.9	97.9	100
June	100	100	100	100	100	100	100	100	100	100	99.0	99.0	99.0	100
July	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	82.4	82.4	82.4	100
Aug	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	91.6	91.6	91.6	100
Sept	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	99.9	99.9	99.9	100
Oct	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	95.5	95.5	95.5	100
Nov	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100
Dec	100	100	100	100	100	100	100	100	100	100	97.3	97.3	97.3	100
Annual	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	95.7	95.7	95.7	100

Terms and abbreviations are given in Table 3.5.

Table 3.27 Monthly results

Site: Happo

Country: Japan

Code: JPA005

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	6.94	6.18	9.45	14.2	11.9	12.5	0.958	4.45	4.17	1.84	5.67	5.25	0.774	122
Feb	6.80	6.46	9.09	7.06	11.3	5.79	0.655	5.37	5.24	1.44	6.55	5.18	0.632	122
Mar	4.34	4.22	5.58	2.29	6.09	1.95	0.500	2.03	1.99	0.789	5.15	5.29	0.431	86.5
Apr	5.79	5.45	7.13	6.37	10.5	5.61	0.522	6.21	6.09	1.53	2.33	5.63	0.514	224
May	2.50	2.41	4.00	1.71	5.00	1.49	<0.3	1.17	1.14	0.513	3.43	5.46	0.299	275
June	2.80	2.75	4.81	1.02	4.78	0.739	<0.3	0.606	0.590	0.367	5.95	5.23	0.367	295
July	3.17	3.12	6.01	1.23	6.73	0.948	<0.3	0.720	0.699	0.372	6.76	5.17	0.450	420
Aug	3.13	3.05	5.43	1.55	6.11	1.36	<0.3	0.703	0.673	0.320	6.16	5.21	0.447	175
Sept	4.65	4.60	5.41	1.76	3.67	0.809	<0.3	0.730	0.712	0.458	9.69	5.01	0.580	311
Oct	3.57	2.62	4.16	18.3	4.03	15.8	0.491	0.841	0.500	1.85	5.81	5.24	0.631	255
Nov	5.53	4.84	8.68	13.3	8.99	11.4	0.485	2.19	1.94	1.58	6.11	5.21	0.708	224
Dec	3.10	2.66	3.91	8.05	3.55	7.19	0.459	2.51	2.35	1.09	5.09	5.29	0.463	268
Annual	3.96	3.67	5.73	5.77	6.33	4.91	0.385	1.94	1.84	0.913	5.73	5.24	0.499	2775
Max.	38.5	36.9	57.1	316	77.4	278	7.42	147	147	34.0	37.2	6.57	5.02	
Min.	0.370	0.331	<0.5	<0.5	<0.8	0.318	<0.3	0.272	0.255	<0.3	0.269	4.43	0.141	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.843	0.752	1.15	1.72	1.44	1.52	0.116	0.540	0.507	0.223	0.689
Feb	0.829	0.787	1.11	0.861	1.38	0.706	0.0799	0.654	0.639	0.175	0.798
Mar	0.375	0.365	0.483	0.198	0.527	0.169	0.0432	0.176	0.172	0.0683	0.446
Apr	1.30	1.22	1.60	1.43	2.34	1.26	0.117	1.39	1.36	0.343	0.523
May	0.685	0.661	1.10	0.469	1.37	0.408	0.0789	0.322	0.313	0.141	0.943
June	0.826	0.813	1.42	0.302	1.41	0.218	0.0737	0.179	0.174	0.109	1.76
July	1.33	1.31	2.52	0.516	2.82	0.398	0.106	0.302	0.294	0.156	2.84
Aug	0.549	0.534	0.950	0.271	1.07	0.237	0.0341	0.123	0.118	0.0560	1.08
Sept	1.45	1.43	1.68	0.547	1.14	0.252	0.0474	0.227	0.222	0.142	3.01
Oct	0.907	0.666	1.06	4.66	1.02	4.01	0.125	0.214	0.127	0.471	1.48
Nov	1.24	1.08	1.94	2.98	2.01	2.55	0.108	0.488	0.433	0.354	1.36
Dec	0.828	0.713	1.05	2.15	0.948	1.92	0.123	0.672	0.630	0.291	1.36
Annual	11.0	10.2	15.9	16.0	17.6	13.6	1.07	5.39	5.10	2.53	15.9

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	95.9	95.9	95.9	100
Feb	100	100	100	100	100	100	100	100	100	100	96.0	96.0	96.0	100
Mar	100	100	100	100	100	100	100	100	100	100	97.1	97.1	97.1	100
Apr	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	98.9	98.9	98.9	100
May	100	100	100	100	100	100	100	100	100	100	99.6	99.6	99.6	100
June	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7	100
July	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.4	99.4	99.4	100
Aug	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.1	89.7	89.7	89.7	93.5
Sept	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.1	70.1	70.1	96.7
Oct	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	100
Nov	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	100
Dec	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	98.5	98.5	98.5	100
Annual	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	92.9	92.9	92.9	99.2

Terms and abbreviations are given in Table 3.5.

Table 3.28 Monthly results

Site: Ijira

Country: Japan

Code: JPA006

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	10.7	7.83	20.6	54.8	14.7	47.2	1.42	9.80	8.78	6.12	10.1	5.00	1.72	79.1
Feb	13.0	12.2	13.8	17.2	11.5	13.8	0.580	4.71	4.41	2.43	16.2	4.79	1.33	135
Mar	12.6	11.2	22.3	24.8	22.5	21.9	0.980	6.73	6.26	3.24	9.00	5.05	1.37	193
Apr	8.14	7.38	13.6	14.2	12.5	12.7	0.663	7.34	7.07	2.38	5.71	5.24	0.876	581
May	8.37	7.80	8.35	11.2	9.28	9.42	0.304	1.34	1.13	1.24	12.0	4.92	0.913	545
June	3.71	3.57	8.55	2.96	7.76	2.29	<0.3	0.874	0.824	0.420	8.00	5.10	0.539	897
July	8.57	8.23	12.4	6.57	13.4	5.59	0.441	1.15	1.03	0.812	15.7	4.80	0.983	341
Aug	13.2	12.3	10.2	18.5	13.3	15.2	0.630	1.04	0.709	1.76	22.4	4.65	1.45	641
Sept	7.59	7.33	8.83	6.17	7.57	4.36	<0.3	0.867	0.773	0.669	16.5	4.78	0.894	464
Oct	7.25	6.67	16.7	11.8	9.02	9.58	0.524	1.89	1.68	1.42	18.7	4.73	1.12	73.5
Nov	9.35	6.62	1.72	54.5	10.3	45.2	1.20	2.86	1.88	5.32	15.0	4.82	1.55	211
Dec	8.30	7.06	13.7	25.0	9.48	20.6	0.835	2.55	2.11	2.68	17.1	4.77	1.24	211
Annual	8.43	7.71	10.7	14.4	10.8	12.0	0.506	2.29	2.03	1.65	13.5	4.87	1.02	4370
Max.	97.0	49.9	150	915	149	781	20.0	73.0	58.9	77.0	69.8	6.68	15.4	
Min.	1.90	1.71	<0.5	2.10	3.30	1.30	<0.3	0.700	0.446	0.300	0.208	4.16	0.384	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.845	0.620	1.63	4.34	1.16	3.73	0.112	0.775	0.695	0.484	0.799
Feb	1.75	1.64	1.85	2.31	1.55	1.86	0.0780	0.633	0.593	0.327	2.18
Mar	2.42	2.17	4.30	4.80	4.34	4.23	0.189	1.30	1.21	0.625	1.74
Apr	4.73	4.29	7.90	8.23	7.27	7.37	0.385	4.27	4.11	1.38	3.32
May	4.56	4.25	4.55	6.11	5.06	5.14	0.166	0.728	0.617	0.677	6.55
June	3.32	3.20	7.66	2.65	6.96	2.05	0.181	0.783	0.739	0.376	7.17
July	2.92	2.81	4.24	2.24	4.55	1.91	0.150	0.393	0.352	0.277	5.34
Aug	8.46	7.87	6.56	11.9	8.54	9.76	0.404	0.665	0.454	1.13	14.3
Sept	3.52	3.40	4.10	2.86	3.51	2.02	0.117	0.402	0.359	0.310	7.64
Oct	0.533	0.490	1.23	0.864	0.663	0.704	0.0385	0.139	0.124	0.105	1.37
Nov	1.97	1.39	0.362	11.5	2.18	9.51	0.254	0.601	0.396	1.12	3.16
Dec	1.75	1.49	2.89	5.27	2.00	4.34	0.176	0.538	0.444	0.564	3.59
Annual	36.9	33.7	46.6	63.1	47.4	52.5	2.21	10.0	8.87	7.20	59.1

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	80.0
Apr	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	98.1

Terms and abbreviations are given in Table 3.5.

Table 3.29 Monthly results

Site: Oki

Country: Japan

Code: JPA007

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.*
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	*	*	*	*	*	*	*	*	*	*	*	*	*	184
Feb	*	*	*	*	*	*	*	*	*	*	*	*	*	83.0
Mar	*	*	*	*	*	*	*	*	*	*	*	*	*	67.0
Apr	*	*	*	*	*	*	*	*	*	*	*	*	*	160
May	*	*	*	*	*	*	*	*	*	*	*	*	*	194
June	*	*	*	*	*	*	*	*	*	*	*	*	*	248
July	*	*	*	*	*	*	*	*	*	*	*	*	*	227
Aug	*	*	*	*	*	*	*	*	*	*	*	*	*	78.0
Sept	*	*	*	*	*	*	*	*	*	*	*	*	*	190
Oct	*	*	*	*	*	*	*	*	*	*	*	*	*	53.5
Nov	*	*	*	*	*	*	*	*	*	*	*	*	*	164
Dec	*	*	*	*	*	*	*	*	*	*	*	*	*	182
Annual	*	*	*	*	*	*	*	*	*	*	*	*	*	1828
Max.	*	*	*	*	*	*	*	*	*	*	*	*	*	
Min.	*	*	*	*	*	*	*	*	*	*	*	*	*	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	*	*	*	*	*	*	*	*	*	*	*
Feb	*	*	*	*	*	*	*	*	*	*	*
Mar	*	*	*	*	*	*	*	*	*	*	*
Apr	*	*	*	*	*	*	*	*	*	*	*
May	*	*	*	*	*	*	*	*	*	*	*
June	*	*	*	*	*	*	*	*	*	*	*
July	*	*	*	*	*	*	*	*	*	*	*
Aug	*	*	*	*	*	*	*	*	*	*	*
Sept	*	*	*	*	*	*	*	*	*	*	*
Oct	*	*	*	*	*	*	*	*	*	*	*
Nov	*	*	*	*	*	*	*	*	*	*	*
Dec	*	*	*	*	*	*	*	*	*	*	*
Annual	*	*	*	*	*	*	*	*	*	*	*

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sept	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Terms and abbreviations are given in Table 3.5.

*Due to the lack of original precipitation data, those of the nearest meteorological station are alternatively put for the reference.

Table 3.30 Monthly results

Site: Yusuhara

Country: Japan

Code: JPA009

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	14.1	10.5	18.0	71.2	17.2	59.5	2.75	8.27	7.11	7.73	11.3	4.95	1.56	72.7
Feb	13.5	12.9	7.55	13.6	7.62	9.98	1.15	4.00	3.79	2.32	21.4	4.67	1.39	53.0
Mar	10.1	9.76	7.99	8.90	7.00	6.52	1.24	2.30	2.16	2.07	19.3	4.71	1.17	141
Apr	5.15	4.58	5.64	10.7	7.45	9.46	1.25	2.05	1.84	2.12	7.15	5.15	0.619	311
May	4.72	4.38	4.95	5.97	3.72	5.63	1.04	1.55	1.43	1.82	8.85	5.05	0.573	241
June	2.07	1.88	3.39	2.93	3.68	3.23	0.984	1.21	1.14	1.59	5.59	5.25	0.373	438
July	9.46	8.93	11.1	9.63	10.5	8.73	1.11	1.49	1.30	2.04	17.7	4.75	1.21	98.0
Aug	8.60	6.78	7.65	35.6	7.10	30.2	1.33	1.57	0.917	3.75	12.6	4.90	1.30	947
Sept	5.27	4.48	6.81	15.1	4.69	13.2	1.17	1.51	1.22	2.40	11.9	4.92	0.848	129
Oct	1.25	1.08	2.83	3.00	1.34	2.76	0.909	1.07	1.01	1.47	4.84	5.31	0.274	27.5
Nov	10.8	8.58	10.2	43.5	7.51	36.4	1.60	2.47	1.68	4.64	19.7	4.71	1.29	90.4
Dec	9.53	7.59	14.2	37.2	9.61	32.1	1.46	4.05	3.35	4.46	12.7	4.90	1.49	76.0
Annual	6.94	5.84	7.04	21.3	6.56	18.3	1.26	1.93	1.54	2.89	11.2	4.95	0.961	2624
Max.	101	82.3	291	1028	418	861	23.7	144	137	99.0	107	6.07	15.1	
Min.	0.400	0.322	<0.5	<0.5	0.800	1.30	0.800	0.900	<0.2	1.20	0.851	3.97	0.150	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.02	0.761	1.31	5.18	1.25	4.33	0.200	0.601	0.517	0.562	0.820
Feb	0.717	0.685	0.400	0.719	0.404	0.528	0.0609	0.212	0.201	0.123	1.14
Mar	1.43	1.38	1.13	1.25	0.987	0.920	0.174	0.324	0.304	0.291	2.72
Apr	1.60	1.43	1.76	3.32	2.32	2.94	0.388	0.638	0.574	0.659	2.23
May	1.14	1.05	1.19	1.44	0.896	1.36	0.250	0.374	0.344	0.438	2.13
June	0.907	0.822	1.48	1.28	1.61	1.41	0.431	0.528	0.497	0.695	2.45
July	0.927	0.875	1.08	0.943	1.03	0.856	0.109	0.146	0.127	0.200	1.73
Aug	8.14	6.42	7.24	33.8	6.72	28.6	1.26	1.49	0.868	3.55	12.0
Sept	0.678	0.576	0.875	1.94	0.603	1.69	0.151	0.194	0.157	0.309	1.53
Oct	0.0343	0.0297	0.0779	0.0825	0.0369	0.0759	0.0250	0.0294	0.0277	0.0405	0.133
Nov	0.974	0.775	0.920	3.93	0.678	3.29	0.145	0.223	0.152	0.420	1.78
Dec	0.724	0.577	1.08	2.82	0.730	2.44	0.111	0.307	0.255	0.339	0.961
Annual	18.2	15.3	18.5	55.9	17.2	47.9	3.30	5.06	4.04	7.58	29.5

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	91.3	91.3	91.3	100
Feb	100	100	100	100	100	100	100	100	100	100	98.2	98.2	98.2	100
Mar	100	100	100	100	100	100	100	100	100	100	98.9	98.9	98.9	100
Apr	100	100	100	100	100	100	100	100	100	100	98.7	98.7	98.7	100
May	100	100	100	100	100	100	100	100	100	100	99.2	99.2	99.2	100
June	100	100	100	100	100	100	100	100	100	100	98.5	98.5	98.5	100
July	100	100	100	100	100	100	100	100	100	100	96.9	96.9	96.9	100
Aug	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	100
Sept	100	100	100	100	100	100	100	100	100	100	98.8	98.8	98.8	100
Oct	100	100	100	100	100	100	100	100	100	100	98.2	98.2	98.2	100
Nov	100	100	100	100	100	100	100	100	100	100	91.8	91.8	91.8	100
Dec	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	88.8	88.8	88.8	100
Annual	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	96.8	96.8	96.8	100

Terms and abbreviations are given in Table 3.5.

Table 3.31 Monthly results

Site: Hedo

Country: Japan

Code: JPA010

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.*
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	131	7.31	13.7	2397	7.25	2058	48.1	52.5	7.99	241	11.5	4.94	32.4	49.4
Feb	15.5	8.79	10.7	130	11.7	112	3.02	4.16	1.74	13.0	12.4	4.91	2.56	121
Mar	11.1	6.28	14.3	91.6	13.0	80.4	2.64	5.84	4.10	10.0	8.33	5.08	1.97	116
Apr	13.8	9.47	13.5	82.8	17.1	71.4	2.59	3.08	1.54	8.60	14.9	4.83	2.11	131
May	4.34	2.07	3.55	43.6	2.55	37.7	0.844	1.60	0.781	4.57	4.17	5.38	0.855	168
June	*	*	*	*	*	*	*	*	*	*	*	*	*	395
July	*	*	*	*	*	*	*	*	*	*	*	*	*	125
Aug	*	*	*	*	*	*	*	*	*	*	*	*	*	532
Sept	*	*	*	*	*	*	*	*	*	*	*	*	*	107
Oct	*	*	*	*	*	*	*	*	*	*	*	*	*	82.5
Nov	*	*	*	*	*	*	*	*	*	*	*	*	*	72.0
Dec	*	*	*	*	*	*	*	*	*	*	*	*	*	184
Annual	26.0	7.70	12.2	353	12.4	304	7.66	9.45	2.89	35.7	11.4	4.94	5.49	2081
Max.	644	44.0	107	12346	90.4	10614	246	252	35.6	1241	58.7	6.47	162	
Min.	2.82	0.894	2.06	27.0	<0.8	23.2	0.844	1.07	0.344	3.00	0.340	4.23	0.855	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	6.49	0.361	0.676	119	0.358	102	2.38	2.59	0.395	11.9	0.570
Feb	1.88	1.06	1.30	15.7	1.41	13.5	0.365	0.502	0.210	1.56	1.50
Mar	1.29	0.727	1.66	10.6	1.50	9.30	0.305	0.675	0.474	1.16	0.964
Apr	1.80	1.24	1.76	10.8	2.24	9.34	0.339	0.404	0.202	1.13	1.95
May	0.730	0.347	0.597	7.34	0.429	6.35	0.142	0.269	0.131	0.768	0.701
June	*	*	*	*	*	*	*	*	*	*	*
July	*	*	*	*	*	*	*	*	*	*	*
Aug	*	*	*	*	*	*	*	*	*	*	*
Sept	*	*	*	*	*	*	*	*	*	*	*
Oct	*	*	*	*	*	*	*	*	*	*	*
Nov	*	*	*	*	*	*	*	*	*	*	*
Dec	*	*	*	*	*	*	*	*	*	*	*
Annual	54.1	16.0	25.4	734	25.9	632	15.9	19.7	6.01	74.2	23.8

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7	100
Mar	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	96.8
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.4
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sept	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	34.2

Terms and abbreviations are given in Table 3.5.

*Due to the lack of original precipitation data, those of the nearest meteorological station are alternatively put for the reference.

Table 3.32 Monthly results

Site: Ogasawara

Country: Japan

Code: JPA011

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	39.4	22.2	14.8	327	8.27	286	6.49	10.4	4.24	36.6	38.2	4.42	6.48	18.0
Feb	6.15	2.88	2.41	59.3	2.47	54.2	1.40	1.60	0.431	6.00	6.45	5.19	1.13	105
Mar	10.6	7.20	8.03	60.6	8.41	56.2	1.52	2.28	1.06	6.29	13.5	4.87	1.71	44.5
Apr	10.2	7.04	4.03	62.4	6.20	52.8	1.61	1.99	0.851	6.17	13.7	4.86	1.60	227
May	5.49	2.79	2.58	50.2	3.48	44.8	1.21	1.71	0.742	4.78	6.54	5.18	1.03	250
June	6.11	2.08	2.46	75.8	1.72	67.3	1.59	1.68	0.284	7.58	6.68	5.18	1.48	87.1
July	6.38	4.16	2.34	48.7	1.32	36.9	0.876	0.900	<0.2	4.06	17.5	4.76	1.47	39.5
Aug	33.6	5.38	0.750	546	<0.8	468	11.3	10.4	0.439	53.2	10.8	4.97	8.11	266
Sept	3.65	1.10	1.73	47.1	1.85	42.3	1.01	1.24	0.323	4.90	5.70	5.24	0.985	64.7
Oct	8.49	3.24	2.26	99.9	2.56	87.1	1.98	2.30	0.415	10.1	9.08	5.04	1.81	261
Nov	8.94	3.59	3.89	101	2.21	88.9	2.07	2.11	0.252	9.95	9.79	5.01	1.98	100
Dec	11.7	4.48	6.00	137	3.48	120	2.74	3.45	0.852	14.0	11.4	4.94	2.43	58.2
Annual	12.7	4.35	2.87	160	3.03	138	3.38	3.53	0.590	15.7	10.0	5.00	2.73	1520
Max.	175	110	53.1	3303	72.8	2827	60.8	63.8	11.6	314	263	5.85	32.3	
Min.	0.300	<0.3	<0.5	3.70	<0.8	3.80	<0.3	0.200	<0.2	0.300	1.41	3.58	0.220	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.710	0.399	0.266	5.89	0.149	5.15	0.117	0.188	0.0763	0.659	0.687
Feb	0.647	0.303	0.254	6.23	0.259	5.70	0.147	0.168	0.0453	0.631	0.678
Mar	0.471	0.320	0.357	2.70	0.374	2.50	0.0677	0.101	0.0473	0.280	0.601
Apr	2.32	1.60	0.915	14.2	1.41	12.0	0.365	0.452	0.193	1.40	3.11
May	1.37	0.697	0.644	12.5	0.868	11.2	0.302	0.426	0.185	1.19	1.63
June	0.532	0.181	0.214	6.59	0.149	5.85	0.139	0.147	0.0247	0.660	0.581
July	0.252	0.164	0.0924	1.92	0.0519	1.46	0.0346	0.0355	<0.01	0.160	0.691
Aug	8.94	1.43	0.199	145	0.135	125	3.01	2.76	0.117	14.2	2.87
Sept	0.236	0.0710	0.112	3.05	0.120	2.74	0.0652	0.0801	0.0209	0.317	0.369
Oct	2.21	0.845	0.589	26.0	0.666	22.7	0.516	0.599	0.108	2.63	2.37
Nov	0.894	0.359	0.389	10.1	0.221	8.89	0.207	0.211	0.0252	0.995	0.979
Dec	0.683	0.261	0.349	8.00	0.203	6.99	0.160	0.201	0.0496	0.817	0.664
Annual	19.3	6.62	4.37	242	4.60	210	5.13	5.37	0.898	23.9	15.2

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	100
Feb	100	100	100	100	100	100	100	100	100	100	98.1	98.1	98.1	100
Mar	100	100	100	100	100	100	100	100	100	100	98.9	98.9	98.9	100
Apr	100	100	100	100	100	100	100	100	100	100	99.3	99.3	99.3	100
May	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.4	99.4	99.4	100
June	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	100
July	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	93.7	93.7	93.7	100
Aug	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	98.9	98.9	98.9	100
Sept	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	98.5	98.5	98.5	100
Oct	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	98.7	98.7	98.7	100
Nov	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.0	99.0	99.0	100
Dec	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	93.6	93.6	93.6	100
Annual	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	98.6	98.6	98.6	100

Terms and abbreviations are given in Table 3.5.

Table 3.33 Monthly results

Site: Tokyo

Country: Japan

Code: JPA012

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	21.3	19.2	39.1	39.3	50.8	33.8	1.27	8.70	7.97	4.68	17.5	4.76	2.21	12.0
Feb	9.86	8.80	22.4	18.7	32.5	17.7	0.697	7.71	7.33	2.35	5.97	5.22	1.24	33.6
Mar	11.9	10.3	18.3	29.9	27.7	27.0	1.22	6.53	5.95	3.46	6.88	5.16	1.29	139
Apr	12.7	10.3	14.5	47.1	27.7	40.5	1.44	6.73	5.85	5.17	4.28	5.37	1.46	86.6
May	10.5	9.32	17.4	22.1	22.1	19.3	0.771	5.19	4.77	2.77	11.1	4.95	1.29	151
June	4.52	4.09	10.1	8.05	13.4	7.25	<0.3	1.63	1.48	0.916	7.10	5.15	0.696	334
July	10.6	10.2	17.2	8.93	21.9	6.59	<0.3	4.71	4.57	1.38	10.4	4.98	1.03	29.0
Aug	8.49	7.35	8.81	22.0	17.9	19.0	0.523	3.35	2.94	2.32	7.67	5.12	1.03	114
Sept	3.42	3.06	8.79	6.55	11.8	5.92	0.458	2.28	2.15	0.756	6.46	5.19	0.602	216
Oct	4.39	3.93	9.81	8.64	15.4	7.68	0.376	1.44	1.27	1.05	7.17	5.14	0.735	126
Nov	8.47	4.89	10.7	67.2	13.1	59.3	1.33	5.03	3.75	6.72	5.83	5.23	1.52	38.4
Dec	8.74	7.22	20.7	26.5	25.4	25.2	0.724	3.52	2.97	3.12	7.77	5.11	1.26	17.5
Annual	7.30	6.33	12.6	18.2	18.4	16.1	0.624	3.56	3.21	2.08	7.39	5.13	0.959	1297
Max.	67.4	64.1	150	786	151	675	16.5	46.6	40.8	73.5	87.1	6.12	11.6	
Min.	0.700	0.483	1.40	0.600	3.40	0.400	<0.3	0.300	0.291	<0.3	0.759	4.06	0.280	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.255	0.231	0.469	0.472	0.610	0.406	0.0152	0.104	0.0957	0.0561	0.210
Feb	0.331	0.295	0.752	0.629	1.09	0.593	0.0234	0.259	0.246	0.0788	0.200
Mar	1.65	1.43	2.54	4.14	3.84	3.74	0.169	0.905	0.824	0.479	0.953
Apr	1.10	0.888	1.25	4.08	2.40	3.51	0.124	0.583	0.507	0.448	0.370
May	1.58	1.40	2.62	3.33	3.33	2.91	0.116	0.782	0.719	0.418	1.68
June	1.51	1.37	3.36	2.69	4.47	2.42	0.0875	0.546	0.494	0.306	2.37
July	0.307	0.296	0.498	0.259	0.634	0.191	<0.01	0.137	0.133	0.0400	0.301
Aug	0.966	0.836	1.00	2.50	2.04	2.16	0.0595	0.382	0.335	0.265	0.872
Sept	0.739	0.662	1.90	1.42	2.56	1.28	0.0990	0.493	0.466	0.163	1.40
Oct	0.554	0.496	1.24	1.09	1.95	0.969	0.0474	0.182	0.161	0.133	0.905
Nov	0.325	0.188	0.411	2.58	0.503	2.28	0.0509	0.193	0.144	0.258	0.224
Dec	0.153	0.126	0.362	0.463	0.445	0.440	0.0127	0.0616	0.0520	0.0546	0.136
Annual	9.46	8.20	16.4	23.6	23.8	20.8	0.810	4.62	4.17	2.69	9.59

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	79.2	79.2	79.2	100
Feb	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100
Mar	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	97.1	97.1	97.1	100
Apr	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	100
May	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	97.8	97.8	97.8	100
June	100	100	100	100	100	100	100	100	100	100	99.6	99.6	99.6	100
July	100	100	100	100	100	100	100	100	100	100	96.6	96.6	96.6	100
Aug	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.3	99.3	99.3	100
Sept	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	100
Oct	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	100
Nov	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	96.3	96.3	96.3	100
Dec	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	100
Annual	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	98.7	98.7	98.7	100

Terms and abbreviations are given in Table 3.5.

Table 3.34 Monthly results

Site: Niigata-maki

Country: Japan

Code: JPA013

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	33.9	17.3	35.0	332	41.1	277	7.03	14.6	8.64	32.9	6.21	5.21	5.61	129
Feb	97.5	35.4	105	1254	111	1030	26.4	48.3	26.1	129	14.8	4.83	24.1	80.5
Mar	156	142	204	267	261	232	16.9	76.1	71.1	40.8	60.3	4.22	12.4	87.0
Apr	13.6	10.2	15.9	69.5	16.0	56.9	2.07	8.96	7.73	8.11	6.83	5.17	1.65	73.5
May	5.65	4.62	9.94	21.1	6.63	17.2	0.827	4.26	3.89	2.59	6.98	5.16	0.847	176
June	*	*	*	*	*	*	*	*	*	*	*	*	*	213
July	8.57	7.07	15.2	30.8	15.8	24.9	0.944	3.32	2.79	3.89	10.9	4.96	1.23	104
Aug	4.60	3.55	6.30	18.7	6.10	17.4	0.600	1.50	1.12	2.80	11.2	4.95	0.870	8.0
Sept	6.99	5.00	10.7	39.3	7.22	33.1	0.859	2.00	1.29	4.57	12.0	4.92	1.26	186
Oct	12.3	5.71	12.4	125	12.4	109	1.31	4.20	1.84	13.1	12.1	4.92	2.68	165
Nov	33.6	7.09	16.2	506	16.3	445	10.4	14.3	4.72	52.8	9.52	5.02	7.56	266
Dec	20.5	5.33	9.32	301	8.10	252	5.57	7.99	2.55	29.9	9.66	5.01	4.61	259
Annual	17.0	6.54	13.3	203	12.4	175	4.05	7.28	3.51	21.2	9.91	5.00	3.49	1745
Max.	183	142	204	3544	261	2924	64.4	80.1	71.1	343	61.7	6.84	45.6	
Min.	0.900	<0.3	1.50	1.60	<0.8	1.40	<0.3	0.600	0.436	0.900	0.145	4.21	0.260	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	4.36	2.22	4.50	42.7	5.28	35.5	0.904	1.88	1.11	4.22	0.798
Feb	7.85	2.85	8.44	101	8.92	82.9	2.12	3.89	2.10	10.4	1.19
Mar	13.5	12.3	17.7	23.2	22.7	20.1	1.47	6.62	6.19	3.55	5.24
Apr	1.00	0.750	1.17	5.11	1.18	4.18	0.152	0.659	0.569	0.596	0.502
May	0.993	0.812	1.75	3.72	1.17	3.02	0.145	0.749	0.684	0.455	1.23
June	*	*	*	*	*	*	*	*	*	*	*
July	0.894	0.738	1.59	3.22	1.65	2.60	0.0986	0.347	0.291	0.407	1.14
Aug	0.0370	0.0285	0.0506	0.150	0.0490	0.140	<0.01	0.0121	<0.01	0.0225	0.0902
Sept	1.30	0.928	1.99	7.30	1.34	6.15	0.160	0.373	0.240	0.850	2.22
Oct	2.02	0.940	2.03	20.5	2.04	18.0	0.215	0.691	0.302	2.15	1.99
Nov	8.94	1.88	4.30	135	4.32	118	2.77	3.81	1.25	14.0	2.53
Dec	5.31	1.38	2.41	78.1	2.10	65.3	1.44	2.07	0.660	7.74	2.50
Annual	29.7	11.4	23.3	355	21.6	305	7.07	12.7	6.12	36.9	17.3

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	96.8
Feb	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	4.3	4.3	4.3	100
Mar	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	100
Apr	100	100	100	100	100	100	100	100	100	100	99.3	99.3	99.3	100
May	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	100
June	0	0	0	0	0	0	0	0	0	0	0	0	0	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	100
Sept	100	100	100	100	100	100	100	100	100	100	99.8	99.8	99.8	100
Oct	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	85.6	85.6	85.6	100
Nov	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.1	90.1	90.1	100
Dec	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	100
Annual	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	68.7	68.7	68.7	99.7

Terms and abbreviations are given in Table 3.5.

Table 3.35 Monthly results

Site: Tsushima

Country: Japan

Code: JPA014

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	7.68	5.83	10.2	36.4	7.80	30.7	0.799	1.51	0.851	3.28	9.27	5.03	1.19	93.0
Feb	16.4	14.3	17.8	42.2	19.8	35.7	1.42	2.84	2.07	4.16	19.3	4.71	2.01	105
Mar	15.5	13.9	19.1	31.6	19.9	26.3	1.25	4.10	3.53	3.14	20.9	4.68	1.89	68.0
Apr	13.9	11.1	14.4	52.9	16.6	45.7	2.03	5.64	4.65	5.65	9.35	5.03	1.68	227
May	9.92	8.46	7.80	28.8	8.31	24.3	1.66	1.24	0.719	2.87	11.6	4.94	1.24	316
June	8.31	8.02	7.81	6.82	10.9	4.83	0.394	0.708	0.604	0.549	9.07	5.04	0.798	225
July	9.74	8.58	17.4	22.7	16.9	19.3	0.661	1.06	0.644	1.97	14.1	4.85	1.38	317
Aug	10.9	7.03	7.71	76.9	5.17	64.7	1.88	1.73	0.329	7.01	10.3	4.99	1.79	330
Sept	9.12	6.74	10.7	46.7	3.79	39.4	0.901	1.29	0.464	4.15	13.2	4.88	1.48	157
Oct	17.4	8.01	32.3	179	21.8	156	3.98	6.35	2.98	17.9	13.1	4.88	3.68	9.0
Nov	6.67	4.06	10.3	51.1	5.69	43.4	2.04	1.71	0.768	4.57	6.90	5.16	1.27	79.5
Dec	16.4	12.7	25.0	71.5	19.6	61.3	1.75	3.77	2.44	6.93	22.8	4.64	2.50	69.0
Annual	11.0	8.77	12.3	43.0	11.5	36.3	1.37	2.13	1.34	4.07	12.4	4.91	1.52	1993
Max.	78.6	73.0	176	395	129	337	17.0	67.5	66.1	37.7	116	6.32	7.72	
Min.	1.00	0.958	1.20	1.40	<0.8	0.700	<0.3	<0.2	<0.2	<0.3	0.479	3.94	0.200	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.714	0.542	0.949	3.39	0.725	2.86	0.0743	0.141	0.0791	0.305	0.862
Feb	1.72	1.49	1.86	4.41	2.07	3.73	0.148	0.297	0.216	0.435	2.01
Mar	1.05	0.945	1.30	2.15	1.36	1.79	0.0849	0.279	0.240	0.214	1.42
Apr	3.14	2.51	3.26	12.0	3.77	10.4	0.460	1.28	1.05	1.28	2.12
May	3.13	2.67	2.47	9.11	2.63	7.67	0.523	0.393	0.227	0.908	3.66
June	1.87	1.80	1.76	1.53	2.45	1.09	0.0886	0.159	0.136	0.124	2.04
July	3.09	2.72	5.51	7.19	5.36	6.11	0.210	0.336	0.204	0.624	4.47
Aug	3.60	2.32	2.54	25.3	1.70	21.3	0.620	0.569	0.108	2.31	3.40
Sept	1.43	1.05	1.67	7.30	0.594	6.17	0.141	0.202	0.0726	0.649	2.06
Oct	0.157	0.0721	0.291	1.61	0.196	1.40	0.0359	0.0572	0.0268	0.161	0.118
Nov	0.530	0.322	0.821	4.07	0.452	3.45	0.163	0.136	0.0611	0.363	0.548
Dec	1.13	0.878	1.72	4.94	1.35	4.23	0.121	0.260	0.169	0.479	1.57
Annual	21.9	17.5	24.6	85.6	22.9	72.5	2.74	4.24	2.68	8.11	24.7

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	100
Feb	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	98.6	98.6	98.6	100
Mar	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	95.6	95.6	95.6	100
Apr	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.1	99.1	99.1	100
May	100	100	100	100	100	100	100	100	100	100	99.8	99.8	99.8	100
June	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	59.8	59.8	59.8	100
July	100	100	100	100	100	100	100	100	100	100	99.1	99.1	99.1	100
Aug	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	100
Sept	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	98.1	98.1	98.1	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	100
Dec	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	97.8	100
Annual	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.1	93.1	93.1	100

Terms and abbreviations are given in Table 3.5.

Table 3.36 Monthly results

Site: Vientiane

Country: Lao PDR

Code: LAA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	--	--	--	--	--	--	--	--	--	--	--	--	--	0
June	3.87	3.67	9.96	3.29	7.12	3.32	1.74	9.90	9.83	1.20	0.252	6.60	0.595	466
July	2.64	2.44	8.24	3.67	8.47	3.40	0.974	11.1	11.0	1.46	0.211	6.68	0.473	249
Aug	3.30	3.01	8.49	6.64	7.64	5.63	1.20	14.9	14.8	2.00	0.199	6.70	0.614	162
Sept	1.41	1.29	4.70	3.59	7.29	2.39	2.02	8.14	8.09	0.812	0.308	6.51	0.369	291
Oct	7.53	7.35	5.49	5.75	10.3	3.13	2.03	26.2	26.2	2.24	0.0423	7.37	0.865	50.9
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	3.11	2.92	7.97	3.99	7.64	3.41	1.59	11.1	11.0	1.31	0.241	6.62	0.530	1218
Max.	31.1	30.4	54.5	30.2	42.4	30.9	14.9	85.0	84.3	14.2	0.891	8.39	2.20	
Min.	<0.3	<0.3	<0.5	0.855	<0.8	0.783	0.519	4.29	4.28	0.362	0.0041	6.05	0.190	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	1.80	1.71	4.64	1.53	3.32	1.55	0.811	4.61	4.58	0.560	0.117
July	0.657	0.606	2.05	0.913	2.11	0.847	0.242	2.76	2.74	0.362	0.0526
Aug	0.533	0.487	1.37	1.07	1.23	0.910	0.194	2.41	2.39	0.323	0.0322
Sept	0.410	0.376	1.37	1.04	2.12	0.695	0.587	2.36	2.35	0.236	0.0896
Oct	0.384	0.374	0.280	0.293	0.527	0.160	0.103	1.34	1.33	0.114	<0.01
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	3.79	3.55	9.71	4.86	9.30	4.16	1.94	13.5	13.4	1.60	0.294

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	--	--	--	--	--	--	--	--	--	--	--	--	--	100
June	100	100	100	100	100	100	100	100	100	100	99.8	99.8	99.8	100
July	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7	100
Aug	100	100	100	100	100	100	100	100	100	100	99.5	99.5	99.5	100
Sept	100	100	100	100	100	100	100	100	100	100	99.5	99.5	99.5	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7	100

Terms and abbreviations are given in Table 3.5.

Table 3.37 Monthly results

Site: Petaling Jaya

Country: Malaysia

Code: MYA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	9.25	9.06	18.5	5.68	18.0	3.05	0.867	2.67	2.61	0.606	16.5	4.78	1.24	325
Feb	10.8	10.6	36.7	6.02	21.7	3.28	1.15	4.23	4.16	0.717	31.4	4.50	1.84	356
Mar	12.2	11.6	33.8	8.75	18.8	10.3	2.14	4.69	4.46	1.20	25.6	4.59	1.75	442
Apr	13.4	13.2	28.9	6.14	25.6	3.19	1.03	3.14	3.07	0.658	23.3	4.63	1.75	362
May	14.4	14.2	31.6	7.60	24.7	3.75	1.62	4.21	4.13	0.830	28.0	4.55	2.05	230
June	11.3	11.1	25.9	6.73	16.9	3.29	1.01	3.68	3.61	0.665	25.1	4.60	1.62	188
July	10.0	9.70	41.4	12.6	21.8	5.06	1.77	4.77	4.67	0.814	34.6	4.46	2.27	201
Aug	21.5	20.7	43.7	16.8	26.0	12.5	1.47	6.06	5.80	1.93	46.4	4.33	3.07	172
Sept	17.3	16.6	33.4	13.4	20.1	10.8	3.35	5.63	5.39	1.34	40.1	4.40	2.43	149
Oct	19.2	18.9	41.6	8.60	25.7	5.41	2.54	6.24	6.12	0.956	39.9	4.40	2.61	398
Nov	11.7	11.6	30.1	6.14	21.9	2.40	0.966	2.81	2.76	0.406	29.9	4.52	1.95	484
Dec	5.00	4.76	28.9	5.71	18.7	3.85	0.704	3.48	3.40	<0.3	19.6	4.71	1.44	323
Annual	12.6	12.3	32.4	7.89	21.7	5.12	1.48	4.14	4.03	0.795	28.9	4.54	1.93	3631
Max.	37.5	35.7	72.8	35.9	84.4	29.4	11.1	15.3	14.7	3.50	67.6	4.97	4.51	
Min.	0.760	0.520	5.64	3.50	1.67	1.49	0.300	1.19	1.16	<0.3	10.7	4.17	0.790	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	3.01	2.95	6.03	1.85	5.87	0.993	0.282	0.869	0.848	0.197	5.38
Feb	3.85	3.78	13.1	2.15	7.72	1.17	0.411	1.51	1.48	0.255	11.2
Mar	5.40	5.13	14.9	3.86	8.33	4.55	0.947	2.07	1.97	0.532	11.3
Apr	4.85	4.78	10.5	2.22	9.28	1.16	0.374	1.14	1.11	0.238	8.45
May	3.32	3.27	7.28	1.75	5.67	0.863	0.373	0.970	0.951	0.191	6.45
June	2.13	2.10	4.88	1.27	3.18	0.621	0.191	0.694	0.681	0.125	4.73
July	2.01	1.95	8.33	2.54	4.38	1.02	0.356	0.960	0.938	0.164	6.95
Aug	3.69	3.56	7.51	2.88	4.46	2.14	0.252	1.04	0.996	0.332	7.98
Sept	2.57	2.48	4.97	2.00	3.00	1.61	0.499	0.837	0.802	0.199	5.96
Oct	7.64	7.51	16.5	3.42	10.2	2.15	1.01	2.48	2.44	0.381	15.9
Nov	5.67	5.60	14.6	2.97	10.6	1.16	0.468	1.36	1.33	0.196	14.5
Dec	1.62	1.54	9.33	1.85	6.04	1.25	0.228	1.13	1.10	0.0892	6.33
Annual	45.7	44.5	118	28.7	78.7	18.6	5.39	15.0	14.6	2.89	105

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	98.3	98.3	98.3	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.6	99.6	99.6	100

Terms and abbreviations are given in Table 3.5.

Table 3.38 Monthly results

Site: Tanah Rata

Country: Malaysia

Code: MYA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	0.981	0.938	3.26	1.76	2.22	1.03	0.576	0.949	0.936	<0.3	5.89	5.23	0.369	200
Feb	2.90	2.73	4.50	3.60	8.74	2.88	1.02	1.06	1.00	<0.3	7.95	5.10	0.515	217
Mar	2.91	2.78	5.93	1.67	7.59	2.05	0.989	1.10	1.06	<0.3	9.61	5.02	0.584	212
Apr	7.01	6.71	12.1	4.31	12.8	5.13	2.03	3.55	3.44	0.382	10.0	5.00	0.839	107
May	5.63	5.46	10.1	3.22	20.4	2.90	1.89	2.64	2.58	<0.3	7.50	5.12	0.772	212
June	5.71	5.52	11.4	3.50	8.00	3.22	2.39	4.55	4.48	0.337	7.43	5.13	0.756	209
July	3.77	3.61	6.94	2.91	5.05	2.69	1.76	2.72	2.66	<0.3	10.0	5.00	0.713	173
Aug	4.86	4.57	7.52	5.32	10.8	4.69	1.12	1.60	1.50	<0.3	7.88	5.10	0.636	154
Sept	4.49	4.28	10.4	5.45	9.96	3.61	1.97	2.53	2.45	0.369	10.0	5.00	0.703	405
Oct	6.12	5.99	7.00	3.26	12.0	2.19	1.59	1.41	1.37	<0.3	9.89	5.00	0.690	386
Nov	1.20	0.875	3.12	4.15	2.70	5.91	3.63	1.11	0.982	<0.3	7.06	5.15	0.399	351
Dec	2.30	2.18	2.08	2.79	2.17	1.93	1.51	2.23	2.19	0.349	7.01	5.15	0.462	277
Annual	3.87	3.68	6.77	3.58	8.29	3.17	1.81	2.01	1.95	<0.3	8.41	5.08	0.607	2902
Max.	24.9	24.3	42.1	15.2	61.3	17.7	7.77	16.5	16.3	1.91	30.9	6.15	2.00	
Min.	<0.3	<0.3	<0.5	0.840	<0.8	0.330	0.320	<0.2	<0.2	<0.3	0.708	4.51	0.210	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.196	0.187	0.650	0.352	0.443	0.206	0.115	0.189	0.187	0.0330	1.18
Feb	0.629	0.591	0.975	0.780	1.90	0.623	0.221	0.231	0.217	0.0530	1.72
Mar	0.615	0.589	1.25	0.352	1.61	0.435	0.209	0.233	0.223	0.0193	2.03
Apr	0.751	0.717	1.30	0.461	1.37	0.549	0.218	0.380	0.368	0.0409	1.07
May	1.20	1.16	2.14	0.684	4.33	0.616	0.402	0.561	0.547	0.0390	1.59
June	1.20	1.16	2.38	0.734	1.68	0.674	0.502	0.954	0.939	0.0705	1.56
July	0.652	0.624	1.20	0.503	0.872	0.465	0.304	0.470	0.460	0.0420	1.74
Aug	0.747	0.704	1.16	0.818	1.66	0.721	0.172	0.247	0.231	0.0449	1.21
Sept	1.82	1.73	4.22	2.21	4.03	1.46	0.799	1.02	0.993	0.150	4.05
Oct	2.37	2.31	2.70	1.26	4.63	0.848	0.614	0.546	0.528	<0.01	3.82
Nov	0.421	0.307	1.09	1.45	0.947	2.07	1.27	0.389	0.344	0.104	2.48
Dec	0.637	0.605	0.577	0.772	0.600	0.534	0.419	0.618	0.607	0.0968	1.94
Annual	11.2	10.7	19.6	10.4	24.1	9.21	5.25	5.84	5.64	0.702	24.4

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.39 Monthly results

Site: Danum Valley

Country: Malaysia

Code: MYA003

Precipitation amount-weighted average concentration/ Precipitation amount

2023	SO ₄ ²⁻ μmol L ⁻¹	nss-SO ₄ ²⁻ μmol L ⁻¹	NO ₃ ⁻ μmol L ⁻¹	Cl ⁻ μmol L ⁻¹	NH ₄ ⁺ μmol L ⁻¹	Na ⁺ μmol L ⁻¹	K ⁺ μmol L ⁻¹	Ca ²⁺ μmol L ⁻¹	nss-Ca ²⁺ μmol L ⁻¹	Mg ²⁺ μmol L ⁻¹	H ⁺ μmol L ⁻¹	pH	EC mS m ⁻¹	Precip. mm month ⁻¹ or mm year ⁻¹
Jan	2.23	1.84	11.8	7.82	4.94	6.46	2.00	0.320	0.258	0.614	12.9	4.89	0.649	79.0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	2.88	2.38	<0.5	9.46	<0.8	8.33	1.02	2.44	2.26	0.670	4.47	5.35	0.380	52.2
Apr	6.75	5.80	<0.5	14.8	<0.8	15.8	3.57	3.44	3.10	2.08	7.76	5.11	0.700	38.8
May	1.24	1.20	<0.5	1.42	<0.8	0.608	1.71	0.747	0.733	<0.3	3.47	5.46	0.479	163
June	1.85	1.74	0.836	3.57	<0.8	1.75	1.26	0.921	0.883	0.426	4.20	5.38	0.308	656
July	*	*	*	*	*	*	*	*	*	*	*	*	*	79.0
Aug	3.90	3.45	<0.5	7.68	<0.8	7.46	9.32	2.64	2.48	1.17	4.05	5.39	0.545	186
Sept	2.97	2.82	<0.5	2.74	<0.8	2.51	1.67	1.27	1.22	0.707	5.88	5.23	0.371	345
Oct	1.22	1.17	<0.5	0.990	<0.8	0.860	0.780	0.410	0.391	<0.3	3.24	5.49	0.210	298
Nov	*	*	*	*	*	*	*	*	*	*	*	*	*	175
Dec	2.48	1.73	<0.5	19.5	<0.8	12.5	5.94	4.45	4.18	2.88	4.27	5.37	0.580	95.5
Annual	2.53	2.29	0.977	5.08	<0.8	4.00	2.83	1.46	1.38	0.709	5.08	5.29	0.418	2167
Max.	8.80	7.72	37.1	19.5	19.6	17.9	22.5	6.10	5.71	2.88	17.8	5.55	1.39	
Min.	<0.3	<0.3	<0.5	<0.5	<0.8	0.530	0.470	<0.2	<0.2	<0.3	2.82	4.75	0.200	

Wet deposition amount

2023	SO ₄ ²⁻ mmol m ⁻²	nss-SO ₄ ²⁻ mmol m ⁻²	NO ₃ ⁻ mmol m ⁻²	Cl ⁻ mmol m ⁻²	NH ₄ ⁺ mmol m ⁻²	Na ⁺ mmol m ⁻²	K ⁺ mmol m ⁻²	Ca ²⁺ mmol m ⁻²	nss-Ca ²⁺ mmol m ⁻²	Mg ²⁺ mmol m ⁻²	H ⁺ mmol m ⁻²
Jan	0.176	0.145	0.932	0.618	0.390	0.510	0.158	0.0253	0.0204	0.0485	1.02
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.150	0.124	<0.01	0.494	0.0204	0.435	0.0532	0.127	0.118	0.0350	0.233
Apr	0.262	0.225	<0.01	0.575	<0.01	0.613	0.139	0.133	0.120	0.0807	0.301
May	0.202	0.196	<0.01	0.231	0.0500	0.0990	0.278	0.122	0.119	<0.01	0.565
June	1.21	1.14	0.549	2.34	0.0956	1.15	0.825	0.604	0.579	0.280	2.76
July	*	*	*	*	*	*	*	*	*	*	*
Aug	0.727	0.643	0.0625	1.43	<0.01	1.39	1.74	0.492	0.462	0.218	0.755
Sept	1.02	0.970	0.0504	0.946	0.0288	0.864	0.576	0.438	0.419	0.244	2.03
Oct	0.363	0.348	0.0119	0.295	<0.01	0.256	0.232	0.122	0.116	<0.01	0.963
Nov	*	*	*	*	*	*	*	*	*	*	*
Dec	0.237	0.165	<0.01	1.86	<0.01	1.19	0.567	0.425	0.399	0.275	0.407
Annual	5.49	4.97	2.12	11.0	0.869	8.68	6.14	3.17	2.99	1.54	11.0

Data completeness

2023	SO ₄ ²⁻ %TP	nss-SO ₄ ²⁻ %TP	NO ₃ ⁻ %TP	Cl ⁻ %TP	NH ₄ ⁺ %TP	Na ⁺ %TP	K ⁺ %TP	Ca ²⁺ %TP	nss-Ca ²⁺ %TP	Mg ²⁺ %TP	H ⁺ %TP	pH %TP	EC %TP	Precip. %PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	100
July	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	100
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Dec	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.7	100
Annual	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	100

Terms and abbreviations are given in Table 3.5.

Table 3.40 Monthly results

Site: Kuching

Country: Malaysia

Code: MYA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	2.85	2.24	3.24	12.3	11.7	10.1	1.76	1.38	1.17	0.613	3.84	5.42	0.534	430
Feb	1.18	0.949	<0.5	5.24	<0.8	3.84	0.850	2.27	2.19	0.550	3.39	5.47	0.280	587
Mar	2.19	1.77	0.753	7.01	8.64	6.94	2.76	1.27	1.12	0.389	3.54	5.45	0.399	986
Apr	2.03	1.94	<0.5	2.70	<0.8	1.43	<0.3	1.72	1.69	<0.3	4.27	5.37	0.297	280
May	2.62	2.45	<0.5	3.71	1.41	2.90	0.663	2.91	2.84	<0.3	3.11	5.51	0.299	256
June	3.55	3.25	<0.5	5.13	3.19	4.91	1.53	3.64	3.54	0.329	1.89	5.72	0.359	235
July	1.78	1.45	<0.5	8.57	3.24	5.51	2.17	2.61	2.49	0.454	2.18	5.66	0.341	119
Aug	2.57	2.23	1.66	5.26	3.67	5.63	1.33	3.47	3.35	0.401	2.90	5.54	0.402	279
Sept	2.82	2.41	3.73	6.48	4.32	6.84	3.05	2.45	2.30	0.479	3.73	5.43	0.452	262
Oct	4.69	4.32	3.78	7.85	4.16	6.20	6.00	4.53	4.39	0.773	3.89	5.41	0.557	208
Nov	0.730	0.564	<0.5	12.3	1.32	2.75	0.580	6.21	6.15	0.740	2.34	5.63	0.340	287
Dec	3.27	2.84	1.48	7.60	9.86	7.10	2.74	4.28	4.13	0.471	3.22	5.49	0.483	376
Annual	2.56	2.19	1.30	6.88	5.92	6.04	2.11	2.44	2.31	0.431	3.39	5.47	0.406	4306
Max.	11.4	10.9	11.4	33.8	103	28.1	12.9	9.84	9.54	1.71	6.46	6.84	1.63	
Min.	0.300	<0.3	<0.5	1.32	<0.8	0.940	<0.3	0.630	<0.2	<0.3	0.145	5.19	0.210	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.22	0.963	1.40	5.27	5.05	4.34	0.756	0.596	0.502	0.264	1.65
Feb	0.692	0.556	0.0293	3.07	<0.01	2.25	0.499	1.33	1.28	0.323	1.99
Mar	2.16	1.74	0.742	6.91	8.51	6.84	2.73	1.25	1.10	0.383	3.49
Apr	0.568	0.544	0.0301	0.756	0.201	0.401	0.0470	0.481	0.473	0.0408	1.20
May	0.672	0.627	0.0165	0.952	0.361	0.744	0.170	0.744	0.728	0.0490	0.796
June	0.833	0.764	<0.01	1.20	0.748	1.15	0.359	0.855	0.830	0.0773	0.444
July	0.213	0.173	0.0263	1.02	0.387	0.658	0.259	0.311	0.297	0.0542	0.260
Aug	0.718	0.623	0.463	1.47	1.02	1.57	0.370	0.969	0.935	0.112	0.808
Sept	0.740	0.632	0.979	1.70	1.13	1.79	0.799	0.642	0.604	0.126	0.978
Oct	0.978	0.901	0.789	1.64	0.867	1.29	1.25	0.943	0.915	0.161	0.810
Nov	0.210	0.162	<0.01	3.54	0.379	0.790	0.167	1.78	1.77	0.213	0.673
Dec	1.23	1.07	0.555	2.86	3.70	2.67	1.03	1.61	1.55	0.177	1.21
Annual	11.0	9.45	5.61	29.6	25.5	26.0	9.10	10.5	9.93	1.86	14.6

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	100
Nov	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	100

Terms and abbreviations are given in Table 3.5.

Table 3.41 Monthly results

Site: **Gunung Brinchang**Country: **Malaysia**Code: **MYA005****Precipitation amount-weighted average concentration/ Precipitation amount**

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.42 Monthly results

Site: Ulaanbaatar

Country: Mongolia

Code: MNA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	41.4	40.8	21.0	8.59	28.5	9.31	6.78	39.3	39.1	5.75	2.20	5.66	1.97	18.5
June	73.5	72.1	58.0	10.7	35.6	24.6	4.25	89.9	89.4	7.90	1.40	5.85	3.48	7.1
July	17.7	17.5	9.06	2.47	22.8	2.70	1.08	28.5	28.4	2.74	3.49	5.46	0.980	73.2
Aug	13.6	13.5	9.51	1.83	25.0	2.03	0.730	9.95	9.91	1.18	6.97	5.16	0.745	53.7
Sept	35.5	35.3	8.53	3.65	40.0	2.47	0.940	37.0	36.9	4.67	1.87	5.73	1.35	15.9
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	22.9	22.7	12.4	3.38	26.3	4.11	1.71	27.1	27.0	2.97	4.22	5.37	1.15	168
Max.	120	118	144	34.1	92.6	47.8	12.0	271	270	21.4	13.2	6.41	7.43	
Min.	5.50	5.40	1.60	0.850	<0.8	0.900	<0.3	3.99	3.95	0.800	0.389	4.88	0.390	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.766	0.755	0.389	0.159	0.527	0.172	0.126	0.727	0.723	0.106	0.0408
June	0.519	0.509	0.409	0.0756	0.251	0.174	0.0300	0.635	0.631	0.0558	<0.01
July	1.30	1.28	0.664	0.181	1.67	0.198	0.0789	2.08	2.08	0.200	0.255
Aug	0.733	0.726	0.511	0.0983	1.35	0.109	0.0392	0.535	0.532	0.0634	0.375
Sept	0.565	0.563	0.136	0.0582	0.638	0.0393	0.0150	0.589	0.588	0.0743	0.0298
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	3.86	3.82	2.09	0.569	4.43	0.692	0.289	4.57	4.55	0.500	0.711

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	93.8	93.8	93.8	93.8	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	99.7	99.7	99.7	99.7	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.43 Monthly results

Site: Terej

Country: Mongolia

Code: MNA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	48.3	47.1	10.7	6.72	20.3	20.1	4.02	31.3	30.9	3.24	2.39	5.62	1.48	15.2
June	117	115	61.0	13.7	14.8	19.3	6.55	81.9	81.5	7.97	1.65	5.78	4.04	23.0
July	40.1	39.4	17.5	4.18	35.1	10.1	2.08	26.9	26.7	1.64	2.50	5.60	1.36	40.2
Aug	40.8	39.2	14.3	4.13	31.8	25.4	1.87	18.9	18.4	1.70	5.21	5.28	1.10	36.6
Sept	13.7	13.3	17.2	7.33	33.9	6.70	6.02	23.8	23.6	3.27	14.2	4.85	1.26	14.9
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	51.7	50.7	23.5	6.50	28.7	16.8	3.49	34.5	34.2	3.15	4.45	5.35	1.76	130
Max.	173	171	213	35.3	79.3	71.8	21.5	257	256	16.0	70.8	6.25	5.81	
Min.	3.85	3.69	3.20	1.70	<0.8	1.30	1.00	7.20	7.15	0.800	0.562	4.15	0.395	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.732	0.713	0.162	0.102	0.308	0.305	0.0609	0.474	0.467	0.0491	0.0363
June	2.68	2.65	1.40	0.314	0.340	0.443	0.151	1.88	1.87	0.183	0.0378
July	1.61	1.59	0.705	0.168	1.41	0.407	0.0837	1.08	1.07	0.0661	0.100
Aug	1.49	1.44	0.523	0.151	1.16	0.930	0.0686	0.693	0.672	0.0621	0.191
Sept	0.204	0.198	0.257	0.109	0.506	0.100	0.0899	0.355	0.353	0.0488	0.212
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	6.72	6.59	3.05	0.845	3.73	2.19	0.454	4.49	4.44	0.409	0.578

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.44 Monthly results

Site: Yangon

Country: Myanmar

Code: MMA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	18.3	13.8	47.0	35.3	48.2	75.5	24.4	32.3	30.6	33.2	0.158	6.80	1.78	6.8
Mar	20.6	18.5	44.4	45.3	80.3	35.4	35.0	25.7	24.9	45.0	0.112	6.95	3.98	4.4
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	11.3	9.07	37.1	43.0	65.8	36.4	8.83	27.7	26.9	12.4	0.261	6.58	1.31	131
June	14.2	13.4	6.69	13.9	16.0	12.8	2.10	7.43	7.16	2.65	0.148	6.83	1.47	679
July	5.04	3.74	5.29	24.5	14.6	21.6	2.00	7.19	6.72	2.89	0.104	6.98	1.45	595
Aug	6.66	5.26	12.2	28.2	24.2	23.3	2.90	15.7	15.2	4.18	0.119	6.92	2.12	263
Sept	7.02	6.55	5.57	10.3	12.9	7.87	3.27	6.08	5.91	1.39	0.198	6.70	1.10	426
Oct	4.92	4.32	10.6	9.57	18.8	10.1	3.62	6.50	6.28	1.70	0.131	6.88	1.31	469
Nov	<0.3	<0.3	3.45	3.67	5.60	1.87	1.15	7.11	7.07	0.620	0.158	6.80	0.630	39.0
Dec	4.41	2.43	44.9	51.7	18.8	32.9	9.05	41.0	40.3	9.50	0.316	6.50	1.05	3.2
Annual	8.18	7.23	9.13	17.8	19.0	15.8	3.06	8.97	8.62	3.10	0.146	6.83	1.42	2615
Max.	29.2	28.8	60.7	56.5	98.2	75.5	39.2	50.0	49.1	45.0	0.316	7.20	3.98	
Min.	<0.3	<0.3	1.21	3.67	2.33	1.87	0.640	3.29	3.22	0.410	0.0631	6.50	0.580	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.125	0.0939	0.320	0.240	0.328	0.514	0.166	0.220	0.209	0.226	<0.01
Mar	0.0908	0.0814	0.195	0.199	0.353	0.156	0.154	0.113	0.109	0.198	<0.01
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	1.48	1.19	4.86	5.64	8.62	4.76	1.16	3.63	3.53	1.62	0.0341
June	9.65	9.12	4.54	9.43	10.8	8.72	1.43	5.05	4.86	1.80	0.101
July	3.00	2.22	3.15	14.6	8.66	12.8	1.19	4.28	4.00	1.72	0.0620
Aug	1.75	1.38	3.20	7.41	6.34	6.13	0.760	4.12	3.99	1.10	0.0312
Sept	2.99	2.79	2.37	4.40	5.49	3.35	1.39	2.59	2.51	0.590	0.0845
Oct	2.31	2.03	4.96	4.49	8.84	4.73	1.70	3.05	2.95	0.799	0.0613
Nov	<0.01	<0.01	0.135	0.143	0.219	0.0730	0.0449	0.277	0.276	0.0242	<0.01
Dec	0.0142	<0.01	0.145	0.166	0.0605	0.106	0.0291	0.132	0.130	0.0306	<0.01
Annual	21.4	18.9	23.9	46.7	49.7	41.4	8.02	23.4	22.6	8.10	0.383

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.45 Monthly results

Site: Manila Observatory

Country: Philippines

Code: PHA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	4.91	4.26	7.39	8.90	27.0	11.5	2.20	0.231	0.212	4.08	1.21	5.92	0.495	184
Feb	41.1	40.1	42.4	19.6	83.9	16.7	2.75	20.4	20.0	2.99	8.91	5.05	2.41	6.2
Mar	23.4	21.1	36.5	46.7	66.7	38.5	11.3	64.6	63.8	8.10	0.165	6.78	2.84	11.3
Apr	18.4	17.9	27.3	10.0	70.4	9.83	2.09	7.30	7.09	1.70	1.37	5.86	1.58	70.0
May	34.3	33.7	31.1	11.1	61.8	9.70	1.45	1.83	1.77	0.654	32.9	4.48	2.98	176
June	26.6	25.8	21.8	16.8	43.5	14.6	1.34	5.97	5.73	1.64	53.9	4.27	2.27	557
July	7.06	5.33	7.83	28.5	22.1	31.7	2.48	1.26	1.20	2.35	3.95	5.40	1.21	910
Aug	14.8	12.9	5.78	30.6	27.5	32.0	1.46	1.56	1.18	4.24	5.28	5.28	1.31	338
Sept	12.8	11.0	12.4	19.9	23.8	29.7	2.00	5.38	4.75	1.39	8.49	5.07	1.16	962
Oct	13.4	13.0	20.2	9.86	47.5	9.37	1.31	<0.2	<0.2	2.17	9.63	5.02	1.39	213
Nov	8.11	7.51	18.9	11.6	56.3	9.98	0.978	11.1	10.9	0.486	0.563	6.25	1.09	92.9
Dec	7.97	6.27	17.9	21.4	62.2	36.6	6.61	16.3	15.5	<0.3	0.865	6.06	1.62	40.1
Annual	14.4	13.0	13.9	20.7	32.7	24.1	1.97	3.82	3.53	2.08	14.6	4.84	1.45	3560
Max.	51.3	50.4	97.7	97.8	172	86.7	21.5	133	133	22.0	98.2	7.36	4.62	
Min.	<0.3	<0.3	<0.5	<0.5	10.7	<0.3	<0.3	<0.2	<0.2	<0.3	0.0437	4.01	0.362	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.904	0.785	1.36	1.64	4.97	2.11	0.405	0.0425	0.0390	0.751	0.224
Feb	0.255	0.249	0.263	0.122	0.520	0.103	0.0171	0.126	0.124	0.0185	0.0553
Mar	0.264	0.238	0.413	0.528	0.753	0.435	0.128	0.730	0.721	0.0916	<0.01
Apr	1.29	1.25	1.91	0.700	4.93	0.688	0.146	0.511	0.496	0.119	0.0957
May	6.04	5.94	5.48	1.96	10.9	1.71	0.256	0.322	0.312	0.115	5.80
June	14.8	14.3	12.1	9.33	24.2	8.14	0.745	3.32	3.19	0.910	30.0
July	6.43	4.85	7.12	25.9	20.1	28.9	2.25	1.15	1.09	2.13	3.59
Aug	5.01	4.35	1.95	10.3	9.29	10.8	0.492	0.527	0.399	1.43	1.78
Sept	12.3	10.6	11.9	19.2	22.9	28.6	1.92	5.17	4.57	1.34	8.17
Oct	2.86	2.77	4.30	2.10	10.1	1.99	0.280	0.0106	<0.01	0.462	2.05
Nov	0.754	0.698	1.76	1.08	5.23	0.927	0.0908	1.03	1.02	0.0452	0.0523
Dec	0.320	0.251	0.719	0.856	2.50	1.47	0.265	0.654	0.622	<0.01	0.0347
Annual	51.2	46.3	49.3	73.7	116	85.9	7.00	13.6	12.6	7.42	52.0

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	96.9	96.9	96.9	100
Feb	100	100	100	100	100	100	100	100	100	100	96.8	96.8	96.8	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	49.6	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	99.8	99.8	99.6	100

Terms and abbreviations are given in Table 3.5.

Table 3.46 Monthly results

Site: Los Baños

Country: Philippines

Code: PHA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	4.34	2.97	2.01	34.5	6.15	22.8	0.684	0.796	0.643	4.30	0.973	6.01	0.689	286
Feb	9.13	7.90	4.48	22.0	20.8	20.5	1.10	4.16	3.88	2.69	3.49	5.46	0.691	60.2
Mar	3.97	2.74	4.94	19.8	17.1	20.3	3.91	4.32	4.13	3.29	0.912	6.04	0.540	32.2
Apr	30.6	27.0	16.3	62.9	57.3	60.7	4.26	<0.2	<0.2	5.19	30.0	4.52	3.39	48.7
May	69.8	69.1	22.5	13.3	38.1	11.9	2.31	5.37	5.22	3.01	170	3.77	5.49	136
June	25.7	24.8	8.17	10.0	16.8	14.5	1.06	0.728	0.654	<0.3	41.7	4.38	1.89	201
July	18.0	17.4	11.1	12.1	12.6	15.6	4.25	3.55	3.49	1.28	34.4	4.46	2.13	365
Aug	24.1	23.7	4.81	10.5	17.1	7.53	0.749	<0.2	<0.2	0.398	30.6	4.51	1.98	181
Sept	47.8	46.8	10.2	18.9	16.6	16.1	1.06	0.747	0.713	1.01	81.2	4.09	3.62	129
Oct	9.11	8.60	2.59	9.08	4.56	8.53	0.987	<0.2	<0.2	<0.3	13.2	4.88	1.10	216
Nov	3.69	1.60	8.20	28.3	5.15	36.5	3.22	8.73	8.44	6.05	1.00	6.00	0.863	332
Dec	4.36	1.78	6.83	41.6	14.6	46.3	2.45	0.516	0.440	4.19	0.541	6.27	1.07	153
Annual	18.2	17.0	7.98	21.1	13.9	21.5	2.15	2.74	2.63	2.56	30.6	4.51	1.80	2139
Max.	92.6	92.3	32.4	349	76.8	296	28.4	99.4	94.9	55.2	234	7.45	7.31	
Min.	<0.3	<0.3	<0.5	<0.5	<0.8	1.76	<0.3	<0.2	<0.2	<0.3	0.0355	3.63	0.363	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.24	0.849	0.575	9.84	1.76	6.50	0.195	0.227	0.184	1.23	0.278
Feb	0.550	0.476	0.270	1.32	1.26	1.23	0.0661	0.250	0.234	0.162	0.210
Mar	0.128	0.0883	0.159	0.639	0.550	0.654	0.126	0.139	0.133	0.106	0.0294
Apr	1.49	1.31	0.793	3.06	2.79	2.96	0.207	<0.01	<0.01	0.253	1.46
May	9.48	9.38	3.05	1.80	5.17	1.61	0.314	0.729	0.708	0.408	23.1
June	5.17	4.99	1.65	2.02	3.38	2.92	0.213	0.147	0.132	<0.01	8.39
July	6.57	6.33	4.05	4.42	4.59	5.67	1.55	1.29	1.27	0.466	12.6
Aug	4.36	4.28	0.870	1.90	3.08	1.36	0.135	<0.01	<0.01	0.0719	5.53
Sept	6.19	6.06	1.32	2.44	2.15	2.08	0.137	0.0967	0.0923	0.130	10.5
Oct	1.96	1.85	0.558	1.96	0.982	1.84	0.213	<0.01	<0.01	<0.01	2.85
Nov	1.22	0.529	2.72	9.37	1.71	12.1	1.07	2.90	2.80	2.01	0.332
Dec	0.667	0.272	1.05	6.37	2.24	7.10	0.375	0.0790	0.0673	0.643	0.0829
Annual	39.0	36.4	17.1	45.2	29.6	46.1	4.60	5.86	5.63	5.48	65.5

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	92.5	92.5	92.5	100
Mar	100	100	100	100	100	100	100	100	100	100	95.7	95.7	95.7	100
Apr	100	100	100	100	100	100	100	100	100	100	97.9	97.9	97.9	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.7	99.7	99.7	100

Terms and abbreviations are given in Table 3.5.

Table 3.47 Monthly results

Site: Mt. Sto. Tomas

Country: Philippines

Code: PHA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.48 Monthly results

Site: Ganghwa

Country: R of Korea

Code: KRA001

Precipitation amount-weighted average concentration/ Precipitation amount

2023	SO ₄ ²⁻ μmol L ⁻¹	nss-SO ₄ ²⁻ μmol L ⁻¹	NO ₃ ⁻ μmol L ⁻¹	Cl ⁻ μmol L ⁻¹	NH ₄ ⁺ μmol L ⁻¹	Na ⁺ μmol L ⁻¹	K ⁺ μmol L ⁻¹	Ca ²⁺ μmol L ⁻¹	nss-Ca ²⁺ μmol L ⁻¹	Mg ²⁺ μmol L ⁻¹	H ⁺ μmol L ⁻¹	pH	EC mS m ⁻¹	Precip. mm month ⁻¹ or mm year ⁻¹
Jan	11.9	11.1	33.2	20.4	39.6	14.6	3.19	6.02	5.71	4.44	0.836	6.08	1.23	22.3
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	9.54	9.06	16.3	12.3	16.6	7.86	1.07	9.46	9.29	3.40	2.13	5.67	0.858	48.7
May	7.13	6.56	10.9	14.5	7.45	9.56	0.766	4.40	4.19	2.50	15.2	4.82	0.861	55.5
June	6.22	5.56	11.7	15.6	12.7	11.1	1.54	4.38	4.14	2.66	8.95	5.05	0.824	92.3
July	5.17	4.49	8.38	14.4	8.82	11.3	1.72	3.31	3.07	2.76	5.92	5.23	0.596	82.1
Aug	6.71	5.38	9.35	33.4	17.5	22.2	3.15	5.66	5.18	4.51	0.526	6.28	1.03	102
Sept	5.29	4.71	7.50	17.5	11.0	9.62	1.05	6.10	5.90	4.44	1.81	5.74	0.610	99.4
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	19.0	13.8	33.1	112	38.2	87.5	4.37	10.3	8.40	12.6	17.6	4.76	2.67	41.9
Dec	6.74	5.81	29.3	17.6	25.4	15.4	1.17	6.74	6.41	3.91	4.50	5.35	1.11	50.5
Annual	7.53	6.43	14.2	25.6	16.4	18.2	1.88	5.84	5.44	4.21	5.85	5.23	0.968	594
Max.	71.6	64.5	202	263	259	227	13.6	32.7	30.2	29.4	58.9	6.56	7.60	
Min.	2.13	1.93	1.87	3.22	<0.8	1.35	0.394	1.94	1.89	1.30	0.275	4.23	0.347	

Wet deposition amount

2023	SO ₄ ²⁻ mmol m ⁻²	nss-SO ₄ ²⁻ mmol m ⁻²	NO ₃ ⁻ mmol m ⁻²	Cl ⁻ mmol m ⁻²	NH ₄ ⁺ mmol m ⁻²	Na ⁺ mmol m ⁻²	K ⁺ mmol m ⁻²	Ca ²⁺ mmol m ⁻²	nss-Ca ²⁺ mmol m ⁻²	Mg ²⁺ mmol m ⁻²	H ⁺ mmol m ⁻²
Jan	0.266	0.246	0.739	0.455	0.881	0.324	0.0710	0.134	0.127	0.0989	0.0186
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.465	0.442	0.795	0.601	0.811	0.383	0.0524	0.461	0.453	0.166	0.104
May	0.396	0.364	0.603	0.805	0.414	0.531	0.0425	0.244	0.233	0.139	0.844
June	0.575	0.513	1.08	1.44	1.18	1.02	0.142	0.404	0.382	0.245	0.826
July	0.424	0.368	0.688	1.18	0.724	0.927	0.141	0.272	0.252	0.227	0.486
Aug	0.682	0.546	0.949	3.39	1.77	2.25	0.320	0.575	0.526	0.458	0.0534
Sept	0.526	0.468	0.746	1.74	1.09	0.957	0.104	0.607	0.586	0.441	0.180
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.799	0.578	1.39	4.69	1.60	3.67	0.183	0.432	0.352	0.528	0.737
Dec	0.341	0.294	1.48	0.888	1.29	0.780	0.0593	0.341	0.324	0.198	0.227
Annual	4.47	3.82	8.46	15.2	9.76	10.8	1.12	3.47	3.23	2.50	3.47

Data completeness

2023	SO ₄ ²⁻ %TP	nss-SO ₄ ²⁻ %TP	NO ₃ ⁻ %TP	Cl ⁻ %TP	NH ₄ ⁺ %TP	Na ⁺ %TP	K ⁺ %TP	Ca ²⁺ %TP	nss-Ca ²⁺ %TP	Mg ²⁺ %TP	H ⁺ %TP	pH %TP	EC %TP	Precip. %PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.49 Monthly results

Site: Jeju

Country: R of Korea

Code: KRA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	50.4	<0.3	32.4	928	9.84	840	20.9	67.1	48.9	80.1	0.105	6.98	14.5	55.0
Feb	67.5	34.6	69.2	564	34.6	546	25.2	64.2	52.4	65.6	0.371	6.43	10.4	55.0
Mar	58.5	29.5	66.2	522	26.0	481	31.5	76.4	66.0	57.6	0.246	6.61	10.4	42.5
Apr	61.2	36.7	83.0	505	48.3	405	61.6	86.3	77.5	60.0	0.668	6.18	10.1	87.5
May	36.1	10.8	16.7	495	12.4	419	9.54	11.9	2.82	44.3	0.900	6.05	7.45	112
June	16.1	1.23	35.1	300	14.7	281	5.29	13.4	7.33	27.6	1.38	5.86	4.58	271
July	26.5	5.11	28.1	400	19.6	384	6.85	11.9	3.59	35.8	2.98	5.53	6.31	168
Aug	15.1	4.38	25.5	167	16.5	179	3.14	6.40	2.70	16.7	7.68	5.11	3.11	192
Sept	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	30.6	9.79	37.3	391	20.0	360	13.8	26.7	18.9	38.0	2.59	5.59	6.54	983
Max.	75.1	37.1	88.0	1349	52.8	1208	74.5	94.1	86.1	119	17.0	7.23	19.1	
Min.	10.5	<0.3	6.88	45.3	5.78	66.8	0.747	2.18	<0.2	4.25	0.0589	4.77	1.38	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	2.77	0.0108	1.78	51.0	0.541	46.2	1.15	3.69	2.69	4.41	<0.01
Feb	3.71	1.90	3.81	31.0	1.90	30.0	1.39	3.53	2.88	3.61	0.0204
Mar	2.49	1.25	2.81	22.2	1.11	20.4	1.34	3.25	2.80	2.45	0.0105
Apr	5.35	3.21	7.26	44.2	4.23	35.5	5.39	7.55	6.79	5.25	0.0584
May	4.04	1.21	1.87	55.5	1.39	46.9	1.07	1.33	0.316	4.97	0.101
June	4.36	0.333	9.51	81.4	3.99	76.1	1.43	3.63	1.99	7.47	0.375
July	4.47	0.861	4.73	67.3	3.31	64.6	1.15	2.00	0.604	6.02	0.501
Aug	2.90	0.839	4.89	31.9	3.17	34.2	0.601	1.23	0.517	3.21	1.47
Sept	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	30.1	9.63	36.7	385	19.6	354	13.5	26.2	18.6	37.4	2.54

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.50 Monthly results

Site: Imsil

Country: R of Korea

Code: KRA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	26.8	21.3	88.0	48.1	68.9	92.4	2.03	8.71	6.71	5.34	5.13	5.29	3.02	24.0
Feb	30.2	24.5	64.7	50.9	49.8	94.2	2.33	17.2	15.1	6.59	0.183	6.74	2.52	11.5
Mar	29.6	27.6	37.3	14.3	70.2	33.2	1.66	7.69	6.98	1.79	2.69	5.57	1.93	14.5
Apr	26.1	22.5	69.0	31.1	59.0	60.8	2.93	18.5	17.7	3.86	3.33	5.48	2.32	54.8
May	8.61	6.74	23.5	7.51	19.7	31.0	0.692	1.91	1.24	0.786	0.585	6.23	0.807	157
June	--	--	--	--	--	--	--	--	--	--	--	--	--	0
July	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Aug	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Sept	11.7	10.1	28.0	9.76	20.2	25.4	1.23	2.51	1.96	0.994	16.2	4.79	1.24	133
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Nov	14.9	10.7	24.0	46.0	21.7	69.2	2.25	4.19	2.86	4.26	4.19	5.38	1.52	84.4
Dec	16.0	13.0	52.5	32.5	52.2	50.4	1.88	6.36	5.33	3.65	4.80	5.32	1.74	122
Annual	14.9	12.2	38.3	23.2	34.0	45.5	1.58	5.49	4.58	2.50	5.87	5.23	1.48	601
Max.	145	137	458	515	364	490	23.5	186	183	47.4	43.7	6.99	11.8	
Min.	5.20	3.65	12.2	1.80	5.82	3.42	<0.3	<0.2	<0.2	<0.3	0.102	4.36	0.474	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.644	0.511	2.11	1.15	1.65	2.22	0.0486	0.209	0.161	0.128	0.123
Feb	0.347	0.282	0.744	0.585	0.573	1.08	0.0268	0.197	0.174	0.0758	<0.01
Mar	0.430	0.401	0.541	0.207	1.02	0.481	0.0241	0.112	0.101	0.0260	0.0390
Apr	1.43	1.23	3.78	1.70	3.23	3.33	0.161	1.02	0.970	0.212	0.183
May	1.35	1.06	3.70	1.18	3.09	4.88	0.109	0.301	0.195	0.124	0.0919
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sept	1.55	1.34	3.71	1.29	2.68	3.36	0.163	0.332	0.260	0.132	2.15
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	1.26	0.907	2.03	3.88	1.83	5.84	0.190	0.353	0.241	0.359	0.354
Dec	1.96	1.58	6.41	3.96	6.37	6.15	0.229	0.776	0.650	0.445	0.586
Annual	8.97	7.32	23.0	14.0	20.4	27.3	0.951	3.30	2.75	1.50	3.53

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	--	--	--	--	--	--	--	--	--	--	--	--	--	100
July	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Aug	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.51 Monthly results

Site: Mondy

Country: Russia

Code: RUA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.52 Monthly results

Site: Listvyanka

Country: Russia

Code: RUA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	11.7	11.3	34.8	7.14	2.65	6.48	4.61	19.7	19.6	5.46	13.6	4.87	1.23	13.0
Feb	22.7	21.9	48.1	4.94	5.17	13.5	7.54	33.2	32.9	7.09	7.89	5.10	1.71	10.6
Mar	16.3	15.4	30.7	4.07	3.14	15.7	8.12	18.2	17.9	4.87	13.7	4.86	1.28	3.5
Apr	17.7	17.1	21.8	4.10	2.77	9.20	7.33	19.8	19.6	5.17	10.1	4.99	1.33	20.9
May	29.2	28.7	15.6	3.72	16.5	8.13	9.55	15.4	15.2	7.39	12.4	4.91	1.46	15.4
June	27.1	26.6	7.12	5.58	23.7	8.68	8.21	6.71	6.52	3.01	19.8	4.70	1.54	112
July	11.8	11.6	11.8	2.20	8.72	3.36	2.84	4.08	4.01	1.18	18.8	4.73	0.957	89.9
Aug	11.4	11.3	12.0	4.52	12.3	1.87	2.16	6.60	6.56	1.82	17.8	4.75	1.05	73.4
Sept	14.2	13.8	7.09	6.15	3.88	7.10	5.94	8.86	8.71	3.43	11.5	4.94	0.996	85.0
Oct	35.0	34.2	19.5	17.2	16.1	12.7	26.1	31.8	31.5	15.9	4.05	5.39	1.85	10.4
Nov	18.1	17.7	34.5	4.52	6.29	6.67	7.04	22.9	22.7	7.17	13.6	4.86	1.30	6.6
Dec	23.2	22.9	43.2	4.85	14.2	4.61	3.30	22.1	22.0	5.11	18.3	4.74	1.59	11.2
Annual	18.1	17.7	13.3	4.96	12.1	6.29	5.89	9.75	9.62	3.37	16.0	4.80	1.23	452
Max.	46.2	45.0	120	24.0	52.7	23.0	52.4	96.3	96.1	30.0	50.1	6.14	5.58	
Min.	5.00	4.92	1.60	<0.5	1.09	0.435	<0.3	2.50	2.33	0.411	0.724	4.30	0.510	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.152	0.147	0.452	0.0927	0.0344	0.0842	0.0599	0.256	0.255	0.0710	0.176
Feb	0.241	0.232	0.510	0.0524	0.0548	0.143	0.0799	0.352	0.349	0.0752	0.0836
Mar	0.0571	0.0538	0.107	0.0142	0.0110	0.0550	0.0284	0.0637	0.0625	0.0170	0.0480
Apr	0.369	0.358	0.455	0.0857	0.0579	0.192	0.153	0.414	0.410	0.108	0.212
May	0.450	0.442	0.240	0.0573	0.254	0.125	0.147	0.236	0.234	0.114	0.192
June	3.04	2.98	0.796	0.624	2.65	0.971	0.918	0.751	0.730	0.336	2.22
July	1.07	1.05	1.07	0.198	0.784	0.302	0.255	0.367	0.360	0.106	1.69
Aug	0.836	0.828	0.882	0.332	0.905	0.138	0.158	0.484	0.481	0.134	1.31
Sept	1.21	1.17	0.603	0.523	0.330	0.603	0.505	0.753	0.740	0.291	0.976
Oct	0.364	0.356	0.203	0.179	0.168	0.132	0.271	0.331	0.328	0.165	0.0421
Nov	0.120	0.117	0.227	0.0298	0.0415	0.0440	0.0465	0.151	0.150	0.0473	0.0901
Dec	0.260	0.257	0.484	0.0543	0.159	0.0516	0.0369	0.247	0.246	0.0573	0.205
Annual	8.16	7.99	6.02	2.24	5.45	2.84	2.66	4.41	4.34	1.52	7.24

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	96.2	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	99.9	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.53 Monthly results

Site: Irkutsk

Country: Russia

Code: RUA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	35.2	33.1	26.8	43.4	30.9	34.5	5.42	71.7	70.9	14.2	0.641	6.19	2.76	15.4
Feb	57.7	55.6	43.2	30.8	32.8	34.1	9.91	73.2	72.5	15.9	2.83	5.55	3.36	13.1
Mar	36.4	31.2	26.6	74.1	18.7	85.0	9.54	83.8	81.9	13.7	0.557	6.25	3.68	8.4
Apr	30.3	28.1	19.6	22.3	25.5	36.6	9.67	33.8	33.1	10.3	1.29	5.89	2.08	39.5
May	27.6	27.4	13.8	4.43	32.3	4.78	9.26	20.4	20.3	8.58	2.14	5.67	1.51	36.6
June	27.9	27.7	10.9	5.80	32.4	3.28	6.14	13.2	13.2	10.1	4.06	5.39	1.29	90.1
July	25.8	25.5	12.3	5.77	26.5	5.39	5.74	12.9	12.8	4.29	17.2	4.77	1.56	80.6
Aug	16.4	16.3	12.1	2.51	21.0	1.40	1.46	11.3	11.2	3.26	5.36	5.27	0.906	88.9
Sept	17.1	15.5	7.67	2.57	11.6	2.30	8.25	12.7	12.6	4.96	4.08	5.39	0.971	68.7
Oct	65.0	64.1	31.1	23.4	33.0	15.4	25.2	79.5	79.2	26.5	1.67	5.78	3.53	5.9
Nov	47.1	45.0	22.3	42.0	27.7	35.0	5.84	62.1	61.4	12.9	1.71	5.77	2.71	12.5
Dec	33.3	31.8	25.7	32.6	30.9	25.1	3.06	40.4	39.8	9.21	2.31	5.64	2.12	22.1
Annual	26.5	25.6	14.7	11.4	25.3	11.2	6.26	23.0	22.8	7.61	5.74	5.24	1.55	482
Max.	365	261	189	419	221	479	212	699	689	476	35.5	7.24	22.5	
Min.	2.08	2.03	2.10	<0.5	2.90	0.435	0.500	3.49	3.47	1.23	0.0575	4.45	0.320	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.543	0.511	0.413	0.670	0.477	0.533	0.0836	1.11	1.09	0.219	<0.01
Feb	0.756	0.729	0.566	0.404	0.430	0.448	0.130	0.960	0.951	0.209	0.0371
Mar	0.305	0.262	0.224	0.621	0.157	0.714	0.0801	0.703	0.687	0.115	<0.01
Apr	1.20	1.11	0.774	0.880	1.01	1.44	0.381	1.34	1.30	0.406	0.0508
May	1.01	1.00	0.507	0.162	1.18	0.175	0.339	0.745	0.742	0.314	0.0782
June	2.51	2.49	0.981	0.523	2.92	0.296	0.553	1.19	1.19	0.906	0.365
July	2.08	2.05	0.987	0.465	2.14	0.434	0.462	1.04	1.03	0.346	1.38
Aug	1.46	1.45	1.08	0.224	1.87	0.124	0.130	1.00	0.998	0.290	0.477
Sept	1.18	1.06	0.527	0.176	0.797	0.158	0.567	0.872	0.868	0.341	0.280
Oct	0.385	0.380	0.184	0.139	0.195	0.0913	0.149	0.471	0.469	0.157	<0.01
Nov	0.588	0.562	0.279	0.524	0.346	0.437	0.0729	0.775	0.766	0.161	0.0213
Dec	0.735	0.702	0.568	0.719	0.681	0.554	0.0674	0.890	0.878	0.203	0.0510
Annual	12.8	12.3	7.09	5.51	12.2	5.41	3.02	11.1	11.0	3.67	2.77

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	99.7	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	99.6	100	100	99.6	99.6	99.6	99.6	99.6	99.6	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	99.9	100	100	99.9	99.9	99.9	99.9	99.9	99.9	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.54 Monthly results

Site: Primorskaya

Country: Russia

Code: RUA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	*	*	*	*	*	*	*	*	*	*	1.44	5.84	*	1.2
Feb	*	*	*	*	*	*	*	*	*	*	1.84	5.74	*	5.1
Mar	21.0	19.9	16.3	53.3	26.6	17.9	9.02	26.2	25.8	6.18	1.31	5.88	1.70	66.4
Apr	20.9	19.9	9.61	56.8	62.4	16.4	8.61	18.6	18.3	5.06	1.27	5.90	1.87	51.6
May	19.1	17.2	12.5	57.0	42.2	31.6	10.6	21.0	20.3	9.05	1.45	5.84	1.95	43.7
June	27.1	25.7	12.9	38.9	35.0	24.4	8.80	22.0	21.5	9.61	1.08	5.96	1.78	221
July	29.2	28.2	16.8	31.7	47.7	15.3	7.49	18.0	17.7	4.31	1.27	5.90	1.67	191
Aug	30.3	29.4	10.6	42.9	43.6	15.2	7.44	23.2	22.9	5.60	1.58	5.80	1.79	390
Sept	26.8	25.7	16.9	67.6	68.8	18.0	21.5	13.3	12.9	4.44	5.56	5.25	2.16	29.4
Oct	66.6	63.1	21.8	203	104	58.1	45.7	32.0	30.8	14.8	48.9	4.31	7.19	10.4
Nov	27.5	25.0	17.1	59.3	56.5	41.3	6.26	9.25	8.36	5.90	3.55	5.45	1.91	106
Dec	22.3	20.8	14.7	40.6	31.6	25.7	13.3	24.2	23.6	7.00	2.10	5.68	1.71	5.2
Annual	27.8	26.5	13.4	45.0	44.5	21.0	8.43	20.3	19.9	6.41	2.11	5.68	1.82	1121
Max.	85.7	81.0	30.3	245	112	172	71.1	35.4	34.1	21.8	100	6.60	8.67	
Min.	7.80	6.46	6.80	9.00	19.4	8.70	2.60	3.00	2.48	1.60	0.251	4.00	1.04	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	*	*	*	*	*	*	*	*	*	*	<0.01
Feb	*	*	*	*	*	*	*	*	*	*	<0.01
Mar	1.39	1.32	1.08	3.54	1.76	1.19	0.599	1.74	1.71	0.410	0.0868
Apr	1.08	1.02	0.496	2.93	3.22	0.844	0.444	0.962	0.943	0.261	0.0655
May	0.836	0.753	0.546	2.49	1.84	1.38	0.465	0.916	0.886	0.395	0.0634
June	6.01	5.68	2.85	8.62	7.74	5.41	1.95	4.88	4.76	2.13	0.240
July	5.57	5.39	3.20	6.05	9.11	2.93	1.43	3.44	3.38	0.824	0.243
Aug	11.8	11.5	4.14	16.7	17.0	5.94	2.90	9.05	8.92	2.18	0.617
Sept	0.788	0.756	0.497	1.99	2.02	0.530	0.631	0.390	0.378	0.131	0.164
Oct	0.693	0.657	0.226	2.12	1.08	0.604	0.475	0.333	0.320	0.154	0.508
Nov	2.90	2.64	1.81	6.27	5.96	4.36	0.661	0.977	0.882	0.623	0.374
Dec	0.116	0.108	0.0764	0.211	0.164	0.134	0.0692	0.126	0.123	0.0364	0.0109
Annual	31.2	29.7	15.1	50.4	49.9	23.5	9.45	22.8	22.3	7.19	2.36

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	0	0	0	0	0	0	0	0	0	0	100	100	0	100
Feb	0	0	0	0	0	0	0	0	0	0	100	100	0	100
Mar	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	100	100	95.0	100
Apr	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	100	100	95.3	100
May	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	100	100	96.3	100
June	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	100	100	98.4	100
July	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	100	100	98.8	100
Aug	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	100	100	88.8	100
Sept	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	100
Oct	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	100	100	55.8	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	100	100	57.7	100
Annual	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	99.4	99.4	93.2	100

Terms and abbreviations are given in Table 3.5.

Table 3.55 Monthly results

Site: Bangkok

Country: Thailand

Code: THA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	0.322	<0.3	125	14.7	49.8	10.9	7.16	82.7	82.4	4.54	0.513	6.29	2.04	91.4
Mar	11.3	7.68	347	71.4	71.0	60.9	21.0	250	249	21.0	0.224	6.65	0.160	9.8
Apr	7.18	6.03	26.4	8.46	47.1	19.1	3.84	46.7	46.2	5.35	0.347	6.46	2.33	24.9
May	6.41	6.07	21.3	3.10	83.8	5.57	0.512	14.2	14.1	0.704	2.19	5.66	1.37	119
June	7.65	6.76	22.0	14.3	27.5	14.9	2.38	16.3	16.0	2.09	0.611	6.21	0.927	66.5
July	10.6	9.42	26.0	17.3	43.7	19.3	4.97	22.5	22.1	2.52	0.397	6.40	1.37	226
Aug	4.37	4.05	11.1	7.16	25.6	5.38	3.16	6.78	6.67	1.40	0.500	6.30	0.666	188
Sept	7.23	6.87	33.2	7.44	37.4	5.96	2.19	9.52	9.39	1.50	5.74	5.24	1.17	280
Oct	8.45	6.99	31.5	5.66	37.3	5.84	2.12	7.18	7.06	0.996	3.85	5.41	1.40	331
Nov	9.13	*	43.4	6.44	*	*	*	*	*	*	3.37	5.47	1.24	66.5
Dec	5.41	*	18.1	4.23	*	*	*	*	*	*	0.933	6.03	0.740	35.5
Annual	7.24	6.33	35.2	9.19	42.1	9.88	3.17	20.2	20.0	2.01	2.56	5.59	1.26	1438
Max.	23.4	23.2	347	71.4	104	60.9	21.0	250	249	21.0	17.4	6.96	3.90	
Min.	<0.3	<0.3	4.03	1.69	12.2	<0.3	0.512	2.99	2.90	0.411	0.110	4.76	0.0400	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.0294	0.0227	11.4	1.34	4.55	0.998	0.655	7.56	7.53	0.415	0.0469
Mar	0.111	0.0752	3.40	0.699	0.695	0.597	0.206	2.45	2.44	0.206	<0.01
Apr	0.179	0.150	0.659	0.211	1.17	0.477	0.0955	1.16	1.15	0.133	<0.01
May	0.759	0.719	2.53	0.368	9.94	0.660	0.0606	1.69	1.67	0.0834	0.260
June	0.509	0.449	1.46	0.953	1.83	0.990	0.159	1.08	1.06	0.139	0.0406
July	2.39	2.12	5.85	3.90	9.85	4.35	1.12	5.08	4.99	0.568	0.0896
Aug	0.823	0.762	2.09	1.35	4.82	1.01	0.596	1.28	1.26	0.264	0.0941
Sept	2.02	1.92	9.27	2.08	10.5	1.67	0.612	2.66	2.63	0.420	1.61
Oct	2.80	2.32	10.4	1.87	12.4	1.93	0.703	2.38	2.34	0.330	1.28
Nov	0.607	*	2.89	0.428	*	*	*	*	*	*	0.224
Dec	0.192	*	0.641	0.150	*	*	*	*	*	*	0.0331
Annual	10.4	9.10	50.7	13.2	60.6	14.2	4.56	29.1	28.7	2.89	3.68

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	71.9	100	100	71.9	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	61.7	100	100	61.7	61.7	61.7	61.7	61.7	61.7	100	100	100	100
Nov	100	0	100	100	0	0	0	0	0	0	100	100	100	100
Dec	100	0	100	100	0	0	0	0	0	0	100	100	100	100
Annual	100	84.1	100	98.2	84.1	84.1	82.3	84.1	84.1	84.1	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.56 Monthly results

Site: Samutprakarn

Country: Thailand

Code: THA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	7.91	7.62	21.1	*	27.2	4.78	*	4.24	4.14	1.23	0.447	6.35	0.780	87.2
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	0
May	--	--	--	--	--	--	--	--	--	--	--	--	--	0
June	4.14	3.23	13.8	20.0	15.2	15.0	1.00	2.21	1.88	0.901	0.234	6.63	0.697	76.0
July	5.51	4.82	13.2	12.9	16.4	11.5	4.31	5.62	5.37	1.49	0.620	6.21	0.643	152
Aug	4.65	4.08	9.64	13.5	27.8	11.1	2.74	8.14	7.90	2.22	9.41	5.03	1.21	162
Sept	5.97	5.44	26.3	10.7	31.7	8.80	1.59	6.49	6.30	1.50	2.54	5.59	0.925	390
Oct	10.3	5.67	36.3	6.73	28.0	4.00	1.70	4.98	4.89	0.889	3.42	5.47	1.21	147
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	6.35	5.16	21.7	11.7	26.5	9.26	2.24	5.94	5.74	1.49	3.12	5.51	0.938	1013
Max.	22.8	14.8	109	38.4	53.8	30.9	12.0	25.2	24.7	4.94	33.1	6.76	2.75	
Min.	<0.3	<0.3	6.29	1.69	<0.8	<0.3	<0.3	0.499	0.499	<0.3	0.174	4.48	0.300	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.690	0.665	1.84	*	2.37	0.417	*	0.370	0.361	0.108	0.0390
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.314	0.246	1.05	1.52	1.15	1.14	0.0762	0.168	0.143	0.0685	0.0178
July	0.836	0.731	2.00	1.95	2.49	1.75	0.653	0.851	0.814	0.226	0.0940
Aug	0.752	0.660	1.56	2.18	4.49	1.79	0.443	1.32	1.28	0.358	1.52
Sept	2.33	2.12	10.2	4.18	12.3	3.43	0.620	2.53	2.45	0.585	0.992
Oct	1.51	0.833	5.33	0.989	4.11	0.588	0.250	0.731	0.718	0.131	0.502
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	6.43	5.23	22.0	11.8	26.9	9.38	2.27	6.01	5.81	1.51	3.17

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	0	100	100	0	100	100	100	100	100	100	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	--	--	--	--	--	--	--	--	--	--	--	--	--	100
May	--	--	--	--	--	--	--	--	--	--	--	--	--	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	96.7	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	64.5	100	100	64.5	64.5	64.5	64.5	64.5	64.5	100	100	100	100
Nov	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	100	94.9	100	91.4	94.9	94.9	86.3	94.9	94.9	94.9	100	100	99.5	100

Terms and abbreviations are given in Table 3.5.

Table 3.57 Monthly results

Site: Pathumthani

Country: Thailand

Code: THA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	24.5	24.0	51.6	12.5	55.2	8.66	4.23	15.1	15.0	2.45	20.7	4.68	2.99	12.5
Mar	48.2	45.0	<0.5	64.4	181	54.4	13.6	37.0	35.9	8.71	64.6	4.19	7.43	7.8
Apr	13.3	12.9	32.1	8.64	45.5	5.35	2.44	8.44	8.32	0.997	11.9	4.93	1.61	54.5
May	13.7	12.9	39.0	17.0	55.1	12.8	1.81	12.2	11.9	2.04	7.17	5.14	1.75	88.1
June	11.2	10.6	34.3	12.5	47.1	9.44	0.876	9.68	9.48	1.47	0.142	6.85	1.26	111
July	4.58	4.21	14.6	6.65	42.2	6.15	<0.3	5.26	5.13	1.08	0.0832	7.08	0.623	90.7
Aug	5.11	4.83	13.2	6.48	35.5	4.80	1.15	5.28	5.18	0.752	0.0316	7.50	0.787	355
Sept	3.64	3.47	7.88	4.52	21.0	2.97	0.658	3.11	3.04	0.425	0.163	6.79	0.513	300
Oct	7.53	7.35	17.6	4.21	29.6	2.96	0.953	5.46	5.40	0.723	0.124	6.91	0.770	143
Nov	7.34	7.19	20.5	5.26	33.1	2.34	1.04	4.61	4.56	0.429	0.0660	7.18	0.929	87.0
Dec	4.91	4.84	8.52	3.63	19.1	1.18	0.517	2.69	2.67	<0.3	0.0691	7.16	0.653	46.8
Annual	7.04	6.72	17.5	7.34	35.0	5.27	1.09	5.92	5.81	0.877	1.66	5.78	0.916	1297
Max.	101	96.2	233	126	194	86.6	14.6	201	199	21.1	64.6	8.85	8.74	
Min.	<0.3	<0.3	<0.5	1.55	6.21	0.473	<0.3	0.730	0.711	<0.3	0.0014	4.19	0.252	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.306	0.300	0.643	0.156	0.688	0.108	0.0528	0.189	0.187	0.0306	0.258
Mar	0.375	0.350	<0.01	0.501	1.41	0.423	0.106	0.288	0.279	0.0677	0.502
Apr	0.723	0.705	1.75	0.471	2.48	0.292	0.133	0.460	0.453	0.0544	0.647
May	1.21	1.14	3.44	1.50	4.85	1.13	0.159	1.07	1.05	0.180	0.632
June	1.25	1.18	3.81	1.39	5.24	1.05	0.0973	1.08	1.05	0.163	0.0157
July	0.416	0.382	1.33	0.603	3.82	0.557	<0.01	0.477	0.465	0.0982	<0.01
Aug	1.82	1.72	4.70	2.30	12.6	1.71	0.409	1.88	1.84	0.267	0.0112
Sept	1.09	1.04	2.36	1.36	6.30	0.892	0.197	0.932	0.912	0.127	0.0488
Oct	1.07	1.05	2.51	0.600	4.22	0.422	0.136	0.779	0.770	0.103	0.0177
Nov	0.638	0.626	1.78	0.457	2.88	0.204	0.0904	0.401	0.397	0.0373	<0.01
Dec	0.230	0.226	0.399	0.170	0.896	0.0554	0.0242	0.126	0.125	<0.01	<0.01
Annual	9.12	8.72	22.7	9.51	45.4	6.84	1.41	7.68	7.53	1.14	2.15

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.58 Monthly results

Site: Khanchanaburi

Country: Thailand

Code: THA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Max.	***	***	***	***	***	***	***	***	***	***	***	***	***	
Min.	***	***	***	***	***	***	***	***	***	***	***	***	***	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Feb	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mar	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Apr	***	***	***	***	***	***	***	***	***	***	***	***	***	***
May	***	***	***	***	***	***	***	***	***	***	***	***	***	***
June	***	***	***	***	***	***	***	***	***	***	***	***	***	***
July	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Aug	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Sept	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Oct	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Nov	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Dec	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Annual	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 3.5.

Table 3.59 Monthly results

Site: Hanoi

Country: Vietnam

Code: VNA001

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	127	126	107	32.5	242	8.03	7.95	81.1	80.9	9.84	0.439	6.36	6.37	6.4
Feb	102	101	86.6	28.2	187	14.4	7.66	48.7	48.4	10.6	2.38	5.62	4.68	23.9
Mar	106	104	78.6	47.6	117	43.0	30.0	75.8	74.9	25.8	6.92	5.16	5.47	27.1
Apr	213	206	147	133	166	119	51.9	217	214	40.0	1.08	5.97	11.1	58.2
May	48.9	48.4	52.1	11.5	78.7	7.42	3.79	22.0	21.8	5.54	30.2	4.52	3.30	68.2
June	26.4	25.9	30.7	14.0	46.2	9.30	2.72	23.5	23.3	4.82	1.32	5.88	1.58	491
July	22.5	22.0	20.2	8.61	33.2	8.97	2.15	13.3	13.1	2.41	3.08	5.51	1.16	207
Aug	34.1	33.6	33.5	8.67	60.5	8.47	2.57	20.7	20.5	3.26	1.12	5.95	1.72	412
Sept	57.4	56.7	50.7	27.1	143	12.3	8.87	20.8	20.5	5.42	1.14	5.94	3.09	535
Oct	21.4	20.8	20.9	20.2	37.3	11.2	6.23	17.4	17.1	5.57	0.960	6.02	1.40	73.8
Nov	15.3	14.7	14.2	14.8	20.1	10.4	5.28	13.3	13.1	4.98	0.838	6.08	1.02	137
Dec	*	*	*	*	*	*	*	*	*	*	*	*	*	0.3
Annual	43.1	42.3	39.6	20.1	78.8	13.6	6.41	26.9	26.6	5.84	2.41	5.62	2.35	2038
Max.	293	284	226	158	448	143	102	268	265	84.9	35.7	6.71	14.9	
Min.	10.1	9.58	9.50	3.32	9.20	5.46	0.946	7.89	7.69	1.01	0.196	4.45	0.750	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.812	0.809	0.687	0.208	1.55	0.0514	0.0509	0.519	0.518	0.0630	<0.01
Feb	2.44	2.42	2.07	0.674	4.48	0.345	0.183	1.16	1.16	0.254	0.0568
Mar	2.88	2.81	2.13	1.29	3.17	1.16	0.814	2.05	2.03	0.700	0.188
Apr	12.4	12.0	8.58	7.74	9.65	6.94	3.02	12.6	12.5	2.33	0.0628
May	3.33	3.30	3.55	0.784	5.37	0.506	0.258	1.50	1.49	0.378	2.06
June	13.0	12.7	15.1	6.86	22.7	4.56	1.33	11.5	11.4	2.36	0.647
July	4.65	4.54	4.18	1.78	6.86	1.85	0.443	2.75	2.71	0.498	0.636
Aug	14.1	13.8	13.8	3.57	24.9	3.49	1.06	8.51	8.44	1.34	0.463
Sept	30.7	30.3	27.1	14.5	76.6	6.55	4.74	11.1	11.0	2.90	0.610
Oct	1.58	1.53	1.54	1.49	2.75	0.824	0.460	1.28	1.26	0.411	0.0708
Nov	2.09	2.01	1.93	2.03	2.75	1.42	0.722	1.82	1.79	0.681	0.115
Dec	*	*	*	*	*	*	*	*	*	*	*
Annual	87.8	86.2	80.6	40.9	161	27.7	13.1	54.8	54.2	11.9	4.91

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	100
Apr	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	99.3	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	100
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Annual	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	100

Terms and abbreviations are given in Table 3.5.

Table 3.60 Monthly results

Site: Hoa Binh

Country: Vietnam

Code: VNA002

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	37.9	37.2	49.0	20.4	59.0	11.5	9.70	23.2	23.0	6.30	6.17	5.21	2.23	3.2
Feb	39.0	38.7	17.5	10.1	67.9	4.50	2.30	7.90	7.80	2.20	8.13	5.09	1.87	6.9
Mar	49.3	48.1	56.7	21.9	125	19.4	5.30	20.9	20.5	4.90	0.843	6.07	2.89	5.0
Apr	45.9	45.2	42.0	13.0	109	10.4	5.43	14.2	14.0	5.80	0.816	6.09	2.35	22.5
May	34.1	33.7	29.8	5.46	63.5	6.84	1.77	19.3	19.2	4.39	1.20	5.92	1.71	168
June	28.6	28.3	23.8	7.06	48.6	5.36	2.81	16.8	16.7	2.95	1.24	5.91	1.38	475
July	62.2	61.5	65.5	40.2	160	12.3	10.6	31.2	31.0	5.96	0.748	6.13	3.69	226
Aug	43.9	43.4	47.6	14.4	103	8.61	4.47	17.9	17.8	4.41	1.90	5.72	2.39	362
Sept	33.2	32.4	42.9	28.5	76.8	12.8	7.79	32.0	31.7	7.47	0.538	6.27	2.36	514
Oct	18.3	17.4	27.5	12.1	21.6	14.5	4.73	18.3	18.0	4.01	2.03	5.69	1.25	59.6
Nov	34.2	32.9	28.0	27.7	37.0	21.3	10.7	32.0	31.5	8.60	0.467	6.33	1.94	119
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Annual	37.3	36.7	39.2	19.3	79.6	10.2	5.81	23.8	23.6	5.29	1.11	5.95	2.16	1961
Max.	85.3	84.5	169	130	300	38.3	19.6	119	118	20.5	8.13	6.90	8.23	
Min.	12.7	12.3	12.4	1.99	11.3	1.70	0.449	6.36	6.30	1.20	0.126	5.09	0.811	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.121	0.119	0.157	0.0653	0.189	0.0368	0.0310	0.0742	0.0734	0.0202	0.0197
Feb	0.269	0.267	0.121	0.0697	0.469	0.0311	0.0159	0.0545	0.0538	0.0152	0.0561
Mar	0.247	0.241	0.284	0.110	0.623	0.0970	0.0265	0.105	0.102	0.0245	<0.01
Apr	1.03	1.02	0.946	0.293	2.46	0.235	0.122	0.320	0.314	0.131	0.0184
May	5.73	5.66	5.01	0.918	10.7	1.15	0.297	3.25	3.22	0.739	0.202
June	13.6	13.4	11.3	3.35	23.1	2.54	1.34	7.96	7.91	1.40	0.588
July	14.0	13.9	14.8	9.08	36.2	2.77	2.39	7.05	6.99	1.35	0.169
Aug	15.9	15.7	17.2	5.20	37.2	3.12	1.62	6.49	6.43	1.60	0.687
Sept	17.1	16.7	22.1	14.7	39.5	6.56	4.01	16.4	16.3	3.84	0.277
Oct	1.09	1.04	1.64	0.720	1.29	0.864	0.282	1.09	1.07	0.239	0.121
Nov	4.05	3.90	3.32	3.29	4.38	2.52	1.27	3.79	3.74	1.02	0.0554
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	73.1	71.9	76.8	37.8	156	19.9	11.4	46.7	46.2	10.4	2.18

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	100
Feb	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	100
Mar	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	100
Apr	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Annual	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100

Terms and abbreviations are given in Table 3.5.

Table 3.61 Monthly results

Site: Cuc Phuong

Country: Vietnam

Code: VNA003

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	43.2	41.3	125	47.1	73.3	31.4	8.44	91.7	91.0	18.7	1.00	6.00	3.90	29.5
Feb	69.5	65.5	122	82.4	137	67.2	15.8	92.6	91.2	20.4	1.46	5.84	5.52	51.0
Mar	69.0	65.1	204	69.5	214	64.7	20.5	186	185	31.9	0.815	6.09	8.42	43.8
Apr	19.5	17.7	92.7	31.1	70.2	29.0	23.5	68.8	68.2	14.9	1.60	5.79	3.85	95.4
May	29.2	26.9	115	42.4	144	37.9	17.1	61.9	61.1	19.1	1.43	5.85	4.57	170
June	10.2	8.91	37.3	45.7	70.8	21.8	28.8	40.5	40.0	14.1	0.820	6.09	2.68	264
July	6.33	5.40	32.3	20.2	23.9	15.4	3.21	30.6	30.3	8.73	0.719	6.14	1.44	285
Aug	6.55	5.98	27.2	10.6	11.9	9.45	4.33	101	100	11.4	0.740	6.13	2.60	247
Sept	5.81	5.30	10.7	8.54	9.08	8.54	2.35	33.1	32.9	6.65	1.24	5.91	1.13	526
Oct	42.4	38.0	78.8	32.1	52.7	72.0	41.7	364	363	20.8	0.0554	7.26	10.2	35.6
Nov	24.9	21.8	48.3	49.2	63.2	50.5	19.1	50.9	49.8	11.5	1.73	5.76	3.05	60.0
Dec	96.8	90.8	59.1	100	120	99.7	16.5	76.7	74.5	15.2	0.454	6.34	4.90	63.6
Annual	17.4	15.9	46.7	28.9	51.3	24.0	11.5	60.8	60.3	12.0	1.03	5.99	2.72	1870
Max.	296	282	454	319	476	234	71.1	452	450	66.7	2.09	7.40	18.2	
Min.	3.68	3.06	8.79	1.66	3.05	2.04	0.844	14.8	14.6	3.87	0.0398	5.68	0.650	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.28	1.22	3.70	1.39	2.16	0.928	0.249	2.71	2.69	0.551	0.0295
Feb	3.54	3.34	6.24	4.20	6.98	3.42	0.806	4.72	4.65	1.04	0.0746
Mar	3.02	2.85	8.95	3.05	9.39	2.83	0.896	8.16	8.10	1.40	0.0357
Apr	1.86	1.69	8.85	2.97	6.69	2.77	2.24	6.57	6.51	1.42	0.153
May	4.96	4.57	19.6	7.21	24.4	6.44	2.91	10.5	10.4	3.24	0.242
June	2.70	2.35	9.85	12.1	18.7	5.74	7.59	10.7	10.6	3.71	0.216
July	1.80	1.54	9.19	5.74	6.81	4.38	0.914	8.71	8.62	2.49	0.205
Aug	1.62	1.48	6.71	2.61	2.93	2.33	1.07	24.8	24.8	2.83	0.183
Sept	3.06	2.79	5.65	4.49	4.78	4.49	1.23	17.4	17.3	3.50	0.654
Oct	1.51	1.35	2.80	1.14	1.88	2.56	1.48	13.0	12.9	0.739	<0.01
Nov	1.49	1.31	2.90	2.95	3.79	3.03	1.15	3.05	2.99	0.687	0.104
Dec	6.16	5.77	3.76	6.37	7.64	6.34	1.05	4.88	4.74	0.967	0.0289
Annual	32.5	29.8	87.4	54.0	96.0	44.9	21.5	114	113	22.5	1.93

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	100
Feb	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	100
Mar	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	100
Apr	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	99.1	100
Sept	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	100
Oct	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	100
Nov	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	100
Dec	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	100
Annual	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	100

Terms and abbreviations are given in Table 3.5.

Table 3.62 Monthly results

Site: Da Nang

Country: Vietnam

Code: VNA004

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	22.6	16.2	7.48	180	35.5	105	20.2	22.8	20.5	29.2	1.72	5.77	3.66	184
Feb	41.7	36.1	19.4	225	91.0	94.3	54.3	36.6	34.6	33.9	1.95	5.71	5.50	85.2
Mar	79.7	72.1	34.6	433	172	126	115	94.8	92.1	60.6	0.794	6.10	9.80	18.5
Apr	52.8	50.0	22.2	167	58.6	46.9	35.2	64.5	63.5	20.9	1.17	5.93	4.56	22.3
May	19.0	15.7	6.04	190	13.2	54.9	67.0	47.0	45.8	22.4	1.65	5.78	3.23	55.9
June	8.71	7.49	3.22	95.5	14.1	20.3	20.9	27.7	27.3	12.7	0.989	6.00	1.79	112
July	12.0	10.2	5.24	147	23.9	29.5	59.8	47.6	47.0	13.0	0.709	6.15	3.01	84.4
Aug	12.6	10.8	4.58	143	18.1	29.7	41.8	36.0	35.3	19.8	1.47	5.83	2.56	88.6
Sept	8.98	5.27	1.55	129	11.2	61.6	59.1	33.2	31.8	23.6	1.11	5.95	3.16	400
Oct	6.99	6.23	1.55	55.6	9.66	12.5	4.49	18.7	18.4	19.0	1.65	5.78	1.28	1754
Nov	10.4	7.05	3.33	108	5.51	55.5	5.11	31.9	30.7	16.7	1.47	5.83	2.01	840
Dec	16.6	13.4	5.28	134	19.2	53.9	13.1	41.4	40.2	19.5	1.44	5.84	2.89	301
Annual	11.1	8.78	3.36	98.4	14.1	38.1	16.5	27.5	26.6	19.7	1.50	5.82	2.11	3946
Max.	152	146	112	611	453	316	453	135	134	80.8	2.09	6.58	16.2	
Min.	4.61	4.07	0.659	53.9	4.38	7.70	2.61	15.2	15.0	7.40	0.263	5.68	1.05	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	4.16	2.99	1.38	33.1	6.53	19.4	3.71	4.20	3.78	5.37	0.316
Feb	3.56	3.07	1.66	19.2	7.76	8.03	4.63	3.12	2.95	2.89	0.166
Mar	1.47	1.33	0.640	8.01	3.19	2.32	2.13	1.75	1.70	1.12	0.0147
Apr	1.18	1.11	0.494	3.73	1.31	1.05	0.785	1.44	1.42	0.466	0.0262
May	1.06	0.879	0.338	10.6	0.737	3.07	3.74	2.63	2.56	1.25	0.0923
June	0.972	0.836	0.359	10.7	1.57	2.26	2.33	3.09	3.05	1.42	0.110
July	1.01	0.860	0.442	12.4	2.02	2.49	5.04	4.02	3.97	1.10	0.0598
Aug	1.12	0.958	0.406	12.6	1.61	2.63	3.71	3.19	3.13	1.75	0.130
Sept	3.60	2.11	0.621	51.5	4.48	24.7	23.7	13.3	12.7	9.44	0.445
Oct	12.3	10.9	2.72	97.5	16.9	22.0	7.88	32.8	32.4	33.4	2.89
Nov	8.73	5.92	2.80	90.5	4.63	46.6	4.29	26.7	25.7	14.0	1.23
Dec	5.00	4.02	1.59	40.3	5.77	16.2	3.94	12.5	12.1	5.86	0.434
Annual	43.7	34.7	13.3	388	55.7	150	65.2	108	105	77.9	5.92

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	100
Apr	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	100
Aug	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	100

Terms and abbreviations are given in Table 3.5.

Table 3.63 Monthly results

Site: Can Tho

Country: Vietnam

Code: VNA005

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	26.2	25.5	3.33	30.9	20.8	13.1	9.57	13.3	13.0	6.75	3.70	5.43	1.27	60.0
Feb	*	*	*	*	*	*	*	*	*	*	3.02	5.52	1.35	2.0
Mar	31.1	29.8	4.03	33.3	20.5	20.1	10.9	17.3	16.9	11.2	2.75	5.56	1.32	5.0
Apr	27.1	25.9	3.40	31.7	21.3	20.4	7.96	17.3	16.9	8.39	1.42	5.85	1.35	47.0
May	24.6	23.7	3.85	28.7	20.6	14.8	8.43	16.3	16.0	7.93	1.17	5.93	1.37	166
June	26.8	25.7	4.27	30.1	21.4	17.1	8.83	17.0	16.7	7.75	1.03	5.99	1.32	181
July	26.3	25.2	3.43	30.4	20.9	18.8	8.98	16.5	16.1	8.35	1.24	5.91	1.38	252
Aug	24.8	23.7	4.01	28.7	22.6	17.9	8.12	14.8	14.4	8.79	1.28	5.89	1.37	226
Sept	26.3	25.4	3.99	29.7	19.7	15.3	10.4	16.5	16.1	7.84	1.77	5.75	1.30	318
Oct	26.3	25.1	3.45	30.1	21.6	19.7	10.3	14.5	14.0	8.55	1.17	5.93	1.41	424
Nov	23.8	22.6	3.98	28.6	19.8	19.7	8.38	15.7	15.3	9.15	1.35	5.87	1.44	160
Dec	29.4	28.2	3.68	27.2	21.3	19.9	11.0	15.5	15.1	9.61	1.38	5.86	1.37	25.0
Annual	25.9	24.8	3.77	29.7	21.0	17.7	9.33	15.7	15.3	8.31	1.39	5.86	1.36	1866
Max.	31.1	30.1	4.98	33.3	25.0	21.6	11.6	19.4	18.9	11.2	7.59	6.12	1.63	
Min.	22.2	21.0	2.78	25.1	16.2	10.1	7.26	11.9	11.5	6.49	0.759	5.12	1.16	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.57	1.53	0.200	1.86	1.25	0.786	0.574	0.796	0.779	0.405	0.222
Feb	*	*	*	*	*	*	*	*	*	*	<0.01
Mar	0.155	0.149	0.0202	0.166	0.102	0.101	0.0543	0.0865	0.0843	0.0558	0.0138
Apr	1.28	1.22	0.160	1.49	1.00	0.957	0.374	0.815	0.794	0.394	0.0666
May	4.08	3.93	0.639	4.76	3.42	2.46	1.40	2.71	2.66	1.32	0.195
June	4.84	4.66	0.772	5.44	3.87	3.10	1.60	3.09	3.02	1.40	0.186
July	6.63	6.34	0.864	7.66	5.27	4.73	2.26	4.16	4.06	2.10	0.311
Aug	5.60	5.35	0.906	6.48	5.10	4.05	1.83	3.34	3.25	1.99	0.289
Sept	8.36	8.07	1.27	9.44	6.27	4.88	3.30	5.23	5.13	2.49	0.563
Oct	11.1	10.6	1.46	12.8	9.16	8.33	4.38	6.14	5.96	3.63	0.495
Nov	3.80	3.61	0.636	4.58	3.17	3.15	1.34	2.51	2.44	1.46	0.216
Dec	0.735	0.705	0.0921	0.679	0.533	0.499	0.274	0.388	0.377	0.240	0.0346
Annual	48.2	46.3	7.03	55.4	39.2	33.1	17.4	29.3	28.6	15.5	2.60

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	100	100	100	100
Feb	0	0	0	0	0	0	0	0	0	0	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	100	100	100	100
Dec	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	100	100	100	100
Annual	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.64 Monthly results

Site: Ho Chi Minh

Country: Vietnam

Code: VNA006

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	33.6	32.5	11.6	48.8	34.8	18.4	11.6	19.3	18.9	11.2	3.58	5.45	2.02	42.0
Feb	32.3	31.1	10.4	42.6	29.3	18.6	11.4	17.2	16.8	9.53	2.40	5.62	1.84	10.0
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Apr	27.4	26.5	10.3	44.9	32.4	15.5	9.96	15.9	15.5	9.23	1.04	5.98	1.73	103
May	31.5	30.5	13.0	42.1	29.6	16.2	11.1	17.1	16.7	10.8	1.26	5.90	1.70	124
June	28.0	26.8	13.7	46.3	32.4	20.1	11.3	19.5	19.0	11.3	0.885	6.05	1.82	506
July	32.2	31.1	12.5	43.5	31.6	18.9	10.1	17.9	17.5	11.1	1.13	5.95	1.66	235
Aug	28.7	27.6	8.38	44.1	30.9	19.5	9.71	17.0	16.6	10.1	0.835	6.08	1.59	274
Sept	31.1	30.1	12.4	37.9	38.1	16.6	12.1	16.4	16.0	9.60	0.895	6.05	1.60	382
Oct	30.7	29.5	11.0	49.9	35.4	20.0	9.69	16.8	16.4	10.3	1.17	5.93	1.82	139
Nov	27.2	26.1	12.6	43.6	39.3	18.7	10.0	17.2	16.8	9.54	0.920	6.04	1.66	142
Dec	25.9	24.6	13.3	49.1	32.1	21.5	11.2	18.6	18.2	9.26	1.46	5.84	1.65	60.0
Annual	29.6	28.5	12.1	43.9	33.7	18.6	10.8	17.7	17.3	10.4	1.04	5.98	1.70	2017
Max.	35.5	34.5	18.5	54.9	47.0	27.4	13.6	24.0	23.7	14.2	3.80	6.35	2.06	
Min.	23.2	22.1	6.31	33.6	24.0	13.0	7.89	12.1	11.7	7.70	0.447	5.42	1.45	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	1.41	1.36	0.486	2.05	1.46	0.773	0.487	0.811	0.795	0.470	0.150
Feb	0.323	0.311	0.104	0.426	0.293	0.186	0.114	0.172	0.168	0.0953	0.0240
Mar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apr	2.83	2.73	1.06	4.62	3.34	1.60	1.03	1.63	1.60	0.950	0.108
May	3.90	3.78	1.61	5.22	3.67	2.01	1.37	2.12	2.08	1.35	0.156
June	14.2	13.6	6.95	23.4	16.4	10.2	5.71	9.85	9.63	5.72	0.448
July	7.57	7.30	2.93	10.2	7.41	4.44	2.38	4.22	4.12	2.61	0.265
Aug	7.88	7.55	2.30	12.1	8.48	5.34	2.66	4.67	4.55	2.75	0.229
Sept	11.9	11.5	4.75	14.5	14.5	6.33	4.62	6.26	6.12	3.67	0.342
Oct	4.27	4.11	1.53	6.93	4.93	2.78	1.35	2.34	2.28	1.42	0.163
Nov	3.86	3.70	1.79	6.19	5.58	2.66	1.42	2.44	2.38	1.35	0.131
Dec	1.55	1.47	0.800	2.94	1.93	1.29	0.671	1.12	1.09	0.556	0.0876
Annual	59.7	57.4	24.3	88.6	68.0	37.6	21.8	35.6	34.8	21.0	2.10

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.65 Monthly results

Site: Yen Bai

Country: Vietnam

Code: VNA007

Precipitation amount-weighted average concentration/ Precipitation amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹	μmol L ⁻¹		mS m ⁻¹	mm month ⁻¹ or mm year ⁻¹
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Feb	75.7	75.1	67.2	21.4	153	11.2	8.11	37.5	37.2	6.80	3.71	5.43	3.91	29.0
Mar	33.8	33.3	32.2	12.5	81.1	8.46	3.54	13.9	13.7	2.09	4.11	5.39	1.91	34.3
Apr	28.9	28.2	27.3	9.02	36.1	10.4	7.08	24.2	23.9	5.99	0.877	6.06	1.51	105
May	35.7	34.6	29.6	15.2	45.1	17.7	6.90	19.0	18.6	8.50	0.759	6.12	1.77	39.1
June	52.9	51.7	31.8	21.9	91.4	20.1	8.22	21.6	21.1	7.66	0.912	6.04	2.53	257
July	55.5	54.8	45.9	23.4	115	11.3	7.79	25.8	25.6	7.38	0.969	6.01	2.87	173
Aug	47.5	46.7	42.2	18.2	98.0	13.5	6.10	21.6	21.3	4.59	1.50	5.82	2.49	210
Sept	68.5	67.5	58.9	20.1	123	15.7	10.7	42.7	42.3	7.00	0.541	6.27	3.58	305
Oct	18.5	18.0	13.6	11.1	23.1	8.40	5.90	13.7	13.5	3.30	1.32	5.88	1.02	122
Nov	171	169	153	37.2	352	30.6	17.9	58.4	57.7	10.4	1.57	5.80	8.18	97.0
Dec	23.6	22.7	17.3	12.7	24.9	15.1	6.60	14.7	14.4	4.60	0.776	6.11	1.23	4.3
Annual	58.7	57.8	48.4	19.8	110	15.4	8.62	28.9	28.6	6.54	1.14	5.94	2.97	1376
Max.	172	170	160	42.5	355	34.6	20.1	120	120	12.1	8.91	6.90	8.21	
Min.	16.8	16.4	9.50	7.30	23.1	6.90	1.70	9.50	9.35	1.70	0.126	5.05	0.950	

Wet deposition amount

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
2023	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb	2.20	2.18	1.95	0.621	4.42	0.326	0.235	1.09	1.08	0.197	0.108
Mar	1.16	1.14	1.10	0.430	2.78	0.290	0.121	0.475	0.469	0.0717	0.141
Apr	3.03	2.97	2.87	0.948	3.80	1.09	0.744	2.54	2.52	0.630	0.0922
May	1.40	1.35	1.16	0.594	1.76	0.692	0.270	0.743	0.728	0.332	0.0297
June	13.6	13.3	8.16	5.62	23.5	5.17	2.11	5.54	5.43	1.97	0.234
July	9.63	9.51	7.96	4.06	20.0	1.95	1.35	4.47	4.43	1.28	0.168
Aug	9.98	9.81	8.87	3.84	20.6	2.84	1.28	4.53	4.47	0.965	0.315
Sept	20.9	20.6	18.0	6.15	37.6	4.79	3.27	13.0	12.9	2.13	0.165
Oct	2.25	2.19	1.66	1.35	2.81	1.02	0.718	1.67	1.65	0.402	0.160
Nov	16.6	16.4	14.8	3.61	34.1	2.96	1.74	5.66	5.60	1.01	0.153
Dec	0.101	0.0976	0.0744	0.0546	0.107	0.0649	0.0284	0.0632	0.0618	0.0198	<0.01
Annual	80.8	79.5	66.6	27.3	151	21.2	11.9	39.8	39.3	9.01	1.57

Data completeness

	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC	Precip.
2023	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%PCL
Jan	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Feb	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mar	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Apr	100	100	100	100	100	100	100	100	100	100	100	100	100	100
May	100	100	100	100	100	100	100	100	100	100	100	100	100	100
June	100	100	100	100	100	100	100	100	100	100	100	100	100	100
July	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aug	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sept	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Annual	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.66 Annual precipitation amount and precipitation amount-weighted average concentration in 2023

Country	Name of sites (Codes)	Precip. mm y ⁻¹	SO ₄ ²⁻ μmol L ⁻¹	nss-SO ₄ ²⁻ μmol L ⁻¹	NO ₃ ⁻ μmol L ⁻¹	Cl ⁻ μmol L ⁻¹	NH ₄ ⁺ μmol L ⁻¹	Na ⁺ μmol L ⁻¹	K ⁺ μmol L ⁻¹	Ca ²⁺ μmol L ⁻¹	nss-Ca ²⁺ μmol L ⁻¹	Mg ²⁺ μmol L ⁻¹	H ⁺ μmol L ⁻¹	pH	EC mS m ⁻¹
Cambodia	Phnom Penh (KHA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
China	Haifu (CNA003)	1353	24.0	23.8	41.9	7.04	80.8	4.53	3.50	27.1	27.0	3.43	0.893	6.05	2.02
	Jinyunshan (CNA004)	1347	21.6	21.5	32.3	3.85	55.2	2.63	1.60	14.5	14.4	2.70	5.99	5.22	1.53
	Shizhan (CNA005)	1056	20.6	19.3	22.6	16.2	123	20.5	2.67	57.6	57.2	3.58	0.0746	7.13	2.89
	Jiwozi (CNA007)	847	18.1	17.4	17.7	21.9	18.0	10.2	6.46	37.0	36.8	6.83	0.976	6.01	1.44
	Hongwen (CNA008)	827	8.83	7.82	19.4	17.5	16.9	16.7	1.72	7.04	6.67	3.03	5.91	5.23	0.956
	Xiaoping (CNA009)	971	10.9	10.2	30.4	13.0	35.4	10.5	2.72	6.39	6.17	2.57	10.2	4.99	1.26
	Xiang Zhou (CNA010)	2109	7.81	6.58	17.6	23.6	21.0	20.4	1.35	13.4	12.9	2.70	3.37	5.47	1.07
	Zhuxiandong (CNA011)	2133	8.29	6.82	18.3	27.9	19.4	24.5	1.42	7.93	7.40	3.10	5.50	5.26	1.08
	Wuzhishan(CNA013)	664	2.38	2.06	4.93	5.13	8.87	5.83	2.15	3.63	3.52	0.838	0.688	6.16	0.520
	Lijiang(CNA014)	480	3.28	3.19	5.75	3.94	12.3	1.59	0.919	11.6	11.5	1.30	0.749	6.13	0.414
Indonesia	Jakarta (IDA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Kototabang (IDA003)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Maros (IDA005)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Jembrana(IDA006)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Lombok(IDA007)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri (JPA001)	1428	12.3	6.78	12.8	106	15.5	91.2	3.00	4.81	2.84	10.7	7.12	5.15	2.17
	Ochiishi (JPA002)	806	*	*	*	*	*	*	*	*	*	*	*	*	*
	Sado-seki (JPA004)	1451	15.1	6.68	12.3	160	11.2	139	3.42	5.97	2.97	16.1	8.09	5.09	2.74
	Happo (JPA005)	2775	3.96	3.67	5.73	5.77	6.33	4.91	0.385	1.94	1.84	0.913	5.73	5.24	0.499
	Ijira (JPA006)	4370	8.43	7.71	10.7	14.4	10.8	12.0	0.506	2.29	2.03	1.65	13.5	4.87	1.02
	Oki (JPA007)	1828	*	*	*	*	*	*	*	*	*	*	*	*	*
	Yusuhara (JPA009)	2624	6.94	5.84	7.04	21.3	6.56	18.3	1.26	1.93	1.54	2.89	11.2	4.95	0.961
	Hedo (JPA010)	2081	26.0	7.70	12.2	353	12.4	304	7.66	9.45	2.89	35.7	11.4	4.94	5.49
	Ogasawara (JPA011)	1520	12.7	4.35	2.87	160	3.03	138	3.38	3.53	0.590	15.7	10.00	5.00	2.73
	Tokyo (JPA012)	1297	7.30	6.33	12.6	18.2	18.4	16.1	0.624	3.56	3.21	2.08	7.39	5.13	0.959
	Niigata-maki(JPA013)	1745	17.0	6.54	13.3	203	12.4	175	4.05	7.28	3.51	21.2	9.91	5.00	3.49
	Tsushima(JPA014)	1993	11.0	8.77	12.3	43.0	11.5	36.3	1.37	2.13	1.34	4.07	12.4	4.91	1.52
Lao PDR	Vientiane (LAA001)	1218	3.11	2.92	7.97	3.99	7.64	3.41	1.59	11.1	11.0	1.31	0.241	6.62	0.530
Malaysia	Petaling Jaya (MYA001)	3631	12.6	12.3	32.4	7.89	21.7	5.12	1.48	4.14	4.03	0.795	28.9	4.54	1.93
	Tanah Rata(MYA002)	2902	3.87	3.68	6.77	3.58	8.29	3.17	1.81	2.01	1.95	<0.3	8.41	5.08	0.607
	Danum Valley (MYA003)	2167	2.53	2.29	0.977	5.08	<0.8	4.00	2.83	1.46	1.38	0.709	5.08	5.29	0.418
	Kuching (MYA004)	4306	2.56	2.19	1.30	6.88	5.92	6.04	2.11	2.44	2.31	0.431	3.39	5.47	0.406
	Gunung Brinchang(MYA005)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar (MNA001)	168	22.9	22.7	12.4	3.38	26.3	4.11	1.71	27.1	27.0	2.97	4.22	5.37	1.15
	Terelj (MNA002)	130	51.7	50.7	23.5	6.50	28.7	16.8	3.49	34.5	34.2	3.15	4.45	5.35	1.76
Myanmar	Yangon (MMA001)	2615	8.18	7.23	9.13	17.8	19.0	15.8	3.06	8.97	8.62	3.10	0.146	6.83	1.42
Philippines	Manila Observatory(PHA001)	3560	14.4	13.0	13.9	20.7	32.7	24.1	1.97	3.82	3.53	2.08	14.6	4.84	1.45
	Los Baños (PHA002)	2139	18.2	17.0	7.98	21.1	13.9	21.5	2.15	2.74	2.63	2.56	30.6	4.51	1.80
	Mt. Sto. Tomas (PHA003)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
R of Korea	Ganghwa (KRA001)	594	7.53	6.43	14.2	25.6	16.4	18.2	1.88	5.84	5.44	4.21	5.85	5.23	0.968
	Jeju (KRA002)	983	30.6	9.79	37.3	391	20.0	360	13.8	26.7	18.9	38.0	2.59	5.59	6.54
	Imsil (KRA003)	601	14.9	12.2	38.3	23.2	34.0	45.5	1.58	5.49	4.58	2.50	5.87	5.23	1.48
Russia	Mondy (RUA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Listvyanka (RUA002)	452	18.1	17.7	13.3	4.96	12.1	6.29	5.89	9.75	9.62	3.37	16.0	4.80	1.23
	Irkutsk (RUA003)	482	26.5	25.6	14.7	11.4	25.3	11.2	6.26	23.0	22.8	7.61	5.74	5.24	1.55
	Primorskaya (RUA004)	1121	27.8	26.5	13.4	45.0	44.5	21.0	8.43	20.3	19.9	6.41	2.11	5.68	1.82
Thailand	Bangkok (THA001)	1438	7.24	6.33	35.2	9.19	42.1	9.88	3.17	20.2	20.0	2.01	2.56	5.59	1.26
	Samutprakarn (THA002)	1013	6.35	5.16	21.7	11.7	26.5	9.26	2.24	5.94	5.74	1.49	3.12	5.51	0.938
	Pathumthani (THA003)	1297	7.04	6.72	17.5	7.34	35.0	5.27	1.09	5.92	5.81	0.877	1.66	5.78	0.916
	Khanchanaburi (THA004)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Vietnam	Hanoi (VNA001)	2038	43.1	42.3	39.6	20.1	78.8	13.6	6.41	26.9	26.6	5.84	2.41	5.62	2.35
	Hoa Binh (VNA002)	1961	37.3	36.7	39.2	19.3	79.6	10.2	5.81	23.8	23.6	5.29	1.11	5.95	2.16
	Cuc Phuong (VNA003)	1870	17.4	15.9	46.7	28.9	51.3	24.0	11.5	60.8	60.3	12.0	1.03	5.99	2.72
	Da Nang (VNA004)	3946	11.1	8.78	3.36	98.4	14.1	38.1	16.5	27.5	26.6	19.7	1.50	5.82	2.11
	Can Tho (VNA005)	1866	25.9	24.8	3.77	29.7	21.0	17.7	9.33	15.7	15.3	8.31	1.39	5.86	1.36
	Ho Chi Minh (VNA006)	2017	29.6	28.5	12.1	43.9	33.7	18.6	10.8	17.7	17.3	10.4	1.04	5.98	1.70
	Yen Bai (VNA007)	1376	58.7	57.8	48.4	19.8	110	15.4	8.62	28.9	28.6	6.54	1.14	5.94	2.97

Terms and abbreviations are given in Table 3.5.

Table 3.67 Annual wet depositions in 2023

Country	Name of sites (Codes)	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺
		mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹	mmol m ⁻² y ⁻¹
Cambodia	Phnom Penh (KHA001)	***	***	***	***	***	***	***	***	***	***	***
China	Haifu (CNA003)	32.5	32.1	56.7	9.52	109	6.13	4.73	36.7	36.6	4.64	1.21
	Jinyunshan (CNA004)	29.1	28.9	43.5	5.18	74.4	3.54	2.16	19.5	19.4	3.63	8.07
	Shizhan (CNA005)	21.7	20.4	23.9	17.1	130	21.7	2.82	60.9	60.4	3.79	0.0787
	Jiwozi (CNA007)	15.3	14.8	15.0	18.6	15.3	8.68	5.47	31.3	31.2	5.79	0.826
	Hongwen (CNA008)	7.30	6.47	16.1	14.5	14.0	13.8	1.42	5.82	5.52	2.51	4.89
	Xiaoping (CNA009)	10.5	9.93	29.5	12.6	34.4	10.2	2.64	6.21	5.99	2.49	9.90
	Xiang Zhou (CNA010)	16.5	13.9	37.0	49.7	44.4	43.1	2.86	28.2	27.2	5.69	7.10
	Zhuxiandong (CNA011)	17.7	14.5	39.1	59.5	41.4	52.2	3.03	16.9	15.8	6.62	11.7
	Wuzhishan(CNA013)	1.58	1.37	3.27	3.40	5.89	3.87	1.43	2.41	2.34	0.556	0.457
	Lijiang(CNA014)	1.57	1.53	2.76	1.89	5.91	0.763	0.441	5.55	5.53	0.622	0.359
Indonesia	Jakarta (IDA001)	***	***	***	***	***	***	***	***	***	***	***
	Kototabang (IDA003)	***	***	***	***	***	***	***	***	***	***	***
	Maros (IDA005)	***	***	***	***	***	***	***	***	***	***	***
	Jembrana(IDA006)	***	***	***	***	***	***	***	***	***	***	***
	Lombok(IDA007)	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri (JPA001)	17.5	9.69	18.3	151	22.2	130	4.29	6.86	4.05	15.3	10.2
	Ochiishi (JPA002)	*	*	*	*	*	*	*	*	*	*	*
	Sado-seki (JPA004)	21.8	9.69	17.8	232	16.3	202	4.96	8.66	4.31	23.4	11.7
	Happo (JPA005)	11.0	10.2	15.9	16.0	17.6	13.6	1.07	5.39	5.10	2.53	15.9
	Ijira (JPA006)	36.9	33.7	46.6	63.1	47.4	52.5	2.21	10.0	8.87	7.20	59.1
	Oki (JPA007)	*	*	*	*	*	*	*	*	*	*	*
	Yusuhara (JPA009)	18.2	15.3	18.5	55.9	17.2	47.9	3.30	5.06	4.04	7.58	29.5
	Hedo (JPA010)	54.1	16.0	25.4	734	25.9	632	15.9	19.7	6.01	74.2	23.8
	Ogasawara (JPA011)	19.3	6.62	4.37	242	4.60	210	5.13	5.37	0.898	23.9	15.2
	Tokyo (JPA012)	9.46	8.20	16.4	23.6	23.8	20.8	0.810	4.62	4.17	2.69	9.59
	Niigata-maki(JPA013)	29.7	11.4	23.3	355	21.6	305	7.07	12.7	6.12	36.9	17.3
	Tsushima(JPA014)	21.9	17.5	24.6	85.6	22.9	72.5	2.74	4.24	2.68	8.11	24.7
Lao PDR	Vientiane (LAA001)	3.79	3.55	9.71	4.86	9.30	4.16	1.94	13.5	13.4	1.60	0.294
Malaysia	Petaling Jaya (MYA001)	45.7	44.5	118	28.7	78.7	18.6	5.39	15.0	14.6	2.89	105
	Tanah Rata(MYA002)	11.2	10.7	19.6	10.4	24.1	9.21	5.25	5.84	5.64	0.702	24.4
	Danum Valley (MYA003)	5.49	4.97	2.12	11.0	0.869	8.68	6.14	3.17	2.99	1.54	11.0
	Kuching (MYA004)	11.0	9.45	5.61	29.6	25.5	26.0	9.10	10.5	9.93	1.86	14.6
	Gunung Brinchang(MYA005)	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar (MNA001)	3.86	3.82	2.09	0.569	4.43	0.692	0.289	4.57	4.55	0.500	0.711
	Terelj (MNA002)	6.72	6.59	3.05	0.845	3.73	2.19	0.454	4.49	4.44	0.409	0.578
Myanmar	Yangon (MMA001)	21.4	18.9	23.9	46.7	49.7	41.4	8.02	23.4	22.6	8.10	0.383
Philippines	Manila Observatory(PHA001)	51.2	46.3	49.3	73.7	116	85.9	7.00	13.6	12.6	7.42	52.0
	Los Baños (PHA002)	39.0	36.4	17.1	45.2	29.6	46.1	4.60	5.86	5.63	5.48	65.5
	Mt. Sto. Tomas (PHA003)	***	***	***	***	***	***	***	***	***	***	***
R of Korea	Ganghwa (KRA001)	4.47	3.82	8.46	15.2	9.76	10.8	1.12	3.47	3.23	2.50	3.47
	Jeju (KRA002)	30.1	9.63	36.7	385	19.6	354	13.5	26.2	18.6	37.4	2.54
	Imsil (KRA003)	8.97	7.32	23.0	14.0	20.4	27.3	0.951	3.30	2.75	1.50	3.53
Russia	Mondy (RUA001)	***	***	***	***	***	***	***	***	***	***	***
	Listvyanka (RUA002)	8.16	7.99	6.02	2.24	5.45	2.84	2.66	4.41	4.34	1.52	7.24
	Irkutsk (RUA003)	12.8	12.3	7.09	5.51	12.2	5.41	3.02	11.1	11.0	3.67	2.77
	Primorskaya (RUA004)	31.2	29.7	15.1	50.4	49.9	23.5	9.45	22.8	22.3	7.19	2.36
Thailand	Bangkok (THA001)	10.4	9.10	50.7	13.2	60.6	14.2	4.56	29.1	28.7	2.89	3.68
	Samutprakarn (THA002)	6.43	5.23	22.0	11.8	26.9	9.38	2.27	6.01	5.81	1.51	3.17
	Pathumthani (THA003)	9.12	8.72	22.7	9.51	45.4	6.84	1.41	7.68	7.53	1.14	2.15
	Khanchanaburi (THA004)	***	***	***	***	***	***	***	***	***	***	***
Vietnam	Hanoi (VNA001)	87.8	86.2	80.6	40.9	161	27.7	13.1	54.8	54.2	11.9	4.91
	Hoa Binh (VNA002)	73.1	71.9	76.8	37.8	156	19.9	11.4	46.7	46.2	10.4	2.18
	Cuc Phuong (VNA003)	32.5	29.8	87.4	54.0	96.0	44.9	21.5	114	113	22.5	1.93
	Da Nang (VNA004)	43.7	34.7	13.3	388	55.7	150	65.2	108	105	77.9	5.92
	Can Tho (VNA005)	48.2	46.3	7.03	55.4	39.2	33.1	17.4	29.3	28.6	15.5	2.60
	Ho Chi Minh (VNA006)	59.7	57.4	24.3	88.6	68.0	37.6	21.8	35.6	34.8	21.0	2.10
	Yen Bai (VNA007)	80.8	79.5	66.6	27.3	151	21.2	11.9	39.8	39.3	9.01	1.57

Terms and abbreviations are given in Table 3.5.

Table 3.68 Data completeness for annual summaries in 2023 (%PCL, %TP)

Country	Name of sites (Codes)	Precip.	SO ₄ ²⁻	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	nss-Ca ²⁺	Mg ²⁺	H ⁺	pH	EC
		%PCL	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP	%TP
Cambodia	Phnom Penh (KHA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
China	Haifu (CNA003)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Jinyunshan (CNA004)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Shizhan (CNA005)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Jiwozi (CNA007)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Hongwen (CNA008)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Xiaoping (CNA009)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Xiang Zhou (CNA010)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Zhuxiandong (CNA011)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Wuzhishan(CNA013)	100	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	100	100	100
	Ljiang(CNA014)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Indonesia	Jakarta (IDA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Kototabang (IDA003)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Maros (IDA005)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Jembrana(IDA006)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Lombok(IDA007)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri (JPA001)	99.7	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2
	Ochiishi (JPA002)	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sado-seki (JPA004)	100	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	95.7	95.7	95.7
	Happo (JPA005)	99.2	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	92.9	92.9	92.9
	Ijira (JPA006)	98.1	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5
	Oki (JPA007)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Yusuhara (JPA009)	100	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	96.8	96.8	96.8
	Hedo (JPA010)	34.2	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
	Ogasawara (JPA011)	100	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	98.6	98.6	98.6
	Tokyo (JPA012)	100	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	98.7	98.7	98.7
	Niigata-maki(JPA013)	99.7	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	68.7	68.7	68.7
	Tsushima(JPA014)	100	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.1	93.1	93.1
Lao PDR	Vientiane (LAA001)	100	100	100	100	100	100	100	100	100	100	100	99.7	99.7	99.7
Malaysia	Petaling Jaya (MYA001)	100	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.6	99.6	99.6
	Tanah Rata(MYA002)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Danum Valley (MYA003)	100	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1
	Kuching (MYA004)	100	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9
	Gunung Brinchang(MYA005)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar (MNA001)	100	99.7	99.7	99.7	99.7	100	100	100	100	100	100	100	100	100
	Terelj (MNA002)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Myanmar	Yangon (MMA001)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Philippines	Manila Observatory(PHA001)	100	100	100	100	100	100	100	100	100	100	100	99.8	99.8	99.6
	Los Baños (PHA002)	100	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.7	99.7	99.7
	Mt. Sto. Tomas (PHA003)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
R of Korea	Ganghwa (KRA001)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Jeju (KRA002)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Imsil (KRA003)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Russia	Mondy (RUA001)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	Listvyanka (RUA002)	100	100	100	100	100	99.9	100	100	100	100	100	100	100	100
	Irkutsk (RUA003)	100	100	99.9	100	100	99.9	99.9	99.9	99.9	99.9	99.9	100	100	100
	Primorskaya (RUA004)	100	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	99.4	99.4	93.2
Thailand	Bangkok (THA001)	100	100	84.1	100	98.2	84.1	84.1	82.3	84.1	84.1	84.1	100	100	100
	Samutprakarn (THA002)	100	100	94.9	100	91.4	94.9	94.9	86.3	94.9	94.9	94.9	100	100	99.5
	Pathumthani (THA003)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Khanchanaburi (THA004)	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Vietnam	Hanoi (VNA001)	100	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
	Hoa Binh (VNA002)	100	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
	Cuc Phuong (VNA003)	100	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6
	Da Nang (VNA004)	100	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6
	Can Tho (VNA005)	100	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	100	100	100
	Ho Chi Minh (VNA006)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Yen Bai (VNA007)	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.69 Results of ion balance and conductivity agreement check in 2023

Country	Name of sites (Codes)	Sample (N)	R ₁ (N)	R ₁ (AA)	%	R ₂ (N)	R ₂ (AA)	%	R ₁ &R ₂ (N)	R ₁ &R ₂ (AA)	%
Cambodia	Phnom Penh (KHA001)	***	***	***	***	***	***	***	***	***	***
China	Haifu (CNA003)*	110	110	108	98.2	110	110	100	110	108	98.2
	Jinyunshan (CNA004)*	118	118	110	93.2	118	116	98.3	118	109	92.4
	Shizhan (CNA005)*	52	52	52	100	52	52	100	52	52	100
	Jiwozi (CNA007)*	38	38	38	100	38	38	100	38	38	100
	Hongwen (CNA008)*	54	54	42	77.8	54	54	100	54	42	77.8
	Xiaoping (CNA009)*	68	68	53	77.9	68	67	98.5	68	52	76.5
	Xiang Zhou (CNA010)*	90	90	54	60.0	90	87	96.7	90	53	58.9
	Zhuxiandong (CNA011)*	89	89	65	73.0	89	89	100	89	65	73.0
	Wuzhishan(CNA013)*	25	22	7	31.8	22	10	45.5	22	3	13.6
	Lijiang(CNA014)*	56	56	11	19.6	56	39	69.6	56	8	14.3
Indonesia	Jakarta (IDA001)	***	***	***	***	***	***	***	***	***	***
	Kototabang (IDA003)	***	***	***	***	***	***	***	***	***	***
	Maros (IDA005)	***	***	***	***	***	***	***	***	***	***
	Jembrana(IDA006)	***	***	***	***	***	***	***	***	***	***
	Lombok(IDA007)	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri (JPA001)*	153	102	97	95.1	102	102	100	102	97	95.1
	Ochiishi (JPA002)	0	0	0	N/A	0	0	N/A	0	0	N/A
	Sado-seki (JPA004)*	215	142	140	98.6	142	142	100	142	140	98.6
	Happo (JPA005)	186	155	142	91.6	155	153	98.7	155	140	90.3
	Ijira (JPA006)*	51	47	44	93.6	47	47	100	47	44	93.6
	Oki (JPA007)	0	0	0	N/A	0	0	N/A	0	0	N/A
	Yusuhara (JPA009)*	169	125	105	84.0	125	125	100	125	105	84.0
	Hedo (JPA010)	52	50	50	100	50	50	100	50	50	100
	Ogasawara (JPA011)*	152	125	124	99.2	125	125	100	125	124	99.2
	Tokyo (JPA012)*	119	93	84	90.3	93	92	98.9	93	84	90.3
	Niigata-maki(JPA013)	153	117	117	100	117	117	100	117	117	100
	Tsushima(JPA014)	127	111	107	96.4	111	109	98.2	111	106	95.5
Lao PDR	Vientiane (LAA001)*	46	42	3	7.1	42	19	45.2	42	1	2.4
Malaysia	Petaling Jaya (MYA001)*	51	50	48	96.0	50	49	98.0	50	47	94.0
	Tanah Rata(MYA002)*	51	51	35	68.6	51	46	90.2	51	33	64.7
	Danum Valley (MYA003)*	21	21	14	66.7	21	19	90.5	21	13	61.9
	Kuching (MYA004)*	43	43	29	67.4	43	41	95.3	43	27	62.8
	Gunung Brinchang(MYA005)*	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar (MNA001)	28	27	6	22.2	27	26	96.3	27	6	22.2
	Terej (MNA002)	34	34	6	17.6	34	21	61.8	34	1	2.9
Myanmar	Yangon (MMA001)	30	30	6	20.0	30	1	3.3	30	0	0
Philippines	Manila Observatory(PHA001)*	46	42	22	52.4	41	33	80.5	41	18	43.9
	Los Baños (PHA002)*	48	42	16	38.1	42	28	66.7	42	12	28.6
	Mt. Sto. Tomas (PHA003)	***	***	***	***	***	***	***	***	***	***
R of Korea	Ganghwa (KRA001)	45	45	45	100	45	44	97.8	45	44	97.8
	Jeju (KRA002)	66	66	64	97.0	66	65	98.5	66	63	95.5
	Imstil (KRA003)	38	38	35	92.1	38	38	100	38	35	92.1
Russia	Mondy (RUA001)	***	***	***	***	***	***	***	***	***	***
	Listvyanka (RUA002)*	66	65	65	100	65	65	100	65	65	100
	Irkutsk (RUA003)*	87	85	83	97.6	85	84	98.8	85	82	96.5
	Primorskaya (RUA004)	98	69	46	66.7	69	69	100	69	46	66.7
Thailand	Bangkok (THA001)*	41	35	10	28.6	35	29	82.9	35	8	22.9
	Samutprakarn (THA002)*	34	30	13	43.3	29	25	86.2	29	12	41.4
	Pathumthani (THA003)*	74	74	33	44.6	74	49	66.2	74	25	33.8
	Khanchanaburi (THA004)	***	***	***	***	***	***	***	***	***	***
Vietnam	Hanoi (VNA001)*	37	37	36	97.3	37	37	100	37	36	97.3
	Hoa Binh (VNA002)*	31	31	28	90.3	31	31	100	31	28	90.3
	Cuc Phuong (VNA003)*	49	36	34	94.4	36	35	97.2	36	34	94.4
	Da Nang (VNA004)*	41	34	29	85.3	34	33	97.1	34	29	85.3
	Can Tho (VNA005)*	41	36	30	83.3	36	36	100	36	30	83.3
	Ho Chi Minh (VNA006)*	37	37	34	91.9	37	37	100	37	34	91.9
	Yen Bai (VNA007)	28	28	23	82.1	28	28	100	28	23	82.1

Sites marked with * : R₁ and R₂, calculated including concentrations of additional measured constituents

Terms and abbreviations are given in Table 3.5.

Table 3.70 Annual precipitation from 2009 to 2023

			unit: mm y ⁻¹														
Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	1326	1851	1277	1617	1345	1561	1103	1277	1379	***	***	***	***	***	***
China	Haifu	CNA003	1066	977	810	1010	1026	1417	1220	1270	1217	1117	1224	1279	1318	1056	1353
	Jinyunshan	CNA004	1098	979	848	1005	1127	1490	1288	1217	1268	935	1037	1231	1530	967	1347
	Shizhan	CNA005	592	459	659	393	441	623	594	415	577	471	465	438	827	456	1056
	Jiwozi	CNA007	628	1155	971	390	649	568	447	369	508	547	582	450	926	419	847
	Hongwen	CNA008	737	1530	843	924	1403	1129	1015	1771	538	978	1027	318	443	857	827
	Xiaoping	CNA009	1134	1518	1531	1291	1979	1364	1557	1851	676	840	1013	795	739	1044	971
	Xiang Zhou	CNA010	2010	1857	1259	1518	2421	1673	1431	2344	1905	2067	1988	1783	2472	2124	2109
	Zhuxiandong	CNA011	1580	1853	1146	***	***	***	1598	2356	1817	2109	2105	2115	2398	2104	2133
	Wuzhishan	CNA013											1495	833	1157	1112	664
	Lijiang	CNA014											508	998	614	346	480
Indonesia	Jakarta	IDA001	1557	2120	990	2722	2331	3168	2807	1976	1307	1709	1500	2976	2115	1721	***
	Serpong	IDA002	1344	1426	830	894	2324	2882	1770	2929	3197	2117	2199	3132	2241	2668	***
	Kototabang	IDA003	2656	2370	2193	2639	2120	2496	2503	2163	2437	2905	2134	2808	2575	2325	***
	Bandung	IDA004	2683	2606	1530	2084	2346	2033	2012	2699	1921	1747	1689	1320	1775	1954	***
	Maros	IDA005	3237	2663	3632	2451	4033	2763	2479	1973	2301	3339	1663	1685	1604	4321	***
	Jembrana	IDA006											1589	2234	2573	2705	***
	Lombok	IDA007											1604	1635	2069	2494	***
Japan	Rishiri	JPA001	1054	1072	1232	1172	1170	1033	1092	1299	938	1087	713	1248	1055	1047	1428
	Ochiishi	JPA002	1580	1085	818	871	1059	838	827	1138	836	1124	830	638	807	846	806
	Tappi	JPA003	1337	1555	1144	1178	1070	1194	1114	1222	1129	1649					
	Sado-seki	JPA004	1037	1368	1387	1296	1576	1409	867	999	1262	1573	959	1346	1530	1193	1451
	Happo	JPA005	2352	2621	3076	2002	2658	2453	2242	2446	3121	2758	2484	2608	2674	2223	2775
	Ijira	JPA006	2876	3847	3068	2862	2724	3044	3135	3151	2919	3725	2777	3486	4209	4042	4370
	Oki	JPA007	1123	1452	1534	1296	1395	1053	1061	1519	992	1308	1095	1503	1736	1311	1828
	Banryu	JPA008	1735	1471	1432	1208	2024	1516	1458	1829	1471	1662					
	Yusuhara	JPA009	2068	2476	3401	3048	2485	3529	3046	2744	2594	4022	3102	2842	2811	2420	2624
	Hedo	JPA010	1975	2643	1766	2837	1612	2442	1762	1822	1623	2632	2566	1943	2740	3029	2081
	Ogasawara	JPA011	1675	1856	1297	1572	1265	1532	1586	1153	1654	960	1868	1662	1880	1953	1520
	Tokyo	JPA012	1727	1656	1388	1635	1609	1807	1641	1609	1280	1296	1641	1401	1839	1464	1297
	Niigata-maki	JPA013											1522	2103	1777	1663	1745
	Tsushima	JPA014											2461	2399	2231	1510	1993
Lao PDR	Vientiane	LAA001	181	***	***	1322	***	1273	921	713	1337	829	700	***	***	***	1218
Malaysia	Petaling Jaya	MYA001	2968	3517	3607	3412	3570	3708	3751	3432	3125	3848	***	3722	3772	4180	3631
	Tanah Rata	MYA002	3077	2451	3293	2846	2771	2895	2684	2366	3016	2607	***	2875	***	3194	2902
	Danum Valley	MYA003	3391	2370	3787	2958	3202	2848	2025	2987	2964	2489	***	2290	3659	2936	2167
	Kuching	MYA004	4671	4645	4632	3796	4110	3656	4428	5655	3828	3804	***	4095	4430	3979	4306
	Gunung Brinchang	MYA005													571	***	***
Mongolia	Ulaanbaatar	MNA001	228	153	163	170	154	***	150	160	160	170	33.7	161	178	117	168
	Terej	MNA002	111	130	144	117	90.8	***	100	106	105	149	***	117	191	121	130
Myanmar	Yangon	MMA001	3010	2280	3151	2570	2692	2872	2432	2180	2813	2940	2962	2235	2075	2461	2615
Philippines	Manila Observatory	PHA001	3782	2676	3657	4461	3516	2628	2499	2519	***	***	2367	2519	2556	2833	3560
	Los Baños	PHA002	2900	2068	2384	2102	2394	2073	1559	1756	***	***	***	***	***	2160	2139
	Mt.Sto.Tomas	PHA003	4727	3610	4608	5730	4392	3641	6108	4426	***	***	***	***	***	620	***
Republic of Korea	Ganghwa	KRA001	1266	1570	1476	748	898	427	589	837	588	628	502	***	688	848	594
	Jeju	KRA002	1039	1003	1076	1199	636	1195	1452	1121	714	1035	791	***	1185	234	983
	Imsil	KRA003	1069	1642	1493	1400	1220	1101	719	838	761	1171	1096	***	522	711	601
Russia	Mondy	RUA001	119	90.2	73.5	105	330	123	136	222	191	362	182	58.5	58.6	54.3	***
	Listvyanka	RUA002	312	327	478	343	278	279	335	316	315	225	430	416	563	396	452
	Irkutsk	RUA003	430	375	329	443	277	388	291	481	502	442	402	484	591	365	482
	Primorskaya	RUA004	864	673	621	922	723	643	1157	925	635	1023	880	808	726	783	1121
Thailand	Bangkok	THA001	2072	2023	2171	1799	1330	1011	1593	1631	1592	1144	630	1427	***	2073	1438
	Samutprakarn	THA002	1989	1880	2103	953	1115	991	1442	1810	1815	1471	899	1086	***	1967	1013
	Pathumthani	THA003	1314	1763	1562	1563	1181	1059	1071	1069	1365	1322	804	1423	883	1657	1297
	Khanchanaburi	THA004	1998	1626	1941	2390	1501	979	1093	1059	1178	994	652	***	***	***	***
	Mae Hia	THA005	1052	1167	1614	1111	1433	527	747	743	1234	818	754				
	Sakaerat	THA008	1259	1627	1509	1126	1443	427	1385	1083	1692	1129	1141				
Vietnam	Hanoi	VNA001	1609	1236	1817	1798	1945	1661	1273	1661	2071	1900	1290	1577	1994	2478	2038
	Hoa Binh	VNA002	1357	1370	1760	1915	2008	1303	1616	1438	1895	2799	1529	2163	2189	2055	1961
	Cuc Phuong	VNA003	2266	1654	1853	2018	1898	1702	1461	1937	2236	2521	1571	1953	1915	2768	1870
	Da Nang	VNA004	2966	1690	3639	1682	2315	2219	1891	2723	2244	2597	2142	3065	2584	3042	3946
	Can Tho	VNA005						1840	2205	1670	1907	2608	2370	1654	2536	2311	1866
	Ho Chi Minh	VNA006						1916	1420	2553	3444	2480	2262	2529	2289	2306	2017
	Yen Bai	VNA007							1514	1815	2397	1866	1593	1691	1411	1834	1376

Terms and abbreviations are given in Table 3.5.

Table 3.71 Precipitation amount-weighted annual average concentrations of SO₄²⁻ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	11.6	7.37	9.04	10.5	7.99	6.27	7.04	5.37	11.3	***	***	***	***	***	***
China	Haiifu	CNA003	99.3	139	142	102	106	84.4	50.3	46.9	41.0	41.2	33.5	25.8	26.4	22.9	24.0
	Jinyunshan	CNA004	114	151	141	124	81.4	60.4	43.9	40.0	36.5	36.3	35.3	30.9	24.4	24.9	21.6
	Shizhan	CNA005	136	100.0	110	109	141	113	82.8	62.5	72.5	47.0	30.3	44.6	34.7	54.7	20.6
	Jiwozi	CNA007	93.5	31.8	62.6	94.5	52.6	69.3	31.6	19.5	35.8	26.6	62.5	15.0	16.9	17.1	18.1
	Hongwen	CNA008	26.1	26.7	31.3	32.2	21.9	27.0	18.5	22.8	31.7	17.7	45.2	30.6	22.0	7.84	8.83
	Xiaoping	CNA009	28.2	27.3	24.9	23.4	22.7	29.6	17.3	13.7	14.6	13.1	12.7	11.7	12.6	6.01	10.9
	Xiang Zhou	CNA010	18.2	19.8	15.5	14.9	19.1	14.3	11.6	16.0	14.1	12.1	10.2	8.70	5.83	6.51	7.81
	Zhuxiandong	CNA011	21.0	17.1	20.4	***	***	***	23.3	18.1	14.1	15.7	11.8	10.6	7.98	7.62	8.29
	Wuzhishan	CNA013											6.78	4.21	2.69	3.63	2.38
	Lijiang	CNA014											0.460	37.0	2.18	5.34	3.28
Indonesia	Jakarta	IDA001	19.4	21.9	28.7	20.6	21.9	22.2	17.1	31.1	17.3	34.8	25.4	15.4	27.2	23.4	***
	Serpong	IDA002	23.1	24.4	33.6	29.0	26.5	23.2	31.5	25.9	25.5	33.6	33.8	26.3	30.6	28.7	***
	Kototabang	IDA003	4.72	6.33	7.77	6.04	6.22	8.52	8.30	5.70	4.48	5.59	6.58	4.33	5.55	4.31	***
	Bandung	IDA004	29.2	27.0	30.8	26.5	30.7	38.8	30.1	31.9	35.0	31.8	43.1	33.3	30.6	33.7	***
	Maros	IDA005	6.96	10.8	8.26	8.77	6.44	7.56	6.19	10.4	6.34	5.83	6.99	4.90	5.33	5.21	***
	Jembrana	IDA006											9.30	8.99	8.55	8.32	***
	Lombok	IDA007											11.6	9.17	9.52	20.3	***
Japan	Rishiri	JPA001	25.9	23.4	21.2	27.8	23.2	20.0	18.2	11.8	24.6	22.5	21.8	18.2	22.0	19.2	12.3
	Ochiishi	JPA002	16.7	23.0	15.2	25.3	32.5	13.0	20.3	12.7	18.0	9.68	8.90	13.0	36.0	*	*
	Tappi	JPA003	23.1	21.3	27.5	22.3	33.1	26.5	24.7	22.5	22.1	17.4					
	Sado-seki	JPA004	33.0	32.3	24.5	29.8	33.5	32.0	34.7	21.4	19.6	15.6	23.1	18.8	117	16.6	15.1
	Happo	JPA005	10.1	6.11	7.00	11.6	8.88	8.00	7.06	5.12	4.66	4.74	5.84	4.12	4.65	4.24	3.96
	Ijira	JPA006	15.4	11.1	13.0	13.6	12.3	12.0	11.7	10.8	10.1	7.43	9.90	7.18	6.08	7.75	8.43
	Oki	JPA007	37.8	40.8	45.6	37.9	47.0	47.8	36.4	31.7	40.7	35.1	21.0	23.7	29.4	*	*
	Banryu	JPA008	20.9	21.0	21.1	25.9	17.3	21.6	18.3	16.9	16.2	11.6					
	Yusuhara	JPA009	11.7	9.64	7.02	10.7	9.07	6.92	6.52	7.58	19.8	5.28	6.46	6.75	4.99	8.12	6.94
	Hedo	JPA010	13.1	20.9	20.5	31.2	22.2	14.3	23.9	17.5	28.0	12.8	12.5	19.3	82.6	10.4	26.0
	Ogasawara	JPA011	16.5	15.0	15.7	10.2	13.5	12.1	20.8	9.57	12.8	3.99	12.8	7.55	11.8	11.5	12.7
	Tokyo	JPA012	16.0	10.9	15.9	15.6	12.2	13.9	11.7	9.36	11.3	10.6	11.0	8.34	6.96	8.50	7.30
	Niigata-maki	JPA013											20.7	14.3	17.9	19.5	17.0
	Tsushima	JPA014											10.5	10.5	10.3	12.3	11.0
Lao PDR	Vientiane	LAA001	4.05	***	***	2.41	***	***	3.19	3.66	*	*	*	***	***	***	3.11
Malaysia	Petaling Jaya	MYA001	13.2	17.1	22.5	17.0	17.8	21.4	21.4	20.2	13.5	15.5	***	11.0	9.56	10.7	12.6
	Tanah Rata	MYA002	3.27	3.25	5.05	4.59	4.77	6.19	6.86	3.92	3.53	4.23	***	5.10	***	2.72	3.87
	Danum Valley	MYA003	2.82	5.08	1.96	2.28	3.17	2.58	3.54	1.65	2.70	3.22	***	7.38	2.46	1.85	2.53
	Kuching	MYA004	3.78	3.57	4.07	4.67	5.01	7.14	4.68	4.07	4.00	4.28	***	7.52	2.86	2.38	2.56
	Gunung Brinchang	MYA005													2.13	***	***
Mongolia	Ulaanbaatar	MNA001	19.9	22.2	28.1	***	56.6	***	122	129	34.6	32.1	346	38.8	98.4	*	22.9
	Terelj	MNA002	16.5	30.5	23.6	***	48.5	***	104	142	13.5	26.7	***	47.9	279	*	51.7
Myanmar	Yangon	MMA001	8.01	4.52	6.63	7.48	7.96	4.55	4.62	9.19	11.6	8.09	8.77	6.24	5.31	7.90	8.18
Philippines	Manila Observatory	PHA001	13.6	20.3	18.7	24.1	15.1	18.0	19.0	21.7	***	***	10.2	11.4	18.0	16.1	14.4
	Los Baños	PHA002	8.82	7.39	8.57	12.6	6.60	9.13	13.4	15.4	***	***	***	***	***	15.3	18.2
	Mt.Sto.Tomas	PHA003	5.04	4.94	4.69	7.26	7.71	4.62	4.02	5.52	***	***	***	***	***	3.82	***
Republic of Korea	Ganghwa	KRA001	29.2	26.3	27.2	27.2	36.1	29.3	29.4	18.8	23.5	14.2	26.2	***	15.0	12.5	7.53
	Jeju	KRA002	25.3	19.3	25.5	36.7	40.6	17.2	17.3	43.1	31.6	23.4	21.1	***	31.9	83.5	30.6
	Imsil	KRA003	19.6	19.5	20.7	19.4	18.5	15.2	20.2	13.8	18.6	10.6	15.3	***	17.1	18.2	14.9
Russia	Mondy	RUA001	7.82	6.80	4.53	7.16	3.58	5.47	6.45	3.13	6.43	4.37	4.68	3.62	6.11	4.95	***
	Listvyanka	RUA002	19.3	20.7	22.1	21.4	18.1	17.4	21.0	15.0	22.5	21.2	19.4	14.2	16.2	14.5	18.1
	Irkutsk	RUA003	31.2	33.5	34.4	37.9	36.6	23.2	42.2	23.6	25.7	31.1	28.2	22.6	26.0	26.5	26.5
	Primorskaya	RUA004	22.6	31.9	14.0	20.8	29.2	32.1	21.4	24.0	34.2	29.9	18.7	26.3	21.8	33.6	27.8
Thailand	Bangkok	THA001	12.7	12.0	10.7	10.7	7.09	8.43	7.53	14.1	17.0	15.1	11.6	9.50	***	5.22	7.24
	Samutprakarn	THA002	15.1	15.6	7.67	10.2	7.67	9.61	7.24	11.8	8.90	10.3	10.6	7.43	***	5.35	6.35
	Pathumthani	THA003	8.89	8.01	9.45	7.93	9.41	8.23	11.6	10.2	8.91	7.17	10.7	5.61	8.95	7.37	7.04
	Khanchanaburi	THA004	3.60	1.79	5.11	3.72	1.23	3.59	2.34	9.80	3.33	2.66	2.94	***	***	***	***
	Mae Hia	THA005	4.30	3.32	3.24	4.76	4.13	8.39	4.12	5.45	6.21	4.17	7.08				
	Sakaerat	THA008	6.44	7.04	5.30	6.64	7.49	10.8	6.53	6.94	4.93	9.62	7.03				
Vietnam	Hanoi	VNA001	27.4	35.4	30.7	28.8	25.9	39.3	39.5	35.8	34.6	44.5	67.8	86.0	39.9	69.8	43.1
	Hoa Binh	VNA002	16.1	26.3	18.0	17.1	19.7	25.2	20.0	26.3	18.9	21.9	15.0	39.8	32.4	21.3	37.3
	Cuc Phuong	VNA003	18.5	20.3	37.6	24.3	26.9	18.5	18.8	16.7	16.2	13.5	22.6	19.5	16.3	15.1	17.4
	Da Nang	VNA004	18.8	16.4	21.1	19.6	24.2	15.8	11.4	11.7	16.5	13.9	24.6	11.2	12.2	12.2	11.1
	Can Tho	VNA005						8.73	30.7	15.9	16.2	22.7	25.7	24.0	20.3	25.1	25.9
	Ho Chi Minh	VNA006						24.2	47.6	19.2	23.4	25.6	31.7	24.0	25.3	26.1	29.6
	Yen Bai	VNA007							22.6	43.6	26.2	25.4	24.4	47.7	40.5	25.4	58.7

Terms and abbreviations are given in Table 3.5.

Table 3.72 Precipitation amount-weighted annual average concentrations of nss-SO₄²⁻ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	11.2	7.18	8.83	10.3	7.80	5.81	6.66	5.11	11.0	***	***	***	***	***	***
China	Haiifu	CNA003	99.0	138	142	101	106	84.0	50.1	46.5	40.7	40.9	33.3	25.6	26.2	22.7	23.8
	Jinyunshan	CNA004	113	151	140	124	81.2	60.1	43.8	39.8	36.4	36.2	35.1	30.8	24.3	24.7	21.5
	Shizhan	CNA005	135	99.5	109	109	132	105	75.9	59.2	70.8	45.8	29.6	43.3	33.6	53.2	19.3
	Jiwozi	CNA007	92.0	31.4	62.1	91.8	45.8	61.8	26.0	19.0	33.8	25.1	57.2	13.7	15.6	16.5	17.4
	Hongwen	CNA008	24.6	25.5	30.2	31.2	21.0	25.8	17.4	21.3	29.5	16.3	44.9	27.7	19.3	6.84	7.82
	Xiaoping	CNA009	27.3	26.2	24.2	22.9	22.0	29.0	16.7	13.3	14.2	12.7	12.6	11.0	12.2	5.61	10.2
	Xiang Zhou	CNA010	15.8	18.6	13.5	12.1	15.9	12.5	8.60	14.7	11.0	8.04	8.94	7.28	4.73	5.12	6.58
	Zhuxiandong	CNA011	18.3	15.9	17.7	***	***	***	19.3	16.2	12.6	10.3	10.3	8.35	6.52	5.93	6.82
	Wuzhishan	CNA013											6.26	3.80	2.27	3.13	2.06
	Lijiang	CNA014											0.407	36.9	2.13	5.24	3.19
Indonesia	Jakarta	IDA001	18.8	21.4	28.0	19.8	20.9	20.9	16.3	29.8	16.7	33.8	24.8	14.5	26.2	22.8	***
	Serpong	IDA002	22.5	23.9	33.0	28.4	25.6	22.1	30.7	25.1	24.8	32.5	32.8	25.5	29.3	28.2	***
	Kototabang	IDA003	4.38	6.04	7.38	5.47	5.71	8.18	8.63	4.96	4.27	5.39	6.30	4.10	5.33	4.11	***
	Bandung	IDA004	28.5	26.4	30.1	25.8	29.9	38.0	29.6	31.2	33.9	30.4	40.4	32.5	30.1	33.0	***
	Maros	IDA005	6.18	10.0	7.36	7.65	5.28	6.24	5.99	5.58	3.71	5.01	5.86	3.97	4.57	4.53	***
	Jembrana	IDA006											8.10	7.18	6.61	6.89	***
	Lombok	IDA007											10.2	7.61	8.35	18.9	***
Japan	Rishiri	JPA001	15.3	13.6	12.9	10.5	11.3	10.2	9.80	7.61	12.2	12.2	10.9	9.83	8.15	9.16	6.78
	Ochiishi	JPA002	5.88	9.65	6.73	8.81	7.18	7.15	9.53	4.37	4.87	5.01	4.84	5.92	18.9	*	*
	Tappi	JPA003	11.5	14.5	18.5	13.8	17.6	17.1	11.5	12.3	10.7	7.83					
	Sado-seki	JPA004	13.7	13.4	15.3	15.3	13.9	15.0	15.1	10.9	10.6	7.60	9.88	8.30	33.6	4.34	6.68
	Happo	JPA005	9.82	5.88	6.80	11.0	8.63	7.68	6.71	4.83	4.36	4.42	5.63	3.86	4.34	3.98	3.67
	Ijira	JPA006	14.6	10.3	12.1	12.4	11.4	11.1	10.8	10.1	9.20	6.55	9.11	6.36	5.10	6.52	7.71
	Oki	JPA007	15.2	16.2	16.7	16.4	16.5	15.0	11.5	11.7	11.5	10.8	11.2	9.94	6.54	*	*
	Banryu	JPA008	15.0	15.3	14.6	20.3	13.1	16.4	12.8	11.9	10.9	8.21					
	Yusuhara	JPA009	10.9	9.11	6.28	9.66	8.47	6.61	5.28	7.10	16.7	4.40	5.64	6.19	3.90	5.95	5.84
	Hedo	JPA010	5.55	5.79	8.26	6.30	8.58	6.03	5.04	5.47	5.94	3.12	4.66	5.60	14.7	2.40	7.70
	Ogasawara	JPA011	5.21	3.02	3.56	3.35	4.99	4.20	2.39	4.09	2.09	1.23	2.10	4.48	1.90	2.51	4.35
	Tokyo	JPA012	14.5	9.86	13.6	13.8	10.8	12.8	10.6	8.49	8.89	8.51	7.50	7.41	5.79	7.38	6.33
	Niigata-maki	JPA013											10.1	7.51	6.46	6.86	6.54
	Tsushima	JPA014											8.69	8.59	8.16	6.20	8.77
Lao PDR	Vientiane	LAA001	3.50	***	***	***	***	***	3.02	3.56	*	*	*	***	***	***	2.92
Malaysia	Petaling Jaya	MYA001	12.9	16.8	22.2	16.8	17.5	21.1	21.0	19.9	13.2	15.2	***	10.6	9.27	10.5	12.3
	Tanah Rata	MYA002	3.19	3.17	4.93	4.50	4.64	6.02	6.69	3.77	3.38	4.08	***	4.80	***	2.54	3.68
	Danum Valley	MYA003	2.47	4.32	1.72	2.11	2.86	2.25	3.22	1.46	2.56	2.91	***	6.61	2.05	1.56	2.29
	Kuching	MYA004	3.33	3.17	3.53	4.35	4.56	6.58	3.91	3.33	3.44	3.76	***	6.89	2.41	1.99	2.19
	Gunung Brinchang	MYA005													1.89	***	***
Mongolia	Ulaanbaatar	MNA001	19.6	22.0	27.7	***	52.0	***	***	119	33.3	29.6	339	35.0	97.3	*	22.7
	Terelj	MNA002	16.0	29.8	23.2	***	47.7	***	***	127	12.7	23.9	***	44.3	272	*	50.7
Myanmar	Yangon	MMA001	6.90	3.90	5.72	6.15	7.33	3.51	4.09	8.24	10.7	6.77	7.67	5.40	4.37	6.97	7.23
Philippines	Manila Observatory	PHA001	12.6	18.9	17.4	23.1	13.4	16.5	17.6	20.7	***	***	9.10	10.8	16.6	14.6	13.0
	Los Baños	PHA002	7.77	6.02	7.40	11.3	5.22	8.20	12.4	14.0	***	***	***	***	***	14.5	17.0
	Mt.Sto.Tomas	PHA003	4.54	4.56	4.43	6.64	7.31	4.24	3.49	4.62	***	***	***	***	***	3.71	***
Republic of Korea	Ganghwa	KRA001	26.5	24.7	25.0	24.4	34.3	26.7	26.7	17.1	21.9	12.4	15.4	***	13.2	11.0	6.43
	Jeju	KRA002	22.1	13.1	16.4	14.1	23.2	10.2	11.2	19.3	15.9	7.55	15.5	***	15.0	31.5	9.79
	Imsil	KRA003	16.6	16.6	18.4	16.3	16.7	13.4	17.3	11.8	16.5	8.33	13.0	***	12.3	13.8	12.2
Russia	Mondy	RUA001	7.69	6.63	4.30	6.90	3.49	5.34	6.35	3.05	6.27	4.24	4.56	3.32	5.94	4.85	***
	Listvyanka	RUA002	19.1	20.5	21.8	21.1	17.7	17.1	20.9	14.7	22.3	20.8	19.1	14.0	15.9	14.2	17.7
	Irkutsk	RUA003	30.1	32.4	33.4	37.3	35.8	22.7	41.4	23.2	25.2	30.6	27.7	22.0	25.6	26.0	25.6
	Primorskaya	RUA004	21.8	30.4	13.2	19.4	27.6	31.1	19.9	22.5	32.6	28.6	17.4	24.2	19.8	31.5	26.5
Thailand	Bangkok	THA001	12.1	11.5	10.3	10.3	6.36	7.88	7.04	13.5	16.7	14.5	11.0	8.54	***	4.94	6.33
	Samutprakarn	THA002	14.5	14.5	7.33	9.74	6.22	8.85	6.68	11.2	8.47	9.69	10.0	6.69	***	5.05	5.16
	Pathumthani	THA003	8.56	7.67	9.10	7.10	9.04	7.91	11.2	9.77	8.61	6.87	10.3	5.40	8.75	7.20	6.72
	Khanchanaburi	THA004	3.03	1.60	4.66	3.14	<1.0	3.20	2.00	9.19	3.05	2.17	2.61	***	***	***	***
	Mae Hia	THA005	4.14	3.16	3.05	4.53	3.83	8.17	3.85	5.04	5.85	3.74	6.59				
	Sakaerat	THA008	6.27	6.85	5.05	6.42	7.31	10.3	6.25	6.70	4.80	8.95	6.45				
Vietnam	Hanoi	VNA001	26.8	35.0	30.3	28.6	25.4	38.9	39.0	35.2	33.6	43.9	66.3	84.5	39.2	68.4	42.3
	Hoa Binh	VNA002	15.9	26.0	17.9	16.9	19.5	25.1	19.8	26.1	18.7	21.8	14.2	39.3	31.8	21.0	36.7
	Cuc Phuong	VNA003	17.8	19.6	36.8	23.1	25.3	17.9	18.3	15.9	15.1	12.7	21.2	18.4	13.9	13.8	15.9
	Da Nang	VNA004	13.1	13.9	16.8	16.1	15.6	10.8	6.65	7.75	11.6	9.85	18.1	7.76	8.04	8.51	8.78
	Can Tho	VNA005						7.80	28.9	15.1	15.6	22.1	24.6	22.9	19.5	24.2	24.8
	Ho Chi Minh	VNA006						22.7	45.5	18.4	22.3	24.8	30.5	22.9	24.2	24.9	28.5
	Yen Bai	VNA007							22.2	43.0	26.0	25.1	23.7	46.7	39.8	25.1	57.8

Terms and abbreviations are given in Table 3.5.

Table 3.73 Precipitation amount-weighted annual average concentrations of NO₃⁻ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	10.3	8.37	8.85	10.7	7.65	8.51	10.4	7.66	10.9	***	***	***	***	***	***
China	Haifu	CNA003	53.2	77.6	83.1	73.9	73.9	64.1	47.4	52.3	51.8	56.8	50.2	42.9	41.0	40.9	41.9
	Jinyunshan	CNA004	54.4	75.0	77.5	70.4	53.1	45.6	36.4	37.5	36.8	44.6	47.0	42.9	35.7	36.8	32.3
	Shizhan	CNA005	57.7	41.0	17.5	49.4	35.6	98.0	71.9	62.8	25.2	38.5	24.7	24.8	12.9	66.2	22.6
	Jiwozi	CNA007	27.4	12.2	8.24	47.4	8.77	13.8	28.6	5.56	2.55	15.1	37.8	4.81	4.41	10.5	17.7
	Hongwen	CNA008	23.4	29.0	23.6	35.2	20.9	26.4	26.2	31.4	43.7	27.1	39.3	50.0	37.9	18.5	19.4
	Xiaoping	CNA009	29.3	30.3	22.6	26.7	20.7	34.0	24.4	19.3	28.1	25.3	31.3	29.1	30.1	20.6	30.4
	Xiang Zhou	CNA010	17.7	23.9	15.7	15.2	20.4	20.9	18.8	18.2	18.1	17.1	21.6	22.6	13.3	13.4	17.6
	Zhuxiandong	CNA011	19.8	19.7	18.8	***	***	***	29.4	22.2	22.8	19.3	24.2	24.3	19.1	15.8	18.3
	Wuzhishan	CNA013											9.44	9.77	6.20	7.29	4.93
	Lijiang	CNA014											4.42	29.7	0.882	6.35	5.75
Indonesia	Jakarta	IDA001	15.3	17.1	29.8	16.2	21.8	20.0	15.3	34.2	18.9	44.3	25.6	16.2	24.6	21.9	***
	Serpong	IDA002	25.4	29.8	35.5	31.5	39.5	36.2	48.1	31.7	31.1	48.0	40.1	29.7	33.7	28.1	***
	Kototabang	IDA003	<0.5	2.37	5.05	4.65	2.86	7.48	3.60	4.16	3.78	7.47	7.60	4.61	5.57	4.49	***
	Bandung	IDA004	22.8	17.9	28.0	21.6	22.0	27.2	23.6	22.6	25.9	23.9	35.8	27.9	19.7	21.7	***
	Maros	IDA005	5.36	6.35	7.51	9.05	3.65	6.10	6.29	8.79	3.48	7.51	3.16	3.08	5.11	5.90	***
	Jembrana	IDA006											9.64	23.8	24.2	7.38	***
	Lombok	IDA007											12.5	8.19	5.10	6.42	***
Japan	Rishiri	JPA001	17.3	14.3	14.1	13.4	13.4	10.2	10.8	10.2	18.7	19.3	17.1	14.1	12.8	15.3	12.8
	Ochiishi	JPA002	5.42	9.47	9.58	9.80	8.83	8.71	11.5	5.62	6.83	7.04	8.05	9.05	42.1	*	*
	Tappi	JPA003	13.4	17.5	19.8	17.4	25.2	24.1	14.3	17.6	19.5	12.2					
	Sado-seki	JPA004	16.6	18.1	19.7	20.0	19.4	19.3	20.8	18.7	18.6	14.1	18.1	13.2	18.9	9.24	12.3
	Happo	JPA005	8.56	6.51	8.17	11.6	8.32	7.80	6.78	5.79	5.96	6.49	8.06	5.54	6.90	6.03	5.73
	Ijira	JPA006	18.4	15.1	15.1	16.7	14.8	14.7	16.7	16.4	15.4	10.4	13.6	11.1	10.2	12.3	10.7
	Okii	JPA007	20.2	24.2	21.2	21.6	24.2	20.3	15.1	16.4	21.0	16.9	19.1	13.2	12.5	*	*
	Banryu	JPA008	20.0	22.6	19.5	27.8	16.2	21.7	18.0	17.9	22.2	13.6					
	Yusuhara	JPA009	7.83	7.70	5.75	8.57	7.03	4.87	7.55	6.96	26.3	4.37	5.64	5.75	6.04	6.33	7.04
	Hedo	JPA010	6.43	6.38	7.69	7.17	8.58	6.88	7.05	7.40	8.76	4.99	6.62	6.83	20.2	4.45	12.2
	Ogasawara	JPA011	3.39	3.07	2.93	2.88	3.82	3.11	2.41	3.87	2.81	2.08	2.27	2.68	2.36	2.48	2.87
	Tokyo	JPA012	18.1	15.3	21.7	18.8	16.1	16.8	16.3	11.8	14.0	15.4	12.7	13.9	11.7	13.6	12.6
	Niigata-maki	JPA013											16.9	13.7	13.5	13.6	13.3
	Tsushima	JPA014											6.76	11.4	11.3	10.2	12.3
Lao PDR	Vientiane	LAA001	9.73	***	***	5.55	***	***	4.12	4.07	*	*	*	***	***	***	7.97
Malaysia	Petaling Jaya	MYA001	46.4	49.5	52.8	43.8	33.5	35.8	43.6	44.1	28.8	36.4	***	25.8	27.8	33.3	32.4
	Tanah Rata	MYA002	5.19	4.40	2.21	3.78	3.78	4.82	7.63	5.97	7.89	5.83	***	6.67	***	5.44	6.77
	Danum Valley	MYA003	1.65	1.42	1.05	0.956	1.97	0.738	1.88	0.888	<0.5	0.945	***	<0.5	1.10	3.76	0.977
	Kuching	MYA004	4.55	4.91	5.00	3.82	4.52	5.29	3.61	4.16	4.64	5.25	***	3.30	7.42	1.96	1.30
	Gunung Brinchang	MYA005													4.36	***	***
Mongolia	Ulaanbaatar	MNA001	19.1	21.4	16.8	***	30.9	***	34.6	36.7	30.4	24.4	56.8	43.5	42.0	*	12.4
	Terelj	MNA002	21.0	27.6	18.0	***	31.8	***	24.0	48.9	43.5	25.5	***	40.0	51.8	*	23.5
Myanmar	Yangon	MMA001	7.23	4.96	6.30	8.31	6.72	4.80	8.25	14.9	18.3	9.98	22.1	16.5	15.7	7.32	9.13
Philippines	Manila Observatory	PHA001	8.68	50.5	14.4	18.2	13.9	16.0	13.4	36.4	***	***	13.1	11.3	13.2	17.6	13.9
	Los Baños	PHA002	8.01	31.4	8.35	11.9	7.80	8.22	8.81	38.5	***	***	***	***	***	9.22	7.98
	Mt.Sto.Tomas	PHA003	3.94	4.29	2.56	6.10	8.47	5.07	3.49	5.76	***	***	***	***	***	3.71	***
Republic of Korea	Ganghwa	KRA001	18.9	31.8	27.7	36.4	43.2	36.9	50.5	29.6	41.9	28.6	32.0	***	33.5	23.5	14.2
	Jeju	KRA002	18.6	22.7	27.9	19.3	30.3	18.2	21.6	31.8	39.7	20.5	39.2	***	26.6	76.2	37.3
	Imsil	KRA003	22.3	29.0	27.7	26.2	26.2	28.0	33.8	22.7	34.8	21.1	22.9	***	25.9	47.1	38.3
Russia	Mondy	RUA001	7.90	8.11	4.30	7.99	5.03	4.65	5.29	5.75	9.75	5.30	7.69	3.45	3.31	5.09	***
	Listvyanka	RUA002	16.4	20.2	30.6	19.3	15.7	13.2	15.5	15.0	19.3	17.8	16.0	11.4	9.44	18.1	13.3
	Irkutsk	RUA003	16.8	22.3	20.7	18.3	16.3	12.3	20.7	13.4	14.4	13.2	16.2	11.2	9.95	14.7	14.7
	Primorskaya	RUA004	18.6	21.9	37.8	23.4	18.5	7.66	25.4	22.3	35.0	26.4	21.2	18.4	22.2	23.8	13.4
Thailand	Bangkok	THA001	28.1	26.8	20.6	27.6	12.9	15.3	16.2	31.8	20.2	38.0	28.7	28.6	***	25.2	35.2
	Samutprakarn	THA002	20.0	15.4	9.81	12.5	5.07	13.0	9.97	18.3	15.7	18.7	19.9	13.9	***	19.0	21.7
	Pathumthani	THA003	16.6	20.4	19.2	18.8	18.6	14.8	29.1	26.3	28.4	18.3	28.1	17.8	25.1	19.8	17.5
	Khanchanaburi	THA004	4.55	3.76	7.27	6.86	1.93	4.68	4.28	4.93	4.95	4.03	3.20	***	***	***	***
	Mae Hia	THA005	8.44	7.30	7.26	7.91	9.89	11.7	8.36	12.9	10.1	8.86	14.8				
	Sakaerat	THA008	12.7	14.6	9.97	11.2	10.4	24.5	12.8	13.5	10.6	13.6	13.4				
Vietnam	Hanoi	VNA001	16.6	20.8	21.7	25.2	26.3	30.6	35.1	28.5	34.8	46.3	77.6	76.4	40.5	77.2	39.6
	Hoa Binh	VNA002	12.9	15.5	14.4	15.4	18.8	25.2	22.3	24.8	22.2	16.4	24.4	42.4	40.3	19.5	39.2
	Cuc Phuong	VNA003	10.9	23.2	27.8	20.1	16.7	10.2	13.4	11.4	14.0	9.19	21.3	18.6	26.4	35.9	46.7
	Da Nang	VNA004	11.4	7.02	15.8	4.79	5.41	5.29	<0.5	2.78	5.39	<0.5	1.88	1.94	3.70	3.87	3.36
	Can Tho	VNA005						8.38	11.7	3.31	3.83	3.07	16.7	3.88	3.95	3.71	3.77
	Ho Chi Minh	VNA006						17.9	18.0	7.42	10.8	4.90	18.3	8.78	13.7	14.5	12.1
	Yen Bai	VNA007							17.8	40.3	24.5	28.9	39.5	74.7	37.8	27.9	48.4

Terms and abbreviations are given in Table 3.5.

Table 3.74 Precipitation amount-weighted annual average concentrations of Cl⁻ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	10.3	4.93	5.89	6.67	7.53	9.08	9.01	6.45	6.09	***	***	***	***	***	***
China	Haiifu	CNA003	11.0	16.2	14.3	11.4	12.7	11.1	7.78	8.34	7.80	8.89	6.82	6.35	5.19	5.51	7.04
	Jinyunshan	CNA004	16.1	16.1	11.9	11.6	7.21	5.70	5.09	4.75	5.34	4.47	4.92	4.69	4.28	4.59	3.85
	Shizhan	CNA005	26.2	22.9	10.7	16.0	50.8	21.1	17.8	14.4	8.93	22.1	13.3	19.5	25.8	21.6	16.2
	Jiwozi	CNA007	27.9	14.6	11.1	31.3	33.9	23.0	14.2	0.787	16.7	14.5	23.9	16.1	8.66	16.7	21.9
	Hongwen	CNA008	32.3	15.0	25.4	23.9	19.3	28.6	25.7	31.2	71.7	62.7	72.3	49.1	33.2	18.4	17.5
	Xiaoping	CNA009	20.1	13.9	17.1	14.5	13.0	13.8	18.5	10.6	21.5	22.5	10.0	14.3	12.1	8.34	13.0
	Xiang Zhou	CNA010	44.9	22.4	29.8	43.4	46.1	23.8	60.2	23.6	61.1	73.3	24.4	28.1	20.8	25.5	23.6
	Zhuxiandong	CNA011	51.4	21.7	18.8	***	***	***	72.4	33.5	29.3	102	28.8	44.6	27.7	31.5	27.9
	Wuzhishan	CNA013											7.43	8.42	7.41	8.91	5.13
	Lijiang	CNA014											3.38	20.7	2.07	10.4	3.94
Indonesia	Jakarta	IDA001	12.0	15.4	19.4	13.0	19.3	28.8	17.1	31.2	12.4	21.1	14.9	18.1	20.2	13.5	***
	Serpong	IDA002	17.6	22.4	15.1	24.1	22.7	25.5	22.3	16.0	16.4	23.7	29.9	34.9	25.6	17.7	***
	Kototabang	IDA003	10.7	9.91	13.9	9.72	27.3	10.6	8.28	33.4	6.28	4.85	5.89	5.03	5.89	4.50	***
	Bandung	IDA004	11.8	8.60	12.4	10.6	15.6	14.7	9.49	9.63	14.9	13.7	21.5	13.1	7.67	11.0	***
	Maros	IDA005	15.3	21.1	16.1	20.0	36.3	36.2	6.90	154	114	15.5	21.3	28.1	14.3	12.9	***
	Jembrana	IDA006											31.4	60.7	61.3	34.5	***
	Lombok	IDA007											23.6	23.3	20.2	24.5	***
Japan	Rishiri	JPA001	193	184	156	332	222	184	160	79.8	234	194	209	157	259	187	106
	Ochiishi	JPA002	205	266	180	307	486	112	201	161	258	88.7	77.7	134	323	*	*
	Tappi	JPA003	217	124	167	162	289	176	283	195	215	185					
	Sado-seki	JPA004	364	351	182	293	355	317	367	199	170	151	250	196	1527	234	160
	Happo	JPA005	6.64	4.99	4.43	11.6	4.89	6.21	7.00	6.42	6.18	6.57	4.42	5.00	6.37	5.29	5.77
	Ijira	JPA006	16.5	16.2	17.2	24.5	19.5	19.7	19.9	15.2	17.7	18.0	15.7	15.8	19.1	24.4	14.4
	Oki	JPA007	436	471	552	411	579	617	473	384	555	473	189	264	434	*	*
	Banryu	JPA008	114	107	125	103	80.8	102	107	92.1	99.8	65.0					
	Yusuhara	JPA009	13.9	11.0	14.7	113	13.4	6.95	27.4	9.97	60.4	16.6	16.7	11.2	21.2	42.2	21.3
	Hedo	JPA010	141	284	232	496	263	157	368	236	429	186	153	271	1353	154	353
	Ogasawara	JPA011	227	211	241	134	166	154	370	106	208	52.8	203	60.8	190	172	160
	Tokyo	JPA012	27.8	19.4	45.9	35.8	27.7	23.1	22.2	17.2	47.5	39.7	65.8	18.4	22.8	21.6	18.2
	Niigata-maki	JPA013											210	131	218	248	203
	Tsushima	JPA014											34.7	35.9	40.6	118	43.0
Lao PDR	Vientiane	LAA001	6.19	***	***	4.46	***	***	4.97	5.28	*	*	*	***	***	***	3.99
Malaysia	Petaling Jaya	MYA001	7.89	9.26	8.36	7.98	7.66	8.89	10.3	10.3	10.0	9.75	***	9.04	8.76	7.41	7.89
	Tanah Rata	MYA002	2.26	1.91	2.95	3.19	2.96	3.49	3.75	3.30	3.35	4.09	***	4.36	***	3.43	3.58
	Danum Valley	MYA003	6.79	17.1	5.70	4.16	7.52	6.50	7.47	4.90	4.60	7.29	***	14.6	8.74	6.28	5.08
	Kuching	MYA004	8.41	8.04	11.5	6.78	8.82	11.0	14.5	14.5	11.5	10.9	***	14.2	11.0	7.73	6.88
	Gunung Brinchang	MYA005													7.04	***	***
Mongolia	Ulaanbaatar	MNA001	9.63	8.49	7.46	***	4.08	***	5.15	4.63	3.56	4.41	13.4	4.60	6.71	*	3.38
	Terej	MNA002	9.95	10.6	9.81	***	6.94	***	7.91	9.71	8.67	5.77	***	5.60	11.5	*	6.50
Myanmar	Yangon	MMA001	25.0	13.2	15.8	26.6	27.1	19.5	34.4	31.3	35.2	21.8	20.8	22.7	16.8	14.6	17.8
Philippines	Manila Observatory	PHA001	24.6	20.6	29.8	20.2	28.7	26.1	27.3	31.4	***	***	23.3	10.3	30.2	12.1	20.7
	Los Baños	PHA002	25.0	25.3	26.2	21.6	25.8	18.3	92.0	25.2	***	***	***	***	***	14.4	21.1
	Mt.Sto.Tomas	PHA003	8.31	5.07	4.41	6.50	7.11	4.21	7.79	5.46	***	***	***	***	***	7.89	***
Republic of Korea	Ganghwa	KRA001	60.2	43.9	48.5	67.5	36.3	61.6	161	50.1	55.7	42.3	216	***	36.4	29.1	25.6
	Jeju	KRA002	63.7	114	147	455	344	124	109	444	280	293	76.4	***	288	945	391
	Imsil	KRA003	51.9	44.4	25.3	88.8	22.8	30.7	46.8	29.9	32.1	27.6	28.4	***	70.9	41.7	23.2
Russia	Mondy	RUA001	3.29	3.39	5.28	5.95	3.69	3.57	3.68	1.66	5.29	2.39	1.95	2.20	2.45	0.866	***
	Listvyanka	RUA002	3.02	3.43	6.63	3.28	5.85	3.65	5.45	3.09	4.12	2.93	4.19	3.61	2.27	2.62	4.96
	Irkutsk	RUA003	24.9	23.8	22.0	15.1	19.2	9.86	23.9	9.90	10.2	10.0	10.6	9.05	6.92	7.97	11.4
	Primorskaya	RUA004	14.7	29.4	67.4	29.9	42.7	25.0	25.4	33.4	37.1	21.5	34.6	31.5	59.3	56.1	45.0
Thailand	Bangkok	THA001	7.65	9.33	7.98	8.33	7.24	9.22	7.36	11.1	8.16	14.4	11.8	12.0	***	6.13	9.19
	Samutprakarn	THA002	8.45	16.2	7.61	9.92	9.16	11.3	9.66	9.41	8.30	10.9	11.4	13.5	***	6.42	11.7
	Pathumthani	THA003	6.23	5.77	6.82	15.9	6.85	7.88	9.96	8.65	7.48	6.98	9.62	6.09	8.72	5.82	7.34
	Khanchanaburi	THA004	8.84	3.30	8.86	11.6	2.89	6.90	5.69	9.04	5.92	7.60	6.88	***	***	***	***
	Mae Hia	THA005	4.91	3.58	2.88	4.14	5.94	5.39	3.87	7.39	5.73	7.19	7.55				
	Sakaerat	THA008	4.62	4.81	4.80	6.36	6.34	11.1	6.99	6.57	4.08	5.08	5.26				
Vietnam	Hanoi	VNA001	9.65	10.9	8.56	6.58	9.93	10.4	14.8	11.4	14.6	23.0	25.2	48.3	14.1	35.2	20.1
	Hoa Binh	VNA002	5.38	6.35	4.30	4.65	6.18	4.24	5.25	7.94	14.6	9.84	9.31	21.4	15.1	10.2	19.3
	Cuc Phuong	VNA003	44.2	24.3	15.5	20.3	25.2	11.7	21.3	17.1	35.6	30.2	38.8	39.3	37.4	22.4	28.9
	Da Nang	VNA004	110	50.4	93.5	83.1	174	92.9	72.8	70.2	80.9	97.8	167	171	116	226	98.4
	Can Tho	VNA005						27.4	41.2	36.1	29.2	30.4	23.9	28.9	29.8	29.5	29.7
	Ho Chi Minh	VNA006						44.8	52.0	37.3	47.5	36.3	36.9	43.2	43.5	44.7	43.9
	Yen Bai	VNA007							7.48	14.3	17.3	12.4	14.0	31.2	14.3	16.0	19.8

Terms and abbreviations are given in Table 3.5.

Table 3.75 Precipitation amount-weighted annual average concentrations of NH₄⁺ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	13.1	22.6	21.9	21.6	13.5	13.9	18.1	19.5	22.2	***	***	***	***	***	***
China	Haifu	CNA003	105	141	145	116	142	116	95.2	98.7	96.3	103	91.5	74.5	73.5	80.6	80.8
	Jinyunshan	CNA004	110	124	117	124	90.1	70.6	62.6	65.8	60.0	79.3	70.6	62.5	55.8	63.7	55.2
	Shizhan	CNA005	169	187	60.8	109	238	170	194	118	147	127	136	160	69.5	118	123
	Jiwozi	CNA007	52.0	17.3	23.1	26.6	55.5	32.8	65.7	2.87	1.07	15.5	34.2	37.9	31.9	17.0	18.0
	Hongwen	CNA008	46.6	39.8	42.3	43.2	18.3	25.7	29.2	37.2	33.8	25.0	28.3	31.9	46.2	21.9	16.9
	Xiaoping	CNA009	45.8	42.9	38.9	30.4	25.3	38.9	37.8	24.6	29.5	23.5	19.9	25.9	34.8	13.0	35.4
	Xiang Zhou	CNA010	22.1	24.4	20.7	29.1	17.7	23.8	19.1	29.6	24.5	24.2	22.7	23.3	14.0	15.7	21.0
	Zhuxiandong	CNA011	25.6	22.7	24.8	***	***	***	24.3	42.4	25.7	23.6	23.0	21.6	18.4	14.2	19.4
	Wuzhishan	CNA013											14.7	20.0	13.2	13.1	8.87
	Lijiang	CNA014											11.0	2.44	12.6	24.9	12.3
Indonesia	Jakarta	IDA001	17.7	23.0	33.7	23.1	17.2	17.6	18.9	37.5	24.0	47.9	29.6	24.5	30.6	27.8	***
	Serpong	IDA002	43.0	52.3	62.2	71.1	83.0	65.5	63.0	55.6	50.5	69.4	67.4	69.6	69.6	64.5	***
	Kototabang	IDA003	2.69	2.83	10.0	8.47	6.93	12.1	1903	4.94	5.59	7.35	7.80	6.87	9.94	4.71	***
	Bandung	IDA004	48.3	32.1	60.8	53.8	47.4	55.4	56.7	58.1	62.4	61.9	73.2	69.1	53.2	65.7	***
	Maros	IDA005	12.7	10.1	9.30	14.1	6.75	7.19	20.7	53.7	5.22	10.9	2.61	1.61	3.52	7.73	***
	Jembrana	IDA006											16.8	14.4	12.2	3.72	***
	Lombok	IDA007											16.9	20.9	16.6	83.5	***
Japan	Rishiri	JPA001	17.7	15.7	14.0	11.4	12.9	12.5	13.3	10.4	22.3	22.3	19.0	19.1	15.0	18.5	15.5
	Ochiishi	JPA002	8.40	10.7	11.0	12.3	9.68	10.8	11.4	5.01	6.26	6.59	7.54	10.6	43.0	*	*
	Tappi	JPA003	10.5	15.0	16.9	13.8	19.1	22.7	13.0	15.4	15.9	10.3					
	Sado-seki	JPA004	12.5	11.9	14.6	15.5	18.1	18.2	19.3	16.0	20.0	10.9	16.2	11.3	14.3	6.72	11.2
	Happo	JPA005	9.73	5.88	6.06	10.7	8.94	8.08	7.84	4.77	4.33	5.57	8.54	5.58	7.25	6.81	6.33
	Ijira	JPA006	18.2	12.2	14.1	14.7	13.4	13.4	13.5	14.3	12.5	9.12	12.7	10.7	9.66	12.6	10.8
	Oki	JPA007	17.0	17.8	18.6	17.0	17.5	14.0	9.63	14.4	17.7	12.1	15.5	10.0	9.83	*	*
	Banryu	JPA008	16.3	21.6	15.7	21.5	13.8	17.3	14.9	15.0	16.3	9.62					
	Yusuhara	JPA009	8.25	6.60	4.83	7.55	7.16	4.91	4.04	6.04	21.9	3.15	5.39	5.94	4.78	6.31	6.56
	Hedo	JPA010	6.43	9.31	9.13	18.8	9.94	8.28	11.0	8.05	7.04	3.19	4.93	8.05	23.8	3.36	12.4
	Ogasawara	JPA011	4.82	5.29	4.54	5.18	6.04	3.88	2.64	4.85	2.30	2.02	2.47	3.51	1.68	1.88	3.03
	Tokyo	JPA012	26.2	19.2	25.4	24.3	22.9	23.1	20.1	17.2	18.2	21.7	17.6	21.8	17.6	20.6	18.4
	Niigata-maki	JPA013											16.3	12.5	11.9	13.5	12.4
	Tsushima	JPA014											8.61	12.8	9.17	9.34	11.5
Lao PDR	Vientiane	LAA001	17.3	***	***	***	***	***	7.78	7.50	*	*	*	***	***	***	7.64
Malaysia	Petaling Jaya	MYA001	7.57	4.60	4.86	1.29	16.2	27.4	25.5	13.0	17.0	19.8	***	20.2	18.9	15.3	21.7
	Tanah Rata	MYA002	5.41	4.05	14.3	5.67	2.42	3.44	7.54	3.51	3.13	2.04	***	10.9	***	6.52	8.29
	Danum Valley	MYA003	3.44	4.89	1.90	<0.8	<0.8	0.915	4.21	<0.8	1.75	***	***	<0.8	<0.8	1.85	<0.8
	Kuching	MYA004	4.94	1.94	5.03	6.16	2.87	9.38	5.49	2.45	3.48	5.24	***	2.26	4.98	7.40	5.92
	Gunung Brinchang	MYA005													2.93	***	***
Mongolia	Ulaanbaatar	MNA001	46.7	54.7	45.9	***	62.2	***	***	40.7	48.9	57.4	75.1	49.6	62.5	*	26.3
	Terelj	MNA002	41.0	35.0	39.4	***	5.37	***	***	60.2	41.9	31.0	***	22.5	55.6	*	28.7
Myanmar	Yangon	MMA001	16.2	14.6	14.9	17.7	17.0	16.6	22.3	17.1	13.6	19.5	17.0	21.0	19.0	22.5	19.0
Philippines	Manila Observatory	PHA001	21.1	53.1	183	273	41.2	61.6	86.1	112	***	***	28.6	21.4	16.5	20.7	32.7
	Los Baños	PHA002	11.7	38.2	29.4	67.8	22.3	55.9	54.9	84.8	***	***	***	***	***	11.6	13.9
	Mt.Sto.Tomas	PHA003	14.1	4.65	0.822	3.42	4.71	13.5	9.57	7.79	***	***	***	***	***	3.04	***
Republic of Korea	Ganghwa	KRA001	30.5	26.5	43.3	49.4	78.5	60.2	99.0	58.1	84.4	38.6	42.3	***	36.8	33.9	16.4
	Jeju	KRA002	45.2	26.8	28.0	33.4	35.9	25.5	28.2	40.3	38.3	25.7	45.4	***	23.4	36.2	20.0
	Imsil	KRA003	35.2	31.2	37.7	39.5	40.5	33.4	50.6	36.1	51.6	26.8	35.7	***	22.5	43.1	34.0
Russia	Mondy	RUA001	20.2	17.5	9.14	19.0	2.71	3.60	13.5	4.97	10.4	8.38	9.51	5.19	33.1	12.4	***
	Listvyanka	RUA002	13.4	18.3	17.2	26.7	9.85	13.7	36.8	14.4	20.6	13.8	18.8	11.8	14.7	13.7	12.1
	Irkutsk	RUA003	36.4	34.5	32.7	34.1	29.5	23.9	73.0	22.2	20.4	21.0	29.8	23.7	25.0	26.7	25.3
	Primorskaya	RUA004	28.8	42.7	54.1	27.0	39.6	42.3	25.7	22.7	46.8	33.0	23.9	22.8	51.4	59.0	44.5
Thailand	Bangkok	THA001	64.9	37.8	40.2	44.1	46.3	52.3	60.7	63.6	54.6	52.9	35.5	44.2	***	28.3	42.1
	Samutprakarn	THA002	41.0	28.1	27.8	34.1	37.7	48.6	46.0	43.3	48.5	40.1	31.6	30.6	***	22.1	26.5
	Pathumthani	THA003	33.0	28.0	38.1	37.9	44.9	35.3	45.3	53.1	41.3	35.6	49.4	31.3	32.6	28.2	35.0
	Khanchanaburi	THA004	26.1	8.90	13.0	8.95	6.80	14.0	10.7	16.2	14.1	6.33	4.51	***	***	***	***
	Mae Hia	THA005	20.2	19.3	13.5	19.6	19.3	26.8	17.6	29.3	26.2	15.1	33.2				
	Sakaerat	THA008	22.9	24.6	24.3	25.7	23.8	42.3	31.3	34.0	23.3	63.3	68.9				
Vietnam	Hanoi	VNA001	50.6	52.4	52.8	60.2	53.4	68.0	64.9	61.4	52.6	56.9	29.9	98.6	66.0	63.3	78.8
	Hoa Binh	VNA002	31.4	28.3	27.8	30.0	25.3	45.6	38.3	56.9	20.0	29.0	12.0	41.2	54.1	25.2	79.6
	Cuc Phuong	VNA003	6.30	9.90	19.2	23.9	25.5	20.5	30.0	20.1	8.72	5.39	19.7	16.4	49.1	57.2	51.3
	Da Nang	VNA004	13.5	8.67	21.5	21.3	24.6	14.5	8.73	5.43	20.9	14.1	41.7	21.2	18.6	16.1	14.1
	Can Tho	VNA005						18.3	21.3	22.7	21.5	12.3	17.6	16.1	19.2	21.6	21.0
	Ho Chi Minh	VNA006						24.3	29.4	28.8	38.4	20.7	22.8	30.1	30.4	30.0	33.7
	Yen Bai	VNA007							30.5	91.5	33.6	39.0	18.2	66.2	75.2	33.4	110

Terms and abbreviations are given in Table 3.5.

Table 3.76 Precipitation amount-weighted annual average concentrations of Na⁺ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	6.95	3.10	3.55	3.65	3.10	7.60	6.28	4.23	4.45	***	***	***	***	***	***
China	Haifu	CNA003	4.20	7.56	9.87	6.04	7.29	6.36	3.61	6.18	4.42	4.98	4.01	3.55	2.47	3.32	4.53
	Jinyunshan	CNA004	7.70	8.17	6.12	6.28	3.92	4.50	2.23	2.55	2.95	1.81	2.00	2.02	1.51	2.01	2.63
	Shizhan	CNA005	13.4	7.30	17.7	5.59	138	126	113	53.6	28.7	20.6	12.1	20.4	17.9	25.6	20.5
	Jiwozi	CNA007	25.2	6.47	7.86	44.5	112	125	92.5	8.39	33.7	24.6	88.3	20.8	20.9	9.93	10.2
	Hongwen	CNA008	24.5	19.4	18.1	16.3	14.3	19.8	18.6	27.2	35.7	24.0	4.99	48.1	45.3	16.6	16.7
	Xiaoping	CNA009	16.4	18.8	10.9	8.45	12.1	8.77	11.0	6.54	6.87	6.55	1.44	10.5	7.52	6.73	10.5
	Xiang Zhou	CNA010	40.2	19.8	32.3	45.9	54.2	30.7	52.9	22.5	52.2	67.2	20.3	23.5	18.3	23.0	20.4
	Zhuxiandong	CNA011	45.3	19.9	45.0	***	***	***	66.9	34.1	26.2	89.3	24.0	38.1	24.2	28.1	24.5
	Wuzhishan	CNA013											8.68	7.39	6.83	8.22	5.83
	Lijiang	CNA014											8.65	0.580	1.15	1.65	1.59
Indonesia	Jakarta	IDA001	9.31	7.92	11.7	12.7	16.2	21.4	2.01	21.0	9.76	16.7	9.40	15.5	15.9	9.55	***
	Serpong	IDA002	10.2	8.32	10.1	10.9	14.0	18.8	14.6	14.4	12.1	17.7	17.0	13.1	22.4	8.15	***
	Kototabang	IDA003	6.12	5.25	6.54	9.63	8.51	5.67	0.779	21.1	3.46	3.40	4.75	7.43	3.63	3.37	***
	Bandung	IDA004	11.8	9.74	12.2	10.8	13.6	12.9	8.58	11.2	18.7	23.1	44.8	14.7	7.05	11.6	***
	Maros	IDA005	13.3	13.2	14.9	19.9	19.3	29.1	3.67	118	104	13.5	18.7	15.4	12.6	11.2	***
	Jembrana	IDA006											19.9	30.0	32.2	23.9	***
	Lombok	IDA007											22.8	25.9	19.5	23.6	***
Japan	Rishiri	JPA001	176	162	139	292	200	162	140	69.7	207	170	182	139	230	167	91.2
	Ochiishi	JPA002	182	232	155	274	421	97.2	178	138	219	77.6	67.4	117	282	*	*
	Tappi	JPA003	199	114	150	141	257	156	237	169	189	159					
	Sado-seki	JPA004	321	320	153	246	328	282	327	175	150	134	220	175	1389	204	139
	Happo	JPA005	5.14	3.76	3.34	9.57	4.07	5.31	5.84	4.83	4.96	5.41	3.54	4.21	5.25	4.45	4.91
	Ijira	JPA006	13.5	13.0	13.8	19.3	15.1	15.6	15.8	12.4	14.6	14.6	13.1	13.7	16.2	20.3	12.0
	Oki	JPA007	376	409	480	357	505	545	412	332	486	405	163	229	380	*	*
	Banryu	JPA008	98.8	94.2	108	92.2	69.1	86.9	91.1	81.9	87.8	56.7					
	Yusuhara	JPA009	12.0	8.82	12.3	18.1	9.90	5.19	22.9	7.97	48.7	14.5	13.8	9.34	17.9	36.1	18.3
	Hedo	JPA010	127	254	204	418	227	137	313	201	368	160	130	228	1125	133	304
	Ogasawara	JPA011	188	208	202	114	141	131	306	90.9	180	46.7	178	51.1	164	149	138
	Tokyo	JPA012	23.5	17.3	37.7	29.5	22.8	18.9	18.0	14.4	40.3	34.5	57.7	15.3	19.4	18.6	16.1
	Niigata-maki	JPA013											176	113	189	210	175
	Tsushima	JPA014											30.0	31.2	35.0	101	36.3
Lao PDR	Vientiane	LAA001	9.14	***	***	***	***	***	2.78	1.52	*	*	*	***	***	***	3.41
Malaysia	Petaling Jaya	MYA001	4.59	4.99	4.56	3.85	4.29	5.04	6.20	6.14	6.04	5.33	***	5.51	4.88	3.61	5.12
	Tanah Rata	MYA002	1.58	1.29	1.99	1.51	2.17	2.82	2.74	2.72	2.47	2.48	***	5.02	***	2.96	3.17
	Danum Valley	MYA003	5.83	13.8	5.52	2.87	5.14	5.42	5.40	3.30	2.52	5.16	***	12.7	6.84	4.76	4.00
	Kuching	MYA004	7.35	6.67	9.08	5.21	7.54	9.25	12.9	12.7	9.28	8.49	***	10.5	7.50	6.60	6.04
	Gunung Brinchang	MYA005													4.66	***	***
Mongolia	Ulaanbaatar	MNA001	4.88	3.50	5.65	***	78.8	***	***	172	21.9	41.5	110	77.7	17.4	*	4.11
	Terelj	MNA002	7.60	11.1	6.07	***	17.0	***	***	206	13.5	49.5	***	60.8	111	*	16.8
Myanmar	Yangon	MMA001	18.5	12.9	15.0	22.1	15.8	17.3	8.77	15.7	15.0	21.9	18.3	14.0	15.7	15.3	15.8
Philippines	Manila Observatory	PHA001	20.2	22.3	21.4	16.7	28.0	24.5	23.4	17.4	***	***	18.0	10.4	22.3	24.1	24.1
	Los Baños	PHA002	17.4	22.7	19.4	22.2	22.8	15.4	17.6	22.4	***	***	***	***	***	12.8	21.5
	Mt.Sto.Tomas	PHA003	8.26	6.30	4.31	10.3	6.70	6.30	8.71	14.8	***	***	***	***	***	1.93	***
Republic of Korea	Ganghwa	KRA001	45.1	27.0	35.8	50.7	29.6	43.2	45.0	28.5	27.8	30.4	180	***	29.9	24.1	18.2
	Jeju	KRA002	53.6	103	152	375	290	116	101	394	261	264	93.4	***	285	879	360
	Imsil	KRA003	50.3	48.2	37.4	51.8	30.3	29.8	47.1	33.8	36.2	38.5	38.1	***	80.5	72.3	45.5
Russia	Mondy	RUA001	2.28	2.81	3.86	4.32	1.36	2.25	1.61	1.38	2.58	2.11	1.92	5.00	2.82	1.66	***
	Listvyanka	RUA002	3.82	3.60	5.42	4.20	6.68	4.80	2.96	2.80	3.26	3.01	3.06	4.45	4.78	4.39	6.29
	Irkutsk	RUA003	18.7	18.4	16.8	9.96	12.8	8.62	12.7	7.42	7.99	8.80	6.70	9.98	7.00	9.07	11.2
	Primorskaya	RUA004	12.8	23.9	13.7	23.1	25.5	15.8	24.8	25.2	26.0	21.9	20.0	33.8	34.3	36.0	21.0
Thailand	Bangkok	THA001	9.79	8.79	6.46	6.07	12.0	9.17	7.97	11.0	5.83	11.4	8.83	15.9	***	5.12	9.88
	Samutprakarn	THA002	10.0	18.6	5.70	7.89	25.3	12.6	9.33	8.87	7.10	9.95	9.65	12.3	***	5.62	9.26
	Pathumthani	THA003	5.58	7.46	5.87	14.1	5.96	5.31	6.92	6.41	4.83	5.10	6.57	3.64	3.64	2.83	5.27
	Khanchanaburi	THA004	9.49	3.11	7.45	9.71	5.46	6.41	5.91	10.4	4.70	8.17	5.45	***	***	***	***
	Mae Hia	THA005	2.69	2.72	3.21	3.80	5.63	3.65	4.48	7.01	6.14	7.89	8.18				
	Sakaerat	THA008	2.73	3.21	4.04	3.71	2.96	8.85	4.59	4.02	2.08	11.0	9.64				
Vietnam	Hanoi	VNA001	9.17	7.28	6.17	4.19	7.69	7.24	9.00	11.4	16.4	11.2	26.4	23.9	11.6	24.0	13.6
	Hoa Binh	VNA002	3.39	4.86	2.46	3.03	4.13	3.16	3.80	4.40	3.99	2.79	12.2	8.27	9.65	4.56	10.2
	Cuc Phuong	VNA003	11.2	12.0	13.6	20.0	26.7	10.7	8.76	12.7	17.6	13.4	23.4	17.5	38.1	20.4	24.0
	Da Nang	VNA004	94.6	41.3	70.2	63.2	144	82.1	79.6	65.7	81.0	68.1	108	57.8	68.8	60.5	38.1
	Can Tho	VNA005						15.4	29.4	12.6	9.61	9.73	18.1	17.9	14.0	14.6	17.7
	Ho Chi Minh	VNA006						25.0	34.6	13.5	17.4	14.2	20.4	18.4	19.5	18.9	18.6
	Yen Bai	VNA007							5.40	8.96	3.68	3.65	11.7	16.0	10.8	5.18	15.4

Terms and abbreviations are given in Table 3.5.

Table 3.77 Precipitation amount-weighted annual average concentrations of K⁺ from 2009 to 2023

			unit: $\mu\text{mol L}^{-1}$														
Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	1.50	0.861	1.15	0.761	1.06	2.69	1.98	2.11	1.22	***	***	***	***	***	***
China	Haiifu	CNA003	7.72	10.0	9.38	6.57	12.8	9.28	5.99	4.66	4.80	6.21	3.45	2.71	2.38	2.96	3.50
	Jinyunshan	CNA004	8.71	10.4	10.4	7.64	5.49	4.42	3.40	3.37	3.60	2.75	3.20	2.60	1.78	2.43	1.60
	Shizhan	CNA005	10.2	32.4	13.4	5.69	28.1	251	5.32	3.76	4.60	10.9	7.50	7.55	3.52	13.2	2.67
	Jiwozi	CNA007	13.7	4.89	7.28	9.74	10.2	16.4	6.63	4.58	13.0	19.3	64.1	13.4	5.05	8.23	6.46
	Hongwen	CNA008	2.26	2.24	1.99	2.86	1.90	1.42	5.99	5.34	35.0	37.8	14.3	9.74	10.6	3.37	1.72
	Xiaoping	CNA009	2.33	1.94	2.80	3.47	1.66	1.45	8.40	5.59	12.4	14.4	2.51	2.71	2.55	3.38	2.72
	Xiang Zhou	CNA010	2.10	2.21	3.74	9.20	8.24	6.89	4.41	3.68	2.56	3.05	1.49	1.22	0.901	0.989	1.35
	Zhuxiandong	CNA011	2.56	3.29	5.92	***	***	***	8.30	5.80	2.24	4.65	1.87	2.15	1.63	1.34	1.42
	Wuzhishan	CNA013											2.87	2.68	3.40	4.00	2.15
	Lijiang	CNA014											1.53	0.768	0.642	1.74	0.919
Indonesia	Jakarta	IDA001	2.22	2.23	2.28	2.86	2.83	3.62	12.5	10.5	2.38	2.83	1.38	3.53	2.43	3.97	***
	Serpong	IDA002	1.75	3.20	3.15	4.33	4.91	5.64	7.81	4.85	3.78	6.02	11.9	14.5	5.04	2.81	***
	Kototabang	IDA003	9.35	4.43	3.96	5.52	19.3	10.4	4949	11.5	1.86	2.06	2.87	3.86	4.29	2.42	***
	Bandung	IDA004	4.08	4.22	4.77	3.36	7.97	5.63	3.54	2.89	4.22	4.48	4.65	5.06	2.54	3.40	***
	Maros	IDA005	3.89	2.52	1.86	3.50	1.84	19.1	1786	15.1	6.27	2.83	3.00	11.3	1.91	1.44	***
	Jembrana	IDA006											3.81	19.7	20.9	3.31	***
	Lombok	IDA007											3.28	6.77	6.93	22.6	***
Japan	Rishiri	JPA001	4.31	4.28	3.44	6.41	4.61	4.10	3.62	2.07	6.01	4.83	5.24	4.30	6.17	4.40	3.00
	Ochiishi	JPA002	4.09	6.16	3.70	6.76	9.35	2.55	4.84	3.43	5.36	1.86	1.68	3.05	24.7	*	*
	Tappi	JPA003	4.95	3.50	4.34	3.96	6.21	3.97	5.56	4.47	4.72	3.87					
	Sado-seki	JPA004	7.96	8.08	4.45	6.62	7.69	7.51	9.69	7.55	4.71	3.33	5.81	4.27	43.3	4.63	3.42
	Happo	JPA005	0.670	0.356	0.447	0.865	0.581	0.746	0.681	0.457	0.376	0.423	0.558	0.509	0.426	0.401	0.385
	Ijira	JPA006	0.678	0.426	0.535	0.609	0.589	0.611	0.699	0.498	0.576	0.462	0.523	0.490	0.588	0.593	0.506
	Oki	JPA007	10.1	10.1	12.7	9.16	12.8	13.1	9.87	8.06	11.6	9.86	4.26	5.39	9.38	*	*
	Banryu	JPA008	3.00	5.43	3.39	3.26	2.33	2.65	2.54	2.28	2.41	1.66					
	Yusuhara	JPA009	0.768	0.613	0.465	1.07	0.387	0.701	0.758	0.508	1.83	0.664	0.793	0.719	1.09	1.58	1.26
	Hedo	JPA010	3.29	6.19	4.94	10.6	5.48	3.31	7.24	4.51	8.02	3.52	3.03	5.15	24.4	2.95	7.66
	Ogasawara	JPA011	4.55	5.02	4.95	2.71	3.64	3.12	8.10	2.22	4.14	1.10	4.41	1.43	2.99	3.43	3.38
	Tokyo	JPA012	1.10	0.989	1.29	0.888	0.711	0.628	0.641	0.539	1.11	0.842	1.37	0.541	0.502	0.523	0.624
	Niigata-maki	JPA013											4.80	2.70	4.55	5.09	4.05
	Tsushima	JPA014											0.882	1.10	1.20	3.44	1.37
Lao PDR	Vientiane	LAA001	0.930	***	***	***	***	***	1.74	0.958	*	*	*	***	***	***	1.59
Malaysia	Petaling Jaya	MYA001	1.51	1.50	1.31	1.33	1.14	1.47	1.70	1.83	1.55	1.90	***	1.97	1.53	1.12	1.48
	Tanah Rata	MYA002	0.991	1.06	2.03	1.68	1.75	1.62	2.37	1.22	1.93	1.36	***	4.70	***	1.93	1.81
	Danum Valley	MYA003	1.59	3.24	1.73	1.21	1.01	2.16	2.39	1.01	1.29	2.64	***	2.95	2.43	2.77	2.83
	Kuching	MYA004	0.695	0.650	0.854	0.924	0.695	3.26	1.44	1.13	1.43	1.54	***	1.92	1.96	2.95	2.11
	Gunung Brinchang	MYA005													1.85	***	***
Mongolia	Ulaanbaatar	MNA001	2.53	2.72	3.98	***	3.88	***	***	0.620	1.29	1.01	2.01	1.64	1.57	*	1.71
	Terelj	MNA002	4.10	5.43	5.00	***	7.98	***	***	7.09	3.40	3.65	***	3.48	4.22	*	3.49
Myanmar	Yangon	MMA001	6.46	2.07	1.66	6.78	2.66	4.69	13.3	3.35	10.4	4.38	7.01	4.64	7.66	4.17	3.06
Philippines	Manila Observatory	PHA001	3.99	17.0	23.5	26.3	6.45	9.79	13.1	14.2	***	***	4.13	1.47	1.77	1.69	1.97
	Los Baños	PHA002	9.08	7.43	6.82	8.14	6.37	8.18	73.4	13.8	***	***	***	***	***	1.18	2.15
	Mt.Sto.Tomas	PHA003	1.95	1.41	0.821	0.885	0.732	1.26	1.63	0.889	***	***	***	***	***	0.426	***
Republic of Korea	Ganghwa	KRA001	8.97	7.78	3.62	6.39	3.27	13.4	106	13.3	16.5	5.01	7.91	***	2.41	3.95	1.88
	Jeju	KRA002	9.75	7.96	6.54	15.7	12.0	11.3	13.8	15.2	7.43	6.53	2.87	***	11.3	17.0	13.8
	Imsil	KRA003	10.9	10.3	3.89	47.5	6.33	9.82	9.19	3.39	8.80	2.18	1.33	***	6.64	2.23	1.58
Russia	Mondy	RUA001	3.29	2.62	4.98	9.05	2.30	2.01	3.40	1.05	1.94	1.27	0.982	0.937	3.64	0.863	***
	Listvyanka	RUA002	2.07	1.66	2.42	2.00	4.36	3.11	2.10	1.71	3.64	2.01	3.04	3.53	3.76	5.25	5.89
	Irkutsk	RUA003	26.6	5.52	4.59	4.99	5.19	2.97	4.51	3.10	2.92	3.06	4.06	3.72	5.18	6.02	6.26
	Primorskaya	RUA004	4.40	5.84	6.75	5.09	5.55	5.14	7.79	19.1	10.1	8.36	8.03	9.07	6.69	11.3	8.43
Thailand	Bangkok	THA001	1.98	2.58	1.82	1.52	1.91	1.38	1.75	1.70	1.24	2.26	3.89	3.88	***	1.56	3.17
	Samutprakarn	THA002	2.77	17.0	1.11	1.52	5.23	2.33	1.93	1.71	1.36	1.63	1.92	2.13	***	1.48	2.24
	Pathumthani	THA003	1.61	1.85	1.96	1.64	2.13	1.87	1.84	2.09	2.13	1.35	2.14	1.51	4.02	0.813	1.09
	Khanchanaburi	THA004	1.21	0.710	2.21	1.57	0.955	1.22	0.838	1.51	1.43	1.72	1.04	***	***	***	***
	Mae Hia	THA005	1.47	1.21	1.45	1.26	1.48	1.77	1.24	3.17	2.71	1.90	3.64				
	Sakaerat	THA008	1.31	0.940	1.20	1.26	0.813	2.63	1.52	1.59	0.512	6.95	6.12				
Vietnam	Hanoi	VNA001	1.57	2.78	2.27	3.00	2.64	3.75	3.72	3.63	7.09	8.06	8.12	6.51	5.56	11.2	6.41
	Hoa Binh	VNA002	2.72	2.88	2.40	1.50	7.10	2.77	2.87	2.59	2.88	3.89	1.85	2.46	4.44	3.96	5.81
	Cuc Phuong	VNA003	14.0	5.61	3.31	6.06	8.57	4.72	4.68	5.77	3.41	4.00	5.38	4.33	8.16	5.68	11.5
	Da Nang	VNA004	6.27	3.41	14.0	11.5	17.9	13.8	11.9	3.39	9.85	15.6	18.1	89.7	19.2	130	16.5
	Can Tho	VNA005						7.45	7.17	6.07	5.44	6.27	12.7	7.05	6.36	11.2	9.33
	Ho Chi Minh	VNA006						10.6	12.0	6.62	10.4	8.29	11.0	9.79	10.8	10.3	10.8
	Yen Bai	VNA007							4.03	4.98	6.20	3.27	2.59	4.59	4.85	4.15	8.62

Terms and abbreviations are given in Table 3.5.

Table 3.78 Precipitation amount-weighted annual average concentrations of Ca²⁺ from 2009 to 2023

			unit: $\mu\text{mol L}^{-1}$														
Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	20.4	8.33	9.30	10.7	9.57	9.47	11.6	14.3	9.74	***	***	***	***	***	***
China	Haifu	CNA003	43.2	69.2	68.5	57.9	69.5	54.6	43.0	67.3	53.5	43.0	25.7	22.0	21.6	21.4	27.1
	Jinyunshan	CNA004	66.7	68.7	65.1	59.2	31.2	26.0	21.7	38.0	51.9	34.2	22.8	19.3	15.4	16.0	14.5
	Shizhan	CNA005	138	105	91.2	128	325	92.7	89.7	35.0	68.3	61.9	50.9	46.1	95.0	177	57.6
	Jiwozi	CNA007	93.7	40.7	91.6	203	133	149	57.7	36.8	95.1	56.3	161	63.8	34.9	25.3	37.0
	Hongwen	CNA008	13.2	9.11	14.1	17.5	21.9	25.5	16.3	13.1	28.3	26.5	60.8	413	35.3	13.3	7.04
	Xiaoping	CNA009	9.04	8.37	11.7	20.0	22.7	42.4	9.17	6.39	15.1	8.12	7.45	4.79	6.93	4.43	6.39
	Xiang Zhou	CNA010	4.91	7.40	17.5	10.8	43.4	17.0	15.9	10.8	10.0	10.6	8.15	7.13	6.29	3.73	13.4
	Zhuxiandong	CNA011	7.40	16.4	19.1	***	***	***	25.2	17.3	13.9	17.7	10.8	12.1	8.47	7.31	7.93
	Wuzhishan	CNA013											10.3	3.75	3.37	4.63	3.63
	Lijiang	CNA014											23.1	2.78	4.31	9.98	11.6
Indonesia	Jakarta	IDA001	12.6	10.3	11.1	12.0	14.1	15.0	7.47	25.2	17.6	16.5	10.6	7.50	8.42	8.18	***
	Serpong	IDA002	5.17	9.25	10.9	9.29	14.0	13.0	19.7	13.9	12.1	21.2	17.5	8.52	11.7	7.43	
	Kototabang	IDA003	5.47	4.77	5.90	7.85	9.55	3.93	1.99	3.83	11.6	8.57	30.9	5.25	9.73	3.80	***
	Bandung	IDA004	15.3	13.5	20.9	13.3	19.6	22.8	17.6	15.2	14.4	18.2	19.6	24.5	17.1	18.1	
	Maros	IDA005	8.11	9.58	6.49	16.1	10.4	27.9	16.8	13.8	14.4	14.0	20.3	8.08	22.7	15.2	***
	Jembrana	IDA006											7.88	20.3	5.43	4.96	***
	Lombok	IDA007											15.7	7.98	6.65	17.2	***
Japan	Rishiri	JPA001	10.1	6.89	5.63	8.44	7.33	5.78	5.27	3.60	8.15	8.45	7.35	6.66	9.79	7.87	4.81
	Ochiishi	JPA002	5.20	8.25	5.42	7.35	11.5	4.06	6.72	4.27	6.18	3.18	2.87	4.37	15.1	*	*
	Tappi	JPA003	6.41	8.54	8.01	8.02	14.1	7.45	7.99	7.45	6.78	6.07					
	Sado-seki	JPA004	11.1	12.7	8.28	11.4	10.4	9.49	11.3	11.4	6.67	7.86	8.74	5.63	53.1	6.06	5.97
	Happo	JPA005	4.66	2.40	2.57	4.14	2.77	2.31	1.70	0.750	1.77	2.12	2.24	1.92	2.45	1.35	1.94
	Ijira	JPA006	2.74	2.48	1.97	2.50	2.74	1.65	2.00	1.88	2.20	1.86	2.36	1.61	2.03	1.93	2.29
	Okii	JPA007	14.6	16.1	17.1	12.1	17.0	16.4	12.0	10.6	15.1	13.1	6.94	7.56	12.2	*	*
	Banryu	JPA008	5.45	8.02	5.85	6.65	3.92	4.75	5.37	5.17	5.13	3.30					
	Yusuhara	JPA009	1.97	1.79	2.27	2.39	2.16	1.60	1.02	1.14	5.19	0.848	1.32	1.10	1.96	2.16	1.93
	Hedo	JPA010	4.47	7.98	6.04	11.5	6.89	4.25	8.24	5.37	9.70	5.31	3.79	6.38	28.5	4.54	9.45
	Ogasawara	JPA011	5.20	5.82	5.56	3.46	4.60	3.98	8.13	2.60	4.54	1.28	4.63	1.59	3.97	3.83	3.53
	Tokyo	JPA012	3.42	3.98	4.84	4.21	4.35	3.81	3.56	2.48	3.34	3.46	4.01	3.20	2.62	3.48	3.56
	Niigata-maki	JPA013											7.18	5.36	6.81	7.21	7.28
	Tsushima	JPA014											1.35	1.58	1.92	3.54	2.13
Lao PDR	Vientiane	LAA001	5.50	***	***	***	***	***	4.00	2.21	*	*	*	***	***	***	11.1
Malaysia	Petaling Jaya	MYA001	4.97	5.40	3.97	3.96	6.13	6.02	6.70	6.48	4.18	6.96	***	4.32	4.06	3.40	4.14
	Tanah Rata	MYA002	1.03	1.22	2.08	2.37	2.91	2.68	2.00	2.18	2.25	2.76	***	5.94	***	2.64	2.01
	Danum Valley	MYA003	1.01	3.82	0.887	0.800	1.44	1.41	2.28	0.987	1.48	2.52	***	7.13	1.89	1.70	1.46
	Kuching	MYA004	1.79	2.60	3.15	3.42	4.20	6.12	4.35	3.35	3.86	4.28	***	18.5	2.46	5.59	2.44
	Gunung Brinchang	MYA005													2.74	***	***
Mongolia	Ulaanbaatar	MNA001	42.2	34.3	33.9	***	95.3	***	***	29.1	41.8	23.5	39.0	45.9	49.2	*	27.1
	Terelj	MNA002	35.8	42.3	20.4	***	69.1	***	***	16.8	15.9	15.3	***	62.5	31.3	*	34.5
Myanmar	Yangon	MMA001	9.66	6.37	6.89	7.79	1.07	14.1	88.7	5.55	10.5	16.6	14.2	9.86	2.60	17.4	8.97
Philippines	Manila Observatory	PHA001	6.41	12.8	12.9	13.9	11.5	14.5	17.4	20.5	***	***	14.7	16.3	9.22	11.6	3.82
	Los Baños	PHA002	5.08	20.1	6.38	9.40	6.40	6.99	8.77	11.8	***	***	***	***	***	17.8	2.74
	Mt.Sto.Tomas	PHA003	5.87	22.7	7.84	14.0	8.58	8.06	6.85	13.4	***	***	***	***	***	7.26	***
Republic of Korea	Ganghwa	KRA001	5.19	7.02	4.39	8.64	8.72	8.94	9.52	3.85	6.73	3.20	7.07	***	10.6	5.65	5.84
	Jeju	KRA002	4.08	6.72	6.60	11.2	13.6	4.12	4.64	16.2	12.8	6.64	4.56	***	9.76	34.9	26.7
	Imsil	KRA003	3.88	5.74	6.81	4.31	2.95	3.50	5.16	2.70	3.71	1.64	2.66	***	8.88	5.94	5.49
Russia	Mondy	RUA001	5.19	9.20	9.02	12.1	4.61	7.02	8.36	5.42	8.67	5.35	5.09	3.46	4.50	4.17	***
	Listvyanka	RUA002	12.6	12.6	16.1	11.7	11.9	12.8	9.97	7.94	12.2	12.4	8.05	7.30	6.76	11.4	9.75
	Irkutsk	RUA003	29.2	32.2	34.7	31.3	33.0	26.5	30.5	17.0	22.5	27.8	17.6	14.1	15.4	27.4	23.0
	Primorskaya	RUA004	11.7	16.9	13.7	12.2	18.0	18.1	13.1	13.1	20.9	14.7	12.1	18.2	13.8	21.1	20.3
Thailand	Bangkok	THA001	10.0	11.2	10.5	13.5	25.2	14.5	16.9	15.9	11.3	27.1	29.2	18.0	***	12.2	20.2
	Samutprakarn	THA002	13.2	7.78	5.95	8.39	19.9	14.6	6.23	9.28	7.96	8.67	10.6	6.70	***	6.18	5.94
	Pathumthani	THA003	9.19	9.17	12.1	20.6	27.1	22.5	16.6	13.7	12.3	7.97	10.3	4.37	5.41	5.43	5.92
	Khanchanaburi	THA004	4.93	1.80	4.04	17.5	3.26	4.07	3.63	5.17	3.63	3.54	4.25	***	***	***	***
	Mae Hia	THA005	5.69	4.40	2.60	7.77	10.6	9.72	4.11	10.7	8.57	7.01	10.3				
	Sakaerat	THA008	2.53	2.21	1.88	3.74	1.96	8.73	6.83	8.24	4.60	35.1	55.9				
Vietnam	Hanoi	VNA001	12.0	23.7	14.6	15.0	16.2	24.8	36.7	22.8	35.3	40.6	80.0	83.0	30.8	79.0	26.9
	Hoa Binh	VNA002	9.44	21.1	12.5	11.1	16.9	13.4	10.1	13.1	23.1	13.7	17.6	43.6	25.5	17.9	23.8
	Cuc Phuong	VNA003	24.8	38.3	32.2	30.6	24.4	23.1	19.4	27.1	24.0	18.0	24.2	20.8	34.1	36.9	60.8
	Da Nang	VNA004	6.35	8.87	10.0	16.9	21.5	27.3	34.4	38.5	33.9	36.5	92.2	93.3	32.2	23.8	27.5
	Can Tho	VNA005						12.8	26.8	11.9	10.6	14.4	15.8	14.2	13.0	13.8	15.7
	Ho Chi Minh	VNA006						26.0	44.3	12.1	14.8	18.2	26.5	15.7	18.6	17.8	17.7
	Yen Bai	VNA007							15.9	20.3	23.1	20.8	27.4	52.9	22.5	21.5	28.9

Terms and abbreviations are given in Table 3.5.

Table 3.79 Precipitation amount-weighted annual average concentrations of nss-Ca²⁺ from 2009 to 2023

unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	20.3	8.26	9.23	10.7	9.50	9.31	11.5	14.2	9.64	***	***	***	***	***	***
China	Haifu	CNA003	43.2	69.0	68.2	57.7	69.3	54.5	43.0	67.1	53.4	42.9	25.6	22.0	21.6	21.3	27.0
	Jinyunshan	CNA004	66.5	68.6	64.9	59.0	31.1	25.9	21.7	38.0	51.9	34.2	22.7	19.2	15.4	16.0	14.4
	Shizhan	CNA005	138	105	90.8	128	322	90.0	87.2	33.9	67.7	61.4	50.6	45.6	94.6	176	57.2
	Jiwozi	CNA007	93.2	40.6	91.4	202	130	146	55.7	36.6	94.4	55.7	160	63.4	34.4	25.1	36.8
	Hongwen	CNA008	12.7	8.70	13.7	17.1	21.6	25.1	15.9	12.6	27.5	26.0	60.7	412	34.4	13.0	6.67
	Xiaoping	CNA009	8.69	7.96	11.5	19.9	22.4	42.2	8.94	6.24	14.9	7.98	7.41	4.56	6.77	4.28	6.17
	Xiang Zhou	CNA010	4.04	6.97	16.8	9.76	42.2	16.4	14.7	10.4	8.88	9.14	7.71	6.62	5.89	3.23	12.9
	Zhuxiandong	CNA011	6.44	15.9	18.1	***	***	***	23.7	16.6	13.3	15.8	10.3	11.3	7.95	6.71	7.40
	Wuzhishan	CNA013											10.2	3.61	3.23	4.45	3.52
	Lijiang	CNA014											22.9	2.77	4.29	9.94	11.5
Indonesia	Jakarta	IDA001	12.4	10.2	10.8	11.7	13.8	14.5	7.43	24.7	17.3	16.1	10.4	7.16	8.08	7.98	***
	Serpong	IDA002	5.03	9.07	10.7	9.05	13.7	12.6	19.4	13.6	11.8	20.8	17.1	8.26	11.3	7.25	***
	Kototabang	IDA003	5.34	4.65	5.76	7.64	9.37	3.81	2.03	3.53	11.6	8.50	30.8	5.09	9.65	3.72	***
	Bandung	IDA004	15.1	13.3	20.6	13.1	19.3	22.6	17.4	15.0	14.0	17.7	18.7	24.2	16.9	17.8	***
	Maros	IDA005	7.83	9.30	6.17	15.7	9.98	27.2	16.7	11.5	12.2	13.7	19.9	7.75	22.4	15.0	***
	Jembrana	IDA006											7.45	19.7	4.74	4.44	***
	Lombok	IDA007											15.2	7.43	6.23	16.7	***
Japan	Rishiri	JPA001	6.39	3.44	2.63	2.20	3.06	2.31	2.29	2.10	3.68	4.78	3.42	3.65	4.83	4.27	2.84
	Ochiishi	JPA002	1.38	3.25	2.11	1.50	2.42	1.96	2.87	1.28	1.46	1.50	1.41	1.84	9.00	*	*
	Tappi	JPA003	2.26	6.16	4.87	4.44	8.53	4.17	3.02	3.80	2.71	2.63					
	Sado-seki	JPA004	4.20	5.94	4.99	6.19	3.83	3.47	4.33	7.67	3.43	4.96	3.98	1.87	23.1	1.66	2.97
	Happo	JPA005	4.55	2.32	2.49	3.93	2.69	2.20	1.58	0.646	1.67	2.01	2.16	1.83	2.34	1.25	1.84
	Ijira	JPA006	2.46	2.21	1.70	2.09	2.43	1.34	1.66	1.61	1.88	1.54	2.08	1.31	1.68	1.49	2.03
	Oki	JPA007	6.44	7.24	6.73	4.40	6.12	4.63	3.15	3.55	4.72	4.35	3.43	2.61	3.99	*	*
	Banryu	JPA008	3.32	5.99	3.52	4.66	2.42	2.87	3.49	3.45	3.23	2.08					
	Yusuhara	JPA009	1.71	1.65	2.04	2.00	1.95	1.49	0.530	0.969	4.14	0.558	1.03	0.909	1.58	1.38	1.54
	Hedo	JPA010	1.75	2.50	1.63	2.44	1.99	1.29	1.48	1.12	2.08	1.90	1.06	1.47	4.16	1.68	2.89
	Ogasawara	JPA011	1.16	1.35	1.20	1.01	1.56	1.15	1.51	0.638	0.647	0.302	0.784	0.504	0.485	0.637	0.590
	Tokyo	JPA012	2.91	3.60	4.03	3.57	3.86	3.40	3.17	2.17	2.47	2.72	2.76	2.87	2.20	3.08	3.21
	Niigata-maki	JPA013											3.40	2.93	2.72	2.68	3.51
	Tsushima	JPA014											0.717	0.912	1.16	1.36	1.34
Lao PDR	Vientiane	LAA001	5.30	***	***	***	***	***	3.94	2.18	*	*	*	***	***	***	11.0
Malaysia	Petaling Jaya	MYA001	4.87	5.29	3.87	3.88	6.04	5.91	6.56	6.34	4.05	6.84	***	4.20	3.95	3.32	4.03
	Tanah Rata	MYA002	1.01	1.19	2.04	2.33	2.87	2.63	1.94	2.12	2.20	2.71	***	5.83	***	2.58	1.95
	Danum Valley	MYA003	0.919	3.59	0.794	0.750	1.34	1.32	2.18	0.920	1.43	2.41	***	6.86	1.74	1.60	1.38
	Kuching	MYA004	1.66	2.45	2.95	3.32	4.04	5.93	4.07	3.07	3.71	4.10	***	18.2	2.29	5.45	2.31
	Gunung Brinchang	MYA005													2.64	***	***
Mongolia	Ulaanbaatar	MNA001	42.1	34.2	33.8	***	93.6	***	***	25.4	41.3	22.6	36.6	44.4	48.8	*	27.0
	Terelj	MNA002	35.6	42.1	20.2	***	68.8	***	***	13.7	15.6	14.4	***	61.3	29.1	*	34.2
Myanmar	Yangon	MMA001	9.26	6.09	6.57	7.32	0.792	13.8	88.5	5.22	10.2	16.1	13.8	9.56	2.26	17.1	8.62
Philippines	Manila Observatory	PHA001	5.98	12.3	12.4	13.5	10.9	14.0	16.9	20.2	***	***	14.3	16.1	8.75	11.1	3.53
	Los Baños	PHA002	4.71	19.7	5.96	8.92	5.94	6.67	8.42	11.3	***	***	***	***	***	17.6	2.63
	Mt.Sto.Tomas	PHA003	5.69	22.5	7.75	13.8	8.43	7.92	6.66	13.1	***	***	***	***	***	7.21	***
Republic of Korea	Ganghwa	KRA001	4.23	6.44	3.66	7.54	8.09	8.13	8.55	3.24	6.15	2.56	3.19	***	10.00	5.13	5.44
	Jeju	KRA002	3.03	4.70	3.72	3.15	7.33	1.79	2.52	7.72	7.59	2.29	2.88	***	3.78	15.9	18.9
	Imsil	KRA003	2.83	4.79	6.02	3.40	2.29	2.90	4.19	2.01	2.98	1.17	2.07	***	7.24	4.48	4.58
Russia	Mondy	RUA001	5.14	9.14	8.94	12.1	4.58	6.97	8.32	5.39	8.61	5.30	5.05	3.35	4.44	4.14	***
	Listvyanka	RUA002	12.5	12.5	16.0	11.7	11.7	12.7	9.91	7.88	12.1	12.4	7.98	7.20	6.66	11.3	9.62
	Irkutsk	RUA003	28.8	31.8	34.4	31.1	32.7	26.3	30.2	16.8	22.4	27.6	17.5	13.9	15.3	27.2	22.8
	Primorskaya	RUA004	11.4	16.3	13.4	11.7	17.4	17.7	12.6	12.6	20.4	14.2	11.6	17.5	13.1	20.3	19.9
Thailand	Bangkok	THA001	9.81	11.1	10.4	13.3	25.0	14.3	16.8	15.7	11.2	26.9	29.0	17.7	***	12.1	20.0
	Samutprakarn	THA002	13.0	7.38	5.83	8.22	19.3	14.3	6.02	9.09	7.81	8.46	10.4	6.44	***	6.06	5.74
	Pathumthani	THA003	9.07	9.03	12.0	20.3	27.0	22.4	16.5	13.6	12.2	7.86	10.2	4.30	5.33	5.37	5.81
	Khanchanaburi	THA004	4.72	1.73	3.88	17.3	3.14	3.93	3.50	4.95	3.53	3.36	4.13	***	***	***	***
	Mae Hia	THA005	5.63	4.36	2.54	7.69	10.4	9.64	4.01	10.6	8.43	6.84	10.1				
	Sakaerat	THA008	2.48	2.15	1.81	3.66	1.90	8.57	6.73	8.16	4.55	34.9	55.7				
Vietnam	Hanoi	VNA001	11.8	23.5	14.5	15.0	16.1	24.6	36.5	22.5	35.0	40.3	79.4	82.5	30.5	78.5	26.6
	Hoa Binh	VNA002	9.37	21.0	12.5	11.0	16.9	13.3	10.0	13.0	23.1	13.7	17.3	43.4	25.3	17.8	23.6
	Cuc Phuong	VNA003	24.6	38.0	32.0	30.2	23.8	22.8	19.2	26.8	23.7	17.7	23.7	20.5	33.3	36.5	60.3
	Da Nang	VNA004	4.31	7.98	8.50	15.5	18.4	25.5	32.7	37.1	32.1	35.0	89.8	92.1	30.7	22.5	26.6
	Can Tho	VNA005						12.4	26.2	11.6	10.3	14.2	15.4	13.8	12.7	13.5	15.3
	Ho Chi Minh	VNA006						25.4	43.5	11.8	14.4	17.9	26.1	15.3	18.2	17.4	17.3
	Yen Bai	VNA007							15.8	20.1	23.0	20.7	27.1	52.5	22.3	21.4	28.6

Terms and abbreviations are given in Table 3.5.

Table 3.80 Precipitation amount-weighted annual average concentrations of Mg²⁺ from 2009 to 2023

			unit: $\mu\text{mol L}^{-1}$														
Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	2.00	0.717	1.22	1.22	1.12	1.63	2.56	1.44	1.41	***	***	***	***	***	***
China	Haifu	CNA003	5.45	8.95	8.61	6.87	8.23	7.00	4.79	5.69	4.08	4.04	3.01	2.22	2.19	2.75	3.43
	Jinyunshan	CNA004	5.56	5.76	6.13	5.82	4.42	4.37	3.24	3.89	4.74	3.34	3.01	2.55	2.12	2.81	2.70
	Shizhan	CNA005	12.4	11.0	9.94	3.47	54.5	11.8	9.25	1.97	11.2	12.9	6.63	9.92	1.25	18.9	3.58
	Jiwozi	CNA007	20.2	7.17	9.65	44.4	22.3	21.6	11.1	12.6	19.7	16.0	22.5	6.32	0.630	5.88	6.83
	Hongwen	CNA008	4.08	2.00	4.22	4.69	3.36	4.27	4.20	4.89	7.19	4.77	4.18	14.5	6.44	3.62	3.03
	Xiaoping	CNA009	3.24	1.89	2.21	3.45	4.03	3.65	2.27	2.14	2.78	2.12	2.04	2.85	2.19	2.34	2.57
	Xiang Zhou	CNA010	4.52	2.57	4.39	6.90	14.0	7.21	7.19	4.02	5.64	6.39	3.56	3.82	2.38	2.53	2.70
	Zhuxiandong	CNA011	6.15	2.86	6.75	***	***	***	8.78	5.17	3.21	10.2	4.12	5.87	3.49	3.74	3.10
	Wuzhishan	CNA013											2.30	1.34	1.36	1.31	0.838
	Lijiang	CNA014											4.59	2.62	1.24	2.28	1.30
Indonesia	Jakarta	IDA001	1.97	2.23	3.45	2.96	2.62	3.64	1.81	4.50	2.95	3.37	1.88	2.52	3.06	2.59	***
	Serpong	IDA002	1.36	3.09	3.12	2.01	3.86	3.23	3.86	3.06	2.51	4.42	4.43	1.95	3.54	3.31	
	Kototabang	IDA003	1.10	1.55	0.950	1.40	2.40	0.908	21.5	1.19	1.08	1.06	0.724	1.22	0.922	0.842	***
	Bandung	IDA004	4.13	4.43	5.78	3.17	6.33	7.51	5.61	3.50	3.80	3.92	4.83	5.09	2.81	2.80	
	Maros	IDA005	1.86	2.17	2.50	7.03	2.81	13.6	30.0	2.92	2.24	2.51	2.59	2.10	1.65	1.80	***
	Jembrana	IDA006											2.63	4.74	4.87	3.06	***
	Lombok	IDA007											4.15	6.84	4.14	9.06	***
Japan	Rishiri	JPA001	19.9	18.6	15.4	32.3	22.5	18.1	16.2	7.96	24.2	19.9	21.5	15.9	27.7	19.3	10.7
	Ochiishi	JPA002	19.9	28.6	18.5	30.6	48.2	11.1	20.4	15.8	25.4	8.76	7.65	13.6	32.1	*	*
	Tappi	JPA003	21.1	12.9	17.4	15.4	30.0	18.1	25.2	19.5	21.7	18.3					
	Sado-seki	JPA004	36.2	37.7	19.0	29.4	36.9	32.5	37.3	20.8	17.1	15.4	25.3	19.7	188	23.1	16.1
	Happo	JPA005	1.16	0.810	0.896	2.30	1.37	1.27	1.33	0.861	1.23	1.03	0.808	0.853	0.962	0.775	0.913
	Ijira	JPA006	1.67	1.62	1.69	2.54	2.09	1.97	2.04	1.57	1.84	1.92	1.67	1.69	2.17	2.57	1.65
	Oki	JPA007	43.1	48.1	55.5	41.2	56.1	60.6	47.9	38.5	55.2	46.1	18.8	25.9	41.7	*	*
	Banryu	JPA008	11.8	12.1	12.8	11.2	8.50	10.8	10.8	9.45	9.94	6.66					
	Yusuhara	JPA009	1.61	1.56	2.56	2.84	2.40	1.82	2.77	1.21	6.01	1.78	1.72	1.05	2.54	4.55	2.89
	Hedo	JPA010	14.5	29.2	23.2	47.9	25.7	15.6	35.8	23.3	42.6	20.8	17.2	27.2	129	15.7	35.7
	Ogasawara	JPA011	21.9	24.5	23.6	13.6	17.0	15.2	34.5	10.5	21.3	5.45	20.3	5.89	17.4	16.5	15.7
	Tokyo	JPA012	2.97	2.40	4.79	3.78	3.04	2.54	2.45	1.85	4.92	4.15	6.71	2.18	2.26	2.35	2.08
	Niigata-maki	JPA013											20.4	13.0	21.6	24.2	21.2
	Tsushima	JPA014											3.27	3.50	4.11	11.3	4.07
Lao PDR	Vientiane	LAA001	0.722	***	***	***	***	***	0.613	<0.3	*	*	*	***	***	***	1.31
Malaysia	Petaling Jaya	MYA001	0.467	0.698	0.579	0.497	0.686	1.10	0.922	0.819	0.565	0.724	***	0.889	0.743	0.604	0.795
	Tanah Rata	MYA002	<0.3	<0.3	<0.3	<0.3	0.301	0.333	<0.3	<0.3	<0.3	<0.3	***	1.16	***	<0.3	<0.3
	Danum Valley	MYA003	0.549	1.48	0.541	<0.3	0.430	0.552	0.934	0.320	0.379	1.30	***	2.10	0.714	0.930	0.709
	Kuching	MYA004	0.395	0.457	0.745	<0.3	0.588	1.12	1.21	0.949	0.718	0.607	***	1.49	0.596	0.726	0.431
	Gunung Brinchang	MYA005													0.332	***	***
Mongolia	Ulaanbaatar	MNA001	5.32	2.98	9.23	***	3.74	***	***	6.06	3.06	2.50	3.71	3.25	3.33	*	2.97
	Terelj	MNA002	5.45	5.54	7.35	***	4.97	***	***	2.19	1.32	1.46	***	9.00	3.14	*	3.15
Myanmar	Yangon	MMA001	2.84	1.80	3.02	6.56	12.3	3.41	5.87	4.58	3.46	4.72	4.00	2.78	29.5	4.53	3.10
Philippines	Manila Observatory	PHA001	2.56	9.12	7.13	6.53	4.54	4.64	6.39	5.29	***	***	3.97	3.26	1.41	13.4	2.08
	Los Baños	PHA002	3.73	8.20	4.76	4.26	3.25	3.32	4.40	4.14	***	***	***	***	***	3.96	2.56
	Mt.Sto.Tomas	PHA003	1.53	3.34	1.61	2.90	1.69	1.35	3.44	2.78	***	***	***	***	***	0.542	***
Republic of Korea	Ganghwa	KRA001	5.27	3.64	3.18	5.50	3.30	3.27	3.60	1.19	2.33	1.09	16.2	***	5.35	3.74	4.21
	Jeju	KRA002	6.02	6.90	10.5	34.5	25.6	7.85	5.92	37.7	21.5	18.1	3.67	***	25.0	83.3	38.0
	Imsil	KRA003	3.88	4.68	2.02	3.05	1.87	1.77	3.30	1.55	1.91	0.648	0.797	***	5.28	3.74	2.50
Russia	Mondy	RUA001	1.17	1.81	2.60	4.06	0.877	1.18	2.15	0.864	1.75	1.07	0.948	0.549	1.24	0.832	***
	Listvyanka	RUA002	2.84	2.97	3.12	2.53	2.92	2.37	2.06	1.91	3.15	2.95	4.27	2.38	2.29	3.29	3.37
	Irkutsk	RUA003	7.55	6.75	7.29	6.49	6.38	3.68	5.51	3.97	4.70	5.32	4.20	3.85	4.63	6.89	7.61
	Primorskaya	RUA004	3.11	4.27	4.29	4.43	4.89	6.21	5.62	5.51	11.9	9.23	8.90	8.73	5.56	7.47	6.41
Thailand	Bangkok	THA001	1.49	1.52	1.25	1.35	2.63	2.37	1.90	2.48	1.57	3.00	2.71	2.81	***	1.58	2.01
	Samutprakarn	THA002	2.80	2.20	1.20	1.53	4.46	3.12	1.57	1.79	1.56	2.14	1.91	2.28	***	1.49	1.49
	Pathumthani	THA003	1.24	1.38	1.57	3.14	2.59	1.91	1.88	2.10	1.41	1.14	1.98	1.02	1.18	1.43	0.877
	Khanchanaburi	THA004	1.44	0.575	1.27	2.76	1.03	1.32	1.06	1.74	1.15	1.44	0.993	***	***	***	***
	Mae Hia	THA005	2.73	0.451	<0.3	0.842	1.50	1.91	1.41	1.54	1.37	0.656	1.41				
	Sakaerat	THA008	1.27	0.703	<0.3	0.423	<0.3	1.31	2.17	4.25	1.76	8.17	9.26				
Vietnam	Hanoi	VNA001	4.78	5.68	4.08	2.15	2.79	3.51	4.59	4.38	7.27	6.49	7.57	8.43	5.59	9.88	5.84
	Hoa Binh	VNA002	1.85	5.56	2.39	2.17	2.69	2.72	2.44	2.52	1.97	3.11	2.17	5.14	4.33	2.53	5.29
	Cuc Phuong	VNA003	4.37	4.41	4.78	7.07	12.2	4.88	5.44	8.30	8.30	10.2	13.5	10.8	13.9	9.48	12.0
	Da Nang	VNA004	10.2	8.52	9.42	9.19	18.8	10.8	8.77	9.03	11.3	10.6	28.6	16.7	17.4	21.2	19.7
	Can Tho	VNA005						4.45	9.17	6.85	5.35	9.84	10.2	7.83	7.01	8.86	8.31
	Ho Chi Minh	VNA006						8.73	17.9	6.90	9.01	10.2	13.2	9.34	11.1	10.1	10.4
	Yen Bai	VNA007							2.68	3.24	1.66	3.39	2.33	9.32	3.48	2.74	6.54

Terms and abbreviations are given in Table 3.5.

Table 3.81 Precipitation amount-weighted annual average concentrations of H⁺ from 2009 to 2023

 unit: $\mu\text{mol L}^{-1}$

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	0.649	1.07	1.10	0.694	0.662	0.621	0.717	0.389	0.667	***	***	***	***	***	***
China	Haifu	CNA003	60.3	71.0	65.9	57.5	30.1	12.1	3.81	0.655	1.47	5.10	3.73	3.41	2.94	1.69	0.893
	Jinyunshan	CNA004	47.1	115	90.9	81.5	63.3	41.2	20.0	10.6	7.07	14.2	17.5	17.5	8.96	7.42	5.99
	Shizhan	CNA005	0.297	0.211	0.535	0.552	0.117	0.247	0.220	0.206	0.256	0.171	0.150	0.120	0.0744	0.0736	0.0746
	Jiwozi	CNA007	0.794	2.91	1.13	0.076	0.635	0.104	0.124	0.237	0.203	0.164	0.175	0.268	0.580	0.831	0.976
	Hongwen	CNA008	30.2	26.6	22.5	30.9	13.2	8.39	12.7	12.1	4.56	2.30	0.853	0.391	4.63	5.57	5.91
	Xiaoping	CNA009	34.1	26.5	15.3	15.7	9.92	19.6	11.3	18.5	1.27	14.6	18.6	17.2	13.6	13.7	10.2
	Xiang Zhou	CNA010	13.4	14.1	8.81	7.73	5.83	9.91	2.77	6.78	10.5	8.66	11.3	8.13	6.03	6.12	3.37
	Zhuxiandong	CNA011	17.7	11.3	16.7	***	***	***	3.29	6.88	8.49	6.98	9.55	6.82	3.56	6.27	5.50
	Wuzhishan	CNA013											1.14	1.29	0.623	0.691	0.688
	Lijiang	CNA014											0.529	0.374	0.241	0.339	0.749
Indonesia	Jakarta	IDA001	23.5	18.6	28.2	17.4	16.9	19.6	14.4	11.3	12.9	20.4	14.7	6.52	12.6	16.4	***
	Serpong	IDA002	19.3	17.5	19.7	12.4	8.63	7.23	11.4	6.56	6.34	6.10	10.5	7.37	3.39	7.61	
	Kototabang	IDA003	22.6	16.0	9.22	9.75	10.6	15.2	12.4	5.04	6.29	4.88	4.21	4.75	2.55	2.56	***
	Bandung	IDA004	4.99	7.99	4.00	3.48	4.01	6.14	4.41	8.29	5.63	2.17	0.953	1.06	3.22	4.92	
	Maros	IDA005	4.64	6.16	4.43	2.41	3.41	5.88	5.77	5.77	4.88	4.21	11.5	4.00	0.568	1.02	***
	Jembrana	IDA006											4.32	6.91	12.2	11.8	***
	Lombok	IDA007											2.56	4.04	5.15	12.9	***
Japan	Rishiri	JPA001	18.3	18.7	20.1	20.2	21.2	18.6	16.8	12.6	17.3	13.6	15.3	10.2	8.77	9.26	7.12
	Ochiishi	JPA002	9.64	14.8	13.1	15.2	9.38	7.82	9.96	6.39	7.42	7.28	7.64	7.77	12.7	*	*
	Tappi	JPA003	18.2	20.4	24.6	20.5	16.0	21.9	14.1	15.2	18.0	11.0					
	Sado-seki	JPA004	17.7	19.8	20.8	18.6	18.2	19.7	21.8	13.9	12.7	10.9	12.6	13.6	18.6	6.91	8.09
	Happo	JPA005	10.7	8.00	9.15	13.3	10.0	9.77	8.14	8.18	7.96	6.31	7.26	5.50	5.53	6.34	5.73
	Ijira	JPA006	23.0	17.3	18.0	20.5	17.9	19.3	20.0	17.5	18.3	12.1	16.4	11.4	8.72	10.4	13.5
	Oki	JPA007	19.4	21.8	18.8	26.4	24.6	22.2	19.1	13.4	14.9	13.6	15.4	14.6	7.38	*	*
	Banryu	JPA008	22.1	19.8	21.8	33.5	22.8	27.9	22.2	15.4	17.1	13.5					
	Yusuhara	JPA009	17.2	16.2	11.7	16.8	16.7	13.2	13.5	14.2	31.1	10.0	10.8	11.4	7.15	10.8	11.2
	Hedo	JPA010	7.81	6.34	12.5	7.49	10.9	9.55	7.17	6.72	9.90	7.96	10.5	8.57	20.8	5.72	11.4
	Ogasawara	JPA011	6.79	5.68	4.98	4.63	5.65	8.38	5.89	7.98	6.09	5.96	5.87	10.6	5.17	6.79	10.00
	Tokyo	JPA012	17.7	11.2	14.9	14.4	8.83	14.8	16.3	11.4	12.7	11.8	9.99	7.95	6.71	6.74	7.39
	Niigata-maki	JPA013											13.7	11.3	10.1	9.95	9.91
	Tsushima	JPA014											10.2	11.9	13.0	7.57	12.4
Lao PDR	Vientiane	LAA001	3.31	***	***	0.351	***	0.288	1.15	0.171	*	*	*	***	***	***	0.241
Malaysia	Petaling Jaya	MYA001	45.2	54.4	69.4	61.4	38.0	38.2	40.8	54.9	30.9	31.6	***	22.4	20.8	29.7	28.9
	Tanah Rata	MYA002	8.31	8.64	9.76	10.9	11.2	13.9	19.1	14.1	13.9	13.7	***	12.7	***	7.97	8.41
	Danum Valley	MYA003	6.00	5.99	6.20	6.58	5.33	4.87	6.15	5.56	6.08	4.97	***	6.04	5.78	6.85	5.08
	Kuching	MYA004	5.47	5.25	3.73	4.84	5.17	4.60	4.88	7.14	6.10	5.62	***	2.51	4.52	2.62	3.39
	Gunung Brinchang	MYA005													5.59	***	***
Mongolia	Ulaanbaatar	MNA001	0.777	1.33	3.64	1.31	1.04	***	0.379	9.54	2.95	1.73	3.25	1.12	2.08	7.06	4.22
	Terej	MNA002	0.608	2.44	5.47	1.81	12.3	***	3.14	6.47	9.14	1.56	***	0.564	2.00	6.77	4.45
Myanmar	Yangon	MMA001	0.346	0.384	0.347	0.323	0.352	0.199	0.216	0.178	0.204	0.264	0.294	0.550	0.182	0.126	0.146
Philippines	Manila Observatory	PHA001	5.87	2.25	2.27	6.03	2.85	0.736	0.528	3.05	***	***	3.94	2.50	10.0	11.6	14.6
	Los Baños	PHA002	2.64	1.32	2.70	2.19	1.41	1.61	0.508	19.3	***	***	***	***	***	14.8	30.6
	Mt.Sto.Tomas	PHA003	1.47	0.201	4.46	1.12	5.18	0.724	1.10	0.345	***	***	***	***	***	2.25	***
Republic of Korea	Ganghwa	KRA001	25.9	39.0	23.0	24.4	26.3	13.4	20.2	16.4	36.4	13.2	20.9	***	5.59	3.75	5.85
	Jeju	KRA002	7.79	9.19	6.80	4.95	4.18	1.61	2.15	7.94	5.27	1.36	2.53	***	2.04	3.27	2.59
	Imsil	KRA003	8.06	13.5	5.42	7.82	6.01	5.17	8.04	3.15	5.04	2.00	4.60	***	0.655	0.261	5.87
Russia	Mondy	RUA001	3.33	2.80	2.90	2.37	4.83	4.65	3.58	4.31	4.86	6.50	3.93	3.97	2.34	4.18	***
	Listvyanka	RUA002	14.4	17.6	18.8	16.7	15.9	12.6	14.7	12.5	17.0	17.9	18.6	15.7	14.0	12.7	16.0
	Irkutsk	RUA003	3.89	7.41	9.51	11.6	9.81	8.65	6.15	11.8	11.4	14.0	15.3	14.0	10.9	7.10	5.74
	Primorskaya	RUA004	10.5	10.7	23.4	8.55	8.80	3.41	6.90	3.97	2.07	1.49	3.65	0.990	2.77	1.70	2.11
Thailand	Bangkok	THA001	8.07	8.48	8.97	2.08	2.52	0.0943	5.09	2.91	1.08	0.902	0.863	1.70	***	1.44	2.56
	Samutprakarn	THA002	7.40	4.82	1.27	0.679	1.06	0.310	2.53	3.57	1.37	3.01	1.76	0.880	***	1.73	3.12
	Pathumthani	THA003	7.05	5.82	9.99	3.60	3.90	3.09	5.12	4.01	4.55	7.57	3.47	1.89	3.26	3.73	1.66
	Khanchanaburi	THA004	2.18	2.03	3.21	0.964	4.72	1.61	3.44	1.04	1.72	1.73	0.835	***	***	***	***
	Mae Hia	THA005	1.20	0.676	5.14	0.789	0.909	0.527	2.28	2.49	2.77	3.07	7.04				
	Sakaerat	THA008	13.6	17.8	9.95	8.58	5.70	15.0	9.26	5.47	3.84	7.28	6.23				
Vietnam	Hanoi	VNA001	2.15	1.16	5.03	2.39	2.21	1.83	0.649	2.52	0.292	3.04	11.2	0.650	2.28	3.16	2.41
	Hoa Binh	VNA002	5.13	4.26	3.65	2.35	0.911	3.60	5.07	2.31	6.02	5.51	4.94	1.87	3.49	3.77	1.11
	Cuc Phuong	VNA003	10.3	5.88	9.09	3.68	3.77	3.00	4.78	1.57	8.43	3.57	3.51	5.64	0.744	2.18	1.03
	Da Nang	VNA004	16.8	7.71	10.4	3.66	2.62	3.01	1.05	1.10	1.36	1.64	0.709	0.712	1.62	1.72	1.50
	Can Tho	VNA005						0.550	1.68	1.43	1.08	1.34	1.18	1.41	1.09	1.15	1.39
	Ho Chi Minh	VNA006						1.42	0.775	1.75	0.861	0.773	1.08	1.08	0.835	0.790	1.04
	Yen Bai	VNA007							5.90	6.63	6.40	4.48	15.3	1.70	2.60	8.54	1.14

Terms and abbreviations are given in Table 3.5.

Table 3.82 Precipitation amount-weighted annual average pH from 2009 to 2023

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	6.19	5.97	5.96	6.16	6.18	6.21	6.14	6.41	6.18	***	***	***	***	***	***
China	Haifu	CNA003	4.22	4.15	4.18	4.24	4.52	4.92	5.42	6.18	5.83	5.29	5.43	5.47	5.53	5.77	6.05
	Jinyunshan	CNA004	4.33	3.94	4.04	4.09	4.20	4.39	4.70	4.97	5.15	4.85	4.76	4.76	5.05	5.13	5.22
	Shizhan	CNA005	6.53	6.68	6.27	6.26	6.93	6.61	6.66	6.69	6.59	6.77	6.82	6.92	7.13	7.13	7.13
	Jiwozi	CNA007	6.10	5.54	5.95	7.12	6.20	6.98	6.91	6.63	6.69	6.79	6.76	6.57	6.24	6.08	6.01
	Hongwen	CNA008	4.52	4.57	4.65	4.51	4.88	5.08	4.90	4.92	5.34	5.64	6.07	6.41	5.33	5.25	5.23
	Xiaoping	CNA009	4.47	4.58	4.82	4.80	5.00	4.71	4.95	4.73	5.90	4.84	4.73	4.76	4.87	4.86	4.99
	Xiang Zhou	CNA010	4.87	4.85	5.05	5.11	5.23	5.00	5.56	5.17	4.98	5.06	4.95	5.09	5.22	5.21	5.47
	Zhuxiandong	CNA011	4.75	4.95	4.78	***	***	***	5.48	5.16	5.07	5.16	5.02	5.17	5.45	5.20	5.26
	Wuzhishan	CNA013											5.94	5.89	6.21	6.16	6.16
	Lijiang	CNA014											6.28	6.43	6.62	6.47	6.13
Indonesia	Jakarta	IDA001	4.63	4.73	4.55	4.76	4.77	4.71	4.84	4.95	4.89	4.69	4.83	5.19	4.90	4.79	***
	Serpong	IDA002	4.71	4.76	4.70	4.91	5.06	5.14	4.94	5.18	5.20	5.21	4.98	5.13	5.47	5.12	***
	Kototabang	IDA003	4.65	4.80	5.04	5.01	4.97	4.82	4.91	5.30	5.20	5.31	5.38	5.32	5.59	5.59	***
	Bandung	IDA004	5.30	5.10	5.40	5.46	5.40	5.21	5.36	5.08	5.25	5.66	6.02	5.97	5.49	5.31	***
	Maros	IDA005	5.33	5.21	5.35	5.62	5.47	5.23	5.24	5.24	5.31	5.38	4.94	5.40	6.25	5.99	***
	Jembrana	IDA006											5.36	5.16	4.91	4.93	***
	Lombok	IDA007											5.59	5.39	5.29	4.89	***
Japan	Rishiri	JPA001	4.74	4.73	4.70	4.70	4.67	4.73	4.77	4.90	4.76	4.87	4.82	4.99	5.06	5.03	5.15
	Ochiishi	JPA002	5.02	4.83	4.88	4.82	5.03	5.11	5.00	5.19	5.13	5.14	5.12	5.11	4.90	*	*
	Tappi	JPA003	4.74	4.69	4.61	4.69	4.80	4.66	4.85	4.82	4.74	4.96					
	Sado-seki	JPA004	4.75	4.70	4.68	4.73	4.74	4.70	4.66	4.86	4.90	4.96	4.90	4.87	4.73	5.16	5.09
	Happo	JPA005	4.97	5.10	5.04	4.88	5.00	5.01	5.09	5.09	5.10	5.20	5.14	5.26	5.26	5.20	5.24
	Ijira	JPA006	4.64	4.76	4.75	4.69	4.75	4.71	4.70	4.76	4.74	4.92	4.79	4.94	5.06	4.98	4.87
	Oki	JPA007	4.71	4.66	4.73	4.58	4.61	4.65	4.72	4.87	4.83	4.87	4.81	4.84	5.13	*	*
	Banryu	JPA008	4.66	4.70	4.66	4.48	4.64	4.55	4.65	4.81	4.77	4.87					
	Yusuhara	JPA009	4.77	4.79	4.93	4.77	4.78	4.88	4.87	4.85	4.51	5.00	4.97	4.94	5.15	4.97	4.95
	Hedo	JPA010	5.11	5.20	4.90	5.13	4.96	5.02	5.14	5.17	5.00	5.10	4.98	5.07	4.68	5.24	4.94
	Ogasawara	JPA011	5.17	5.25	5.30	5.33	5.25	5.08	5.23	5.10	5.22	5.23	5.23	4.97	5.29	5.17	5.00
	Tokyo	JPA012	4.75	4.95	4.83	4.84	5.05	4.83	4.79	4.94	4.90	4.93	5.00	5.10	5.17	5.17	5.13
	Niigata-maki	JPA013											4.86	4.95	5.00	5.00	5.00
	Tsushima	JPA014											4.99	4.92	4.89	5.12	4.91
Lao PDR	Vientiane	LAA001	5.48	***	***	6.46	***	6.54	5.94	6.77	*	*	*	***	***	***	6.62
Malaysia	Petaling Jaya	MYA001	4.35	4.26	4.16	4.21	4.42	4.42	4.39	4.26	4.51	4.50	***	4.65	4.68	4.53	4.54
	Tanah Rata	MYA002	5.08	5.06	5.01	4.96	4.95	4.86	4.72	4.85	4.86	4.86	***	4.90	***	5.10	5.08
	Danum Valley	MYA003	5.22	5.22	5.21	5.18	5.27	5.31	5.21	5.25	5.22	5.30	***	5.22	5.24	5.16	5.29
	Kuching	MYA004	5.26	5.28	5.43	5.32	5.29	5.34	5.31	5.15	5.21	5.25	***	5.60	5.34	5.58	5.47
	Gunung Brinchang	MYA005													5.25	***	***
Mongolia	Ulaanbaatar	MNA001	6.11	5.88	5.44	5.88	5.98	***	6.42	5.02	5.53	5.76	5.49	5.95	5.68	5.15	5.37
	Terelj	MNA002	6.22	5.61	5.26	5.74	4.91	***	5.50	5.19	5.04	5.81	***	6.25	5.70	5.17	5.35
Myanmar	Yangon	MMA001	6.46	6.42	6.46	6.49	6.45	6.70	6.66	6.75	6.69	6.58	6.53	6.26	6.74	6.90	6.83
Philippines	Manila Observatory	PHA001	5.23	5.65	5.64	5.22	5.55	6.13	6.28	5.52	***	***	5.40	5.60	5.00	4.93	4.84
	Los Baños	PHA002	5.58	5.88	5.57	5.66	5.85	5.79	6.29	4.71	***	***	***	***	***	4.83	4.51
	Mt.Sto.Tomas	PHA003	5.83	6.70	5.35	5.95	5.29	6.14	5.96	6.46	***	***	***	***	***	5.65	***
Republic of Korea	Ganghwa	KRA001	4.59	4.41	4.64	4.61	4.58	4.87	4.69	4.79	4.44	4.88	4.68	***	5.25	5.43	5.23
	Jeju	KRA002	5.11	5.04	5.17	5.31	5.38	5.79	5.67	5.10	5.28	5.87	5.60	***	5.69	5.49	5.59
	Imsil	KRA003	5.09	4.87	5.27	5.11	5.22	5.29	5.09	5.50	5.30	5.70	5.34	***	6.18	6.58	5.23
Russia	Mondy	RUA001	5.48	5.55	5.54	5.62	5.32	5.33	5.45	5.37	5.31	5.19	5.41	5.40	5.63	5.38	***
	Listvyanka	RUA002	4.84	4.76	4.73	4.78	4.80	4.90	4.83	4.90	4.77	4.75	4.73	4.80	4.85	4.90	4.80
	Irkutsk	RUA003	5.41	5.13	5.02	4.93	5.01	5.06	5.21	4.93	4.94	4.86	4.82	4.85	4.96	5.15	5.24
	Primorskaya	RUA004	4.98	4.97	4.63	5.07	5.06	5.47	5.16	5.40	5.69	5.83	5.44	6.00	5.56	5.77	5.68
Thailand	Bangkok	THA001	5.09	5.07	5.05	5.68	5.60	7.03	5.29	5.54	5.97	6.04	6.06	5.77	***	5.84	5.59
	Samutprakarn	THA002	5.13	5.32	5.90	6.17	5.98	6.51	5.60	5.45	5.86	5.52	5.75	6.06	***	5.76	5.51
	Pathumthani	THA003	5.15	5.24	5.00	5.44	5.41	5.51	5.29	5.40	5.34	5.12	5.46	5.72	5.49	5.43	5.78
	Khanchanaburi	THA004	5.66	5.69	5.49	6.02	5.33	5.79	5.46	5.98	5.76	5.76	6.08	***	***	***	***
	Mae Hia	THA005	5.92	6.17	5.29	6.10	6.04	6.28	5.64	5.60	5.56	5.51	5.15				
	Sakaerat	THA008	4.87	4.75	5.00	5.07	5.24	4.82	5.03	5.26	5.42	5.14	5.21				
Vietnam	Hanoi	VNA001	5.67	5.93	5.30	5.62	5.66	5.74	6.19	5.60	6.53	5.52	4.95	6.19	5.64	5.50	5.62
	Hoa Binh	VNA002	5.29	5.37	5.44	5.63	6.04	5.44	5.29	5.64	5.22	5.26	5.31	5.73	5.46	5.42	5.95
	Cuc Phuong	VNA003	4.99	5.23	5.04	5.43	5.42	5.52	5.32	5.81	5.07	5.45	5.45	5.25	6.13	5.66	5.99
	Da Nang	VNA004	4.77	5.11	4.98	5.44	5.58	5.52	5.98	5.96	5.87	5.78	6.15	6.15	5.79	5.76	5.82
	Can Tho	VNA005						6.26	5.77	5.84	5.97	5.87	5.93	5.85	5.96	5.94	5.86
	Ho Chi Minh	VNA006						5.85	6.11	5.76	6.06	6.11	5.96	5.96	6.08	6.10	5.98
	Yen Bai	VNA007							5.23	5.18	5.19	5.35	4.82	5.77	5.59	5.07	5.94

Terms and abbreviations are given in Table 3.5.

Table 3.83 Precipitation amount-weighted annual average EC from 2009 to 2023

			unit: mS m ⁻¹														
Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	0.880	0.747	0.820	0.704	0.665	0.676	0.691	0.705	0.747	***	***	***	***	***	***
China	Haifu	CNA003	5.14	6.71	6.55	5.33	5.26	3.94	2.70	3.00	2.71	2.83	2.27	1.86	1.85	1.83	2.02
	Jinyunshan	CNA004	5.27	8.07	7.09	6.56	4.81	3.65	2.50	2.44	2.38	2.65	2.43	2.20	1.71	1.77	1.53
	Shizhan	CNA005	5.80	5.63	4.31	6.51	6.97	4.37	5.06	3.69	3.53	3.28	3.02	3.43	3.57	6.32	2.89
	Jiwozi	CNA007	3.73	1.67	3.04	5.39	3.61	4.29	2.32	1.05	2.64	2.09	5.58	2.21	1.41	1.21	1.44
	Hongwen	CNA008	2.25	2.05	2.18	2.67	1.63	1.89	1.59	2.33	2.21	2.07	3.18	7.26	2.42	1.15	0.956
	Xiaoping	CNA009	2.26	2.06	1.82	1.67	1.46	2.15	1.43	1.28	0.996	1.29	1.56	1.41	1.35	1.03	1.26
	Xiang Zhou	CNA010	1.99	1.74	1.84	1.76	1.15	1.94	1.65	1.50	1.85	2.09	1.46	1.24	0.905	0.968	1.07
	Zhuxiandong	CNA011	2.15	1.37	1.99	***	***	***	2.29	2.01	1.45	2.38	1.53	1.49	1.02	1.09	1.08
	Wuzhishan	CNA013											0.733	0.613	0.525	0.573	0.520
	Lijiang	CNA014											1.50	0.418	0.366	0.536	0.414
Indonesia	Jakarta	IDA001	1.66	1.90	2.17	1.39	1.59	1.67	1.26	2.03	1.27	2.52	1.82	1.27	1.81	1.71	***
	Serpong	IDA002	1.66	1.95	2.31	2.05	2.16	1.89	2.26	1.85	1.82	2.30	2.46	2.03	2.00	1.98	***
	Kototabang	IDA003	0.766	0.903	0.742	0.791	0.927	1.10	1.04	0.790	0.402	0.429	0.671	0.499	0.507	0.348	***
	Bandung	IDA004	1.62	1.43	1.90	1.60	1.86	2.14	1.71	1.79	1.88	1.88	2.37	1.96	1.59	1.81	***
	Maros	IDA005	1.06	0.718	0.576	0.885	0.970	1.00	2.10	3.03	1.65	0.664	1.04	0.692	0.659	0.559	***
	Jembrana	IDA006											0.898	1.78	1.79	1.29	***
	Lombok	IDA007											1.10	1.03	0.968	3.77	***
Japan	Rishiri	JPA001	4.10	3.77	3.50	5.54	4.25	3.56	3.16	1.92	4.47	3.78	4.00	3.13	4.36	3.48	2.17
	Ochiishi	JPA002	3.31	4.65	3.28	4.96	7.10	2.14	3.29	2.42	4.02	1.64	1.58	2.52	4.51	*	*
	Tappi	JPA003	3.78	2.80	3.64	3.45	4.76	3.62	3.97	3.32	3.91	3.16					
	Sado-seki	JPA004	5.65	5.08	3.57	4.88	5.98	5.58	6.15	3.47	3.11	2.86	4.15	3.17	27.9	3.64	2.74
	Happo	JPA005	0.860	0.597	0.666	1.07	0.764	0.744	0.680	0.616	0.569	0.560	0.595	0.494	0.541	0.530	0.499
	Ijira	JPA006	1.65	1.33	1.46	1.65	1.42	1.47	1.49	1.33	1.32	0.959	1.19	1.00	0.866	1.08	1.02
	Oki	JPA007	7.16	7.56	8.76	6.72	9.41	9.58	7.57	6.08	7.96	6.96	3.51	4.37	5.93	*	*
	Banryu	JPA008	3.02	2.88	3.13	3.44	2.48	3.11	2.82	2.39	2.46	1.85					
	Yusuhara	JPA009	1.15	1.06	0.870	1.24	1.06	0.789	1.11	0.972	2.68	0.804	0.870	0.839	0.763	1.21	0.961
	Hedo	JPA010	2.44	4.59	3.87	7.27	4.24	2.68	5.28	3.41	6.15	3.00	2.66	4.16	19.7	2.42	5.49
	Ogasawara	JPA011	3.27	3.58	3.70	2.26	2.86	2.62	5.30	1.87	3.25	1.02	3.15	1.39	2.80	2.76	2.73
	Tokyo	JPA012	1.66	1.18	1.88	1.75	1.33	1.46	1.40	1.04	1.60	1.43	1.66	0.997	0.941	1.02	0.959
	Niigata-maki	JPA013											3.87	2.58	3.67	4.03	3.49
	Tsushima	JPA014											1.23	1.40	1.46	2.29	1.52
Lao PDR	Vientiane	LAA001	0.534	***	***	0.411	***	0.867	1.26	0.730	*	*	*	***	***	***	0.530
Malaysia	Petaling Jaya	MYA001	2.46	2.90	3.43	3.10	2.43	2.50	2.61	2.95	1.92	2.17	***	1.58	1.50	1.90	1.93
	Tanah Rata	MYA002	0.544	0.550	0.822	0.780	0.734	0.875	1.10	0.813	0.798	0.808	***	1.01	***	0.569	0.607
	Danum Valley	MYA003	0.445	0.552	0.440	0.416	0.410	0.419	0.513	0.360	0.339	0.433	***	0.707	0.506	0.504	0.418
	Kuching	MYA004	0.521	0.500	0.547	0.489	0.549	1.02	0.635	0.683	0.588	0.612	***	0.730	0.630	0.487	0.406
	Gunung Brinchang	MYA005													0.481	***	***
Mongolia	Ulaanbaatar	MNA001	1.76	1.53	1.74	1.71	2.54	***	2.86	3.52	1.26	1.40	7.89	2.09	2.10	4.24	1.15
	Terelj	MNA002	2.06	1.88	1.54	1.33	1.94	***	2.80	3.27	1.38	1.19	***	2.37	4.04	5.11	1.76
Myanmar	Yangon	MMA001	1.54	1.34	0.682	1.30	0.813	0.914	1.46	1.37	0.504	0.644	0.910	1.19	0.807	1.38	1.42
Philippines	Manila Observatory	PHA001	1.24	1.89	3.76	4.81	1.53	1.92	2.53	3.02	***	***	1.20	1.01	1.33	1.25	1.45
	Los Baños	PHA002	0.802	1.22	1.18	1.74	1.02	1.45	3.34	2.25	***	***	***	***	***	1.21	1.80
	Mt.Sto.Tomas	PHA003	0.495	0.533	0.355	0.500	0.558	0.460	0.464	0.527	***	***	***	***	***	0.520	***
Republic of Korea	Ganghwa	KRA001	2.88	2.46	2.34	2.76	2.66	2.41	4.29	1.80	2.44	1.67	4.74	***	1.62	1.23	0.968
	Jeju	KRA002	2.20	2.32	3.07	7.05	5.55	2.42	2.31	7.07	5.00	4.74	2.37	***	5.13	15.1	6.54
	Imsil	KRA003	1.98	1.89	1.58	2.58	1.47	1.39	1.98	1.23	1.69	1.07	1.31	***	1.96	1.82	1.48
Russia	Mondy	RUA001	0.621	0.653	0.566	0.864	0.420	0.480	0.588	0.409	0.659	0.576	0.469	0.330	0.802	0.441	***
	Listvyanka	RUA002	1.31	1.41	1.63	1.51	1.25	1.20	1.50	1.11	1.54	1.43	1.32	1.14	1.14	1.20	1.23
	Irkutsk	RUA003	2.18	2.05	2.16	2.16	2.08	1.59	2.55	1.47	1.62	1.90	1.65	1.54	1.51	1.68	1.55
	Primorskaya	RUA004	1.48	1.96	2.64	1.56	1.89	1.63	1.75	1.58	2.06	1.53	1.36	1.56	1.85	2.02	1.82
Thailand	Bangkok	THA001	1.38	1.31	1.24	1.26	1.35	1.10	1.35	1.34	0.821	1.64	1.36	0.891	***	0.958	1.26
	Samutprakarn	THA002	1.48	1.13	0.667	0.902	1.20	1.00	0.921	0.880	0.799	1.05	1.01	0.845	***	0.681	0.938
	Pathumthani	THA003	1.07	0.975	1.27	1.17	1.08	0.998	1.34	1.38	1.19	1.24	1.24	0.798	1.03	0.944	0.916
	Khanchanaburi	THA004	0.511	0.249	0.585	0.817	0.326	0.506	0.438	0.379	0.421	0.382	0.421	***	***	***	***
	Mae Hia	THA005	0.608	0.519	0.442	0.512	0.682	0.803	0.561	0.825	0.736	0.526	0.939				
	Sakaerat	THA008	0.981	0.992	0.796	0.756	0.789	1.46	0.856	0.848	0.566	0.870	0.800				
Vietnam	Hanoi	VNA001	1.41	1.72	1.60	1.56	1.52	1.99	2.21	1.93	2.08	2.47	3.68	4.28	2.21	3.87	2.35
	Hoa Binh	VNA002	1.10	1.39	1.02	0.940	1.10	1.35	1.22	1.45	1.27	1.22	1.06	2.11	1.90	1.17	2.16
	Cuc Phuong	VNA003	1.74	1.71	1.98	1.73	1.80	1.28	1.42	1.37	1.52	1.10	1.69	1.51	2.22	2.10	2.72
	Da Nang	VNA004	2.53	1.46	2.37	2.10	3.46	1.85	1.82	1.74	2.47	2.41	5.02	4.72	2.63	4.03	2.11
	Can Tho	VNA005						1.10	1.92	1.20	1.06	1.27	1.35	1.34	1.21	1.28	1.36
	Ho Chi Minh	VNA006						2.00	2.85	1.33	1.68	1.35	1.78	1.64	1.61	1.65	1.70
	Yen Bai	VNA007							1.31	2.47	1.55	1.49	1.90	2.90	2.10	1.59	2.97

Terms and abbreviations are given in Table 3.5.

Table 3.84 Annual SO₄²⁻ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	15.4	13.6	11.5	17.0	10.7	9.78	7.76	6.85	15.6	***	***	***	***	***	***
China	Haifu	CNA003	106	136	115	103	109	120	61.3	59.5	49.8	46.1	41.0	33.0	34.7	24.1	32.5
	Jinyunshan	CNA004	125	148	119	125	91.7	90.0	56.5	48.6	46.3	33.9	36.6	38.0	37.3	24.0	29.1
	Shizhan	CNA005	80.5	45.8	72.5	42.9	62.0	70.1	49.1	25.9	41.8	22.1	14.1	19.5	28.7	25.0	21.7
	Jiwozi	CNA007	58.7	36.8	60.7	36.9	34.1	39.4	14.1	7.18	18.2	14.5	36.4	6.75	15.6	7.17	15.3
	Hongwen	CNA008	19.2	40.8	26.4	29.7	30.7	30.4	18.8	40.4	17.1	17.3	46.4	9.74	9.75	6.72	7.30
	Xiaoping	CNA009	32.0	41.4	38.1	30.2	44.9	40.3	27.0	25.4	9.85	11.0	12.9	9.26	9.34	6.28	10.5
	Xiang Zhou	CNA010	36.6	36.7	19.5	22.6	46.3	23.9	16.6	37.6	26.9	25.0	20.2	15.5	14.4	13.8	16.5
	Zhuxiandong	CNA011	33.2	31.6	23.4	***	***	***	37.2	42.6	25.7	33.1	24.8	22.5	19.1	16.0	17.7
	Wuzhishan	CNA013											10.1	3.50	3.11	4.04	1.58
	Lijiang	CNA014											0.234	36.9	1.34	1.85	1.57
Indonesia	Jakarta	IDA001	30.2	46.4	28.4	56.0	51.0	70.4	48.0	61.4	22.6	59.4	38.1	45.8	57.4	40.2	***
	Serpong	IDA002	31.0	34.8	27.9	26.0	61.6	66.9	55.8	76.0	81.5	71.0	74.3	82.4	68.6	76.5	***
	Kototabang	IDA003	12.5	15.0	17.1	16.0	13.2	21.3	20.8	12.3	10.9	16.2	14.0	12.2	14.3	10.0	***
	Bandung	IDA004	78.3	70.3	47.1	55.2	72.1	78.8	60.6	86.1	67.3	55.6	72.8	44.0	54.3	65.9	***
	Maros	IDA005	22.5	28.9	30.0	21.5	26.0	20.9	15.3	20.6	14.6	19.4	11.6	8.26	8.55	22.5	***
	Jembrana	IDA006											14.8	20.1	22.0	22.5	***
	Lombok	IDA007											18.6	15.0	19.7	50.7	***
Japan	Rishiri	JPA001	27.4	25.1	26.1	32.6	27.1	20.7	19.9	15.3	23.1	24.4	15.6	22.7	23.2	20.1	17.5
	Ochiishi	JPA002	26.3	24.9	12.4	22.0	34.4	10.9	16.8	14.5	15.1	10.9	7.39	8.29	29.0	*	*
	Tappi	JPA003	30.9	33.1	31.5	26.2	35.4	31.7	27.5	27.5	24.9	28.8					
	Sado-seki	JPA004	34.2	44.2	34.0	38.6	52.7	45.1	30.1	21.4	24.7	24.6	22.2	25.3	179	19.8	21.8
	Happo	JPA005	23.8	16.0	21.5	23.2	23.6	19.6	15.8	12.5	14.5	13.1	14.5	10.7	12.4	9.43	11.0
	Ijira	JPA006	44.2	42.6	39.8	38.9	33.6	36.6	36.8	34.1	29.4	27.7	27.5	25.0	25.6	31.3	36.9
	Oki	JPA007	42.4	59.3	70.0	49.1	65.6	50.4	38.6	48.2	40.4	45.9	23.0	35.6	51.1	*	*
	Banryu	JPA008	36.3	30.8	30.1	31.2	35.0	32.7	26.7	30.9	23.8	19.3					
	Yusuhara	JPA009	24.1	23.9	23.9	32.8	22.5	24.4	19.9	20.8	51.3	21.2	20.1	19.2	14.0	19.7	18.2
	Hedo	JPA010	25.9	55.3	36.3	88.5	35.8	34.9	42.1	31.9	45.5	33.6	32.0	37.5	226	31.5	54.1
	Ogasawara	JPA011	27.7	27.9	20.4	16.0	17.1	18.5	32.9	11.0	21.1	3.83	23.9	12.6	22.1	22.4	19.3
	Tokyo	JPA012	27.6	18.1	22.0	25.5	19.7	25.1	19.2	15.1	14.5	13.7	18.0	11.7	12.8	12.4	9.46
	Niigata-maki	JPA013											31.6	30.1	31.7	32.4	29.7
	Tsushima	JPA014											25.8	25.1	22.9	18.5	21.9
Lao PDR	Vientiane	LAA001	0.733	***	***	3.19	***	***	2.94	2.61	*	*	*	***	***	***	3.79
Malaysia	Petaling Jaya	MYA001	39.2	60.3	81.2	58.0	63.6	79.2	80.3	69.4	42.2	59.6	***	40.9	36.1	44.8	45.7
	Tanah Rata	MYA002	10.0	7.96	16.6	13.1	13.2	17.9	18.4	9.28	10.7	11.0	***	14.7	***	8.69	11.2
	Danum Valley	MYA003	9.56	12.0	7.42	6.75	10.1	7.35	7.17	4.92	7.99	8.01	***	16.9	9.00	5.43	5.49
	Kuching	MYA004	17.6	16.6	18.9	17.7	20.6	26.1	20.7	23.0	15.3	16.3	***	30.8	12.7	9.49	11.0
	Gunung Brinchang	MYA005												1.22	***	***	***
Mongolia	Ulaanbaatar	MNA001	4.53	3.39	4.59	***	8.71	***	18.3	20.7	5.54	5.48	11.7	6.27	17.5	*	3.86
	Terej	MNA002	1.83	3.96	3.40	***	4.40	***	10.4	15.1	1.42	3.98	***	5.60	53.2	*	6.72
Myanmar	Yangon	MMA001	24.1	10.3	20.9	19.2	21.4	13.1	11.2	20.0	32.6	23.8	26.0	14.0	11.0	19.4	21.4
Philippines	Manila Observatory	PHA001	51.3	54.2	68.3	108	52.9	47.3	47.4	54.7	***	***	24.1	28.8	45.9	45.5	51.2
	Los Baños	PHA002	25.6	15.3	20.4	26.5	15.8	18.9	21.0	27.0	***	***	***	***	***	33.0	39.0
	Mt.Sto.Tomas	PHA003	23.8	17.8	21.6	41.6	33.8	16.8	24.5	24.4	***	***	***	***	***	2.37	***
Republic of Korea	Ganghwa	KRA001	37.0	41.3	40.1	20.3	32.4	12.5	17.3	15.8	8.93	13.2	***	***	10.3	10.6	4.47
	Jeju	KRA002	26.3	19.4	27.4	43.9	25.9	20.5	25.1	48.3	22.6	24.3	16.7	***	37.8	19.5	30.1
	Imsil	KRA003	21.0	32.0	30.9	27.2	22.6	16.7	14.5	11.6	14.2	12.4	16.8	***	8.94	12.9	8.97
Russia	Mondy	RUA001	0.929	0.613	0.333	0.753	1.18	0.675	0.877	0.696	1.23	1.58	0.853	0.212	0.358	0.269	***
	Listvyanka	RUA002	6.02	6.76	10.6	7.33	5.02	4.85	7.04	4.74	7.09	4.77	8.32	5.92	9.12	5.73	8.16
	Irkutsk	RUA003	13.4	12.6	11.3	16.8	10.1	9.02	12.3	11.4	12.9	13.7	11.3	10.9	15.4	9.69	12.8
	Primorskaya	RUA004	19.5	21.5	8.70	19.1	21.1	20.6	24.7	22.2	21.7	30.6	16.4	21.2	15.9	26.3	31.2
Thailand	Bangkok	THA001	26.3	24.3	23.2	19.3	9.42	8.52	12.0	23.1	27.1	17.3	7.29	13.5	***	10.8	10.4
	Samutprakarn	THA002	30.0	29.3	16.1	9.73	8.55	9.52	10.4	21.3	16.2	15.1	9.55	8.07	***	10.5	6.43
	Pathumthani	THA003	11.7	14.1	14.8	12.4	11.1	8.71	12.4	10.9	12.2	9.47	8.64	7.98	7.90	12.2	9.12
	Khanchanaburi	THA004	7.19	2.91	9.93	8.89	1.84	3.51	2.56	10.4	3.92	2.65	1.91	***	***	***	***
	Mae Hia	THA005	4.52	3.88	5.23	5.28	5.92	4.42	3.07	4.06	7.67	3.41	5.34				
	Sakaerat	THA008	8.11	11.5	7.99	7.48	10.8	4.61	9.04	7.51	8.34	10.9	8.02				
Vietnam	Hanoi	VNA001	44.1	43.8	55.7	51.8	50.4	65.3	50.3	59.5	71.7	84.6	87.5	136	79.5	173	87.8
	Hoa Binh	VNA002	21.8	36.1	31.7	32.7	39.6	32.9	32.3	37.9	35.9	61.4	22.9	86.1	70.8	43.7	73.1
	Cuc Phuong	VNA003	41.9	33.7	69.7	49.0	51.1	31.5	27.5	32.3	36.1	34.0	35.5	38.0	31.1	41.7	32.5
	Da Nang	VNA004	55.6	27.6	76.7	32.9	56.1	35.0	21.6	31.9	37.0	36.2	52.7	34.5	31.5	37.0	43.7
	Can Tho	VNA005						16.1	67.7	26.5	30.9	59.1	61.0	39.7	51.6	58.1	48.2
	Ho Chi Minh	VNA006						46.3	67.6	49.0	80.5	63.5	71.8	60.7	58.0	60.1	59.7
	Yen Bai	VNA007							34.2	79.1	62.9	47.3	38.9	80.6	57.1	46.6	80.8

Terms and abbreviations are given in Table 3.5.

Table 3.85 Annual nss-SO₄²⁻ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	14.9	13.3	11.3	16.6	10.5	9.07	7.35	6.53	15.2	***	***	***	***	***	***
China	Haifu	CNA003	106	135	115	102	108	119	61.1	59.1	49.5	45.7	40.7	32.7	34.6	23.9	32.1
	Jinyunshan	CNA004	124	148	119	125	91.5	89.6	56.4	48.5	46.1	33.8	36.5	37.9	37.2	23.9	28.9
	Shizhan	CNA005	80.1	45.6	71.8	42.8	58.3	65.4	45.1	24.6	40.8	21.5	13.7	19.0	27.8	24.3	20.4
	Jiwozi	CNA007	57.8	36.3	60.3	35.8	29.7	35.1	11.6	6.99	17.1	13.7	33.3	6.18	14.4	6.91	14.8
	Hongwen	CNA008	18.1	39.0	25.5	28.8	29.5	29.1	17.7	37.7	15.9	15.9	46.1	8.82	8.54	5.86	6.47
	Xiaoping	CNA009	30.9	39.7	37.1	29.5	43.5	39.6	25.9	24.7	9.57	10.7	12.8	8.76	9.01	5.86	9.93
	Xiang Zhou	CNA010	31.7	34.5	17.0	18.4	38.4	20.9	12.3	34.4	20.9	16.6	17.8	13.0	11.7	10.9	13.9
	Zhuxiandong	CNA011	28.9	29.4	20.3	***	***	***	30.8	38.3	22.8	21.8	21.7	17.7	15.6	12.5	14.5
	Wuzhishan	CNA013											9.35	3.17	2.63	3.49	1.37
	Lijiang	CNA014											0.207	36.9	1.31	1.81	1.53
Indonesia	Jakarta	IDA001	29.3	45.4	27.7	53.9	48.8	66.3	45.7	58.9	21.8	57.7	37.2	43.0	55.4	39.2	***
	Serpong	IDA002	30.2	34.1	27.4	25.4	59.6	63.7	54.3	73.5	79.2	68.8	72.1	80.0	65.6	75.1	
	Kototabang	IDA003	11.6	14.3	16.2	14.4	12.1	20.4	21.6	10.7	10.4	15.7	13.4	11.5	13.7	9.56	***
	Bandung	IDA004	76.4	68.8	46.0	53.8	70.2	77.2	59.5	84.3	65.1	53.2	68.2	42.9	53.5	64.6	
	Maros	IDA005	20.0	26.7	26.7	18.7	21.3	17.2	14.9	11.0	8.53	16.7	9.75	6.69	7.33	19.6	***
	Jembrana	IDA006											12.9	16.0	17.0	18.6	***
	Lombok	IDA007											16.4	12.4	17.3	47.1	***
Japan	Rishiri	JPA001	16.2	14.6	15.8	12.3	13.2	10.6	10.7	9.89	11.4	13.3	7.76	12.3	8.60	9.59	9.69
	Ochiishi	JPA002	9.29	10.5	5.51	7.68	7.60	5.99	7.88	4.98	4.07	5.63	4.02	3.77	15.3	*	*
	Tappi	JPA003	15.4	22.5	21.2	16.3	18.9	20.4	12.9	15.1	12.1	12.9					
	Sado-seki	JPA004	14.2	18.3	21.2	19.9	22.0	21.2	13.1	10.9	13.3	12.0	9.48	11.2	51.4	5.18	9.69
	Happo	JPA005	23.1	15.4	20.9	22.0	22.9	18.8	15.0	11.8	13.6	12.2	14.0	10.1	11.6	8.84	10.2
	Ijira	JPA006	41.9	39.6	37.2	35.5	31.1	33.8	33.8	31.8	26.8	24.4	25.3	22.2	21.5	26.4	33.7
	Oki	JPA007	17.0	23.6	25.6	21.2	23.1	15.8	12.3	17.8	11.4	14.1	12.2	14.9	11.3	*	*
	Banryu	JPA008	25.9	22.5	20.8	24.5	26.5	24.8	18.6	21.8	16.0	13.7					
	Yusuhara	JPA009	22.6	22.6	21.3	29.4	21.1	23.3	16.1	19.5	43.4	17.7	17.5	17.6	11.0	14.4	15.3
	Hedo	JPA010	11.0	15.3	14.6	17.9	13.8	14.7	8.88	9.97	9.63	8.21	11.9	10.9	40.4	7.26	16.0
	Ogasawara	JPA011	8.72	5.60	4.62	5.27	6.31	6.44	3.79	4.72	3.45	1.18	3.92	7.45	3.57	4.91	6.62
	Tokyo	JPA012	25.1	16.3	18.9	22.6	17.4	23.1	17.4	13.7	11.4	11.0	12.3	10.4	10.6	10.8	8.20
	Niigata-maki	JPA013											15.4	15.8	11.5	11.4	11.4
	Tsushima	JPA014											21.4	20.6	18.2	9.36	17.5
Lao PDR	Vientiane	LAA001	0.633	***	***	***	***	***	2.79	2.54	*	*	*	***	***	***	3.55
Malaysia	Petaling Jaya	MYA001	38.4	59.3	80.2	57.3	62.6	78.1	78.9	68.1	41.1	58.4	***	39.6	35.0	43.9	44.5
	Tanah Rata	MYA002	9.80	7.78	16.2	12.8	12.8	17.4	18.0	8.93	10.2	10.6	***	13.8	***	8.12	10.7
	Danum Valley	MYA003	8.36	10.2	6.51	6.24	9.15	6.42	6.52	4.36	7.58	7.24	***	15.1	7.50	4.59	4.97
	Kuching	MYA004	15.6	14.7	16.3	16.5	18.7	24.1	17.3	18.8	13.2	14.3	***	28.2	10.7	7.91	9.45
	Gunung Brinchang	MYA005													1.08	***	***
Mongolia	Ulaanbaatar	MNA001	4.47	3.36	4.53	***	8.00	***	***	19.0	5.32	5.05	11.4	5.65	17.3	*	3.82
	Terej	MNA002	1.78	3.86	3.34	***	4.33	***	***	13.5	1.34	3.56	***	5.17	51.9	*	6.59
Myanmar	Yangon	MMA001	20.8	8.88	18.0	15.8	19.7	10.1	9.94	18.0	30.0	19.9	22.7	12.1	9.06	17.2	18.9
Philippines	Manila Observatory	PHA001	47.7	50.6	63.6	103	47.0	43.5	43.9	52.0	***	***	21.5	27.3	42.5	41.4	46.3
	Los Baños	PHA002	22.5	12.5	17.6	23.7	12.5	17.0	19.3	24.7	***	***	***	***	***	31.3	36.4
	Mt.Sto.Tomas	PHA003	21.5	16.5	20.4	38.1	32.1	15.4	21.3	20.5	***	***	***	***	***	2.30	***
Republic of Korea	Ganghwa	KRA001	33.6	38.8	36.9	18.3	30.8	11.4	15.7	14.3	12.9	7.77	7.71	***	9.04	9.33	3.82
	Jeju	KRA002	23.0	13.1	17.6	16.9	14.8	12.1	16.2	21.7	11.3	7.82	12.3	***	17.8	7.37	9.63
	Imsil	KRA003	17.7	27.2	27.5	22.8	20.4	14.7	12.5	9.88	12.5	9.75	14.2	***	6.41	9.83	7.32
Russia	Mondy	RUA001	0.912	0.598	0.316	0.726	1.15	0.658	0.863	0.678	1.20	1.54	0.832	0.194	0.348	0.263	***
	Listvyanka	RUA002	5.94	6.69	10.4	7.25	4.91	4.77	6.98	4.63	7.03	4.68	8.22	5.81	8.96	5.63	7.99
	Irkutsk	RUA003	12.9	12.2	11.0	16.5	9.90	8.82	12.1	11.1	12.7	13.5	11.1	10.7	15.1	9.49	12.3
	Primorskaya	RUA004	18.8	20.5	8.19	17.9	20.0	20.0	23.0	20.8	20.7	29.3	15.4	19.6	14.4	24.6	29.7
Thailand	Bangkok	THA001	25.1	23.3	22.4	18.6	8.46	7.96	11.2	22.0	26.6	16.5	6.95	12.2	***	10.2	9.10
	Samutprakarn	THA002	28.8	27.2	15.4	9.28	6.94	8.77	9.63	20.3	15.4	14.3	9.03	7.27	***	9.93	5.23
	Pathumthani	THA003	11.2	13.5	14.2	11.1	10.7	8.37	12.0	10.4	11.8	9.09	8.32	7.68	7.72	11.9	8.72
	Khanchanaburi	THA004	6.05	2.61	9.06	7.49	1.40	3.13	2.19	9.73	3.59	2.16	1.70	***	***	***	***
	Mae Hia	THA005	4.36	3.69	4.93	5.04	5.49	4.31	2.87	3.74	7.23	3.06	4.97				
	Sakaerat	THA008	7.90	11.1	7.63	7.23	10.5	4.39	8.66	7.25	8.13	10.1	7.36				
Vietnam	Hanoi	VNA001	43.2	43.3	55.0	51.4	49.5	64.6	49.6	58.4	69.6	83.3	85.5	133	78.1	169	86.2
	Hoa Binh	VNA002	21.5	35.7	31.5	32.4	39.1	32.7	31.9	37.5	35.4	61.0	21.8	85.0	69.6	43.1	71.9
	Cuc Phuong	VNA003	40.4	32.5	68.2	46.5	48.0	30.4	26.8	30.8	33.7	31.9	33.3	35.9	26.6	38.3	29.8
	Da Nang	VNA004	38.7	23.4	61.3	27.1	36.0	24.0	12.6	21.1	26.1	25.6	38.8	23.8	20.8	25.9	34.7
	Can Tho	VNA005						14.4	63.8	25.2	29.8	57.5	58.4	37.9	49.4	56.0	46.3
	Ho Chi Minh	VNA006						43.5	64.6	46.9	76.9	61.4	69.0	57.9	55.3	57.5	57.4
	Yen Bai	VNA007							33.7	78.1	62.4	46.9	37.7	79.0	56.2	46.0	79.5

Terms and abbreviations are given in Table 3.5.

Table 3.86 Annual NO₃⁻ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	13.7	15.5	11.3	17.4	10.3	13.3	11.4	9.78	15.1	***	***	***	***	***	***
China	Haifu	CNA003	56.7	75.9	67.4	74.6	75.8	90.8	57.8	66.4	63.1	63.5	61.4	54.9	54.1	43.2	56.7
	Jinyunshan	CNA004	59.7	73.4	65.8	70.8	59.9	68.0	46.9	45.6	46.7	41.7	48.8	52.8	54.6	35.6	43.5
	Shizhan	CNA005	34.1	18.8	11.5	19.4	15.7	61.0	42.7	26.1	14.6	18.1	11.5	10.8	10.7	30.2	23.9
	Jiwozi	CNA007	17.2	14.1	8.01	18.5	5.69	7.84	12.8	2.05	1.30	8.25	22.0	2.16	4.08	4.42	15.0
	Hongwen	CNA008	17.2	44.3	19.9	32.5	29.3	29.8	26.6	55.6	23.5	26.5	40.4	15.9	16.8	15.9	16.1
	Xiaoping	CNA009	33.2	46.0	34.6	34.4	40.9	46.3	38.0	35.7	19.0	21.3	31.7	23.2	22.3	21.5	29.5
	Xiang Zhou	CNA010	35.5	44.3	19.8	23.1	49.3	34.9	26.9	42.6	34.5	35.3	43.0	40.3	32.9	28.4	37.0
	Zhuxiandong	CNA011	31.3	36.6	21.5	***	***	***	47.0	52.2	41.5	40.7	51.0	51.4	45.9	33.1	39.1
	Wuzhishan	CNA013											14.1	8.14	7.17	8.10	3.27
	Lijiang	CNA014											2.25	29.6	0.542	2.19	2.76
Indonesia	Jakarta	IDA001	23.8	36.2	29.5	44.2	50.8	63.4	42.9	67.5	24.7	75.8	38.3	48.3	52.0	37.8	***
	Serpong	IDA002	34.2	42.4	29.5	28.2	91.9	104	85.1	92.8	99.6	102	88.3	93.1	75.4	75.0	
	Kototabang	IDA003	0.679	5.61	11.1	12.3	6.06	18.7	9.00	8.99	9.21	21.7	16.2	12.9	14.3	10.4	***
	Bandung	IDA004	61.3	46.8	42.8	45.0	51.7	55.3	47.5	61.0	49.7	41.8	60.4	36.9	34.9	42.5	
	Maros	IDA005	17.4	16.9	27.3	22.2	14.7	16.8	15.6	17.3	8.00	25.1	5.26	5.20	8.19	25.5	***
	Jembrana	IDA006											15.3	53.1	62.2	20.0	***
	Lombok	IDA007											20.0	13.4	10.6	16.0	***
Japan	Rishiri	JPA001	18.3	15.4	17.4	15.7	15.7	10.6	11.8	13.3	17.5	20.9	12.2	17.6	13.5	16.1	18.3
	Ochiishi	JPA002	8.57	10.3	7.83	8.54	9.36	7.29	9.54	6.40	5.71	7.92	6.68	5.77	34.0	*	*
	Tappi	JPA003	18.0	27.2	22.7	20.4	27.0	28.8	15.9	21.5	22.0	20.1					
	Sado-seki	JPA004	17.2	24.8	27.3	26.0	30.6	27.1	18.0	18.7	23.5	22.2	17.4	17.7	28.9	11.0	17.8
	Happo	JPA005	20.1	17.1	25.1	23.3	22.1	19.1	15.2	14.2	18.6	17.9	20.0	14.4	18.5	13.4	15.9
	Ijira	JPA006	52.9	57.9	46.4	47.7	40.2	44.7	52.5	51.6	44.9	38.6	37.9	38.8	42.9	49.8	46.6
	Oki	JPA007	22.7	35.2	32.6	28.0	33.7	21.4	16.1	24.9	20.8	22.0	20.9	19.9	21.7	*	*
	Banryu	JPA008	34.8	33.2	27.9	33.6	32.8	32.9	26.3	32.8	32.6	22.6					
	Yusuhara	JPA009	16.2	19.1	19.6	26.1	17.5	17.2	23.0	19.1	68.2	17.6	17.5	16.4	17.0	15.3	18.5
	Hedo	JPA010	12.7	16.9	13.6	20.3	13.8	16.8	12.4	13.5	14.2	13.1	17.0	13.3	55.4	13.5	25.4
	Ogasawara	JPA011	5.67	5.70	3.80	4.53	4.83	4.76	3.82	4.47	4.65	2.00	4.25	4.46	4.43	4.84	4.37
	Tokyo	JPA012	31.3	25.4	30.1	30.7	25.9	30.4	26.7	19.0	17.9	20.0	20.9	19.4	21.5	19.9	16.4
	Niigata-maki	JPA013											25.7	28.7	23.9	22.7	23.3
	Tsushima	JPA014											16.6	27.3	25.1	15.4	24.6
Lao PDR	Vientiane	LAA001	1.76	***	***	7.34	***	***	3.79	2.90	*	*	*	***	***	***	9.71
Malaysia	Petaling Jaya	MYA001	138	174	190	150	119	133	164	151	90.1	140	***	96.1	105	139	118
	Tanah Rata	MYA002	16.0	10.8	7.29	10.8	10.5	13.9	20.5	14.1	23.8	15.2	***	19.2	***	17.4	19.6
	Danum Valley	MYA003	5.61	3.36	3.99	2.83	6.32	2.10	3.81	2.65	0.545	2.35	***	<0.01	4.01	11.1	2.12
	Kuching	MYA004	21.2	22.8	23.1	14.5	18.6	19.4	16.0	23.5	17.8	20.0	***	13.5	32.8	7.81	5.61
	Gunung Brinchang	MYA005													2.49	***	***
Mongolia	Ulaanbaatar	MNA001	4.35	3.26	2.75	***	4.76	***	5.20	5.87	4.86	4.16	1.92	7.03	7.45	*	2.09
	Terej	MNA002	2.33	3.58	2.59	***	2.89	***	2.41	5.20	4.58	3.81	***	4.68	9.88	*	3.05
Myanmar	Yangon	MMA001	21.8	11.3	19.8	21.4	18.1	13.8	20.1	32.5	51.4	29.3	65.5	36.8	32.6	18.0	23.9
Philippines	Manila Observatory	PHA001	32.8	135	52.7	81.4	49.0	42.0	33.5	91.8	***	***	31.0	28.5	33.9	49.9	49.3
	Los Baños	PHA002	23.2	64.9	19.9	25.0	18.7	17.0	13.7	67.7	***	***	***	***	***	19.9	17.1
	Mt.Sto.Tomas	PHA003	18.6	15.5	11.8	34.9	37.2	18.5	21.3	25.5	***	***	***	***	***	2.30	***
Republic of Korea	Ganghwa	KRA001	23.9	49.8	40.9	27.2	38.8	15.7	29.7	24.7	24.6	17.9	16.0	***	23.0	19.9	8.46
	Jeju	KRA002	19.3	22.7	30.0	23.1	19.3	21.8	31.4	35.6	28.4	21.2	31.0	***	31.6	17.8	36.7
	Imsil	KRA003	23.9	47.6	41.3	36.7	32.0	30.8	24.3	19.0	26.5	24.6	25.1	***	13.5	33.5	23.0
Russia	Mondy	RUA001	0.938	0.732	0.316	0.841	1.66	0.573	0.718	1.28	1.86	1.92	1.40	0.202	0.194	0.276	***
	Listvyanka	RUA002	5.10	6.59	14.6	6.64	4.37	3.68	5.18	4.73	6.08	3.99	6.88	4.75	5.32	7.17	6.02
	Irkutsk	RUA003	7.23	8.36	6.81	8.09	4.52	4.77	6.02	6.46	7.22	5.82	6.53	5.44	5.89	5.36	7.09
	Primorskaya	RUA004	16.1	14.7	23.5	21.6	13.4	4.93	29.4	20.6	22.3	27.0	18.6	14.9	16.1	18.6	15.1
Thailand	Bangkok	THA001	58.2	54.1	44.7	49.7	17.2	15.5	25.7	51.8	32.2	43.4	18.0	40.8	***	52.2	50.7
	Samutprakarn	THA002	39.7	28.9	20.6	11.9	5.65	12.9	14.4	33.2	28.5	27.5	17.8	15.2	***	37.4	22.0
	Pathumthani	THA003	21.8	36.0	30.0	29.3	22.0	15.6	31.2	28.1	38.8	24.2	22.6	25.4	22.2	32.7	22.7
	Khanchanaburi	THA004	9.10	6.11	14.1	16.4	2.90	4.58	4.68	5.22	5.83	4.00	2.09	***	***	***	***
	Mae Hia	THA005	8.88	8.52	11.7	8.78	14.2	6.19	6.24	9.59	12.5	7.25	11.2				
	Sakaerat	THA008	16.0	23.7	15.0	12.6	15.0	10.5	17.8	14.6	17.9	15.4	15.2				
Vietnam	Hanoi	VNA001	26.7	25.7	39.5	45.3	51.2	50.9	44.7	47.3	72.1	88.0	100	120	80.8	191	80.6
	Hoa Binh	VNA002	17.5	21.3	25.4	29.5	37.7	32.8	36.0	35.7	42.1	45.9	37.3	91.8	88.2	40.1	76.8
	Cuc Phuong	VNA003	24.6	38.4	51.5	40.5	31.6	17.4	19.6	22.1	31.4	23.2	33.4	36.3	50.5	99.4	87.4
	Da Nang	VNA004	33.7	11.9	57.5	8.06	12.5	11.7	0.941	7.58	12.1	1.12	4.03	5.94	9.56	11.8	13.3
	Can Tho	VNA005						15.4	25.8	5.52	7.30	8.01	39.7	6.42	10.0	8.57	7.03
	Ho Chi Minh	VNA006						34.2	25.5	18.9	37.2	12.2	41.4	22.2	31.4	33.3	24.3
	Yen Bai	VNA007							27.0	73.2	58.6	54.0	63.0	126	53.4	51.1	66.6

Terms and abbreviations are given in Table 3.5.

Table 3.87 Annual Cl⁻ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	13.6	9.12	7.52	10.8	10.1	14.2	9.94	8.23	8.40	***	***	***	***	***	***
China	Haifu	CNA003	11.7	15.8	11.6	11.5	13.1	15.7	9.48	10.6	9.49	9.93	8.35	8.12	6.84	5.82	9.52
	Jinyunshan	CNA004	17.7	15.7	10.1	11.7	8.13	8.50	6.56	5.78	6.77	4.18	5.10	5.77	6.55	4.44	5.18
	Shizhan	CNA005	15.5	10.5	7.07	6.28	22.4	13.1	10.6	5.96	5.15	10.4	6.20	8.54	21.3	9.87	17.1
	Jiwozi	CNA007	17.5	16.9	10.8	12.2	22.0	13.1	6.35	0.290	8.49	7.94	13.9	7.25	8.02	6.99	18.6
	Hongwen	CNA008	23.8	23.0	21.5	22.1	27.1	32.3	26.1	55.3	38.6	61.3	74.3	15.6	14.7	15.8	14.5
	Xiaoping	CNA009	22.8	21.1	26.1	18.8	25.7	18.8	28.8	19.7	14.5	18.9	10.2	11.4	8.94	8.71	12.6
	Xiang Zhou	CNA010	90.2	41.6	37.5	65.8	112	39.8	86.1	55.3	116	152	48.5	50.1	51.5	54.0	49.7
	Zhuxiandong	CNA011	81.2	40.2	21.5	***	***	***	116	78.9	53.3	214	60.5	94.3	66.4	66.2	59.5
	Wuzhishan	CNA013											11.1	7.02	8.57	9.91	3.40
	Lijiang	CNA014											1.72	20.7	1.27	3.60	1.89
Indonesia	Jakarta	IDA001	18.7	32.7	19.2	35.3	45.1	91.1	48.0	61.6	16.2	36.1	22.3	53.9	42.7	23.3	***
	Serpong	IDA002	23.6	31.9	12.5	21.6	52.8	73.3	39.4	46.8	52.6	50.2	65.7	109	57.4	47.2	
	Kototabang	IDA003	28.4	23.5	30.5	25.7	57.8	26.4	20.7	72.3	15.3	14.1	12.6	14.1	15.2	10.5	***
	Bandung	IDA004	31.6	22.4	18.9	22.1	36.5	29.8	19.1	26.0	28.7	24.0	36.3	17.3	13.6	21.5	
	Maros	IDA005	49.7	56.2	58.4	48.9	146	99.9	17.1	304	262	51.8	35.5	47.4	23.0	55.6	***
	Jembrana	IDA006											49.8	136	158	93.2	***
	Lombok	IDA007											37.9	38.2	41.7	61.1	***
Japan	Rishiri	JPA001	203	197	192	389	260	190	175	104	219	211	149	196	273	196	151
	Ochiishi	JPA002	323	288	147	267	514	93.8	166	184	216	99.6	64.6	85.6	260	*	*
	Tappi	JPA003	290	192	191	191	309	210	315	238	242	305					
	Sado-seki	JPA004	377	481	252	380	559	447	318	199	214	237	240	264	2335	279	232
	Happo	JPA005	15.6	13.1	13.6	23.3	13.0	15.2	15.7	15.7	19.3	18.1	11.0	13.0	17.0	11.8	16.0
	Ijira	JPA006	47.4	62.4	52.8	70.2	53.2	59.8	62.3	48.0	51.7	66.9	43.6	55.1	80.3	98.5	63.1
	Oki	JPA007	489	684	847	532	807	649	502	583	551	619	207	397	754	*	*
	Banryu	JPA008	197	157	179	125	164	155	157	168	147	108					
	Yusuhara	JPA009	28.8	27.3	49.8	66.5	33.4	24.5	83.4	27.4	157	66.8	51.7	31.7	59.7	102	55.9
	Hedo	JPA010	278	751	410	1407	424	383	648	429	696	490	391	527	3707	466	734
	Ogasawara	JPA011	379	391	313	210	210	236	587	122	344	50.7	379	101	358	336	242
	Tokyo	JPA012	48.0	32.1	63.8	58.5	44.5	41.8	36.4	27.6	60.8	51.5	108	25.8	41.9	31.6	23.6
	Niigata-maki	JPA013											320	276	387	413	355
	Tsushima	JPA014											85.5	86.1	90.5	178	85.6
Lao PDR	Vientiane	LAA001	1.12	***	***	5.89	***	***	4.58	3.76	*	*	*	***	***	***	4.86
Malaysia	Petaling Jaya	MYA001	23.4	32.6	30.2	27.2	27.3	33.0	38.7	35.3	31.3	37.5	***	33.6	33.0	31.0	28.7
	Tanah Rata	MYA002	6.96	4.67	9.70	9.07	8.19	10.1	10.1	7.82	10.1	10.7	***	12.5	***	10.9	10.4
	Danum Valley	MYA003	23.0	40.5	21.6	12.3	24.1	18.5	15.1	14.6	13.6	18.1	***	33.3	32.0	18.4	11.0
	Kuching	MYA004	39.3	37.3	53.2	25.7	36.2	40.4	64.1	81.8	44.0	41.3	***	58.2	48.8	30.8	29.6
	Gunung Brinchang	MYA005													4.02	***	***
Mongolia	Ulaanbaatar	MNA001	2.20	1.30	1.22	***	0.628	***	0.774	0.740	0.569	0.752	0.452	0.743	1.19	*	0.569
	Terej	MNA002	1.10	1.37	1.41	***	0.630	***	0.793	1.03	0.913	0.860	***	0.655	2.19	*	0.845
Myanmar	Yangon	MMA001	75.3	30.0	49.6	68.3	72.9	56.0	83.6	68.2	99.1	64.1	61.6	50.8	34.9	36.0	46.7
Philippines	Manila Observatory	PHA001	92.9	55.2	109	90.1	101	68.6	68.2	79.0	***	***	55.1	25.9	77.3	34.2	73.7
	Los Baños	PHA002	72.6	52.3	62.5	45.4	61.7	38.0	143	44.3	***	***	***	***	***	31.1	45.2
	Mt.Sto.Tomas	PHA003	39.3	18.3	20.3	37.2	31.2	15.3	47.6	24.1	***	***	***	***	***	4.89	***
Republic of Korea	Ganghwa	KRA001	76.2	68.9	71.6	50.5	32.6	26.3	95.0	41.9	32.8	26.6	108	***	25.0	24.6	15.2
	Jeju	KRA002	66.1	114	158	545	219	148	159	498	200	303	60.4	***	341	221	385
	Imsil	KRA003	55.5	72.9	37.9	124	27.8	33.8	33.7	25.1	24.4	32.4	31.2	***	37.0	29.6	14.0
Russia	Mondy	RUA001	0.391	0.306	0.388	0.626	1.22	0.440	0.501	0.369	1.01	0.864	0.355	0.128	0.143	0.0470	***
	Listvyanka	RUA002	0.942	1.12	3.17	1.13	1.62	1.02	1.82	0.975	1.30	0.658	1.80	1.50	1.28	1.04	2.24
	Irkutsk	RUA003	10.7	8.95	7.23	6.69	5.30	3.82	6.96	4.76	5.13	4.43	4.27	4.38	4.09	2.91	5.51
	Primorskaya	RUA004	12.7	19.8	41.9	27.5	30.9	16.1	29.4	30.9	23.6	22.0	30.4	25.4	43.1	43.9	50.4
Thailand	Bangkok	THA001	15.9	18.9	17.3	15.0	9.63	9.32	11.7	18.1	13.0	16.5	7.46	17.1	***	12.7	16.7
	Samutprakarn	THA002	16.8	30.4	16.0	9.45	10.2	11.2	13.9	17.0	15.1	16.0	10.3	14.6	***	12.6	57.9
	Pathumthani	THA003	8.18	10.2	10.6	24.9	8.08	8.34	10.7	9.24	10.2	9.23	7.74	8.66	7.69	9.63	9.51
	Khanchanaburi	THA004	17.6	5.37	17.2	27.8	4.34	6.75	6.22	9.58	6.97	7.55	4.48	***	***	***	***
	Mae Hia	THA005	5.16	4.17	4.65	4.59	8.51	2.84	2.89	5.49	7.07	5.89	5.70				
	Sakaerat	THA008	5.81	7.82	7.24	7.17	9.14	4.76	9.68	7.12	6.90	5.74	6.00				
Vietnam	Hanoi	VNA001	15.5	13.4	15.6	11.8	19.3	17.2	18.8	18.9	30.3	43.7	32.5	76.1	28.1	87.2	40.9
	Hoa Binh	VNA002	7.30	8.70	7.58	8.91	12.4	5.53	8.49	11.4	27.6	27.5	14.2	46.3	33.0	20.9	37.8
	Cuc Phuong	VNA003	100	40.2	28.7	41.0	47.9	19.8	31.1	33.1	79.6	76.1	60.9	76.7	71.6	61.9	54.0
	Da Nang	VNA004	325	85.2	340	140	403	206	138	191	182	254	359	524	300	689	388
	Can Tho	VNA005						50.4	90.8	60.3	55.6	79.4	56.6	47.8	75.5	68.2	55.4
	Ho Chi Minh	VNA006						85.8	73.9	95.2	164	89.9	83.6	109	99.7	103	88.6
	Yen Bai	VNA007							11.3	25.9	41.4	23.2	22.3	52.8	20.2	29.3	27.3

Terms and abbreviations are given in Table 3.5.

Table 3.88 Annual NH₄⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	17.3	41.9	28.0	34.9	18.1	21.7	19.9	24.9	30.7	***	***	***	***	***	***
China	Haifu	CNA003	112	137	117	118	145	164	116	125	117	115	112	95.3	96.8	85.1	109
	Jinyunshan	CNA004	121	121	98.8	125	102	105	80.6	80.1	76.1	74.2	73.2	77.0	85.4	61.6	74.4
	Shizhan	CNA005	99.7	85.6	40.0	42.7	105	106	115	49.0	85.0	59.8	63.3	70.1	57.5	54.1	130
	Jiwozi	CNA007	32.7	20.0	22.5	10.4	36.0	18.6	29.4	1.06	0.544	8.50	19.9	17.1	29.5	7.13	15.3
	Hongwen	CNA008	34.4	60.9	35.7	39.9	25.7	29.1	29.6	65.9	18.2	24.4	29.1	10.1	20.5	18.8	14.0
	Xiaoping	CNA009	52.0	65.1	59.6	39.2	50.0	53.0	58.8	45.5	20.0	19.8	20.1	20.6	25.8	13.6	34.4
	Xiang Zhou	CNA010	44.4	45.4	26.1	44.2	42.9	39.9	27.3	69.4	46.6	50.0	45.1	41.6	34.5	33.4	44.4
	Zhuxiandong	CNA011	40.5	42.1	28.4	***	***	***	38.9	99.8	46.7	49.8	48.4	45.7	44.1	30.0	41.4
	Wuzhishan	CNA013											22.0	16.6	15.2	14.6	5.89
	Lijiang	CNA014											5.58	2.44	7.75	8.59	5.91
Indonesia	Jakarta	IDA001	27.6	48.8	33.4	62.9	40.0	55.7	53.2	74.1	31.4	81.9	44.3	73.0	64.8	47.8	***
	Serpong	IDA002	57.7	74.6	51.6	63.6	193	189	112	163	161	147	148	218	156	172	
	Kototabang	IDA003	7.15	6.72	21.9	22.4	14.7	30.2	4764	10.7	13.6	21.4	16.6	19.3	25.6	11.0	***
	Bandung	IDA004	130	83.7	93.0	112	111	113	114	157	120	108	124	91.2	94.4	128	
	Maros	IDA005	41.2	27.0	33.8	34.5	27.2	19.9	51.4	106	12.0	36.5	4.33	2.71	5.64	33.4	***
	Jembrana	IDA006											26.7	32.2	31.4	10.1	***
	Lombok	IDA007											27.0	34.3	34.4	208	***
Japan	Rishiri	JPA001	18.7	16.8	17.3	13.3	15.1	12.9	14.5	13.5	20.9	24.2	13.6	23.8	15.8	19.3	22.2
	Ochiishi	JPA002	13.3	11.6	8.98	10.7	10.3	9.05	9.45	5.70	5.24	7.40	6.26	6.77	34.7	*	*
	Tappi	JPA003	14.0	23.3	19.4	16.3	20.4	27.2	14.5	18.8	17.9	16.9					
	Sado-seki	JPA004	12.9	16.2	20.2	20.1	28.6	25.6	16.7	16.0	25.2	17.2	15.5	15.2	21.8	8.02	16.3
	Happo	JPA005	22.9	15.4	18.6	21.5	23.8	19.8	17.6	11.7	13.5	15.4	21.2	14.5	19.4	15.1	17.6
	Ijira	JPA006	52.4	46.9	43.4	42.2	36.6	40.8	42.3	45.1	36.4	34.0	35.2	37.4	40.7	50.8	47.4
	Oki	JPA007	19.1	25.8	28.6	22.0	24.4	14.7	10.2	21.9	17.6	15.8	16.9	15.0	17.1	*	*
	Banryu	JPA008	28.3	31.8	22.5	25.9	27.9	26.2	21.8	27.4	24.0	16.0					
	Yusuhara	JPA009	17.1	16.3	16.4	23.0	17.8	17.3	12.3	16.6	56.9	12.7	16.7	16.9	13.4	15.3	17.2
	Hedo	JPA010	12.7	24.6	16.1	53.5	16.0	20.2	19.4	14.7	11.4	8.39	12.6	15.6	65.3	10.2	25.9
	Ogasawara	JPA011	8.07	9.82	5.88	8.14	7.64	5.94	4.19	5.59	3.80	1.94	4.61	5.84	3.15	3.68	4.60
	Tokyo	JPA012	45.3	31.8	35.3	39.8	36.9	41.8	33.0	27.7	23.3	28.1	28.8	30.6	32.4	30.2	23.8
	Niigata-maki	JPA013											24.8	26.3	21.2	22.4	21.6
	Tsushima	JPA014											21.2	30.8	20.4	14.1	22.9
Lao PDR	Vientiane	LAA001	3.13	***	***	***	***	***	7.17	5.35	*	*	*	***	***	***	9.30
Malaysia	Petaling Jaya	MYA001	22.5	16.2	17.5	4.40	57.8	102	95.5	44.6	53.3	76.0	***	75.3	71.4	64.0	78.7
	Tanah Rata	MYA002	16.7	9.92	47.2	16.1	6.69	9.97	20.2	8.31	9.45	5.33	***	31.3	***	20.8	24.1
	Danum Valley	MYA003	11.7	11.6	7.19	1.90	2.48	2.60	8.53	0.827	0.590	4.34	***	0.0532	1.61	5.42	0.869
	Kuching	MYA004	23.1	9.03	23.3	23.4	11.8	34.3	24.3	13.9	13.3	19.9	***	9.25	22.0	29.4	25.5
	Gunung Brinchang	MYA005													1.67	***	***
Mongolia	Ulaanbaatar	MNA001	10.6	8.35	7.50	***	9.58	***	***	6.50	7.81	9.78	2.53	8.00	11.1	*	4.43
	Terej	MNA002	4.54	4.53	5.66	***	0.487	***	***	6.41	4.40	4.62	***	2.63	10.6	*	3.73
Myanmar	Yangon	MMA001	48.9	33.3	46.9	45.6	45.8	47.6	54.3	37.4	38.2	57.4	50.3	47.0	39.3	55.4	49.7
Philippines	Manila Observatory	PHA001	79.7	142	667	1218	145	162	215	283	***	***	67.6	53.8	42.1	58.5	116
	Los Baños	PHA002	33.9	79.1	70.1	142	53.3	116	85.6	149	***	***	***	***	***	25.0	29.6
	Mt.Sto.Tomas	PHA003	66.7	16.8	3.79	19.6	20.7	49.0	58.4	34.5	***	***	***	***	***	1.88	***
Republic of Korea	Ganghwa	KRA001	38.6	41.6	63.8	36.9	70.5	25.7	58.3	48.6	49.6	24.2	21.2	***	25.3	28.8	9.76
	Jeju	KRA002	47.0	26.8	30.2	40.1	22.9	30.4	40.9	45.2	27.3	26.6	35.9	***	27.7	8.45	19.6
	Imsil	KRA003	37.6	51.2	56.3	55.4	49.4	36.7	36.4	30.2	39.2	31.4	39.1	***	11.8	30.7	20.4
Russia	Mondy	RUA001	2.40	1.58	0.672	2.00	0.894	0.444	1.84	1.10	1.99	3.03	1.73	0.304	1.94	0.675	***
	Listvyanka	RUA002	4.18	5.99	8.22	9.17	2.74	3.83	12.3	4.56	6.50	3.11	8.06	4.91	8.28	5.41	5.45
	Irkutsk	RUA003	15.7	12.9	10.8	15.1	8.15	9.28	21.3	10.7	10.3	9.29	12.0	11.5	14.8	9.76	12.2
	Primorskaya	RUA004	24.9	28.8	33.6	24.9	28.6	27.2	29.8	21.0	29.7	33.8	21.0	18.5	37.3	46.2	49.9
Thailand	Bangkok	THA001	134	76.5	87.3	79.4	61.6	52.9	96.7	104	87.0	60.5	22.4	63.1	***	58.7	60.6
	Samutprakarn	THA002	81.5	52.9	58.5	32.5	42.1	48.2	66.3	78.4	88.1	58.9	28.4	33.3	***	43.5	26.9
	Pathumthani	THA003	43.3	49.4	59.5	59.2	53.1	37.4	48.6	56.7	56.3	47.0	39.7	44.5	28.7	46.7	45.4
	Khanchanaburi	THA004	52.1	14.5	25.2	21.4	10.2	13.7	11.7	17.2	16.6	6.29	2.94	***	***	***	***
	Mae Hia	THA005	21.2	22.5	21.9	21.8	27.7	14.1	13.1	21.8	32.3	12.3	25.0				
	Sakaerat	THA008	28.8	40.0	36.7	29.0	34.4	18.0	43.3	36.8	39.4	71.5	78.6				
Vietnam	Hanoi	VNA001	81.4	64.8	95.9	108	104	113	82.6	102	109	108	38.6	155	132	157	161
	Hoa Binh	VNA002	42.6	38.8	48.9	57.4	50.7	59.5	62.0	81.8	37.8	81.1	18.3	89.1	118	51.7	156
	Cuc Phuong	VNA003	14.3	16.4	35.5	48.3	48.5	34.9	43.8	38.9	19.5	13.6	31.0	32.0	94.0	158	96.0
	Da Nang	VNA004	40.0	14.6	78.3	35.8	57.0	32.2	16.5	14.8	46.8	36.6	89.4	65.0	48.1	49.0	55.7
	Can Tho	VNA005						33.7	46.9	38.0	41.0	32.0	41.8	26.6	48.6	50.0	39.2
	Ho Chi Minh	VNA006						46.6	41.8	73.6	132	51.3	51.5	76.2	69.5	69.1	68.0
	Yen Bai	VNA007							46.1	166	80.5	72.8	29.0	112	106	61.2	151

Terms and abbreviations are given in Table 3.5.

Table 3.89 Annual Na⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	9.22	5.74	4.54	5.90	4.16	11.9	6.92	5.40	6.14	***	***	***	***	***	***
China	Haifu	CNA003	4.48	7.38	7.99	6.10	7.48	9.01	4.40	7.85	5.38	5.56	4.90	4.54	3.26	3.51	6.13
	Jinyunshan	CNA004	8.45	8.00	5.19	6.32	4.41	6.70	2.87	3.10	3.74	1.69	2.08	2.49	2.31	1.95	3.54
	Shizhan	CNA005	7.91	3.35	11.7	2.20	60.9	78.1	67.3	22.2	16.6	9.72	5.62	8.94	14.8	11.7	21.7
	Jiwozi	CNA007	15.8	7.47	7.63	17.3	72.8	70.9	41.3	3.09	17.1	13.4	51.3	9.35	19.3	4.16	8.68
	Hongwen	CNA008	18.1	29.6	15.2	15.0	20.1	22.3	18.8	48.2	19.2	23.4	5.12	15.3	20.1	14.2	13.8
	Xiaoping	CNA009	18.5	28.6	16.6	10.9	23.9	12.0	17.0	12.1	4.64	5.50	1.46	8.37	5.56	7.03	10.2
	Xiang Zhou	CNA010	80.7	36.8	40.7	69.7	131	51.4	75.7	52.8	99.5	139	40.4	41.9	45.3	48.8	43.1
	Zhuxiandong	CNA011	71.5	37.0	51.5	***	***	***	107	80.4	47.7	188	50.5	80.5	58.0	59.0	52.2
	Wuzhishan	CNA013											13.0	6.16	7.90	9.14	3.87
	Lijiang	CNA014											4.40	0.579	0.705	0.571	0.763
Indonesia	Jakarta	IDA001	14.5	16.8	11.6	34.5	37.7	67.8	5.65	41.5	12.8	28.5	14.1	46.2	33.5	16.4	***
	Serpong	IDA002	13.7	11.9	8.36	9.71	32.5	54.1	25.9	42.1	38.7	37.4	37.5	40.9	50.2	21.8	
	Kototabang	IDA003	16.3	12.4	14.3	25.4	18.0	14.2	1.95	45.7	8.43	9.88	10.1	20.9	9.35	7.84	***
	Bandung	IDA004	31.6	25.4	18.7	22.5	31.9	26.3	17.3	30.3	35.9	40.4	75.7	19.4	12.5	22.7	
	Maros	IDA005	43.0	35.3	54.1	48.8	77.7	80.5	9.10	233	240	45.2	31.1	26.0	20.3	48.5	***
	Jembrana	IDA006											31.6	67.0	82.7	64.5	***
	Lombok	IDA007											36.6	42.3	40.4	58.8	***
Japan	Rishiri	JPA001	185	173	171	343	234	168	153	90.6	194	185	130	174	243	175	130
	Ochiishi	JPA002	287	252	126	239	446	81.5	147	158	183	87.2	56.0	74.9	228	*	*
	Tappi	JPA003	266	177	171	166	275	187	264	206	213	263					
	Sado-seki	JPA004	333	437	213	319	517	397	283	175	189	211	211	235	2124	243	202
	Happo	JPA005	12.1	9.86	10.3	19.2	10.8	13.0	13.1	11.8	15.5	14.9	8.80	11.0	14.1	9.89	13.6
	Ijira	JPA006	39.0	50.0	42.3	55.2	41.3	47.5	49.6	39.1	42.7	54.4	36.3	47.8	68.1	82.0	52.5
	Oki	JPA007	422	594	737	462	705	574	437	505	482	530	178	344	659	*	*
	Banryu	JPA008	171	139	155	111	140	132	133	150	129	94.3					
	Yusuhara	JPA009	24.9	21.8	41.8	55.1	24.6	18.3	69.8	21.9	126	58.3	42.7	26.5	50.2	87.4	47.9
	Hedo	JPA010	250	670	360	1186	366	335	552	365	597	421	333	442	3083	402	632
	Ogasawara	JPA011	315	386	262	179	178	201	486	105	298	44.8	333	85.0	308	291	210
	Tokyo	JPA012	40.7	28.7	52.3	48.2	36.7	34.2	29.6	23.2	51.5	44.7	94.7	21.5	35.7	27.2	20.8
	Niigata-maki	JPA013											269	237	336	349	305
	Tsushima	JPA014											73.8	74.9	78.1	152	72.5
Lao PDR	Vientiane	LAA001	1.66	***	***	***	***	***	2.56	1.08	*	*	*	***	***	***	4.16
Malaysia	Petaling Jaya	MYA001	13.6	17.6	16.5	13.1	15.3	18.7	23.3	21.1	18.9	20.5	***	20.5	18.4	15.1	18.6
	Tanah Rata	MYA002	4.87	3.15	6.56	4.29	6.02	8.17	7.36	6.44	7.45	6.46	***	14.4	***	9.44	9.21
	Danum Valley	MYA003	19.8	32.7	20.9	8.49	16.5	15.4	10.9	9.87	7.47	12.8	***	29.1	25.0	14.0	8.68
	Kuching	MYA004	34.3	31.0	42.1	19.8	31.0	33.8	56.9	71.7	35.5	32.3	***	43.1	33.2	26.3	26.0
	Gunung Brinchang	MYA005													2.66	***	***
Mongolia	Ulaanbaatar	MNA001	1.11	0.535	0.924	***	12.1	***	***	27.6	3.50	7.07	3.72	12.5	3.10	*	0.692
	Terej	MNA002	0.843	1.44	0.873	***	1.54	***	***	21.9	1.42	7.38	***	7.11	21.2	*	2.19
Myanmar	Yangon	MMA001	55.7	29.3	47.2	56.7	42.6	49.6	21.3	34.3	42.2	64.3	54.2	31.2	32.5	37.7	41.4
Philippines	Manila Observatory	PHA001	76.5	59.7	78.2	74.6	98.3	64.4	58.5	43.7	***	***	42.7	26.3	57.0	68.2	85.9
	Los Baños	PHA002	50.5	46.9	46.3	46.7	54.5	32.0	27.4	39.3	***	***	***	***	***	27.6	46.1
	Mt.Sto.Tomas	PHA003	39.1	22.7	19.9	58.9	29.4	23.0	53.2	65.7	***	***	***	***	***	1.20	***
Republic of Korea	Ganghwa	KRA001	57.1	42.4	52.8	37.9	26.6	18.4	26.5	23.8	16.3	19.1	90.3	***	20.6	20.4	10.8
	Jeju	KRA002	55.7	103	163	449	184	139	147	442	187	273	73.8	***	338	205	354
	Imsil	KRA003	53.7	79.2	55.9	72.6	36.9	32.8	33.9	28.4	27.5	45.1	41.8	***	42.0	51.4	27.3
Russia	Mondy	RUA001	0.270	0.253	0.283	0.455	0.449	0.277	0.219	0.306	0.493	0.764	0.350	0.293	0.166	0.0902	***
	Listvyanka	RUA002	1.19	1.18	2.59	1.44	1.86	1.34	0.989	0.883	1.03	0.677	1.32	1.85	2.70	1.74	2.84
	Irkutsk	RUA003	8.06	6.91	5.52	4.41	3.55	3.35	3.71	3.57	4.01	3.89	2.69	4.83	4.14	3.31	5.41
	Primorskaya	RUA004	11.0	16.1	8.48	21.3	18.4	10.1	28.7	23.3	16.5	22.4	17.6	27.3	24.9	28.2	23.5
Thailand	Bangkok	THA001	20.3	17.8	14.0	10.9	16.0	9.26	12.7	17.9	9.28	13.0	5.56	22.7	***	10.6	14.2
	Samutprakarn	THA002	19.9	35.0	12.0	7.51	28.2	12.5	13.5	16.1	12.9	14.6	8.68	13.4	***	11.1	9.38
	Pathumthani	THA003	7.34	13.1	9.16	22.0	7.04	5.62	7.42	6.85	6.60	6.74	5.28	5.17	3.21	4.68	6.84
	Khanchanaburi	THA004	19.0	5.05	14.5	23.2	8.19	6.28	6.46	11.0	5.54	8.12	3.55	***	***	***	***
	Mae Hia	THA005	2.83	3.17	5.17	4.22	8.07	1.93	3.34	5.21	7.58	6.45	6.17				
	Sakaerat	THA008	3.44	5.22	6.10	4.18	4.27	3.78	6.36	4.36	3.53	12.5	11.0				
Vietnam	Hanoi	VNA001	14.8	9.00	11.2	7.54	15.0	12.0	11.5	18.9	33.9	21.2	34.1	37.7	23.1	59.6	27.7
	Hoa Binh	VNA002	4.60	6.65	4.32	5.81	8.29	4.12	6.14	6.33	7.56	7.80	18.6	17.9	21.1	9.37	19.9
	Cuc Phuong	VNA003	25.5	19.8	25.2	40.4	50.7	18.2	12.8	24.6	39.3	33.9	36.7	34.2	72.9	56.6	44.9
	Da Nang	VNA004	281	69.9	255	106	333	182	151	179	182	177	231	177	178	184	150
	Can Tho	VNA005						28.4	64.8	21.0	18.3	25.4	42.8	29.7	35.5	33.6	33.1
	Ho Chi Minh	VNA006						47.9	49.1	34.4	59.8	35.1	46.1	46.5	44.7	43.7	37.6
	Yen Bai	VNA007							8.18	16.3	8.81	6.81	18.7	27.1	15.2	9.50	21.2

Terms and abbreviations are given in Table 3.5.

Table 3.90 Annual K⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	1.98	1.59	1.47	1.23	1.42	4.20	2.18	2.70	1.68	***	***	***	***	***	***
China	Haifu	CNA003	8.23	9.78	7.60	6.64	13.1	13.2	7.30	5.91	5.84	6.94	4.22	3.46	3.14	3.12	4.73
	Jinyunshan	CNA004	9.56	10.2	8.80	7.69	6.19	6.59	4.38	4.10	4.56	2.57	3.32	3.20	2.72	2.35	2.16
	Shizhan	CNA005	6.03	14.9	8.83	2.23	12.4	156	3.16	1.56	2.65	5.13	3.49	3.31	2.91	6.01	2.82
	Jiwozi	CNA007	8.58	5.64	7.07	3.80	6.64	9.33	2.96	1.69	6.59	10.6	37.3	6.02	4.67	3.45	5.47
	Hongwen	CNA008	1.66	3.42	1.68	2.64	2.67	1.60	6.08	9.45	18.8	37.0	14.7	3.09	4.69	2.89	1.42
	Xiaoping	CNA009	2.64	2.94	4.29	4.48	3.29	1.98	13.1	10.3	8.37	12.1	2.54	2.16	1.89	3.53	2.64
	Xiang Zhou	CNA010	4.23	4.10	4.71	14.0	20.0	11.5	6.31	8.63	4.87	6.30	2.97	2.17	2.23	2.10	2.86
	Zhuxiandong	CNA011	4.04	6.10	6.78	***	***	***	13.3	13.7	4.08	9.80	3.93	4.54	3.91	2.81	3.03
	Wuzhishan	CNA013											4.29	2.23	3.93	4.45	1.43
	Lijiang	CNA014											0.778	0.767	0.394	0.601	0.441
Indonesia	Jakarta	IDA001	3.46	4.72	2.26	7.79	6.61	11.5	35.2	20.7	3.10	4.83	2.08	10.5	5.14	6.83	***
	Serpong	IDA002	2.36	4.57	2.61	3.87	11.4	16.3	13.8	14.2	12.1	12.8	26.2	45.5	11.3	7.50	
	Kototabang	IDA003	24.8	10.5	8.69	14.6	40.9	25.8	12387	24.9	4.54	5.98	6.13	10.8	11.0	5.62	***
	Bandung	IDA004	11.0	11.0	7.30	7.01	18.7	11.4	7.11	7.79	8.10	7.82	7.85	6.68	4.51	6.65	
	Maros	IDA005	12.6	6.71	6.74	8.57	7.41	52.7	4427	29.7	14.4	9.44	4.98	19.0	3.06	6.24	***
	Jembrana	IDA006											6.05	43.9	53.8	8.95	***
	Lombok	IDA007											5.26	11.1	14.3	56.3	***
Japan	Rishiri	JPA001	4.54	4.59	4.24	7.51	5.40	4.23	3.95	2.69	5.63	5.25	3.74	5.37	6.52	4.61	4.29
	Ochiishi	JPA002	6.47	6.68	3.02	5.89	9.91	2.14	4.00	3.91	4.48	2.09	1.40	1.94	20.0	*	*
	Tappi	JPA003	6.62	5.45	4.96	4.66	6.65	4.74	6.20	5.46	5.33	6.38					
	Sado-seki	JPA004	8.26	11.1	6.18	8.58	12.1	10.6	8.40	7.54	5.95	5.23	5.57	5.74	66.2	5.52	4.96
	Happo	JPA005	1.58	0.934	1.38	1.73	1.54	1.83	1.53	1.12	1.17	1.17	1.39	1.33	1.14	0.891	1.07
	Ijira	JPA006	1.95	1.64	1.64	1.74	1.60	1.86	2.19	1.57	1.68	1.72	1.45	1.71	2.47	2.40	2.21
	Oki	JPA007	11.3	14.7	19.5	11.9	17.8	13.8	10.5	12.2	11.5	12.9	4.67	8.09	16.3	*	*
	Banryu	JPA008	5.20	7.98	4.85	3.93	4.71	4.02	3.70	4.17	3.54	2.76					
	Yusuhara	JPA009	1.59	1.52	1.58	3.25	0.962	2.47	2.31	1.39	4.74	2.67	2.46	2.04	3.06	3.83	3.30
	Hedo	JPA010	6.49	16.4	8.73	30.2	8.82	8.08	12.8	8.22	13.0	9.26	7.78	10.0	66.9	8.94	15.9
	Ogasawara	JPA011	7.61	9.32	6.42	4.26	4.60	4.79	12.8	2.56	6.84	1.06	8.23	2.37	5.62	6.69	5.13
	Tokyo	JPA012	1.90	1.64	1.79	1.45	1.14	1.13	1.05	0.868	1.42	1.09	2.25	0.758	0.922	0.766	0.810
	Niigata-maki	JPA013											7.31	5.67	8.08	8.46	7.07
	Tsushima	JPA014											2.17	2.65	2.67	5.20	2.74
Lao PDR	Vientiane	LAA001	0.168	***	***	***	***	***	1.61	0.683	*	*	*	***	***	***	1.94
Malaysia	Petaling Jaya	MYA001	4.47	5.26	4.71	4.53	4.07	5.46	6.39	6.27	4.83	7.33	***	7.34	5.78	4.67	5.39
	Tanah Rata	MYA002	3.05	2.60	6.70	4.78	4.85	4.69	6.35	2.88	5.82	3.54	***	13.5	***	6.15	5.25
	Danum Valley	MYA003	5.39	7.67	6.56	3.59	3.22	6.15	4.83	3.02	3.83	6.58	***	6.77	8.88	8.12	6.14
	Kuching	MYA004	3.24	3.02	3.95	3.51	2.85	11.9	6.37	6.40	5.48	5.84	***	7.88	8.66	11.7	9.10
	Gunung Brinchang	MYA005													1.06	***	***
Mongolia	Ulaanbaatar	MNA001	0.577	0.416	0.650	***	0.598	***	***	0.0990	0.207	0.172	0.0677	0.264	0.278	*	0.289
	Terej	MNA002	0.455	0.703	0.719	***	0.725	***	***	0.754	0.358	0.544	***	0.407	0.805	*	0.454
Myanmar	Yangon	MMA001	19.4	4.71	5.21	17.4	7.17	13.5	32.2	7.30	29.4	12.9	20.8	10.4	15.9	10.3	8.02
Philippines	Manila Observatory	PHA001	15.1	45.6	85.9	117	22.7	25.7	32.7	35.8	***	***	9.78	3.69	4.54	4.79	7.00
	Los Baños	PHA002	26.3	15.4	16.3	17.1	15.3	17.0	114	24.3	***	***	***	***	***	2.55	4.60
	Mt.Sto.Tomas	PHA003	9.24	5.09	3.78	5.07	3.30	4.57	9.93	3.93	***	***	***	***	***	0.264	***
Republic of Korea	Ganghwa	KRA001	11.3	12.2	5.34	4.78	2.94	5.73	62.7	11.2	9.72	3.14	3.97	***	1.66	3.35	1.12
	Jeju	KRA002	10.1	7.98	7.04	18.8	7.65	13.5	20.1	17.0	5.31	6.76	2.27	***	13.4	3.96	13.5
	Imsil	KRA003	11.7	16.8	5.81	66.5	7.72	10.8	6.61	2.84	6.70	2.55	1.46	***	3.47	1.58	0.951
Russia	Mondy	RUA001	0.390	0.237	0.366	0.952	0.759	0.248	0.462	0.233	0.371	0.461	0.179	0.0548	0.213	0.0469	***
	Listvyanka	RUA002	0.646	0.543	1.16	0.686	1.21	0.868	0.702	0.540	1.15	0.452	1.31	1.47	2.12	2.08	2.66
	Irkutsk	RUA003	11.4	2.07	1.51	2.21	1.44	1.15	1.31	1.49	1.47	1.35	1.63	1.80	3.06	2.20	3.02
	Primorskaya	RUA004	3.81	3.93	4.19	4.69	4.01	3.30	9.01	17.6	6.41	8.56	7.07	7.32	4.86	8.87	9.45
Thailand	Bangkok	THA001	4.10	5.22	3.95	2.74	2.54	1.40	2.78	2.77	1.97	2.58	2.45	5.53	***	3.24	8.76
	Samutprakarn	THA002	5.51	31.9	2.33	1.45	5.83	2.30	2.79	3.10	2.48	2.40	1.72	2.31	***	2.91	52.2
	Pathumthani	THA003	2.12	3.26	3.06	2.57	2.51	1.98	1.97	2.24	2.90	1.78	1.72	2.15	3.55	1.35	1.41
	Khanchanaburi	THA004	2.41	1.15	4.30	3.75	1.43	1.19	0.916	1.60	1.69	1.71	0.679	***	***	***	***
	Mae Hia	THA005	1.55	1.41	2.33	1.40	2.12	0.935	0.924	2.35	3.35	1.55	2.74				
	Sakaerat	THA008	1.65	1.53	1.81	1.42	1.17	1.12	2.10	1.73	0.866	7.85	6.99				
Vietnam	Hanoi	VNA001	2.53	3.43	4.12	5.39	5.13	6.23	4.73	6.03	14.7	15.3	10.5	10.3	11.1	27.8	13.1
	Hoa Binh	VNA002	3.69	3.94	4.23	2.88	14.3	3.61	4.63	3.73	5.46	10.9	2.83	5.31	9.72	8.14	11.4
	Cuc Phuong	VNA003	31.7	9.28	6.14	12.2	16.3	8.04	6.83	11.2	7.63	10.1	8.45	8.46	15.6	15.7	21.5
	Da Nang	VNA004	18.6	5.76	50.9	19.3	41.5	30.5	22.6	9.24	22.1	40.5	38.7	275	49.6	396	65.2
	Can Tho	VNA005						13.7	15.8	10.1	10.4	16.4	30.0	11.7	16.1	26.0	17.4
	Ho Chi Minh	VNA006						20.3	17.1	16.9	35.7	20.6	24.9	24.8	24.8	23.7	21.8
	Yen Bai	VNA007							6.09	9.03	14.9	6.10	4.12	7.76	6.84	7.61	11.9

Terms and abbreviations are given in Table 3.5.

Table 3.91 Annual Ca²⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	27.1	15.4	11.9	17.4	12.9	14.8	12.8	18.2	13.4	***	***	***	***	***	***
China	Haifu	CNA003	46.1	67.6	55.5	58.5	71.2	77.4	52.5	85.4	65.1	48.0	31.5	28.2	28.5	22.5	36.7
	Jinyunshan	CNA004	73.2	67.3	55.2	59.5	35.1	38.8	28.0	46.3	65.8	32.0	23.6	23.7	23.6	15.5	19.5
	Shizhan	CNA005	81.7	48.1	60.1	50.1	143	57.7	53.2	14.5	39.4	29.1	23.6	20.2	78.6	80.8	60.9
	Jiwozi	CNA007	58.9	47.0	88.9	79.3	86.2	84.4	25.8	13.6	48.3	30.7	93.9	28.7	32.3	10.6	31.3
	Hongwen	CNA008	9.71	13.9	11.9	16.1	30.8	28.8	16.6	23.3	15.2	26.0	62.4	131	15.7	11.4	5.82
	Xiaoping	CNA009	10.2	12.7	17.9	25.9	44.9	57.8	14.3	11.8	10.2	6.83	7.54	3.81	5.13	4.63	6.21
	Xiang Zhou	CNA010	9.87	13.7	22.1	16.3	105	28.5	22.7	25.4	19.1	21.9	16.2	12.7	15.5	7.92	28.2
	Zhuxiandong	CNA011	11.7	30.3	21.8	***	***	***	40.2	40.9	25.2	37.4	22.7	25.6	20.3	15.4	16.9
	Wuzhishan	CNA013											15.5	3.12	3.89	5.15	2.41
	Lijiang	CNA014											11.8	2.78	2.65	3.45	5.55
Indonesia	Jakarta	IDA001	19.6	21.9	11.0	32.6	33.0	47.4	21.0	49.8	22.9	28.2	15.8	22.3	17.8	14.1	***
	Serpong	IDA002	6.95	13.2	9.08	8.31	32.5	37.4	34.9	40.7	38.6	44.9	38.5	26.7	26.3	19.8	
	Kototabang	IDA003	14.5	11.3	12.9	20.7	20.2	9.82	4.98	8.28	28.4	24.9	66.0	14.7	25.0	8.83	***
	Bandung	IDA004	41.1	35.1	32.0	27.8	45.9	46.4	35.4	41.0	27.7	31.8	33.2	32.3	30.3	35.3	
	Maros	IDA005	26.3	25.5	23.6	39.4	41.9	77.0	41.5	27.2	33.0	46.8	33.8	13.6	36.4	65.8	***
	Jembrana	IDA006											12.5	45.4	14.0	13.4	***
	Lombok	IDA007											25.3	13.1	13.8	43.0	***
Japan	Rishiri	JPA001	10.6	7.39	6.93	9.89	8.58	5.97	5.75	4.68	7.64	9.19	5.24	8.31	10.3	8.24	6.86
	Ochiishi	JPA002	8.21	8.95	4.44	6.41	12.2	3.40	5.56	4.86	5.17	3.57	2.38	2.79	12.2	*	*
	Tappi	JPA003	8.58	13.3	9.17	9.45	15.0	8.89	8.90	9.10	7.66	10.0					
	Sado-seki	JPA004	11.5	17.4	11.5	14.8	16.4	13.4	9.83	11.4	8.41	12.4	8.39	7.58	81.2	7.23	8.66
	Happo	JPA005	11.0	6.30	7.89	8.29	7.37	5.67	3.82	1.84	5.54	5.86	5.57	5.00	6.55	2.99	5.39
	Ijira	JPA006	7.89	9.55	6.05	7.16	7.45	5.02	6.26	5.92	6.41	6.92	6.55	5.61	8.54	7.79	10.0
	Oki	JPA007	16.3	23.3	26.2	15.7	23.8	17.3	12.8	16.2	15.0	17.1	7.60	11.4	21.2	*	*
	Banryu	JPA008	9.46	11.8	8.38	8.03	7.92	7.20	7.83	9.45	7.55	5.49					
	Yusuhara	JPA009	4.07	4.44	7.71	7.28	5.37	5.64	3.11	3.13	13.5	3.41	4.10	3.12	5.51	5.24	5.06
	Hedo	JPA010	8.83	21.1	10.7	32.6	11.1	10.4	14.5	9.79	15.7	14.0	9.72	12.4	78.0	13.7	19.7
	Ogasawara	JPA011	8.71	10.8	7.21	5.44	5.82	6.10	12.9	3.00	7.51	1.23	8.65	2.64	7.46	7.48	5.37
	Tokyo	JPA012	5.91	6.59	6.72	6.88	7.00	6.88	5.84	3.99	4.27	4.49	6.58	4.48	4.82	5.10	4.62
	Niigata-maki	JPA013											10.9	11.3	12.1	12.0	12.7
	Tsushima	JPA014											3.31	3.79	4.27	5.35	4.24
Lao PDR	Vientiane	LAA001	0.996	***	***	***	***	***	3.68	1.57	*	*	*	***	***	***	13.5
Malaysia	Petaling Jaya	MYA001	14.8	19.0	14.3	13.5	21.9	22.3	25.1	22.2	13.1	26.8	***	16.1	15.3	14.2	15.0
	Tanah Rata	MYA002	3.17	2.99	6.84	6.73	8.06	7.75	5.36	5.15	6.80	7.19	***	17.1	***	8.43	5.84
	Danum Valley	MYA003	3.43	9.05	3.36	2.37	4.59	4.02	4.62	2.95	4.38	6.27	***	16.3	6.92	4.99	3.17
	Kuching	MYA004	8.35	12.1	14.6	13.0	17.2	22.4	19.2	18.9	14.8	16.3	***	75.6	10.9	22.3	10.5
	Gunung Brinchang	MYA005													1.56	***	***
Mongolia	Ulaanbaatar	MNA001	9.63	5.23	5.54	***	14.7	***	***	4.65	6.68	4.00	1.31	7.40	8.73	*	4.57
	Terej	MNA002	3.97	5.48	2.93	***	6.28	***	***	1.78	1.67	2.29	***	7.31	5.98	*	4.49
Myanmar	Yangon	MMA001	29.1	14.5	21.7	20.0	2.87	40.6	216	12.1	29.5	48.8	41.9	22.0	5.40	42.9	23.4
Philippines	Manila Observatory	PHA001	24.2	34.2	47.0	61.8	40.5	38.2	43.6	51.6	***	***	34.8	41.0	23.6	32.9	13.6
	Los Baños	PHA002	14.7	41.6	15.2	19.8	15.3	14.5	13.7	20.7	***	***	***	***	***	38.5	5.86
	Mt.Sto.Tomas	PHA003	27.8	81.8	36.1	80.4	37.7	29.3	41.8	59.5	***	***	***	***	***	4.50	***
Republic of Korea	Ganghwa	KRA001	6.57	11.0	6.48	6.46	7.83	3.81	5.61	3.22	3.96	2.01	3.54	***	7.32	4.79	3.47
	Jeju	KRA002	4.23	6.74	7.10	13.4	8.64	4.92	6.74	18.1	9.15	6.87	3.61	***	11.6	8.15	26.2
	Imsil	KRA003	4.14	9.42	10.2	6.03	3.59	3.85	3.71	2.26	2.82	1.92	2.92	***	4.63	4.22	3.30
Russia	Mondy	RUA001	0.616	0.830	0.663	1.28	1.52	0.866	1.14	1.20	1.66	1.94	0.928	0.202	0.264	0.227	***
	Listvyanka	RUA002	3.92	4.12	7.72	4.03	3.30	3.56	3.34	2.51	3.86	2.80	3.46	3.04	3.81	4.50	4.41
	Irkutsk	RUA003	12.6	12.1	11.4	13.9	9.12	10.3	8.88	8.18	11.3	12.3	7.09	6.82	9.12	10.0	11.1
	Primorskaya	RUA004	10.1	11.3	8.52	11.2	13.0	11.6	15.2	12.1	13.3	15.0	10.6	14.7	10.0	16.5	22.8
Thailand	Bangkok	THA001	20.8	22.8	22.9	24.2	33.5	14.6	27.0	26.0	18.0	31.0	18.4	25.7	***	25.3	29.1
	Samutprakarn	THA002	26.2	14.6	12.5	7.99	22.2	14.5	8.98	16.8	14.4	12.8	9.57	7.28	***	12.2	6.01
	Pathumthani	THA003	12.1	16.2	18.9	32.2	32.0	23.8	17.8	14.7	16.8	10.5	8.30	6.22	4.77	9.00	7.68
	Khanchanaburi	THA004	9.85	2.93	7.84	41.7	4.90	3.98	3.97	5.48	4.28	3.52	2.77	***	***	***	***
	Mae Hia	THA005	5.98	5.14	4.20	8.64	15.1	5.13	3.07	7.99	10.6	5.74	7.75				
	Sakaerat	THA008	3.19	3.60	2.83	4.21	2.83	3.73	9.46	8.93	7.78	39.7	63.7				
Vietnam	Hanoi	VNA001	19.3	29.2	26.6	27.0	31.6	41.2	46.8	37.8	73.2	77.1	103	131	61.4	196	54.8
	Hoa Binh	VNA002	12.8	28.9	22.1	21.2	34.0	17.4	16.3	18.9	43.8	38.4	26.9	94.2	55.9	36.8	46.7
	Cuc Phuong	VNA003	56.2	63.3	59.8	61.8	46.2	39.2	28.3	52.4	53.7	45.4	38.0	40.7	65.4	102	114
	Da Nang	VNA004	18.8	15.0	36.4	28.4	49.7	60.6	65.0	105	76.0	94.8	197	286	83.2	72.3	108
	Can Tho	VNA005						23.5	59.1	19.8	20.1	37.5	37.4	23.5	32.9	31.9	29.3
	Ho Chi Minh	VNA006						49.7	62.8	30.8	51.0	45.1	60.0	39.8	42.6	41.0	35.6
	Yen Bai	VNA007							24.1	36.9	55.4	38.8	43.6	89.4	31.8	39.5	39.8

Terms and abbreviations are given in Table 3.5.

Table 3.92 Annual nss-Ca²⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	26.9	15.3	11.8	17.3	12.8	14.5	12.6	18.1	13.3	***	***	***	***	***	***
China	Haifu	CNA003	46.0	67.5	55.3	58.3	71.1	77.2	52.4	85.2	65.0	47.9	31.4	28.1	28.4	22.5	36.6
	Jinyunshan	CNA004	73.0	67.1	55.1	59.4	35.0	38.6	27.9	46.2	65.7	32.0	23.6	23.7	23.6	15.5	19.4
	Shizhan	CNA005	81.5	48.0	59.8	50.1	142	56.0	51.8	14.1	39.0	28.9	23.5	20.0	78.3	80.5	60.4
	Jiwozi	CNA007	58.5	46.9	88.8	78.9	84.6	82.9	24.9	13.5	47.9	30.5	92.8	28.5	31.9	10.5	31.2
	Hongwen	CNA008	9.32	13.3	11.5	15.8	30.3	28.4	16.2	22.2	14.8	25.4	62.3	131	15.2	11.1	5.52
	Xiaoping	CNA009	9.85	12.1	17.6	25.6	44.4	57.6	13.9	11.6	10.1	6.71	7.51	3.63	5.01	4.47	5.99
	Xiang Zhou	CNA010	8.13	13.0	21.2	14.8	102	27.4	21.1	24.4	16.9	18.9	15.3	11.8	14.6	6.87	27.2
	Zhuxiandong	CNA011	10.2	29.5	20.7	***	***	***	37.9	39.1	24.2	33.3	21.6	23.8	19.1	14.1	15.8
	Wuzhishan	CNA013											15.2	3.01	3.73	4.95	2.34
	Lijiang	CNA014											11.7	2.77	2.63	3.43	5.53
Indonesia	Jakarta	IDA001	19.2	21.6	10.7	31.9	32.2	46.0	20.8	48.9	22.7	27.6	15.5	21.3	17.1	13.7	***
	Serpong	IDA002	6.76	12.9	8.91	8.10	31.8	36.2	34.3	39.8	37.8	44.1	37.7	25.9	25.2	19.4	
	Kototabang	IDA003	14.2	11.0	12.6	20.2	19.9	9.51	5.09	7.64	28.2	24.7	65.8	14.3	24.8	8.66	***
	Bandung	IDA004	40.4	34.6	31.6	27.4	45.2	45.9	35.1	40.4	27.0	31.0	31.5	31.9	30.1	34.8	
	Maros	IDA005	25.3	24.8	22.4	38.4	40.3	75.2	41.4	22.8	28.1	45.8	33.1	13.1	35.9	64.7	***
	Jembrana	IDA006											11.8	44.0	12.2	12.0	***
	Lombok	IDA007											24.5	12.1	12.9	41.7	***
Japan	Rishiri	JPA001	6.74	3.69	3.24	2.58	3.58	2.39	2.51	2.72	3.45	5.20	2.44	4.56	5.09	4.47	4.05
	Ochiishi	JPA002	2.18	3.52	1.73	1.31	2.57	1.64	2.38	1.45	1.22	1.69	1.17	1.17	7.26	*	*
	Tappi	JPA003	3.02	9.58	5.57	5.23	9.14	4.98	3.36	4.65	3.06	4.35					
	Sado-seki	JPA004	4.36	8.12	6.92	8.03	6.04	4.88	3.76	7.66	4.33	7.80	3.82	2.52	35.3	1.98	4.31
	Happo	JPA005	10.7	6.09	7.67	7.87	7.14	5.39	3.54	1.58	5.20	5.53	5.38	4.76	6.25	2.78	5.10
	Ijira	JPA006	7.06	8.49	5.23	5.99	6.61	4.07	5.20	5.08	5.49	5.74	5.77	4.58	7.07	6.02	8.87
	Oki	JPA007	7.23	10.5	10.3	5.71	8.53	4.88	3.34	5.39	4.68	5.69	3.75	3.92	6.92	*	*
	Banryu	JPA008	5.76	8.80	5.04	5.62	4.90	4.35	5.09	6.31	4.75	3.46					
	Yusuhara	JPA009	3.53	4.07	6.94	6.09	4.84	5.25	1.61	2.66	10.7	2.24	3.19	2.58	4.43	3.35	4.04
	Hedo	JPA010	3.46	6.61	2.88	6.93	3.21	3.14	2.60	2.05	3.38	5.01	2.73	2.86	11.4	5.09	6.01
	Ogasawara	JPA011	1.95	2.51	1.56	1.58	1.97	1.76	2.40	0.736	1.07	0.290	1.47	0.838	0.911	1.24	0.898
	Tokyo	JPA012	5.03	5.97	5.59	5.84	6.21	6.14	5.20	3.49	3.16	3.52	4.53	4.02	4.04	4.51	4.17
	Niigata-maki	JPA013											5.17	6.16	4.83	4.46	6.12
	Tsushima	JPA014											1.76	2.19	2.58	2.06	2.68
Lao PDR	Vientiane	LAA001	0.960	***	***	***	***	***	3.63	1.55	*	*	*	***	***	***	13.4
Malaysia	Petaling Jaya	MYA001	14.5	18.6	14.0	13.2	21.6	21.9	24.6	21.8	12.7	26.3	***	15.6	14.9	13.9	14.6
	Tanah Rata	MYA002	3.10	2.93	6.71	6.64	7.95	7.60	5.22	5.01	6.64	7.05	***	16.8	***	8.23	5.64
	Danum Valley	MYA003	3.12	8.51	3.01	2.22	4.30	3.76	4.40	2.75	4.24	5.99	***	15.7	6.38	4.69	2.99
	Kuching	MYA004	7.76	11.4	13.7	12.6	16.6	21.7	18.0	17.4	14.2	15.6	***	74.7	10.2	21.7	9.93
	Gunung Brinchang	MYA005													1.51	***	***
Mongolia	Ulaanbaatar	MNA001	9.60	5.22	5.53	***	14.4	***	***	4.05	6.60	3.85	1.23	7.17	8.66	*	4.55
	Terej	MNA002	3.95	5.45	2.91	***	6.25	***	***	1.46	1.64	2.14	***	7.16	5.55	*	4.44
Myanmar	Yangon	MMA001	27.9	13.9	20.7	18.8	2.13	39.6	215	11.4	28.6	47.4	40.8	21.4	4.70	42.1	22.6
Philippines	Manila Observatory	PHA001	22.6	32.9	45.4	60.2	38.4	36.8	42.3	50.8	***	***	33.9	40.7	22.4	31.4	12.6
	Los Baños	PHA002	13.7	40.7	14.2	18.7	14.2	13.8	13.1	19.9	***	***	***	***	***	37.9	5.63
	Mt.Sto.Tomas	PHA003	26.9	81.4	35.7	79.1	37.0	28.8	40.7	58.0	***	***	***	***	***	4.47	***
Republic of Korea	Ganghwa	KRA001	5.35	10.1	5.40	5.64	7.26	3.47	5.04	2.71	3.61	1.61	1.60	***	6.87	4.35	3.23
	Jeju	KRA002	3.15	4.72	4.00	3.78	4.66	2.13	3.66	8.65	5.42	2.37	2.28	***	4.48	3.71	18.6
	Imsil	KRA003	3.02	7.87	8.99	4.76	2.80	3.19	3.01	1.68	2.26	1.37	2.27	***	3.78	3.18	2.75
Russia	Mondy	RUA001	0.610	0.824	0.657	1.27	1.51	0.860	1.13	1.20	1.65	1.92	0.921	0.196	0.260	0.225	***
	Listvyanka	RUA002	3.89	4.09	7.67	4.00	3.26	3.53	3.31	2.49	3.83	2.78	3.43	3.00	3.75	4.46	4.34
	Irkutsk	RUA003	12.4	11.9	11.3	13.8	9.04	10.2	8.80	8.10	11.2	12.2	7.03	6.72	9.03	9.93	11.0
	Primorskaya	RUA004	9.86	11.0	8.34	10.8	12.6	11.4	14.5	11.6	12.9	14.5	10.2	14.1	9.49	15.9	22.3
Thailand	Bangkok	THA001	20.3	22.4	22.6	24.0	33.2	14.4	26.7	25.6	17.8	30.7	18.3	25.3	***	25.0	28.7
	Samutprakarn	THA002	25.8	13.9	12.3	7.83	21.6	14.2	8.69	16.5	14.2	12.4	9.38	6.99	***	11.9	5.81
	Pathumthani	THA003	11.9	15.9	18.7	31.8	31.9	23.7	17.7	14.5	16.6	10.4	8.19	6.11	4.70	8.90	7.53
	Khanchanaburi	THA004	9.44	2.82	7.53	41.2	4.72	3.85	3.83	5.24	4.16	3.34	2.69	***	***	***	***
	Mae Hia	THA005	5.92	5.09	4.10	8.54	15.0	5.09	3.00	7.87	10.4	5.60	7.62				
	Sakaerat	THA008	3.12	3.50	2.73	4.13	2.75	3.66	9.32	8.83	7.70	39.4	63.5				
Vietnam	Hanoi	VNA001	19.0	29.0	26.3	26.9	31.2	40.9	46.5	37.4	72.5	76.6	102	130	60.9	194	54.2
	Hoa Binh	VNA002	12.7	28.7	22.0	21.0	33.8	17.3	16.2	18.7	43.7	38.2	26.5	39.8	55.5	36.6	46.2
	Cuc Phuong	VNA003	55.7	62.9	59.2	60.9	45.2	38.8	28.0	51.9	52.9	44.7	37.2	39.9	63.8	101	113
	Da Nang	VNA004	12.8	13.5	30.9	26.1	42.5	56.7	61.8	101	72.1	91.0	192	282	79.4	68.4	105
	Can Tho	VNA005						22.9	57.7	19.4	19.7	37.0	36.5	22.9	32.1	31.2	28.6
	Ho Chi Minh	VNA006						48.7	61.8	30.1	49.7	44.3	59.0	38.8	41.6	40.1	34.8
	Yen Bai	VNA007							23.9	36.5	55.2	38.6	43.2	88.8	31.4	39.3	39.3

Terms and abbreviations are given in Table 3.5.

Table 3.93 Annual Mg²⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	2.66	1.33	1.55	1.98	1.50	2.54	2.82	1.84	1.94	***	***	***	***	***	***
China	Haifu	CNA003	5.81	8.75	6.98	6.94	8.44	9.92	5.85	7.22	4.96	4.52	3.68	2.84	2.89	2.90	4.64
	Jinyunshan	CNA004	6.10	5.64	5.20	5.85	4.99	6.52	4.17	4.73	6.01	3.13	3.12	3.14	3.25	2.72	3.63
	Shizhan	CNA005	7.34	5.04	6.55	1.36	24.0	7.34	5.49	0.819	6.45	6.06	3.08	4.35	1.03	8.63	3.79
	Jiwozi	CNA007	12.7	8.28	9.37	17.3	14.5	12.3	4.97	4.66	10.0	8.74	13.1	2.84	0.583	2.46	5.79
	Hongwen	CNA008	3.01	3.06	3.56	4.34	4.71	4.82	4.26	8.65	3.87	4.66	4.29	4.60	2.85	3.10	2.51
	Xiaoping	CNA009	3.67	2.88	3.39	4.46	7.97	4.98	3.54	3.96	1.88	1.78	2.06	2.27	1.62	2.44	2.49
	Xiang Zhou	CNA010	9.08	4.77	5.53	10.5	33.9	12.1	10.3	9.42	10.7	13.2	7.08	6.81	5.87	5.36	5.69
	Zhuxiandong	CNA011	9.71	5.30	7.74	***	***	***	14.0	12.2	5.82	21.5	8.67	12.4	8.36	7.88	6.62
	Wuzhishan	CNA013											3.44	1.12	1.57	1.45	0.556
	Lijiang	CNA014											2.33	2.62	0.759	0.786	0.622
Indonesia	Jakarta	IDA001	3.06	4.72	3.42	8.06	6.11	11.5	5.07	8.90	3.86	5.76	2.83	7.50	6.47	4.46	***
	Serpong	IDA002	1.83	4.40	2.59	1.80	8.97	9.31	6.84	8.96	8.01	9.36	9.74	6.11	7.93	8.84	
	Kototabang	IDA003	2.92	3.67	2.08	3.69	5.09	2.27	53.7	2.57	2.63	3.08	1.55	3.44	2.37	1.96	***
	Bandung	IDA004	11.1	11.6	8.85	6.61	14.8	15.3	11.3	9.45	7.30	6.86	8.16	6.71	4.99	5.47	
	Maros	IDA005	6.02	5.79	9.07	17.2	11.3	37.7	74.5	5.76	5.16	8.39	4.30	3.55	2.64	7.78	***
	Jembrana	IDA006											4.19	10.6	12.5	8.29	***
	Lombok	IDA007											6.65	11.2	8.56	22.6	***
Japan	Rishiri	JPA001	21.0	20.0	18.9	37.8	26.3	18.7	17.7	10.3	22.7	21.7	15.3	19.9	29.2	20.2	15.3
	Ochiishi	JPA002	31.4	31.0	15.1	26.6	51.0	9.28	16.9	18.0	21.3	9.84	6.35	8.65	25.9	*	*
	Tappi	JPA003	28.2	20.1	19.9	18.2	32.1	21.6	28.0	23.8	24.5	30.2					
	Sado-seki	JPA004	37.6	51.6	26.4	38.1	58.2	45.8	32.3	20.8	21.6	24.3	24.3	26.5	288	27.5	23.4
	Happo	JPA005	2.73	2.12	2.76	4.60	3.63	3.11	2.98	2.11	3.83	2.84	2.01	2.22	2.57	1.72	2.53
	Ijira	JPA006	4.80	6.22	5.19	7.27	5.70	6.00	6.40	4.94	5.38	7.17	4.64	5.89	9.11	10.4	7.20
	Oki	JPA007	48.3	69.9	85.2	53.4	78.3	63.9	50.8	58.5	54.8	60.4	20.6	38.9	72.3	*	*
	Banryu	JPA008	20.4	17.7	18.3	13.5	17.2	16.4	15.7	17.3	14.6	11.1					
	Yusuhara	JPA009	3.33	3.86	8.71	8.65	5.98	6.43	8.45	3.33	15.6	7.18	5.35	2.98	7.14	11.0	7.58
	Hedo	JPA010	28.6	77.2	40.9	136	41.5	38.2	63.0	42.5	69.2	54.7	44.2	52.9	354	47.4	74.2
	Ogasawara	JPA011	36.6	45.4	30.5	21.3	21.5	23.2	54.8	12.1	35.2	5.23	38.0	9.80	32.7	32.3	23.9
	Tokyo	JPA012	5.13	3.98	6.65	6.18	4.89	4.58	4.02	2.97	6.30	5.38	11.0	3.05	4.16	3.45	2.69
	Niigata-maki	JPA013											31.0	27.4	38.4	40.3	36.9
	Tsushima	JPA014											8.05	8.39	9.18	17.1	8.11
Lao PDR	Vientiane	LAA001	0.131	***	***	***	***	***	0.564	0.198	*	*	*	***	***	***	1.60
Malaysia	Petaling Jaya	MYA001	1.39	2.46	2.09	1.69	2.45	4.07	3.46	2.81	1.77	2.79	***	3.31	2.80	2.53	2.89
	Tanah Rata	MYA002	0.0927	0.210	0.869	0.528	0.835	0.964	0.636	0.647	0.327	0.673	***	3.34	***	0.703	0.702
	Danum Valley	MYA003	1.86	3.51	2.05	0.830	1.38	1.57	1.89	0.956	1.12	3.25	***	4.80	2.61	2.73	1.54
	Kuching	MYA004	1.84	2.12	3.45	1.04	2.42	4.10	5.35	5.37	2.75	2.31	***	6.09	2.64	2.89	1.86
	Gunung Brinchang	MYA005												0.189	***	***	***
Mongolia	Ulaanbaatar	MNA001	1.21	0.455	1.51	***	0.576	***	***	0.968	0.489	0.426	0.125	0.524	0.591	*	0.500
	Terej	MNA002	0.604	0.718	1.06	***	0.451	***	***	0.233	0.139	0.218	***	1.05	0.600	*	0.409
Myanmar	Yangon	MMA001	8.54	4.11	9.52	16.9	33.1	9.79	14.3	9.98	9.75	13.9	11.8	6.20	61.3	11.1	8.10
Philippines	Manila Observatory	PHA001	9.69	24.4	26.1	29.1	16.0	12.2	16.0	13.3	***	***	9.41	8.21	3.59	37.9	7.42
	Los Baños	PHA002	10.8	17.0	11.3	8.96	7.77	6.88	6.86	7.28	***	***	***	***	***	8.55	5.48
	Mt.Sto.Tomas	PHA003	7.23	12.1	7.41	16.6	7.41	4.92	21.0	12.3	***	***	***	***	***	0.336	***
Republic of Korea	Ganghwa	KRA001	6.67	5.71	4.70	4.11	2.96	1.39	2.12	0.994	1.37	0.683	8.13	***	3.68	3.17	2.50
	Jeju	KRA002	6.25	6.91	11.3	41.4	16.3	9.38	8.60	42.2	15.3	18.7	2.90	***	29.6	19.5	37.4
	Imsil	KRA003	4.14	7.69	3.02	4.27	2.28	1.95	2.38	1.30	1.45	0.759	0.874	***	2.76	2.66	1.50
Russia	Mondy	RUA001	0.138	0.163	0.191	0.427	0.290	0.146	0.292	0.192	0.334	0.386	0.173	0.0321	0.0725	0.0452	***
	Listvyanka	RUA002	0.884	0.970	1.49	0.867	0.810	0.662	0.689	0.604	0.993	0.663	0.974	0.992	1.29	1.30	1.52
	Irkutsk	RUA003	3.25	2.53	2.40	2.88	1.77	1.43	1.60	1.91	2.36	2.35	1.69	1.86	2.74	2.52	3.67
	Primorskaya	RUA004	2.68	2.88	2.66	4.08	3.53	3.99	6.49	5.09	7.57	9.44	7.83	7.05	4.04	5.85	7.19
Thailand	Bangkok	THA001	3.09	3.07	2.72	2.43	3.50	2.40	3.02	4.04	2.50	3.43	1.70	4.01	***	3.29	2.89
	Samutprakarn	THA002	5.57	4.14	2.52	1.46	4.97	3.09	2.26	3.24	2.83	3.14	1.71	2.48	***	2.94	1.51
	Pathumthani	THA003	1.62	2.43	2.46	4.91	3.06	2.03	2.02	2.25	1.92	1.51	1.59	1.45	1.04	2.36	1.14
	Khanchanaburi	THA004	2.87	0.935	2.47	6.59	1.55	1.30	1.16	1.84	1.35	1.43	0.647	***	***	***	***
	Mae Hia	THA005	2.87	0.526	0.367	0.936	2.15	1.01	1.05	1.15	1.69	0.537	1.07				
	Sakaerat	THA008	1.60	1.14	0.410	0.477	0.289	0.557	3.01	4.60	2.97	9.23	10.6				
Vietnam	Hanoi	VNA001	7.70	7.02	7.41	3.87	5.42	5.83	5.85	7.28	15.1	12.3	9.77	13.3	11.1	24.5	11.9
	Hoa Binh	VNA002	2.51	7.61	4.21	4.15	5.40	3.54	3.95	3.63	3.73	8.70	3.32	11.1	9.47	5.21	10.4
	Cuc Phuong	VNA003	9.89	7.30	8.86	14.3	23.1	8.30	7.94	16.1	18.6	25.6	21.2	21.1	26.6	26.2	22.5
	Da Nang	VNA004	30.1	14.4	34.3	15.4	43.4	23.9	16.6	24.6	25.4	27.6	61.3	51.1	44.8	64.6	77.9
	Can Tho	VNA005						8.19	20.2	11.4	10.2	25.7	24.1	13.0	17.8	20.5	15.5
	Ho Chi Minh	VNA006						16.7	25.4	17.6	31.0	25.2	29.9	23.6	25.4	23.2	21.0
	Yen Bai	VNA007							4.06	5.88	3.99	6.32	3.71	15.8	4.92	5.02	9.01

Terms and abbreviations are given in Table 3.5.

Table 3.94 Annual H⁺ deposition amount from 2009 to 2023unit: mmol m⁻² y⁻¹

Country	Name of sites	Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	KHA001	0.861	1.98	1.41	1.12	0.890	0.969	0.791	0.496	0.920	***	***	***	***	***	***
China	Haifu	CNA003	64.3	69.3	53.4	58.1	30.8	17.1	4.65	0.832	1.79	5.70	4.56	4.36	3.88	1.78	1.21
	Jinyunshan	CNA004	51.7	112	77.1	82.0	71.4	61.3	25.7	12.9	8.96	13.2	18.2	21.5	13.7	7.17	8.07
	Shizhan	CNA005	0.176	0.0965	0.352	0.217	0.0514	0.154	0.131	0.0852	0.148	0.0803	0.0697	0.0528	0.0616	0.0336	0.0787
	Jiwozi	CNA007	0.498	3.36	1.10	0.0295	0.412	0.0591	0.0556	0.0875	0.103	0.0895	0.102	0.121	0.537	0.348	0.826
	Hongwen	CNA008	22.2	40.7	19.0	28.6	18.5	9.48	12.9	21.5	2.46	2.25	0.877	0.124	2.05	4.78	4.89
	Xiaoping	CNA009	38.7	40.2	23.4	20.3	19.6	26.7	17.6	34.2	0.856	12.2	18.9	13.7	10.1	14.3	9.90
	Xiang Zhou	CNA010	26.9	26.2	11.1	11.7	14.1	16.6	3.96	15.9	20.0	17.9	22.4	14.5	14.9	13.0	7.10
	Zhuxiandong	CNA011	28.0	21.0	19.1	***	***	***	5.25	16.2	15.4	14.7	20.1	14.4	8.55	13.2	11.7
	Wuzhishan	CNA013											1.71	1.07	0.720	0.768	0.457
	Lijiang	CNA014											0.269	0.374	0.148	0.117	0.359
Indonesia	Jakarta	IDA001	36.6	39.5	27.9	47.4	39.3	62.2	40.5	22.3	16.8	34.8	22.1	19.4	26.7	28.2	***
	Serpong	IDA002	25.9	25.0	16.4	11.1	20.1	20.8	20.1	19.2	20.3	12.9	23.1	23.1	7.59	20.3	
	Kototabang	IDA003	59.9	37.9	20.2	25.7	22.5	38.0	30.9	10.9	15.3	14.2	8.99	13.3	6.58	5.96	***
	Bandung	IDA004	13.4	20.8	6.12	7.25	9.42	12.5	8.87	22.4	10.8	3.79	1.61	1.40	5.72	9.61	
	Maros	IDA005	15.0	16.4	16.1	5.90	13.7	16.2	14.3	11.4	11.2	14.1	19.1	6.75	0.910	4.41	***
	Jembrana	IDA006											6.86	15.4	31.4	31.9	***
	Lombok	IDA007											4.11	6.61	10.7	32.3	***
Japan	Rishiri	JPA001	19.3	20.1	24.8	23.6	24.8	19.2	18.4	16.4	16.2	14.8	10.9	12.7	9.26	9.70	10.2
	Ochiishi	JPA002	15.2	16.0	10.7	13.3	9.94	6.55	8.23	7.28	6.21	8.18	6.34	4.95	10.3	*	*
	Tappi	JPA003	24.4	31.7	28.2	24.1	17.1	26.1	15.7	18.5	20.4	18.1					
	Sado-seki	JPA004	18.4	27.0	28.8	24.1	28.7	27.8	18.9	13.9	16.0	17.1	12.1	18.3	28.4	8.24	11.7
	Happo	JPA005	25.2	21.0	28.2	26.6	26.7	24.0	18.3	20.0	24.9	17.4	18.0	14.3	14.8	14.1	15.9
	Ijira	JPA006	66.0	66.6	55.2	58.7	48.8	58.8	62.7	55.2	53.5	45.1	45.4	39.7	36.7	42.1	59.1
	Oki	JPA007	21.8	31.7	28.8	34.2	34.3	23.4	20.3	20.3	14.8	17.8	16.8	21.9	12.8	*	*
	Banryu	JPA008	38.3	29.2	31.3	40.5	46.2	42.3	32.4	28.2	25.2	22.5					
	Yusuhara	JPA009	35.5	40.1	39.7	51.3	41.4	46.5	41.2	38.9	80.7	40.3	33.6	32.5	20.1	26.1	29.5
	Hedo	JPA010	15.4	16.8	22.1	21.3	17.6	23.3	12.6	12.2	16.1	21.0	27.0	16.6	56.9	17.3	23.8
	Ogasawara	JPA011	11.4	10.5	6.46	7.28	7.15	12.8	9.35	9.21	10.1	5.72	11.0	17.7	9.72	13.3	15.2
	Tokyo	JPA012	30.6	18.6	20.7	23.5	14.2	26.7	26.8	18.4	16.3	15.3	16.4	11.1	12.3	9.86	9.59
	Niigata-maki	JPA013											20.8	23.8	17.9	16.5	17.3
	Tsushima	JPA014											25.1	28.6	28.9	11.4	24.7
Lao PDR	Vientiane	LAA001	0.600	***	***	0.463	***	0.366	1.06	0.122	*	*	*	***	***	***	0.294
Malaysia	Petaling Jaya	MYA001	134	191	250	210	136	142	153	189	96.6	122	***	83.4	78.3	124	105
	Tanah Rata	MYA002	25.6	21.2	32.1	31.0	31.1	40.3	51.4	33.3	41.9	35.7	***	36.4	***	25.4	24.4
	Danum Valley	MYA003	20.4	14.2	23.5	19.5	17.1	13.9	12.4	16.6	18.0	12.4	***	13.8	21.2	20.1	11.0
	Kuching	MYA004	25.5	24.4	17.3	18.4	21.2	16.8	21.6	40.4	23.4	21.4	***	10.3	20.0	10.4	14.6
	Gunung Brinchang	MYA005													3.20	***	***
Mongolia	Ulaanbaatar	MNA001	0.177	0.202	0.595	0.224	0.161	***	0.0569	1.52	0.471	0.295	0.110	0.182	0.369	0.829	0.711
	Terej	MNA002	0.0675	0.316	0.786	0.211	1.11	***	0.315	0.689	0.962	0.233	***	0.0659	0.381	0.820	0.578
Myanmar	Yangon	MMA001	1.04	0.875	1.09	0.831	0.948	0.571	0.526	0.387	0.575	0.777	0.871	1.23	0.378	0.310	0.383
Philippines	Manila Observatory	PHA001	22.2	6.01	8.29	26.9	10.0	1.93	1.32	7.68	***	***	9.33	6.31	25.6	33.0	52.0
	Los Baños	PHA002	7.64	2.73	6.43	4.61	3.37	3.34	0.791	33.9	***	***	***	***	***	32.0	65.5
	Mt.Sto.Tomas	PHA003	6.96	0.726	20.6	6.41	22.7	2.64	6.72	1.52	***	***	***	***	***	1.39	***
Republic of Korea	Ganghwa	KRA001	32.7	61.2	33.9	18.3	23.6	5.72	11.9	13.7	21.4	8.27	10.5	***	3.85	3.18	3.47
	Jeju	KRA002	8.09	9.21	7.32	5.93	2.66	1.93	3.12	8.90	3.76	1.41	2.00	***	2.42	0.765	2.54
	Imsil	KRA003	8.62	22.1	8.09	10.9	7.33	5.69	5.78	2.64	3.83	2.34	5.04	***	0.342	0.185	3.53
Russia	Mondy	RUA001	0.395	0.253	0.213	0.250	1.60	0.573	0.487	0.957	0.928	2.35	0.717	0.232	0.137	0.227	***
	Listvyanka	RUA002	4.49	5.74	9.00	5.73	4.41	3.53	4.91	3.94	5.38	4.03	8.00	6.52	7.88	5.03	7.24
	Irkutsk	RUA003	1.67	2.78	3.13	5.15	2.71	3.35	1.79	5.68	5.73	6.17	6.14	6.77	6.44	2.59	2.77
	Primorskaya	RUA004	9.11	7.23	14.6	7.88	6.36	2.19	7.98	3.68	1.31	1.53	3.21	0.800	2.01	1.33	2.36
Thailand	Bangkok	THA001	16.7	17.2	19.5	3.74	3.35	0.0953	8.10	4.75	1.72	1.03	0.543	2.43	***	2.98	3.68
	Samutprakarn	THA002	14.7	9.06	2.66	0.647	1.18	0.307	3.66	6.46	2.49	4.43	1.58	0.956	***	3.41	3.17
	Pathumthani	THA003	9.26	10.3	15.6	5.62	4.60	3.27	5.48	4.29	6.21	10.0	2.79	2.69	2.87	6.18	2.15
	Khanchanaburi	THA004	4.35	3.30	6.24	2.30	7.08	1.58	3.76	1.10	2.02	1.72	0.544	***	***	***	***
	Mae Hia	THA005	1.26	0.789	8.29	0.876	1.30	0.278	1.70	1.85	3.42	2.51	5.31				
	Sakaerat	THA008	17.1	29.0	15.0	9.66	8.23	6.42	12.8	5.92	6.50	8.21	7.11				
Vietnam	Hanoi	VNA001	3.46	1.44	9.13	4.29	4.29	3.04	0.826	4.19	0.604	5.77	14.5	1.02	4.55	7.82	4.91
	Hoa Binh	VNA002	6.96	5.84	6.42	4.50	1.83	4.69	8.20	3.32	11.4	15.4	7.55	4.04	7.65	7.75	2.18
	Cuc Phuong	VNA003	23.4	9.73	16.8	7.42	7.16	5.10	6.99	3.03	18.8	8.99	5.52	11.0	1.42	6.05	1.93
	Da Nang	VNA004	49.9	13.0	38.0	6.16	6.07	6.69	1.98	2.99	3.06	4.27	1.52	2.18	4.19	5.23	5.92
	Can Tho	VNA005						1.01	3.71	2.39	2.05	3.50	2.79	2.34	2.77	2.65	2.60
	Ho Chi Minh	VNA006						2.72	1.10	4.46	2.97	1.92	2.45	2.74	1.91	1.82	2.10
	Yen Bai	VNA007							8.93	12.0	15.3	8.36	24.4	2.87	3.66	15.7	1.57

Terms and abbreviations are given in Table 3.5.

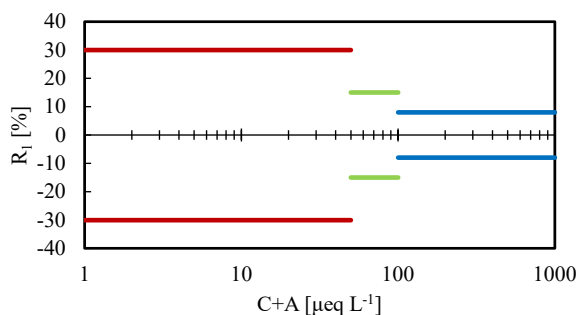


Fig. 3.2 a) Phnom Penh Ion Balance (R_1)

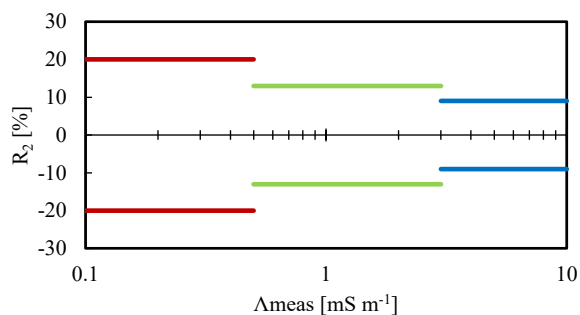


Fig. 3.2 b) Phnom Penh Conductivity Agreement (R_2)

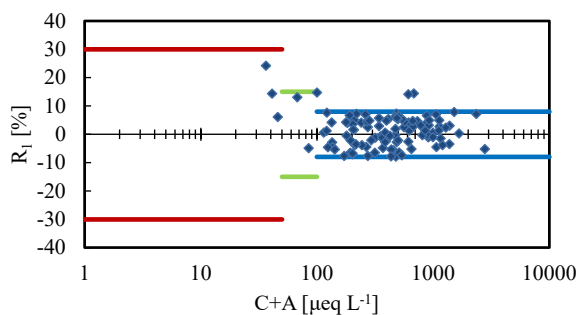


Fig. 3.3 a) Haifu Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

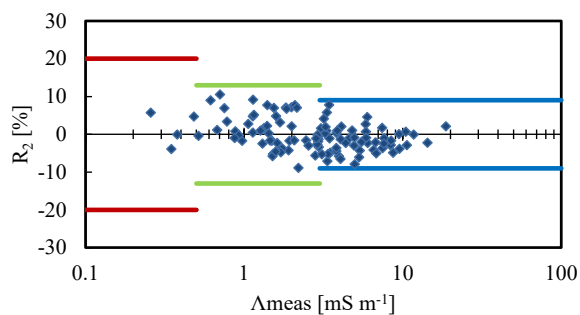


Fig. 3.3 b) Haifu Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

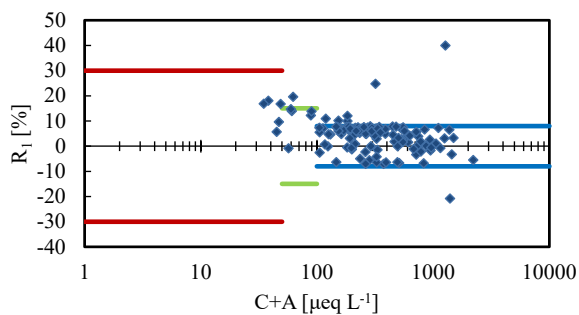


Fig. 3.4 a) Jinyunshan Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

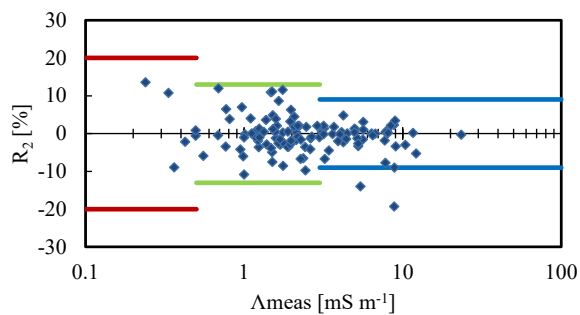


Fig. 3.4 b) Jinyunshan Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

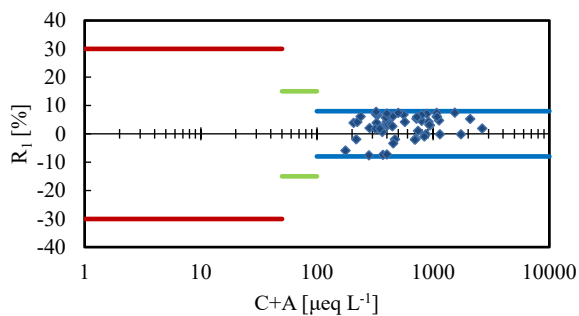


Fig. 3.5 a) Shizhan Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

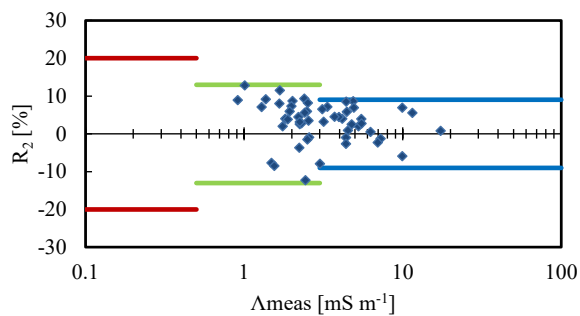


Fig. 3.5 b) Shizhan Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

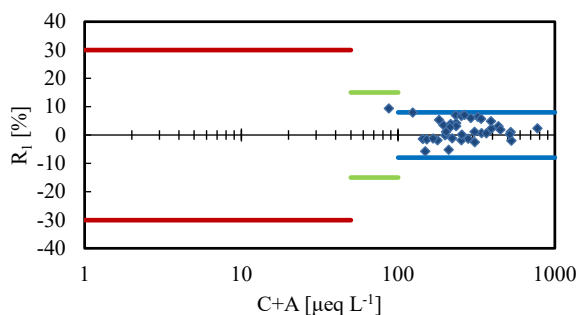


Fig. 3.6 a) Jiwozi Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

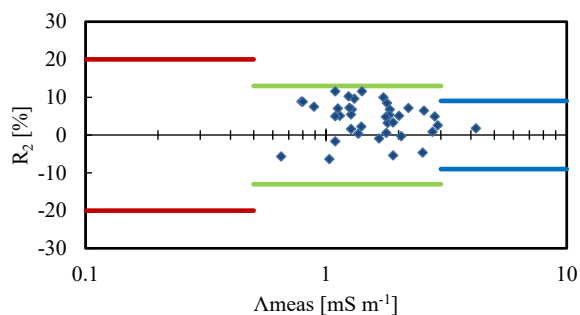


Fig. 3.6 b) Jiwozi Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

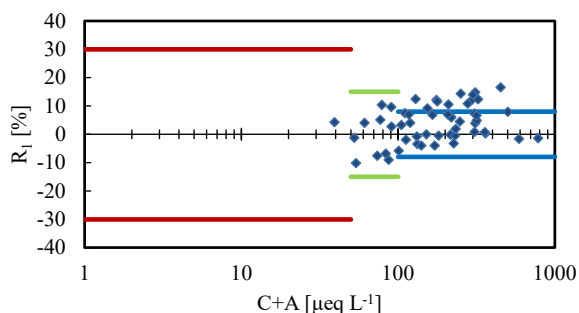


Fig. 3.7 a) Hongwen Ion Balance (R_1)

All of R_1 plots were calculated including F^-

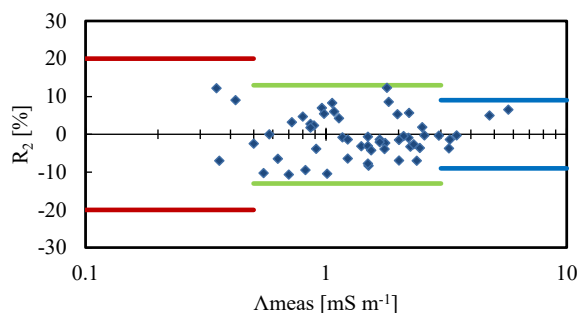


Fig. 3.7 b) Hongwen Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

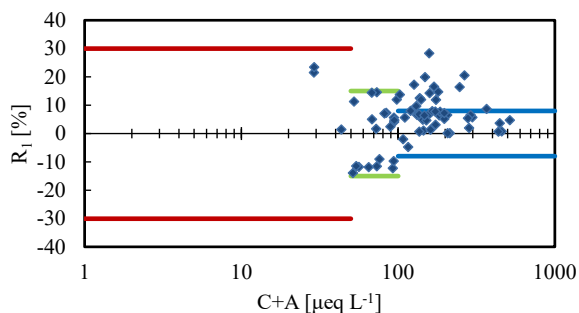


Fig. 3.8 a) Xiaoping Ion Balance (R_1)

All of R_1 plots were calculated including F^-

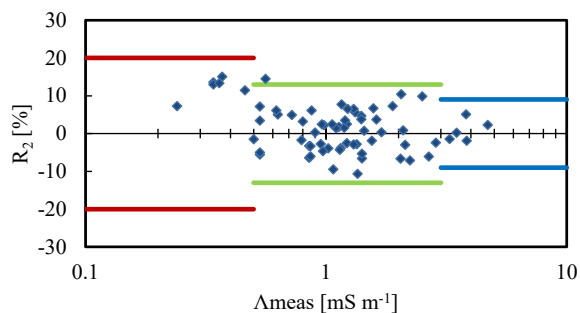


Fig. 3.8 b) Xiaoping Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

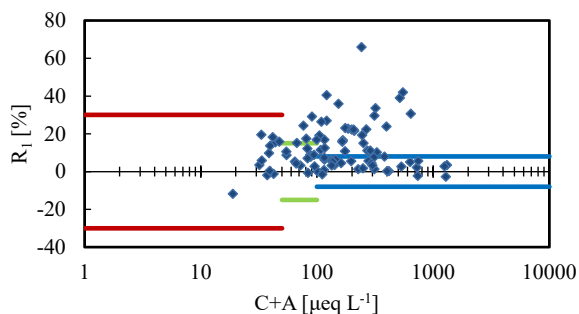


Fig. 3.9 a) Xiang Zhou Ion Balance (R_1)

All of R_1 plots were calculated including F^-

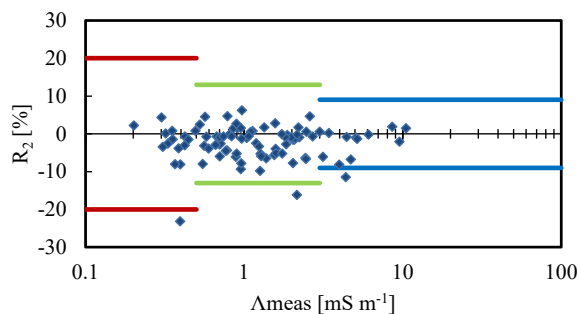


Fig. 3.9 b) Xiang Zhou Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

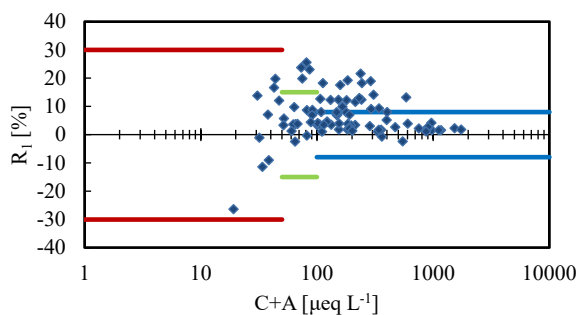


Fig. 3.10 a) Zhuxiandong Ion Balance (R_1)

All of R_1 plots were calculated including F^-

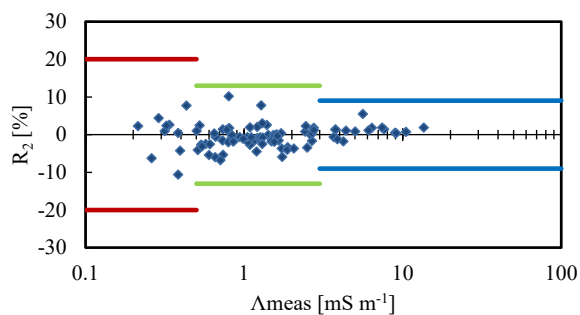


Fig. 3.10 b) Zhuxiandong

Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

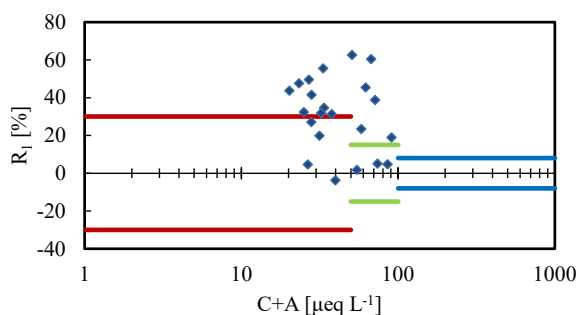


Fig. 3.11 a) Wuzhishan Ion Balance (R_1)

All of R_1 plots were calculated including F^-

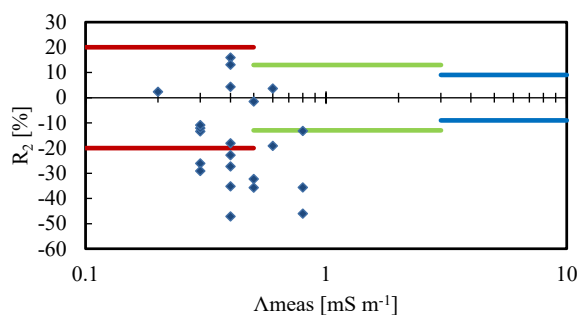


Fig. 3.11 b) Wuzhishan Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

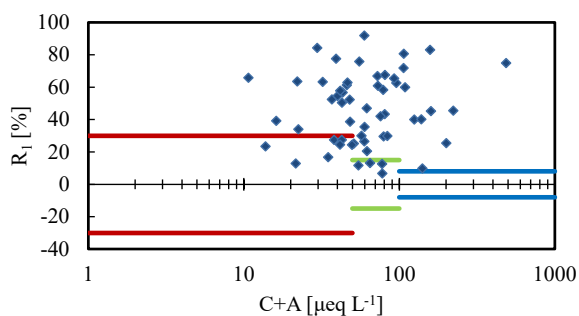


Fig. 3.12 a) Lijiang Ion Balance (R_1)

All of R_1 plots were calculated including F^-

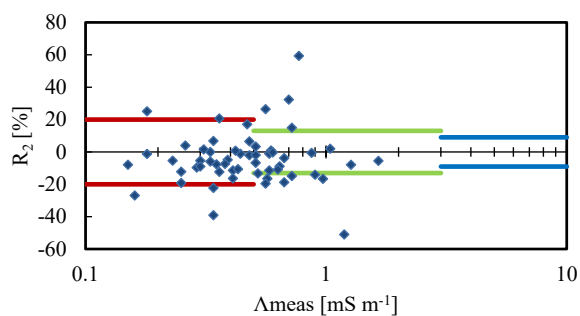


Fig. 3.12 b) Lijiang Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

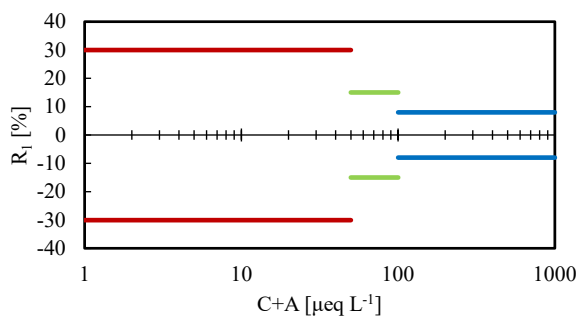


Fig. 3.13 a) Jakarta Ion Balance (R_1)

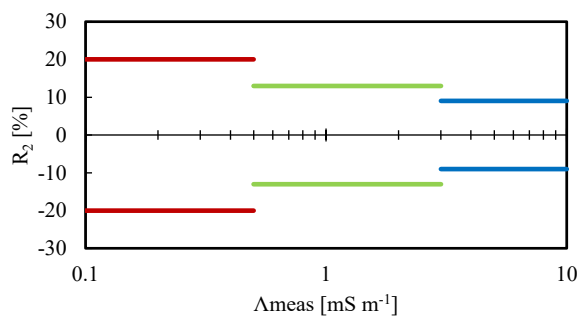


Fig. 3.13 b) Jakarta Conductivity Agreement (R_2)

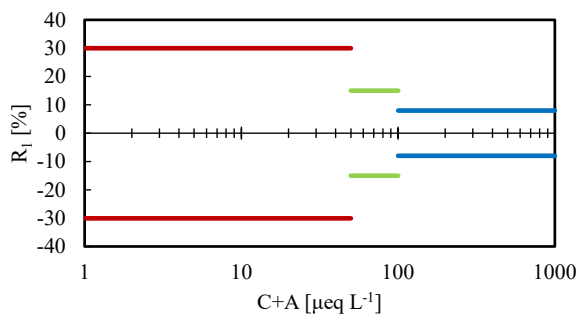


Fig. 3.14 a) Kototabang Ion Balance (R_1)

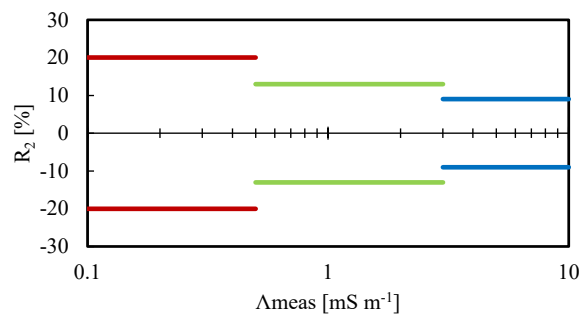


Fig. 3.14 b) Kototabang Conductivity Agreement (R_2)

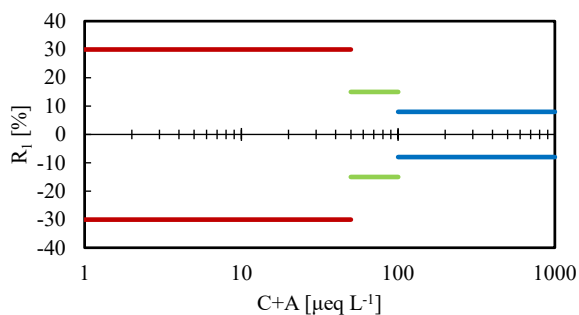


Fig. 3.15 a) Maros Ion Balance (R_1)

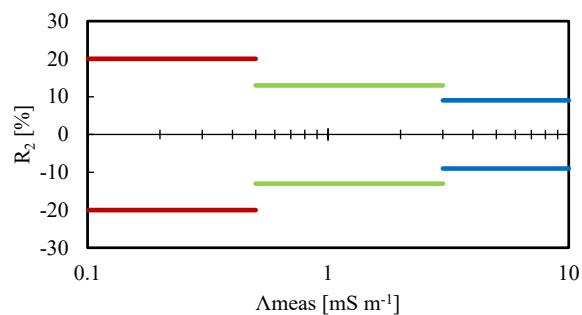


Fig. 3.15 b) Maros Conductivity Agreement (R_2)

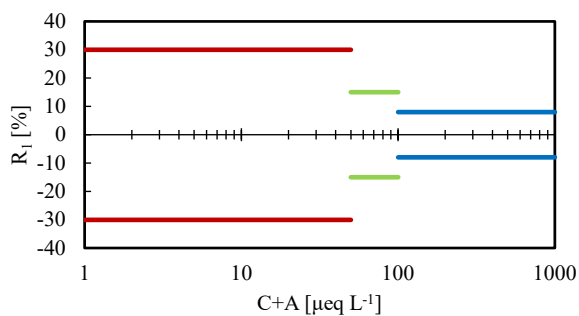


Fig. 3.16 a) Jembrana Ion Balance (R_1)

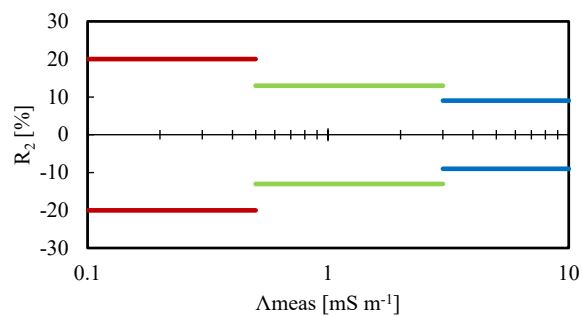


Fig. 3.16 b) Jembrana Conductivity Agreement (R_2)

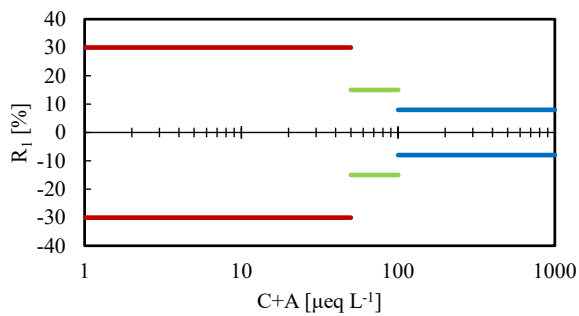


Fig. 3.17 a) Lombok Ion Balance (R_1)

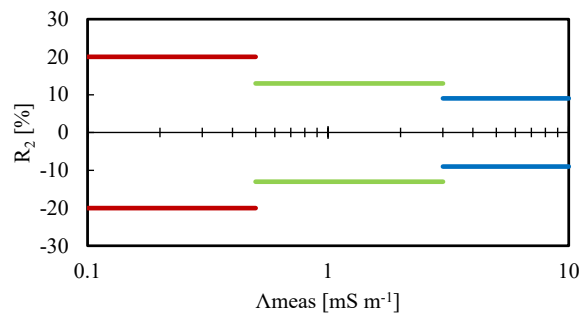


Fig. 3.17 b) Lombok Conductivity Agreement (R_2)

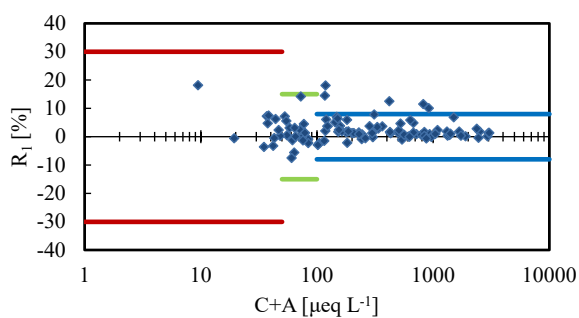


Fig. 3.18 a) Rishiri Ion Balance (R_1)

All of R_1 plots were calculated including NO_2^-

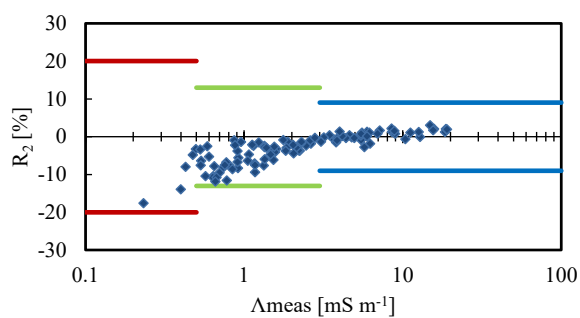


Fig. 3.18 b) Rishiri Conductivity Agreement (R_2)

All of R_2 plots were calculated including NO_2^-

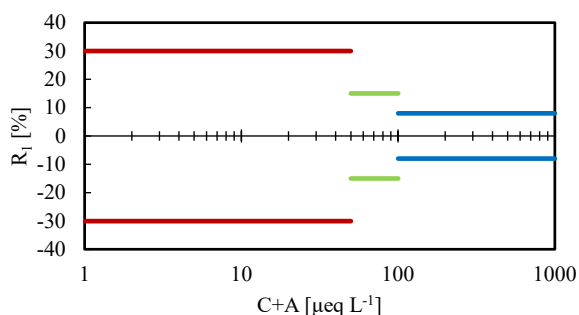


Fig. 3.19 a) Ochiishi Ion Balance (R_1)

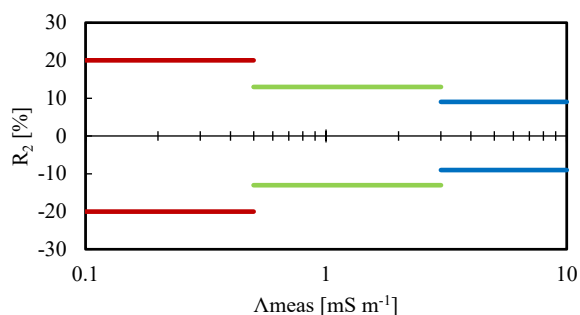


Fig. 3.19 b) Ochiishi Conductivity Agreement (R_2)

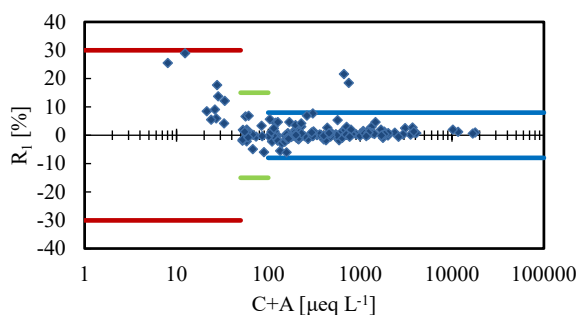


Fig. 3.20 a) Sado-seki Ion Balance (R_1)

All of R_1 plots were calculated including F^- , Br^- , NO_2^-

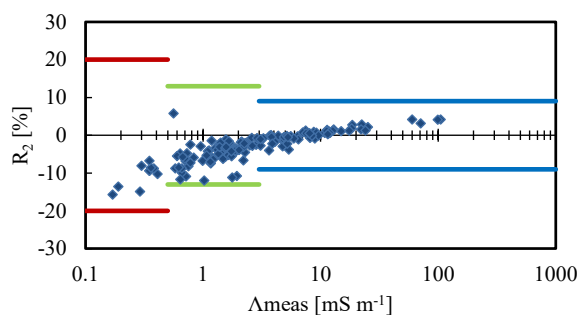


Fig. 3.20 b) Sado-seki Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^- , Br^- , NO_2^-

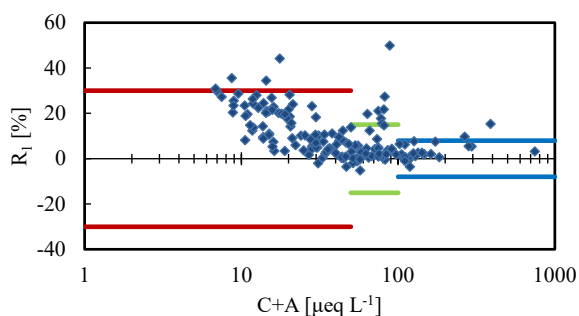


Fig. 3.21 a) Happo Ion Balance (R_1)

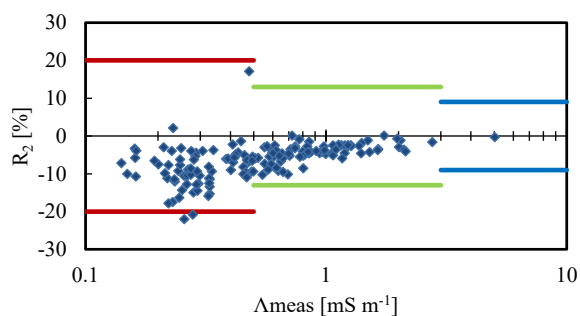


Fig. 3.21 b) Happo Conductivity Agreement (R_2)

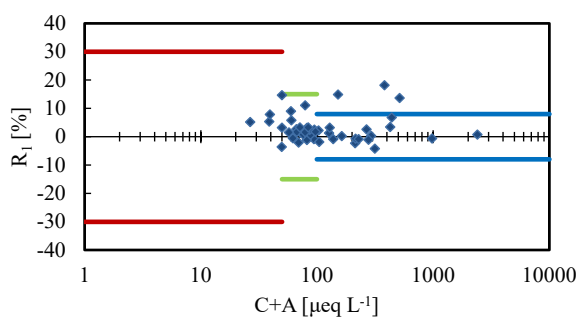


Fig. 3.22 a) Ijira Ion Balance (R_1)

All of R_1 plots were calculated including NO_2^-

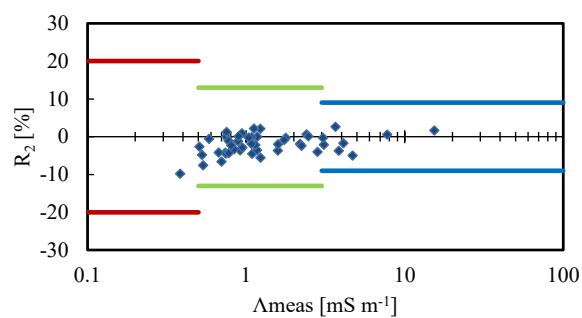


Fig. 3.22 b) Ijira Conductivity Agreement (R_2)

All of R_2 plots were calculated including NO_2^-

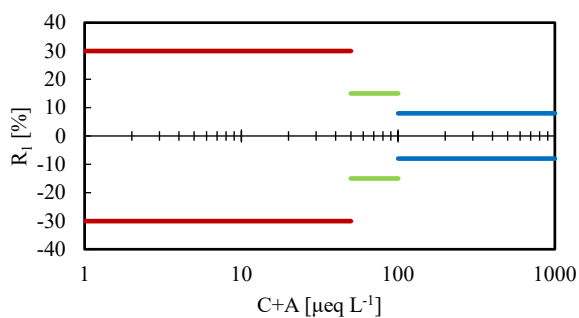


Fig. 3.23 a) Oki Ion Balance (R_1)

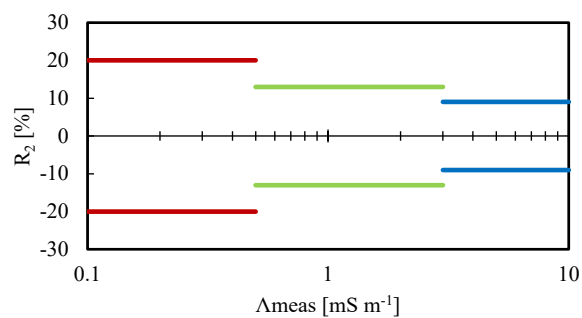


Fig. 3.23 b) Oki Conductivity Agreement (R_2)

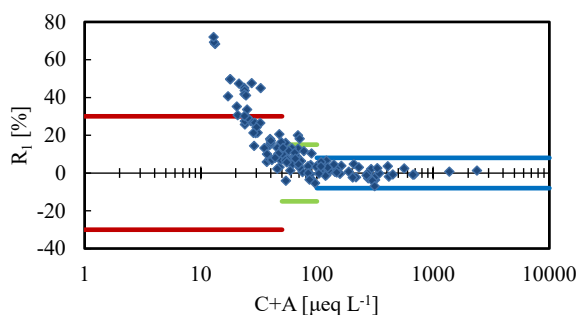


Fig. 3.24 a) Yusuhara Ion Balance (R_1)

All of R_1 plots were calculated including F^- , NO_2^- and PO_4^{3-}

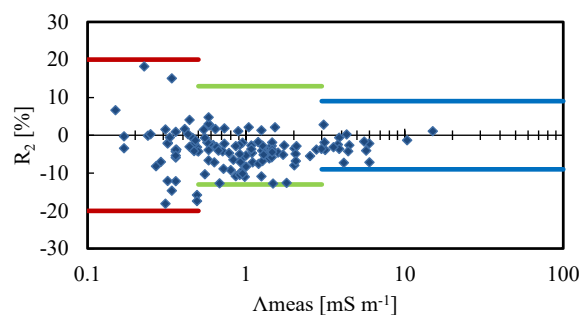


Fig. 3.24 b) Yusuhara Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^- , NO_2^- and PO_4^{3-}

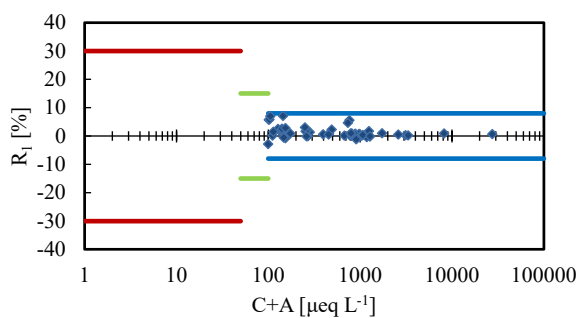


Fig. 3.25 a) Hedo Ion Balance (R_1)

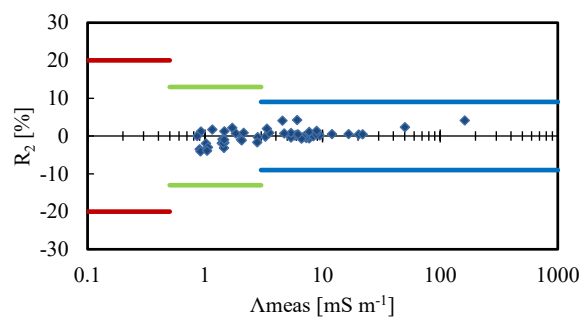


Fig. 3.25 b) Hedo Conductivity Agreement (R_2)

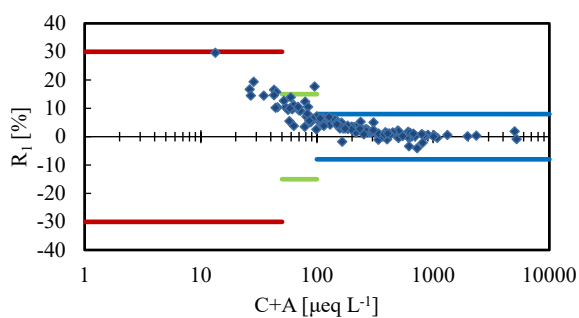


Fig. 3.26 a) Ogasawara Ion Balance (R_1)

All of R_1 plots were calculated including NO_2^-

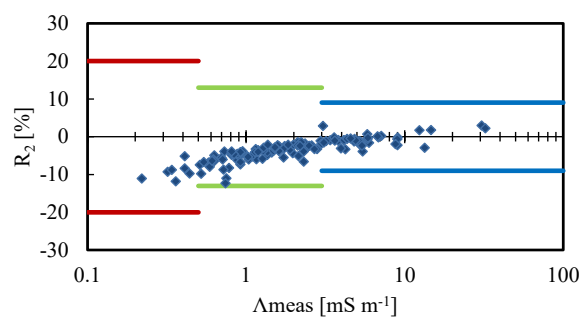


Fig. 3.26 b) Ogasawara Conductivity Agreement (R_2)

All of R_2 plots were calculated including NO_2^-

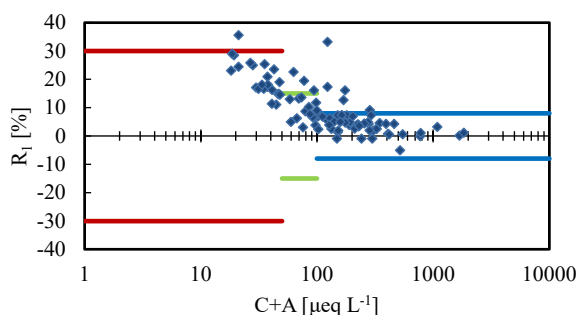


Fig. 3.27 a) Tokyo Ion Balance (R_1)

All of R_1 plots were calculated including NO_2^-

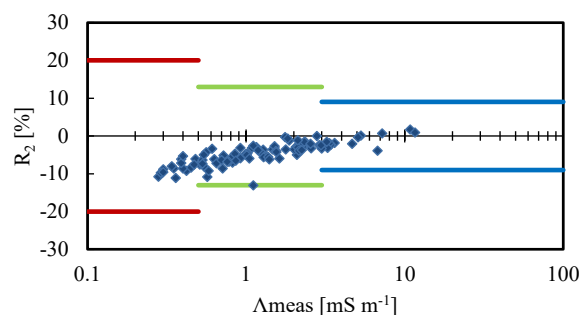


Fig. 3.27 b) Tokyo Conductivity Agreement (R_2)

All of R_2 plots were calculated including NO_2^-

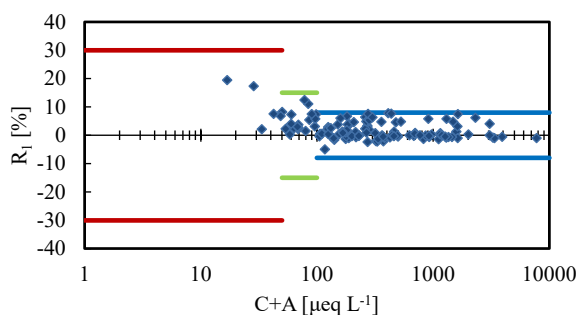


Fig. 3.28 a) Niigata-maki Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^-

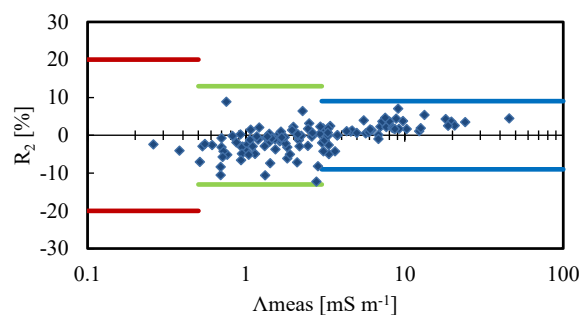


**Fig. 3.28 b) Niigata-maki
Conductivity Agreement (R_2)**

All of R_2 plots were calculated including HCO_3^-

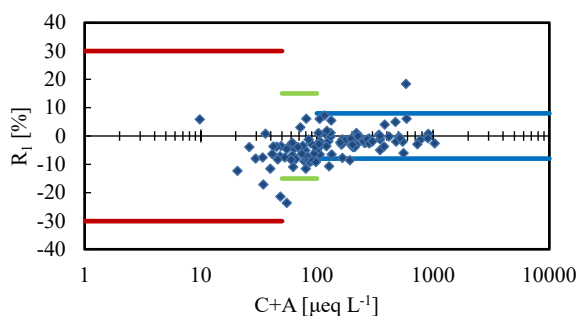


Fig. 3.29 a) Tsushima Ion Balance (R_1)

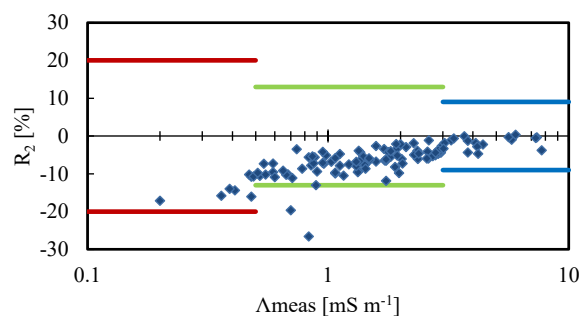


Fig. 3.29 b) Tsushima Conductivity Agreement (R_2)

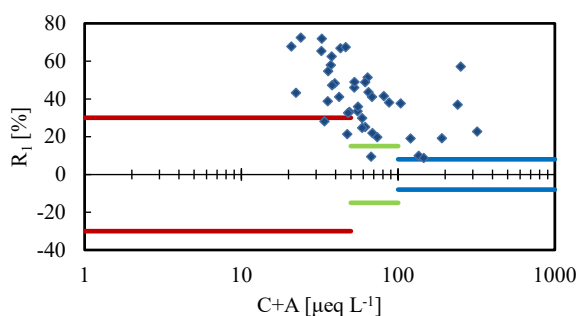


Fig. 3.30 a) Vientiane Ion Balance (R_1)

All of R_1 plots were calculated including F^- , and Br^-

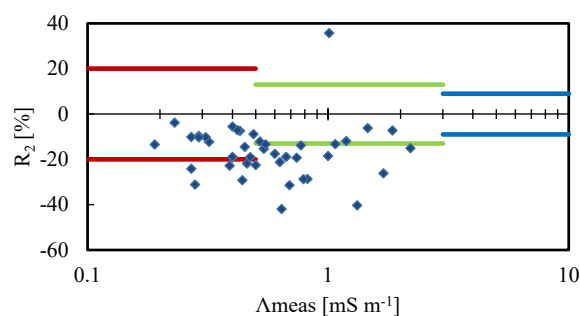


Fig. 3.30 b) Vientiane Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^- , and Br^-

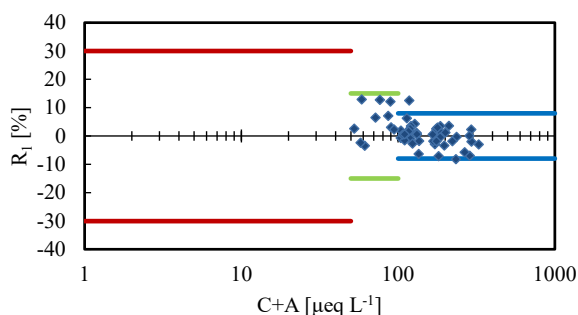


Fig. 3.31 a) Petaling Jaya Ion Balance (R_1)

All of R_1 plots were calculated including F^- , Formic, Acetic and Oxalic acid

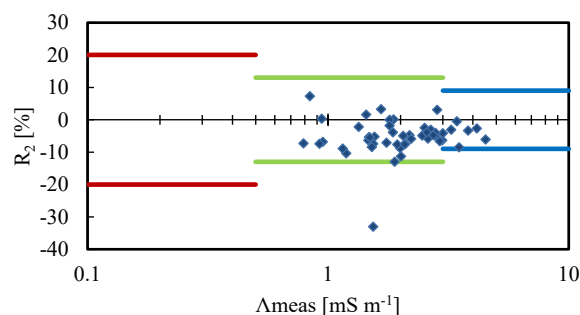


**Fig. 3.31 b) Petaling Jaya
Conductivity Agreement (R_2)**

All of R_2 plots were calculated including F^- , Formic, Acetic and Oxalic acid

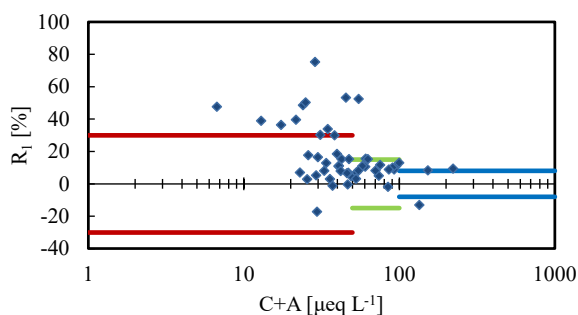


Fig. 3.32 a) Tanah Rata Ion Balance (R_1)

All of R_1 plots were calculated including F^- , Formic, Acetic and Oxalic acid

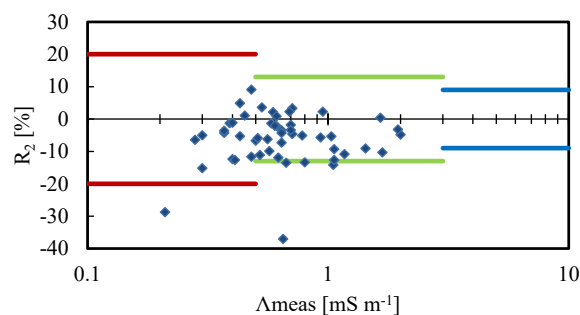


Fig. 3.32 b) Tanah Rata Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^- , Formic, Acetic and Oxalic acid

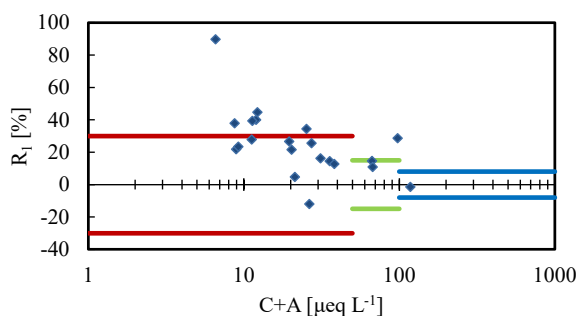


Fig. 3.33 a) Danum Valley Ion Balance (R_1)

All of R_1 plots were calculated including F^- , Formic, Acetic and Oxalic acid

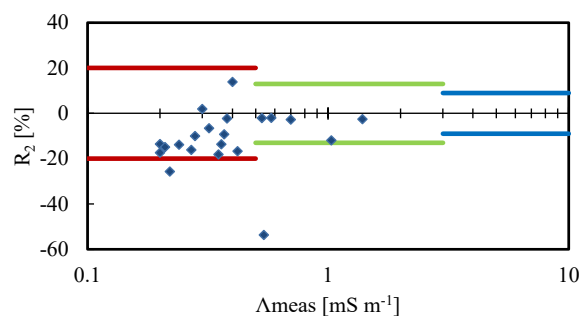


**Fig. 3.33 b) Danum Valley
Conductivity Agreement (R_2)**

All of R_2 plots were calculated including F^- , Formic, Acetic and Oxalic acid

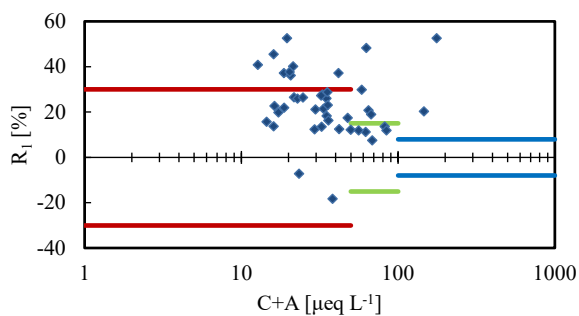


Fig. 3.34 a) Kuching Ion Balance (R_1)

All of R_1 plots were calculated including F^- , Formic, Acetic and Oxalic acid

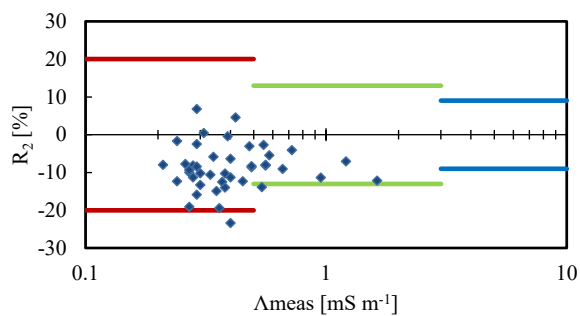


Fig. 3.34 b) Kuching Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^- , Formic, Acetic and Oxalic acid

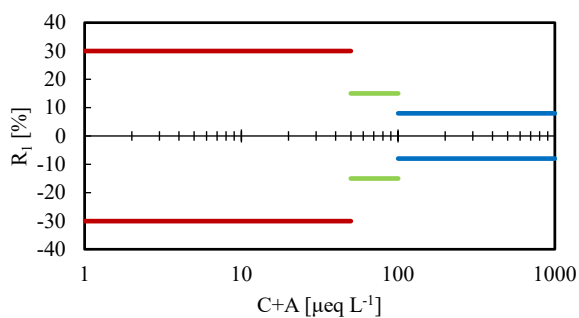


Fig. 3.35 a) Gunung Brinchang Ion Balance (R_1)

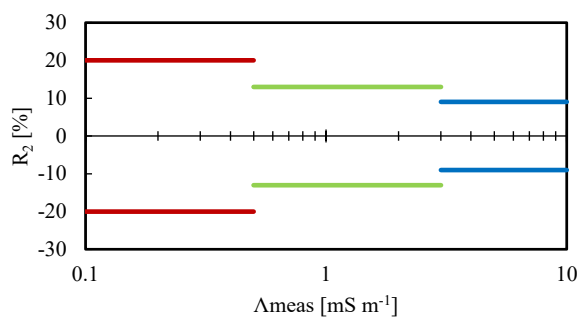


Fig. 3.35 b) Gunung Brinchang Conductivity Agreement (R_2)

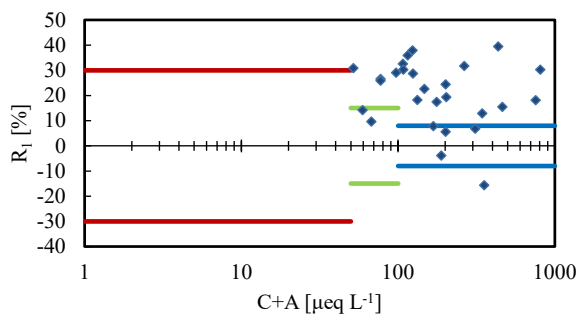


Fig. 3.36 a) Ulaanbaatar Ion Balance (R_1)

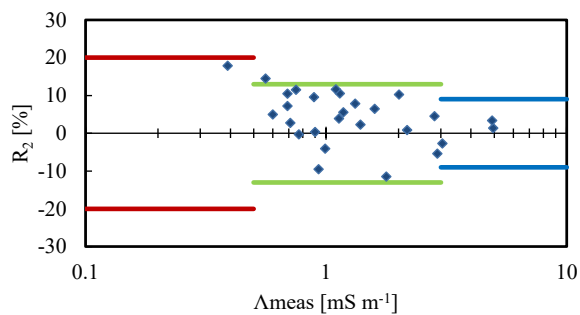


Fig. 3.36 b) Ulaanbaatar Conductivity Agreement (R_2)

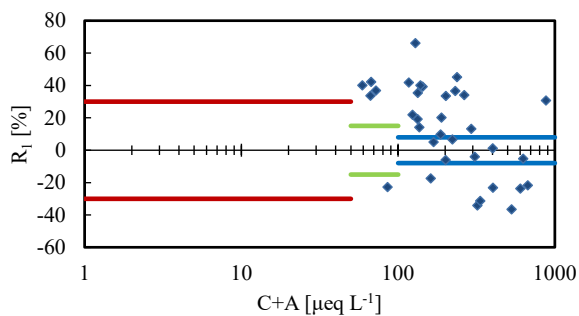


Fig. 3.37 a) Terelj Ion Balance (R_1)

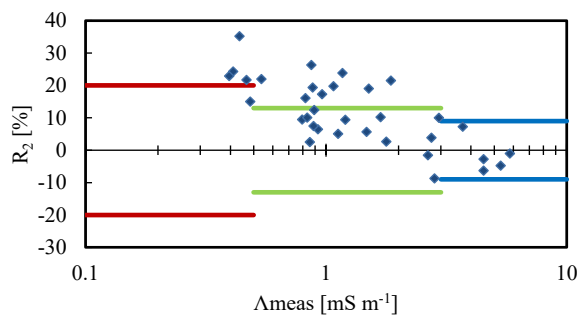


Fig. 3.37 b) Terelj Conductivity Agreement (R_2)

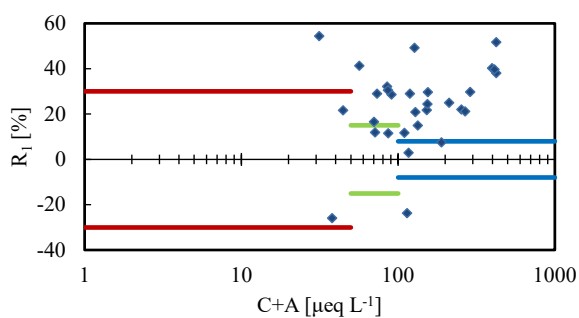


Fig. 3.38 a) Yangon Ion Balance (R_1)

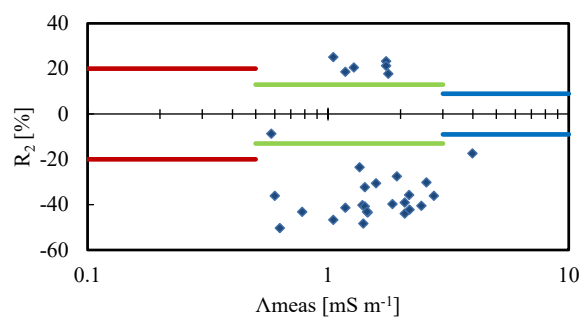


Fig. 3.38 b) Yangon Conductivity Agreement (R_2)

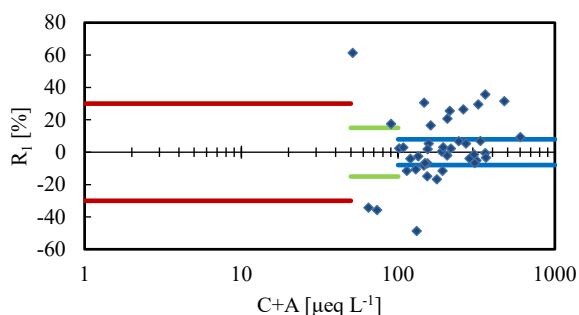


Fig. 3.39 a) Manila Observatory Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

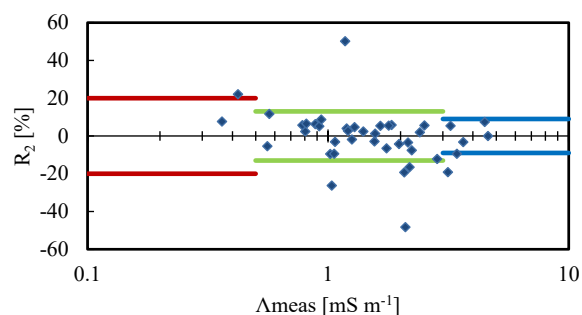


Fig. 3.39 b) Manila Observatory

Conductivity Agreement (R_2)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

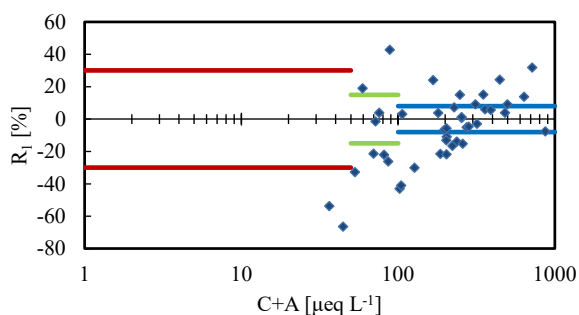


Fig. 3.40 a) Los Baños Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

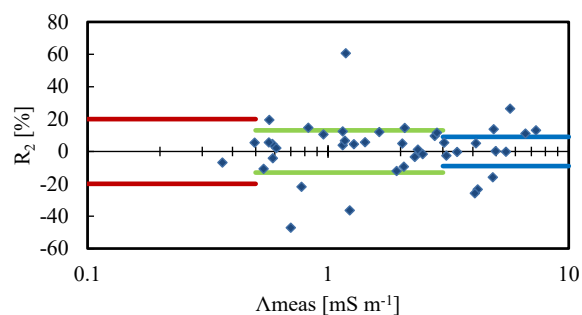


Fig. 3.40 b) Los Baños Conductivity Agreement (R_2)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

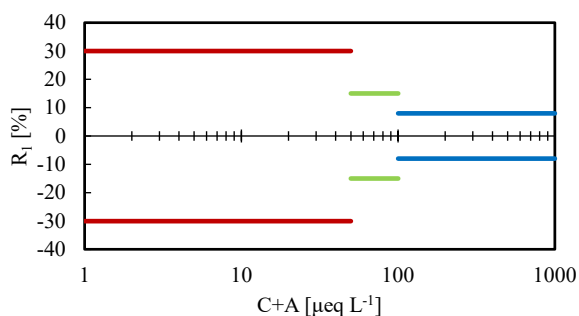


Fig. 3.41 a) Mt. Sto. Tomas Ion Balance (R_1)

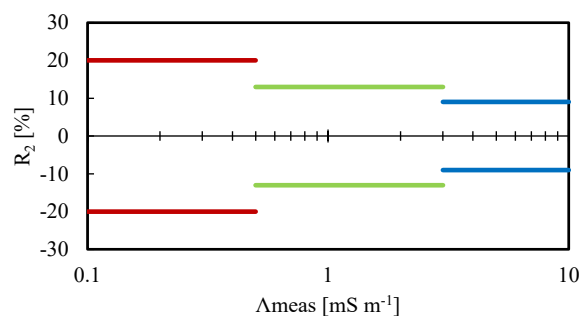


**Fig. 3.41 b) Mt. Sto. Tomas
Conductivity Agreement (R_2)**

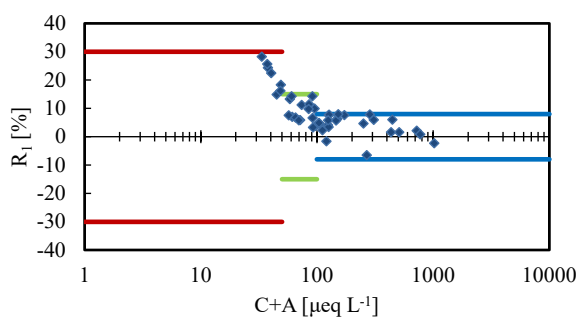


Fig. 3.42 a) Ganghwa Ion Balance (R_1)

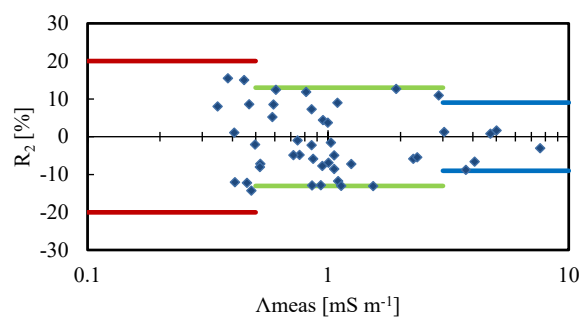


Fig. 3.42 b) Ganghwa Conductivity Agreement (R_2)

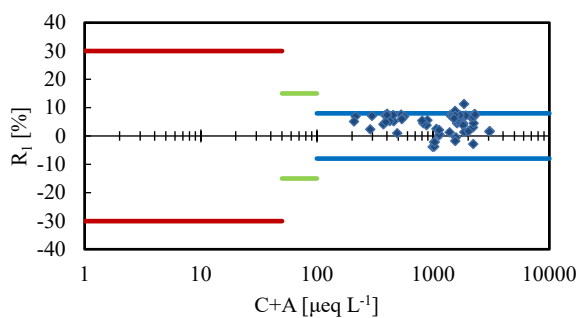


Fig. 3.43 a) Jeju Ion Balance (R_1)

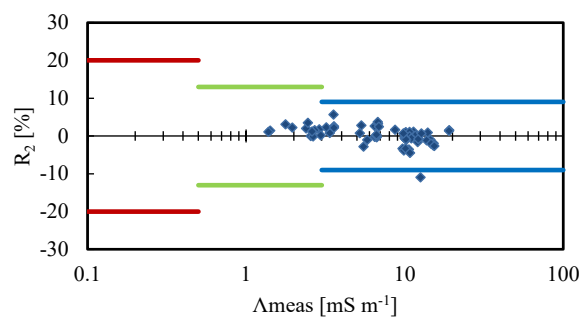


Fig. 3.43 b) Jeju Conductivity Agreement (R_2)

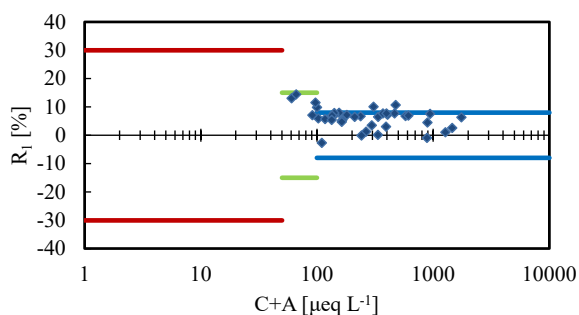


Fig. 3.44 a) Imsil Ion Balance (R_1)

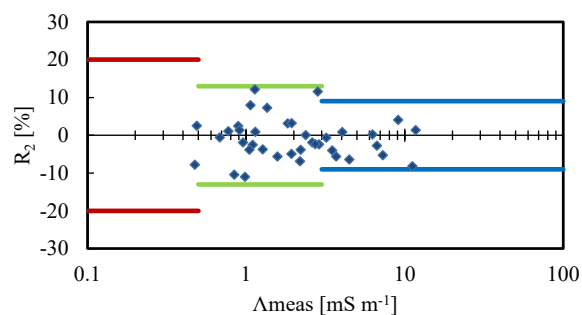


Fig. 3.44 b) Imsil Conductivity Agreement (R_2)

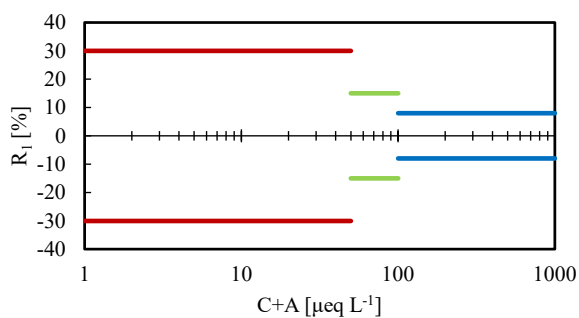


Fig. 3.45 a) Mondy Ion Balance (R_1)

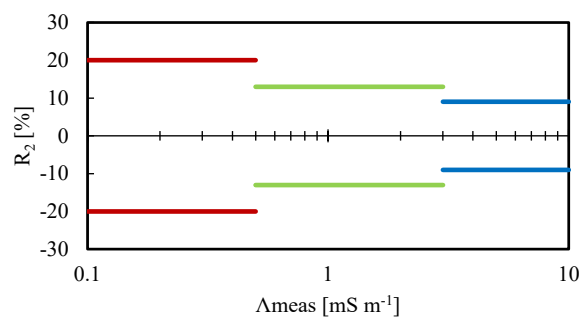


Fig. 3.45 b) Mondy Conductivity Agreement (R_2)

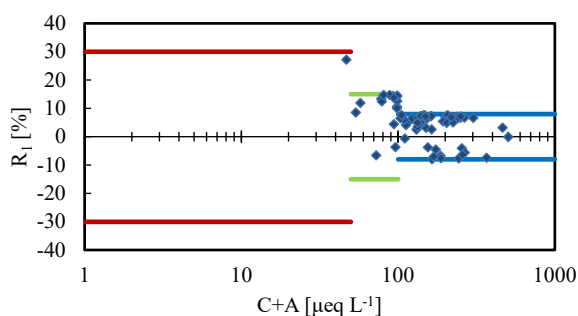


Fig. 3.46 a) Listvyanka Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

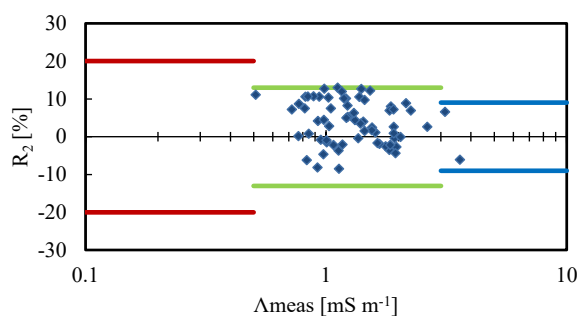


Fig. 3.46 b) Listvyanka Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

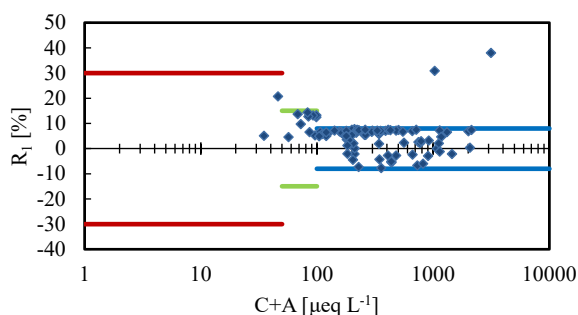


Fig. 3.47 a) Irkutsk Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

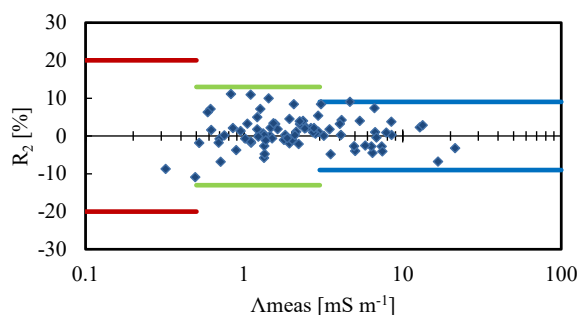


Fig. 3.47 b) Irkutsk Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- , F^- , Br^- , NO_2^- , PO_4^{3-}

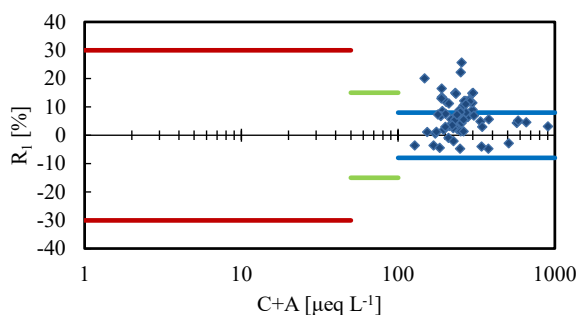


Fig. 3.48 a) Primorskaya Ion Balance (R_1)

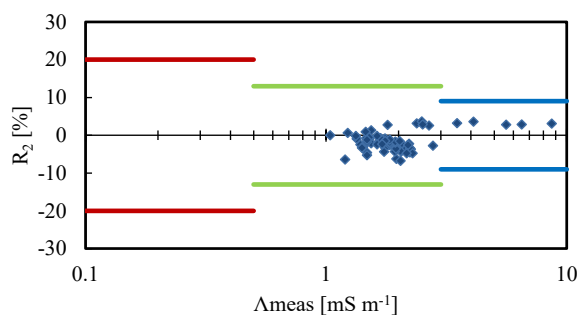


Fig. 3.48 b) Primorskaya Conductivity Agreement (R_2)

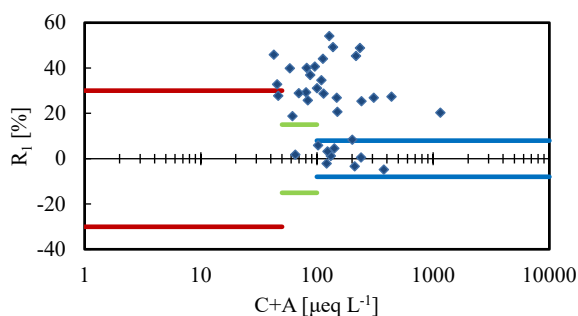


Fig. 3.49 a) Bangkok Ion Balance (R_1)

All of R_1 plots were calculated including PO_4^{3-} , Formic and Acetic acid

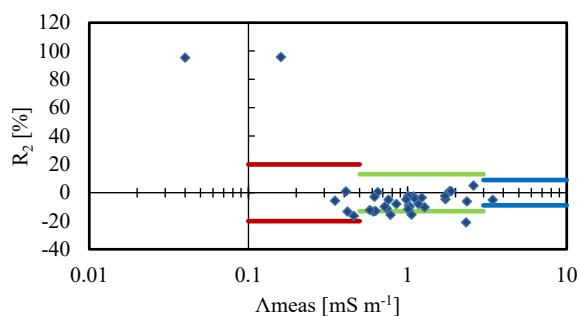


Fig. 3.49 b) Bangkok Conductivity Agreement (R_2)

All of R_2 plots were calculated including PO_4^{3-} , Formic and Acetic acid

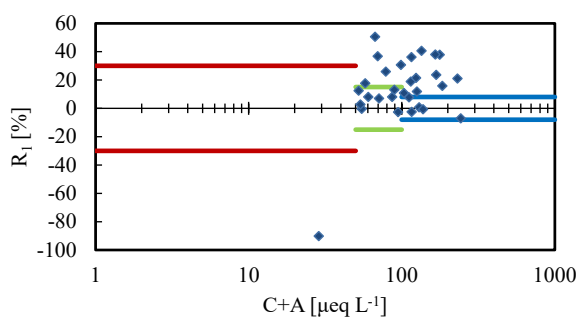


Fig. 3.50 a) Samutprakarn Ion Balance (R_1)

All of R_1 plots were calculated including PO_4^{3-} , Formic and Acetic acid

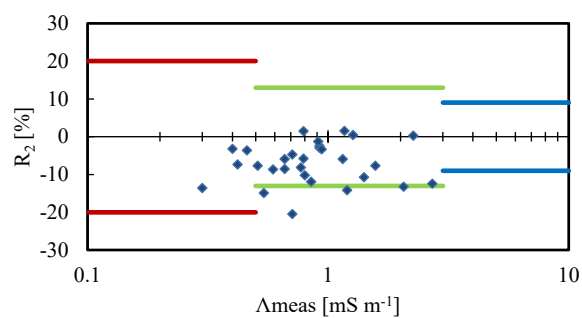


Fig. 3.50 b) Samutprakarn Conductivity Agreement (R_2)

All of R_2 plots were calculated including PO_4^{3-} , Formic and Acetic acid

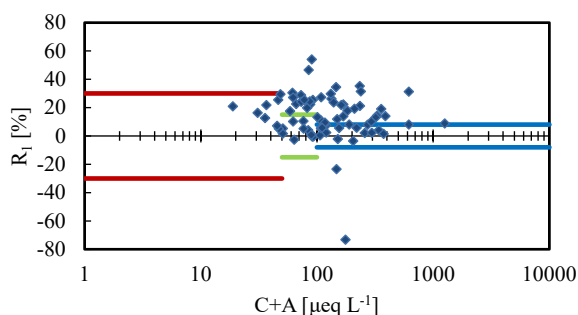


Fig. 3.51 a) Pathumthani Ion Balance (R_1)

All of R_1 plots were calculated including NO_2^- , PO_4^{3-} , Formic and Acetic acid

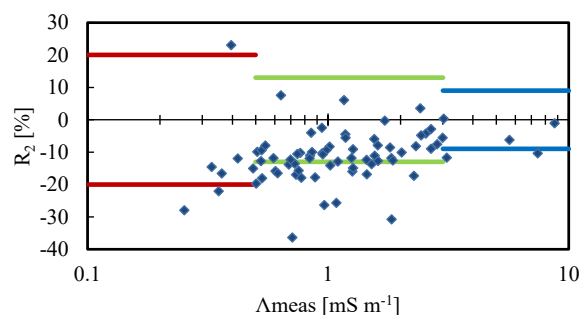


Fig. 3.51 b) Pathumthani Conductivity Agreement (R_2)

All of R_2 plots were calculated including NO_2^- , PO_4^{3-} , Formic and Acetic acid

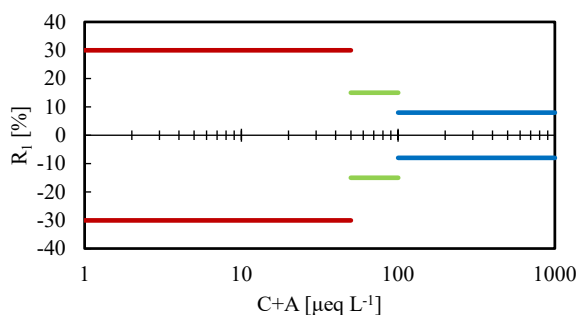


Fig. 3.52 a) Khanchanaburi Ion Balance (R_1)

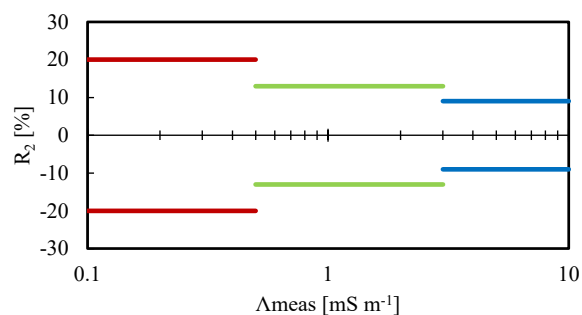


Fig. 3.52 b) Khanchanaburi Conductivity Agreement (R_2)

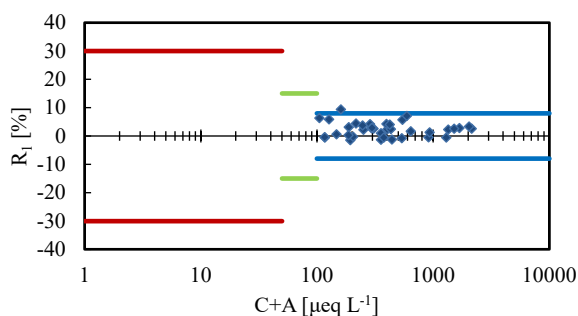


Fig. 3.53 a) Hanoi Ion Balance (R_1)

All of R_1 plots were calculated including F^-

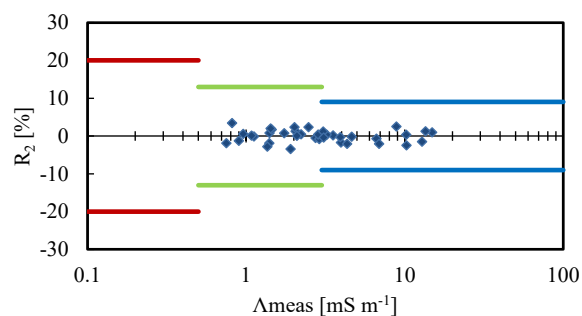


Fig. 3.53 b) Hanoi Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

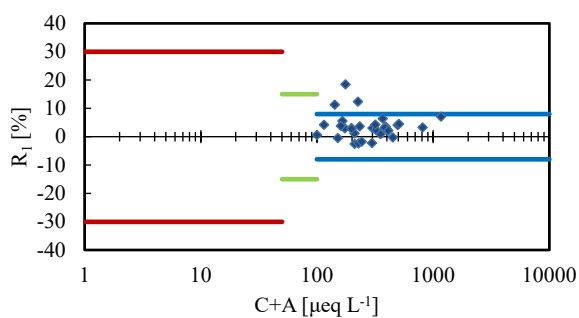


Fig. 3.54 a) Hoa Binh Ion Balance (R_1)

All of R_1 plots were calculated including F^-

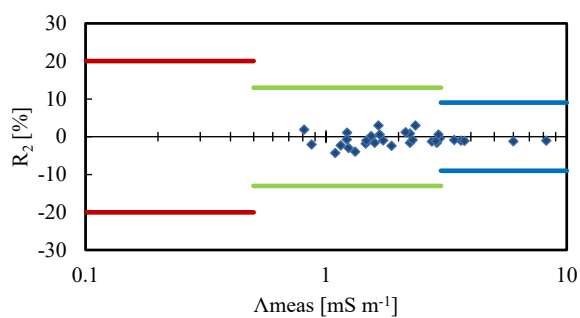


Fig. 3.54 b) Hoa Binh Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

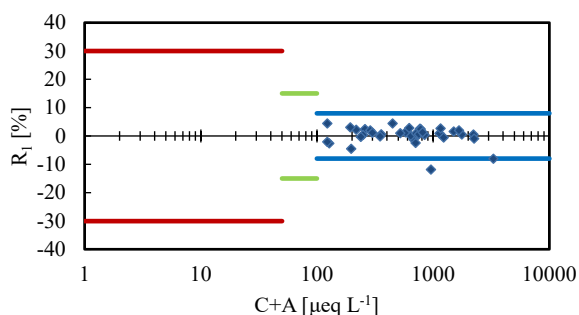


Fig. 3.55 a) Cuc Phuong Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

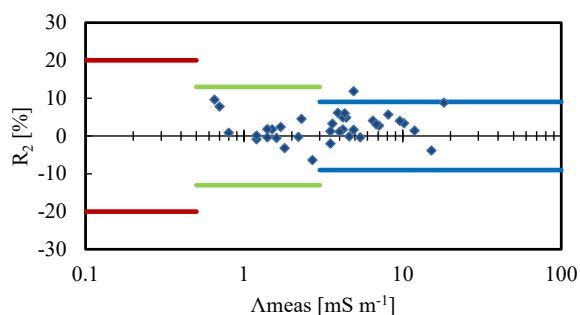


Fig. 3.55 b) Cuc Phuong Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

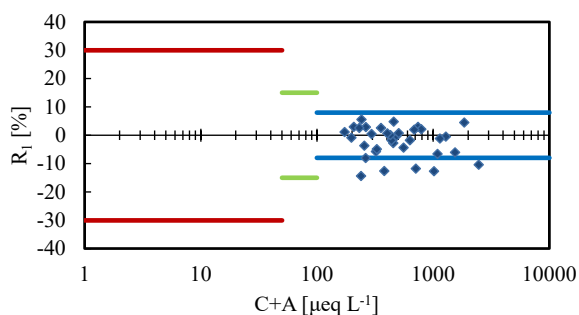


Fig. 3.56 a) Da Nang Ion Balance (R_1)

All of R_1 plots were calculated including HCO_3^- and F^-

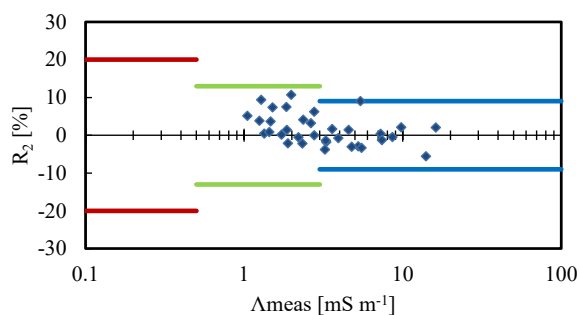


Fig. 3.56 b) Da Nang Conductivity Agreement (R_2)

All of R_2 plots were calculated including HCO_3^- and F^-

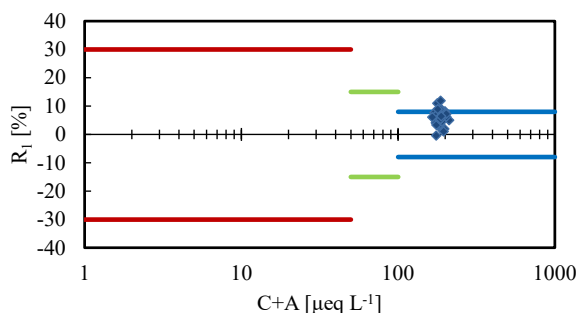


Fig. 3.57 a) Can Tho Ion Balance (R_1)

All of R_1 plots were calculated including F^-

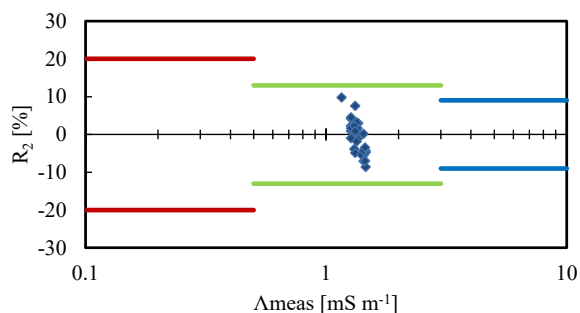


Fig. 3.57 b) Can Tho Conductivity Agreement (R_2)

All of R_2 plots were calculated including F^-

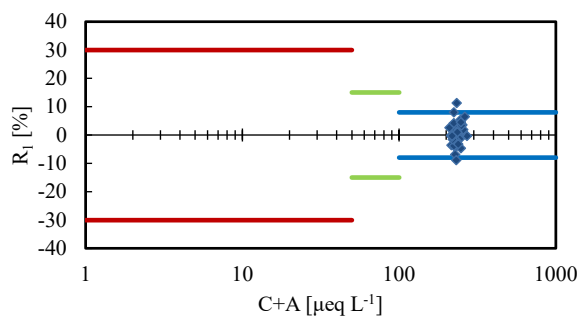


Fig. 3.58 a) Ho Chi Minh Ion Balance (R_1)

All of R_1 plots were calculated including F^-

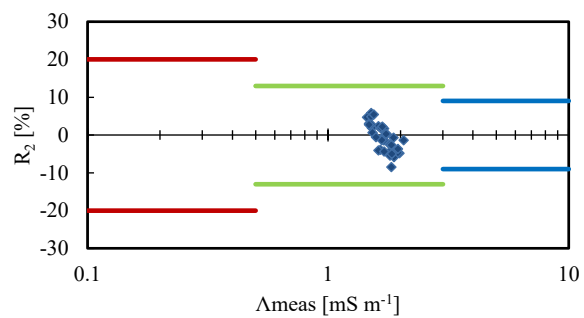


**Fig. 3.58 b) Ho Chi Minh
Conductivity Agreement (R_2)**

All of R_2 plots were calculated including F^-

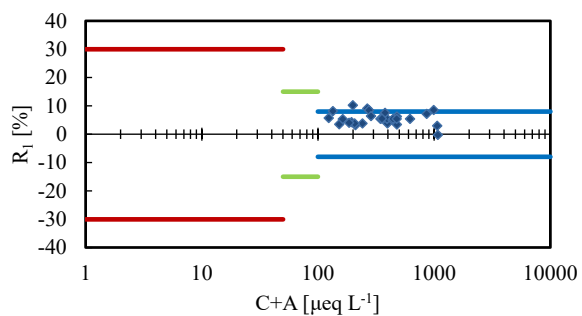


Fig. 3.59 a) Yen Bai Ion Balance (R_1)

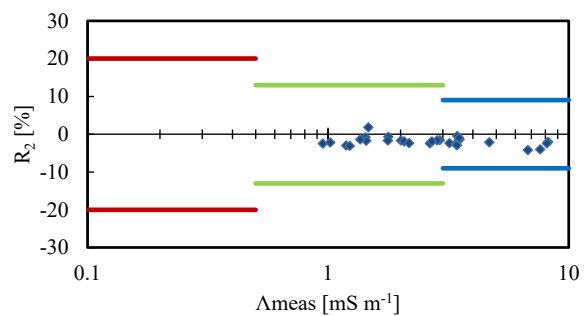


Fig. 3.59 b) Yen Bai Conductivity Agreement (R_2)

Table 3.95 Concentration, deposition and data completeness of HCO_3^-

Precipitation amount-weighted average concentration/ Precipitation amount														unit : $\mu\text{mol L}^{-1}$
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
China	Haifu	106	70.6	81.5	46.0	81.8	48.3	28.5	279	17.8	30.3	102	116	57.4
	Jinyunshan	95.9	24.3	146	7.82	61.0	33.2	36.5	18.8	*	*	*	*	36.4
	Shizhan	--	156	358	330	190	143	135	156	147	146	179	190	173
	Jiwozi	237	133	101	130	54.1	60.0	18.2	8.60	50.6	34.1	*	8.87	64.7
Philippines	Manila Observatory	28.7	11.6	<1	24.5	12.0	3.33	12.5	9.12	17.1	14.5	39.3	58.3	14.3
	Los Baños	33.7	15.9	<1	14.3	7.80	<1	24.1	3.15	<1	9.80	38.8	28.3	19.2
Russia	Listvyanka	<1	<1	11.1	<1	1.15	<1	<1	<1	<1	6.86	<1	<1	<1
	Irkutsk	59.7	26.8	71.6	45.4	20.1	3.99	3.60	1.94	8.07	57.2	34.1	22.5	14.6
Vietnam	Cuc Phuong	80.0	126	306	125	133	113	51.7	187	61.6	752	106	160	118
	Da Nang	24.4	32.4	180	90.0	36.3	41.0	77.6	36.8	97.1	17.3	23.4	35.9	32.4
Wet deposition amount														unit: $\text{mmol m}^{-2}\text{month}^{-1}$ or $\text{mmol m}^{-2}\text{year}^{-1}$
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
China	Haifu	1.13	1.44	3.29	5.63	7.63	7.40	12.5	17.5	3.27	4.71	4.98	2.65	77.6
	Jinyunshan	0.969	0.710	7.60	1.09	3.43	6.12	15.6	1.40	*	*	*	*	49.1
	Shizhan	0.00	1.71	14.1	21.6	28.3	18.5	17.2	33.6	32.1	11.1	3.03	1.48	183
	Jiwozi	3.39	0.864	2.68	14.0	4.81	3.36	3.91	1.13	4.55	1.99	*	0.124	54.8
Philippines	Manila Observatory	5.28	0.0720	<0.01	1.72	2.11	1.85	11.4	3.08	16.5	3.09	3.65	2.34	51.0
	Los Baños	9.63	0.956	<0.01	0.695	1.06	<0.01	8.78	0.570	<0.01	2.11	12.9	4.34	41.1
Russia	Listvyanka	<0.01	<0.01	0.0388	0.0109	0.0176	<0.01	<0.01	<0.01	<0.01	0.0713	<0.01	<0.01	0.136
	Irkutsk	0.921	0.352	0.601	1.79	0.736	0.360	0.290	0.172	0.555	0.339	0.426	0.497	7.03
Vietnam	Cuc Phuong	2.36	6.41	13.4	11.9	22.6	29.7	14.7	46.3	32.4	26.8	6.34	10.2	221
	Da Nang	4.48	2.76	3.33	2.01	2.03	4.58	6.55	3.26	38.9	30.4	19.7	10.8	128
Data completeness														%TP
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
China	Haifu	88.7	85.3	97.5	70.0	100	93.4	71.3	100	83.4	66.9	49.9	100	79.0
	Jinyunshan	28.7	4.5	30.8	62.2	81.0	69.6	0.4	10.9	0.0	0.0	0.0	0.0	21.6
	Shizhan	--	100	100	100	100	100	100	100	100	100	100	100	100
	Jiwozi	100	100	100	100	100	30.4	62.8	6.0	100	77.7	0.0	64.3	64.7
Philippines	Manila Observatory	100	100	100	100	100	100	100	100	100	100	98.9	100	100
	Los Baños	100	100	100	100	100	100	100	98.7	100	100	100	100	99.9
Russia	Listvyanka	100	100	100	100	100	100	100	100	100	96.2	100	100	99.9
	Irkutsk	100	100	96.4	99.7	100	100	99.1	100	99.6	100	100	100	99.7
Vietnam	Cuc Phuong	68.5	99.8	97.9	99.2	100	100	100	99.1	98.6	88.8	99.5	96.5	98.6
	Da Nang	98.5	100	78.4	91.0	100	100	98.0	95.5	100	100	100	100	99.6

Terms and abbreviations are given in Table 3.5.

Table 3.96 Concentration, deposition and data completeness of F⁻

Precipitation amount-weighted average concentration/ Precipitation amount														unit: $\mu\text{mol L}^{-1}$	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
China	Haifu	12.5	3.28	3.94	4.73	3.11	1.74	1.66	2.95	1.48	1.73	2.81	6.20	2.39	
	Jinyunshan	4.34	2.98	3.89	2.70	2.85	1.85	1.22	1.76	1.61	1.45	2.14	4.01	1.78	
	Shizhan	--	46.3	<1	1.99	2.93	<1	4.40	<1	2.59	<1	2.95	10.4	2.35	
	Jiwozi	8.36	<1	2.99	2.27	4.56	2.87	1.53	<1	<1	<1	<1	<1	1.58	
	Hongwen	2.55	<1	4.51	2.69	3.69	2.97	3.24	3.71	4.00	8.94	18.4	5.26	3.74	
	Xiaoping	<1	<1	3.14	2.36	5.14	3.83	2.78	3.95	4.42	--	--	5.32	3.55	
	Xiang Zhou	1.14	--	<1	1.22	1.02	<1	<1	<1	<1	<1	<1	<1	<1	
	Zhuxiandong	1.14	1.05	<1	<1	<1	<1	<1	<1	<1	<1	2.11	--	<1	
	Wuzhishan	--	--	--	--	*	<1	2.51	<1	<1	<1	<1	<1	<1	
Japan	Lijiang	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Sado-seki	1.67	1.13	*	<1	*	*	<1	*	*	*	*	<1	1.12	
	Yusuhara	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Lao PDR	Vientiane	--	--	--	--	--	<1	<1	<1	<1	<1	--	--	<1	
Malaysia	Petaling Jaya	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Tanah Rata	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.43	
	Danum Valley	<1	--	<1	<1	<1	<1	*	<1	<1	<1	*	5.54	<1	
	Kuching	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Philippines	Manila Observatory	1.11	2.08	2.95	1.04	1.90	1.25	<1	<1	1.66	<1	<1	1.28	1.14	
	Los Baños	<1	<1	<1	2.39	<1	<1	<1	<1	1.36	1.36	<1	1.04	<1	
Russia	Listvyanka	5.73	16.9	6.46	3.64	<1	2.13	1.96	1.56	2.03	18.2	6.19	10.2	3.11	
	Irkutsk	15.3	20.5	12.2	6.74	5.39	3.65	2.01	1.57	3.45	15.7	14.0	12.6	5.16	
Vietnam	Hanoi	15.9	13.7	39.1	98.3	9.21	9.48	4.74	5.24	14.8	9.61	8.32	*	12.4	
	Hoa Binh	6.70	2.80	10.5	2.63	6.41	4.01	10.5	7.41	16.7	5.68	9.38	--	9.32	
	Cuc Phuong	4.42	4.85	4.90	3.21	4.73	3.79	2.55	3.19	3.55	3.83	4.45	4.01	3.60	
	Da Nang	10.6	10.3	10.1	10.6	9.90	10.5	9.88	10.3	9.81	9.84	10.3	10.4	10.1	
	Can Tho	1.00	*	1.00	1.85	1.16	1.18	1.19	1.00	1.00	1.53	1.30	1.00	1.23	
	Ho Chi Minh	2.00	1.00	--	1.27	1.00	1.38	1.47	1.16	1.00	1.62	1.30	1.00	1.27	
Wet deposition amount														unit: $\text{mmol m}^{-2} \text{month}^{-1}$ or $\text{mmol m}^{-2} \text{year}^{-1}$	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
China	Haifu	0.132	0.0668	0.159	0.579	0.290	0.267	0.730	0.185	0.272	0.270	0.137	0.142	3.23	
	Jinyunshan	0.0438	0.0872	0.202	0.376	0.160	0.341	0.522	0.130	0.295	0.207	0.0950	0.0136	2.40	
	Shizhan	0.00	0.509	0.0116	0.130	0.438	0.0437	0.558	0.0948	0.566	<0.01	0.0499	0.0811	2.48	
	Jiwozi	0.119	<0.01	0.0793	0.244	0.406	0.161	0.330	<0.01	<0.01	<0.01	<0.01	<0.01	1.34	
	Hongwen	<0.01	<0.01	0.0392	0.270	0.198	0.190	0.0729	0.833	1.29	0.0974	0.0718	0.0153	3.09	
	Xiaoping	0.0140	0.0201	0.241	0.250	0.405	0.698	0.395	0.876	0.434	0.00	0.00	0.117	3.45	
	Xiang Zhou	0.0211	0.00	0.0128	0.0861	0.179	0.129	0.128	0.111	0.0194	0.0252	0.00	<0.01	0.713	
	Zhuxiandong	0.0212	<0.01	0.0235	0.0704	0.121	0.0851	0.0717	0.124	0.0188	0.0565	<0.01	0.00	0.596	
	Wuzhishan	0.00	0.00	0.00	0.00	*	<0.01	0.214	0.0105	0.0507	0.00	0.0282	0.00	0.357	
Japan	Lijiang	0.00	0.00	0.00	0.00	<0.01	0.0124	0.0108	0.0470	0.0248	<0.01	<0.01	<0.01	0.108	
	Sado-seki	0.115	0.0613	*	0.0442	*	*	0.100	*	*	*	*	0.135	1.62	
	Yusuhara	0.0271	0.0379	0.0899	0.105	0.0624	0.0904	0.0463	0.324	0.0378	<0.01	0.0464	0.0369	0.905	
Lao PDR	Vientiane	0.00	0.00	0.00	0.00	0.00	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	<0.01	
Malaysia	Petaling Jaya	0.266	0.323	0.243	0.158	0.161	0.142	0.128	0.109	0.0705	0.327	0.333	0.142	2.40	
	Tanah Rata	0.0298	0.0479	0.0373	0.0546	0.0707	0.0704	0.0317	0.0147	0.267	0.0179	0.342	0.396	1.38	
	Danum Valley	0.0263	0.00	<0.01	<0.01	<0.01	0.0389	*	<0.01	0.124	0.0179	*	0.529	0.896	
	Kuching	0.0793	0.188	0.105	0.0534	0.0506	0.0934	0.0224	0.0556	0.0303	0.0356	0.0431	0.163	0.904	
Philippines	Manila Observatory	0.204	0.0129	0.0333	0.0726	0.335	0.695	0.678	0.151	1.60	0.178	0.0620	0.0513	4.07	
	Los Baños	<0.01	<0.01	<0.01	0.116	<0.01	0.0692	0.155	0.0893	0.177	0.294	0.220	0.159	1.28	
Russia	Listvyanka	0.0744	0.179	0.0226	0.0761	<0.01	0.238	0.177	0.115	0.173	0.190	0.0409	0.115	1.41	
	Irkutsk	0.236	0.269	0.102	0.266	0.197	0.329	0.162	0.139	0.237	0.0930	0.175	0.279	2.48	
Vietnam	Hanoi	0.102	0.327	1.06	5.72	0.628	4.65	0.979	2.16	7.90	0.709	1.14	*	25.3	
	Hoa Binh	0.0214	0.0193	0.0525	0.0593	1.08	1.90	2.37	2.68	8.61	0.339	1.11	0.00	18.3	
	Cuc Phuong	0.130	0.247	0.215	0.306	0.804	1.00	0.725	0.787	1.87	0.136	0.267	0.255	6.73	
	Da Nang	1.96	0.880	0.187	0.236	0.553	1.17	0.834	0.916	3.93	17.3	8.61	3.12	39.7	
	Can Tho	0.0600	*	<0.01	0.0870	0.193	0.213	0.301	0.226	0.318	0.649	0.209	0.0250	2.29	
	Ho Chi Minh	0.0840	0.0100	0.00	0.131	0.124	0.700	0.345	0.319	0.382	0.225	0.184	0.0600	2.56	
Data completeness														%TP	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
China	Haifu	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Jinyunshan	100	100	100	45.0	100	100	100	100	100	100	100	100	94.3	
	Shizhan	--	100	100	100	100	100	100	100	100	100	100	100	100	
	Jiwozi	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Hongwen	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Xiaoping	100	100	100	100	100	100	100	100	100	--	--	100	100	
	Xiang Zhou	100	--	100	100	100	100	100	100	100	100	--	100	100	
	Zhuxiandong	100	100	100	100	100	100	100	100	100	100	100	--	100	
	Wuzhishan	--	--	--	--	0.0	100	100	100	100	--	100	--	84.9	
Japan	Lijiang	--	--	--	--	100	100	100	100	100	100	100	100	100	
	Sado-seki	12.3	53.4	0.0	5.6	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.4	3.3	
	Yusuhara	97.3	100	100	100	100	100	100	95.6	100	100	100	97.4	98.3	
Lao PDR	Vientiane	--	--	--	--	--	100	100	100	100	100	--	--	100	
Malaysia	Petaling Jaya	100	100	100	100	100	100	100	93.5	100	100	100	100	99.7	
	Tanah Rata	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Danum Valley	100	--	100	100	100	100	48.3	0.0	100	33.1	0.0	70.7	62.1	
	Kuching	100	49.1	100	100	100	100	100	75.0	100	82.6	14.6	100	84.9	
Philippines	Manila Observatory	100	100	100	100	100	100	100	100	100	100	98.9	100	100	
	Los Baños	100	100	100	100	100	100	100	98.7	100	100	100	100	99.9	
Russia	Listvyanka	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Irkutsk	100	100	100	100	100	100	100	100	100	100	100	100	100	
Vietnam	Hanoi	98.4	100	99.3	99.3	100	100	100	100	100	100	99.9	0.0	99.9	
	Hoa Binh	56.3	73.9	86.0	98.7	100	100	100	100	100	100	100	--	99.8	
	Cuc Phuong	68.5	99.8	97.9	99.2	100	100	100	99.1	98.6	88.8	99.5	96.5	98.6	
	Da Nang	98.5	100	78.4	91.0	100	100	98.0	95.5	100	100	100	100	99.6	
	Can Tho	98.3	0.0	100	100	100	100	100	99.6	100	100	98.8	96.0	99.6	
	Ho Chi Minh	100	100	--	100	100	100	100	100	100	100	100	100	100	

Terms and abbreviations are given in Table 3.5.

Table 3.97 Concentration, deposition and data completeness of Br⁻

Precipitation amount-weighted average concentration/ Precipitation amount														
unit : $\mu\text{mol L}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Sado-seki	1.48	1.85	*	<1	*	*	*	*	*	*	*	<1	<1
Lao PDR	Vientiane	--	--	--	--	--	<1	<1	<1	<1	<1	--	--	<1
Philippines	Manila Observatory	<1	<1	<1	<1	<1	<1	<1	<1	1.04	<1	<1	<1	<1
	Los Baños	<1	<1	3.22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Russia	Listvyanka	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Irkutsk	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Wet deposition amount														
unit: $\text{mmol m}^{-2} \text{month}^{-1}$ or $\text{mmol m}^{-2} \text{year}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Sado-seki	0.102	0.100	*	0.018	*	*	*	*	*	*	*	0.106	1.37
Lao PDR	Vientiane	0.00	0.00	0.00	0.00	0.00	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	<0.01
Philippines	Manila Observatory	0.033	<0.01	<0.01	0.011	0.014	0.034	0.063	<0.01	1.00	0.011	<0.01	<0.01	1.18
	Los Baños	<0.01	<0.01	0.104	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	0.130
Russia	Listvyanka	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019
	Irkutsk	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.020
Data completeness														
%TP														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Sado-seki	15.2	30.4	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8	5.8
Lao PDR	Vientiane	--	--	--	--	--	100	100	100	100	100	--	--	100
Philippines	Manila Observatory	100	100	100	100	100	100	100	100	100	100	98.9	100	100
	Los Baños	100	100	100	100	100	100	100	98.7	100	100	100	100	99.9
Russia	Listvyanka	100	100	100	100	100	100	100	100	100	100	100	100	100
	Irkutsk	100	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.98 Concentration, deposition and data completeness of NO₂⁻

Precipitation amount-weighted average concentration/ Precipitation amount unit : $\mu\text{mol L}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Rishiri	*	*	*	*	*	*	*	<1	*	*	*	*	<1
	Sado-seki	*	<1	*	<1	*	<1	*	*	*	*	*	<1	<1
	Ijira	<1	*	*	*	*	*	*	*	*	*	*	*	<1
	Yusuhara	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Ogasawara	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tokyo	3.0	1.8	1.1	1.2	<1	<1	<1	<1	<1	<1	1.6	2.6	<1
Philippines	Manila Observatory	1.2	<1	2.0	<1	<1	<1	<1	<1	<1	<1	1.3	2.0	<1
	Los Baños	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Russia	Listvyanka	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Irkutsk	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thailand	Pathumthani	--	<1	1.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Wet deposition amount unit: $\text{mmol m}^{-2}\text{month}^{-1}$ or $\text{mmol m}^{-2}\text{year}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Rishiri	*	*	*	*	*	*	*	<0.01	*	*	*	*	0.0176
	Sado-seki	*	0.0238	*	0.0177	*	0.0125	*	*	*	*	*	0.0370	0.323
	Ijira	0.0396	*	*	*	*	*	*	*	*	*	*	*	2.18
	Yusuhara	0.0129	0.0168	0.0210	0.0260	<0.01	<0.01	0.0305	<0.01	0.0260	<0.01	<0.01	0.0149	0.170
	Ogasawara	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Tokyo	0.0360	0.0604	0.159	0.101	0.104	0.151	0.0215	0.106	0.124	0.123	0.0606	0.0449	1.09
Philippines	Manila Observatory	0.218	<0.01	0.0231	0.0630	0.104	0.303	0.600	0.262	0.584	0.173	0.116	0.0810	2.53
	Los Baños	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0942	0.0303	0.120	0.0220	0.0380	0.307
Russia	Listvyanka	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0324
	Irkutsk	<0.01	<0.01	<0.01	0.0117	0.0125	0.0116	0.0144	0.0152	0.0161	<0.01	<0.01	<0.01	0.103
Thailand	Pathumthani	0.00	<0.01	0.0123	0.0205	0.0638	0.0878	0.0542	0.271	0.166	0.0941	0.0355	0.0429	0.857
Data completeness %TP														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Japan	Rishiri	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	1.4
	Sado-seki	0.0	4.6	0.0	5.6	0.0	1.7	0.0	0.0	0.0	0.0	0.0	29.3	4.1
	Ijira	35.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	Yusuhara	97.3	100	100	100	100	100	100	95.6	100	100	100	97.4	98.3
	Ogasawara	94.4	100	100	100	99.8	99.4	96.3	99.8	99.2	99.8	99.5	97.9	99.6
	Tokyo	95.8	99.8	98.9	99.9	99.3	100	100	99.8	99.5	99.9	97.4	97.1	99.5
Philippines	Manila Observatory	100	100	100	100	100	100	100	100	100	100	98.9	100	100
	Los Baños	100	100	100	100	100	100	100	98.7	100	100	100	100	99.9
Russia	Listvyanka	100	100	100	100	100	100	100	100	100	100	100	100	100
	Irkutsk	100	96.2	100	100	100	100	100	100	100	100	100	100	99.9
Thailand	Pathumthani	--	100	100	100	100	100	100	100	100	100	100	100	100

Terms and abbreviations are given in Table 3.5.

Table 3.99 Concentration, deposition and data completeness of PO₄³⁻

Precipitation amount-weighted average concentration/ Precipitation amount															unit : $\mu\text{mol L}^{-1}$	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual		
Japan	Yusuhara	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Philippines	Manila Observatory	<1	1.91	1.26	<1	1.47	1.39	<1	<1	<1	<1	<1	2.28	<1		
	Los Baños	<1	<1	<1	<1	<1	1.17	1.15	<1	<1	<1	<1	3.18	<1		
Russia	Listvyanka	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
	Irkutsk	<1	<1	<1	<1	<1	<1	2.01	<1	1.12	4.00	<1	<1	<1		
Thailand	Bangkok	--	<1	3.47	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
	Samutprakarn	--	<1	--	--	--	<1	<1	<1	<1	<1	--	--	<1		
	Pathumthani	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Wet deposition amount															unit: $\text{mmol m}^{-2}\text{month}^{-1}$ or $\text{mmol m}^{-2}\text{year}^{-1}$	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual		
Japan	Yusuhara	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0282		
Philippines	Manila Observatory	0.150	0.0118	0.0143	0.0428	0.259	0.772	0.691	0.138	<0.01	0.0579	<0.01	0.0913	2.23		
	Los Baños	<0.01	<0.01	<0.01	<0.01	0.0860	0.236	0.420	0.0391	0.0436	<0.01	<0.01	0.487	1.31		
Russia	Listvyanka	<0.01	<0.01	<0.01	<0.01	<0.01	0.0777	0.0166	<0.01	<0.01	<0.01	<0.01	<0.01	0.130		
	Irkutsk	<0.01	<0.01	<0.01	0.0120	0.0220	0.0446	0.162	0.0135	0.0771	0.0237	<0.01	<0.01	0.364		
Thailand	Bangkok	0.00	0.0424	0.0341	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0152	<0.01	0.0112	0.124		
	Samutprakarn	0.00	<0.01	0.00	0.00	0.00	0.0117	<0.01	0.0148	<0.01	<0.01	0.00	0.00	0.0396		
	Pathumthani	0.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0451	<0.01	<0.01	<0.01	0.0292	0.0997		
Data completeness															%TP	
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual		
Japan	Yusuhara	97.3	100	100	100	100	100	100	95.6	100	100	100	97.4	98.3		
Philippines	Manila Observatory	100	100	100	100	100	100	100	100	100	100	98.9	100	100		
	Los Baños	100	100	100	100	100	100	100	98.7	100	100	100	100	99.9		
Russia	Listvyanka	100	100	100	100	100	100	100	100	100	100	100	100	100		
	Irkutsk	100	100	100	100	100	100	100	100	100	100	100	100	100		
Thailand	Bangkok	--	100	100	100	100	100	100	100	100	100	100	100	100		
	Samutprakarn	--	100	--	--	--	100	100	100	100	100	--	--	100		
	Pathumthani	--	100	100	100	100	100	100	100	100	100	100	100	100		

Terms and abbreviations are given in Table 3.5.

Table 3.100 Concentration, deposition and data completeness of Formic Acid

Precipitation amount-weighted average concentration/ Precipitation amount unit : $\mu\text{mol L}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tanah Rata	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Danum Valley	<1	--	<1	<1	<1	<1	*	<1	<1	<1	*	<1	<1
	Kuching	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thailand	Bangkok	--	<1	<1	9.99	<1	<1	<1	<1	<1	19.9	<1	<1	5.11
	Samutprakarn	--	<1	--	--	--	<1	<1	<1	<1	<1	--	--	<1
	Pathumthani	--	6.08	41.8	5.07	6.32	1.71	<1	<1	<1	<1	<1	<1	1.23
Wet deposition amount unit: $\text{mmol m}^{-2}\text{month}^{-1}$ or $\text{mmol m}^{-2}\text{year}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	0.0361	<0.01	0.0370	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0287	<0.01	<0.01	0.108
	Tanah Rata	0.0155	0.0616	0.112	0.0195	0.0251	<0.01	0.0261	0.0116	0.0444	0.114	<0.01	<0.01	0.439
	Danum Valley	<0.01	0.00	<0.01	<0.01	<0.01	<0.01	*	<0.01	<0.01	<0.01	*	<0.01	<0.01
	Kuching	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thailand	Bangkok	0.00	<0.01	<0.01	0.249	<0.01	<0.01	0.151	0.0998	0.200	6.61	<0.01	<0.01	7.34
	Samutprakarn	0.00	0.0193	0.00	0.00	0.00	0.0123	<0.01	0.0470	0.116	0.0337	0.00	0.00	0.228
	Pathumthani	0.00	0.0758	0.325	0.277	0.557	0.190	0.0265	0.113	<0.01	<0.01	0.0108	<0.01	1.60
Data completeness %TP														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	100	100	100	100	100	98.3	100	93.5	100	100	100	100	99.6
	Tanah Rata	100	100	100	100	100	100	100	100	100	100	100	100	100
	Danum Valley	100	--	100	100	100	48.3	0.0	100	100	33.1	0.0	70.7	62.1
	Kuching	100	49.1	100	100	100	100	100	75.0	100	82.6	14.6	100	84.9
Thailand	Bangkok	--	100	100	100	100	100	100	100	100	100	100	100	100
	Samutprakarn	--	100	--	--	--	100	100	100	100	100	--	--	100
	Pathumthani	--	100	100	100	100	100	100	96.7	100	100	100	100	99.1

Terms and abbreviations are given in Table 3.5.

Table 3.101 Concentration, deposition and data completeness of Acetic Acid

Precipitation amount-weighted average concentration/ Precipitation amount														
unit : $\mu\text{mol L}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tanah Rata	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Danum Valley	<1	--	<1	<1	<1	<1	*	<1	<1	<1	*	<1	<1
	Kuching	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.10	<1	<1
Thailand	Bangkok	--	<1	7.72	<1	6.25	1.71	<1	1.80	2.53	2.27	1.22	<1	2.05
	Samutprakarn	--	<1	--	--	--	<1	<1	1.35	1.35	<1	--	--	<1
	Pathumthani	--	2.13	6.35	<1	<1	3.12	<1	<1	<1	<1	<1	<1	<1
Wet deposition amount														
unit: $\text{mmol m}^{-2}\text{month}^{-1}$ or $\text{mmol m}^{-2}\text{year}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0153	0.0108	0.0224	0.0518
	Tanah Rata	<0.01	0.0300	0.0262	0.0162	0.0208	0.0132	0.0172	<0.01	0.0280	0.0451	0.0231	0.168	0.394
	Danum Valley	<0.01	0.00	<0.01	<0.01	<0.01	<0.01	*	0.0155	0.0117	<0.01	*	<0.01	0.0491
	Kuching	<0.01	<0.01	0.0412	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.315	0.0231	0.141
Thailand	Bangkok	0.00	0.0109	0.0757	<0.01	0.740	0.114	0.119	0.339	0.707	0.754	0.0813	<0.01	2.95
	Samutprakarn	0.00	0.0145	0.00	0.00	0.00	<0.01	0.0143	0.218	0.526	0.0234	0.00	0.00	0.806
	Pathumthani	0.00	0.0265	0.0494	0.0448	0.0490	0.347	0.0344	0.201	0.0159	0.0143	0.0187	0.0143	0.816
Data completeness														
%TP														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	100	100	100	100	100	98.3	100	93.5	100	100	100	100	99.6
	Tanah Rata	100	100	100	100	100	100	100	100	100	100	100	100	100
	Danum Valley	100	--	100	100	100	48.3	0.0	100	100	33.1	0.0	70.7	62.1
	Kuching	100	49.1	100	100	100	100	100	75.0	100	82.6	14.6	100	84.9
Thailand	Bangkok	--	100	100	100	100	100	100	100	100	100	100	100	100
	Samutprakarn	--	100	--	--	--	100	100	100	100	100	--	--	100
	Pathumthani	--	100	100	100	100	100	100	96.7	100	100	100	100	99.1

Terms and abbreviations are given in Table 3.5.

Table 3.102 Concentration, deposition and data completeness of Oxalic Acid

Precipitation amount-weighted average concentration/ Precipitation amount														
unit : $\mu\text{mol L}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tanah Rata	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Danum Valley	<1	--	<1	<1	<1	<1	*	<1	<1	<1	*	<1	<1
	Kuching	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Wet deposition amount														
unit: $\text{mmol m}^{-2} \text{month}^{-1}$ or $\text{mmol m}^{-2} \text{year}^{-1}$														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0103	<0.01	<0.01	0.0189
	Tanah Rata	0.0173	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0103	0.0237	<0.01	<0.01	0.0528
	Danum Valley	0.0143	0.00	<0.01	<0.01	<0.01	0.0153	*	<0.01	<0.01	<0.01	*	<0.01	0.0424
	Kuching	0.0152	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0307
Data completeness														
%TP														
Country	Name of sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Malaysia	Petaling Jaya	100	100	100	100	100	98.3	100	93.5	100	100	100	100	99.6
	Tanah Rata	100	100	100	100	100	100	100	100	100	100	100	100	100
	Danum Valley	100	--	100	100	100	48.3	0.0	100	100	33.1	0.0	70.7	62.1
	Kuching	100	49.1	100	100	100	100	100	75.0	100	82.6	14.6	100	84.9

Terms and abbreviations are given in Table 3.5.

CHAPTER 4

Air Concentration and Dry Deposition Monitoring

4. Air Concentration and Dry Deposition Monitoring

4.1 Method

Automatic monitoring and manual monitoring methods were used to implement air concentration and dry deposition monitoring in 2023. The monitoring items were selected considering the priority chemical species defined in *Strategy Paper for Future Direction of Dry Deposition Monitoring of EANET (2016-2020 Edition, 2015)*.

4.1.1 Automatic Monitoring Method

The priority chemical species of SO₂, O₃, NO, NO₂ (urban), PM₁₀ and PM_{2.5} are monitored by automatic monitoring methods. The criteria and quality assurance/quality control (QA/QC) for automatic monitoring methods are described in Chapter 3 of *Technical Manual for Air Concentration Monitoring in East Asia* (Technical Manual, EANET, 2013).

4.1.2 Manual Monitoring Method

Filter pack and passive sampler are used for manual monitoring in EANET. The filter pack method is used to determine gaseous substances (SO₂, HNO₃, HCl, NH₃) and particulate matter components (PMCs; SO₄²⁻, NO₃⁻, Cl⁻, NH₄⁺, Na⁺, K⁺, Mg²⁺, Ca²⁺), which are identified as the priority chemical species in EANET. The passive sampler method is also used to determine gaseous species of SO₂, NH₃, NO₂ and O₃. The recommended monitoring method by means of the four-stage filter pack is explained in the Technical Manual, EANET, 2013. The basic flow chart of the four-stage filter pack method is shown in Figure 4.1. The QA/QC for the manual monitoring methods is described in Chapter 4 of the Technical Manual, EANET, 2013.

4.1.3 Monitoring Sites

The measurement methods, monitoring intervals (time intervals of submitted data), and parameters at each monitoring site for air concentration and dry deposition monitoring in 2023 are shown in Table 4.1.1. Automatic monitors were used in Cambodia, China, Japan, Lao PDR, Mongolia, Myanmar, Philippines, Republic of Korea, Thailand, and Vietnam. The methods of automatic monitors are shown in Table 4.1.2.

The filter pack method was used in Cambodia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Russia, Thailand and Vietnam, and no passive sampler method was conducted in any country in 2023.

Preparation of filter pack

Stage	Specification of filter	Collected species
1 st (F0)	PTFE filter (pore size: 0.8 μm , diameter: 47 mm)	Aerosols
2 nd (F1)	Polyamide filter (pore size: 0.45 μm , diameter: 47 mm)	HNO ₃ , SO ₂ , HCl, NH ₃
3 rd (F2)	Impregnated cellulose filter Solution: 6% K ₂ CO ₃ + 2% glycerin	SO ₂ , HCl
4 th (F3)	Impregnated cellulose filter Solution: 5% H ₃ PO ₄ + 2% glycerin	NH ₃



Sampling on site

Air flow rate: approximately 1 or 2 liter/minute
Sampling period: one week or two weeks



Extraction of filter pack

Stage	Solvent	Extracted species
F0	Extraction with 20 mL of deionized water	SO ₄ ²⁻ , NO ₃ ⁻ , Cl ⁻ , NH ₄ ⁺ , Na ⁺ , K ⁺ , Mg ²⁺ , Ca ²⁺
F1	Extraction with 20 mL of deionized water	SO ₄ ²⁻ , NO ₃ ⁻ , Cl ⁻ , NH ₄ ⁺
F2	Extraction with 20mL of 0.05% H ₂ O ₂	SO ₄ ²⁻ , Cl ⁻
F3	Extraction with 20mL of deionized water	NH ₄ ⁺



Chemical analysis

By ion chromatography or other suitable analytical methods

Figure 4.1 Flow chart of the four-stage filter pack method

Table 4.1.1 Sampling methods and parameters for air concentration and dry deposition monitoring in 2023

Country	Site	Method	Monitoring Interval* ¹	Parameter
Cambodia	Phnom Penh	AT FP	Hourly 2 weeks	NO ^{*3} , NO ₂ ^{*3} , NO _x ^{*3} , O ₃ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
China	Chongqing	AT	Daily	SO ₂ , NO, NO _x [*] , PM _{10/2.5}
	- Jinyunshan	AT	Daily	SO ₂ , NO ₂ , PM _{10/2.5}
	Xiamen	AT	Daily	SO ₂ , NO ₂ , PM _{10/2.5}
	- Hongwen	AT	Daily	SO ₂ , NO ₂ , PM ₁₀
	Zhuhai	AT	Daily	SO ₂ , NO ₂ , PM ₁₀
Indonesia ^{*7}	Jakarta	PS	Monthly	SO ₂ , NO ₂
	Kototabang	PS	Monthly	SO ₂ , NO ₂
Japan	Rishiri	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Ochiichi	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Sado-seki	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Happo	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Ijira	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Oki	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Yusuhara	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Hedo	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Ogasawara	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Tokyo	FP	2 weeks	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Niigata-maki	AT FP	Hourly 2 weeks	SO ₂ , NO, NO _x [*] , O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Tsushima	AT FP	Hourly 2 weeks	O ₃ , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
Lao PDR ^{*7}	Vientiane	AT FP	Hourly monthly	NO, NO ₂ , NO _x , PM ₁₀ , PM _{2.5} SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
Malaysia	Petaling Jaya	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Tanah Rata	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Danum Valley	FP	2 weeks	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs

Table 4.1.1 Sampling methods and parameters for air concentration and dry deposition monitoring in 2023 (continued)

Country	Site	Method	Monitoring Interval ^{*1}	Parameter
Mongolia	Ulaanbaatar	AT	Hourly	SO ₂ , NO, NO ₂ , NO _x , O ₃ , PM ₁₀ , PM _{2.5}
		FP ^{*2}	1 week	SO ₂ , HNO ₃ , HCl, PMCs
	Terelj	FP ^{*2}	2 weeks	SO ₂ , HNO ₃ , HCl, PMCs
Myanmar	Yangon	AT	Hourly	PM _{2.5}
		FP	2 weeks	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs ^{*9}
Philippines	Metro Manila	AT ^{*3}	Daily	SO ₂ , NO ₂ , O ₃
	-Manila Observatory		4-17 days ^{*2}	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	-North Caloocan ^{*4}	AT	Daily	PM ₁₀ , PM _{2.5}
	Laguna	FP	5-28 days ^{*2}	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	-Los Baños		Hourly	PM ₁₀ , PM _{2.5}
	-Sta. Rosa ^{*4}	AT		
	Benguet	AT	Hourly	PM _{2.5}
	-Mt. Sto. Tomas		1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
Republic of Korea	Ganghwa	AT	Hourly	SO ₂ , NO ₂ , O ₃ , PM ₁₀ , PM _{2.5}
		FP ^{*5}	*5	HNO ₃ , HCl, NH ₃ , PMCs in PM _{2.5}
	Jeju	AT	Hourly	SO ₂ , NO ₂ , O ₃ , PM ₁₀ , PM _{2.5}
		FP ^{*5}	*5	HNO ₃ , HCl, NH ₃ , PMCs in PM _{2.5}
	Imsil	AT	Hourly	SO ₂ , NO ₂ , O ₃ , PM ₁₀ , PM _{2.5}
		FP ^{*5}	*5	HNO ₃ , HCl, NH ₃ , PMCs in PM _{2.5}
Russia	Mondy	FP	7-22 days ^{*2}	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Listvyanka	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Irkutsk	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Primorskaya	FP	15 days	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
Thailand	Bangkok	AT	Hourly	O ₃ , PM ₁₀ , PM _{2.5} ,
		FP	10 days	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Samutprakarn	AT	Hourly	PM ₁₀ , PM _{2.5}
	Khanchanaburi	AT	Hourly	PM _{2.5}
	Chiang Mai	AT	Hourly	PM _{2.5}
	-Chang Phueak		Hourly	SO ₂ , PM ₁₀ , PM _{2.5}
	- Si Phum	AT		
	Nakhon Ratchasima	AT	Hourly	SO ₂ , NO, NO ₂ , NO _x , O ₃ , PM ₁₀ , PM _{2.5}
	- Nai Mueang			
Vietnam	Hanoi	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Hoa Binh	AT ^{*8}	Hourly	PM _{2.5}
		FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Can Tho	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Ho Chi Minh	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs
	Yen Bai	FP	1 week	SO ₂ , HNO ₃ , HCl, NH ₃ , PMCs

AT: Automatic monitor, FP: Filter pack, PMCs: particulate matter components.

NOx*: NOx measured by CLD in remote or rural sites.

- *1 The 'Monitoring interval' in Table 4.1.1 refers to the time intervals for submitted data from participating countries for each site and method. The submitted data are disclosed on the EANET website: <https://monitoring.eanet.asia/document/register/index> (registration required)."
- *2 Their sampling periods are typically 1 week, 10 days, 2 weeks, 15 days, or 1 month; however, they sometimes change irregularly.
- *3 The NO, NOx*, and NO² monitoring data at Phnom Penh site are disclosed and the data from 2019 to 2022 were provided in Appendix 3.
- *4 Three additional sites in Philippines were officially registered, but no 2023 data from Sta. Rosa and Lower Session Road were submitted.
- *5 Their FP sampling at the Ganghwa, Jeju, and Imsil sites in Republic of Korea is conducted for once (24 hours) every six days with PM_{2.5} cyclone.
- *7 No monitoring data were submitted from Indonesia and Lao PDR.
- *8 No PM_{2.5} monitoring data from Hoa Binh were submitted.

Table 4.1.2 Methods of automatic monitors in 2023

Country	Site	Parameter				
		SO ₂	NO _x	O ₃	PM ₁₀	PM _{2.5}
Cambodia	Phnom Penh	--	--	UVP	--	β-ray
China	Jinyunshan	UVF	CLD	--	β-ray	β-ray
	Hongwen	DOAS	DOAS	--	TEOM	β-ray
	Haibin-Park	DOAS	DOAS	--	TEOM	β-ray
	Wuzhishan	UVF	CLD	--	β-ray	--
	Lijiang	UVF	CLD	--	β-ray	--
Japan	Rishiri	UVF	CLD	UVP	β-ray	β-ray
	Ochiishi	UVF	CLD	UVP	β-ray	β-ray
	Sado-seki	UVF	CLD	UVP	β-ray	β-ray
	Happo	UVF	CLD	UVP	β-ray	β-ray
	Ijira	UVF	CLD	UVP	β-ray	β-ray
	Oki	UVF	CLD	UVP	β-ray	β-ray
	Yusuhara	UVF	CLD	UVP	β-ray	β-ray
	Hedo	UVF	CLD	UVP	β-ray	β-ray
	Ogasawara	UVF	CLD	UVP	β-ray	β-ray
	Niigata-maki	UVF	CLD	UVP	β-ray	β-ray
	Tsushima	--	--	UVP	β-ray	β-ray

Table 4.1.2 Methods of automatic monitors in 2023 (continued)

Country	Site	Parameter				
		SO ₂	NO _x	O ₃	PM ₁₀	PM _{2.5}
Mongolia	Ulaanbaatar	UVF	CLD	UVP	β-ray	β-ray
Myanmar	Yangon	--	--	--	--	β-ray
Philippines	Manila Observatory	--	CLD	UVP	--	--
	North Caloocan	--	--	--	--	β-ray
	Sta. Rosa	--	--	--	--	β-ray
	Mt. Sto. Tomas	--	--	--	--	β-ray
	Lower Session Road	--	--	--	--	--
Republic of Korea	Ganghwa	UVF	CLD	UVP	β-ray	β-ray
	Jeju (Kosan)	UVF	CLD	UVP	β-ray	β-ray
	Imsil	UVF	CLD	UVP	β-ray	β-ray
Thailand	Bangkok	--	--	UVP	β-ray	β-ray
	Samutprakarn	--	--	--	β-ray	β-ray
	Khanchanaburi	--	--	--	--	β-ray
	Chiang Mai					
	- Chang Phueak	--	--	--	--	β-ray
	- Si Phum	UVF	--	--	β-ray	β-ray
	Nakhon Ratchasima					
	- Nai Mueang	UVF	CLD	UVP	β-ray	β-ray
Vietnam	Hoa Binh	--	--	--	--	β-ray

UVF: Ultraviolet fluorescent method, CLD: Chemiluminescence detection method, UVP: Ultraviolet photometric method, β-ray: β-ray absorption method, TEOM: Tapered element oscillating microbalance method, LS: Light scattering method, DOAS: Differential optical absorption spectroscopy method, "--": no monitoring by auto monitors.

4.2 Results of Monitoring

Monitoring data were summarized into monthly average values accompanied with maximum, minimum and data completeness on a monthly basis. Summarized data in 2022 are presented in Table 4.3.1 through Table 4.20.2. Some sites have monitored SO₂, NH₃, and/or O₃ with 2 methods. On data report 2023, those values are all shown in each table. The terms and abbreviations are given in Table 4.2.

Table 4.2 Terms and abbreviations

Term/Abbreviation	Definition
Mean	Monthly or annual arithmetic average values
Max-d	Maximum values of daily data
Min-d	Minimum values of daily data

Table 4.2 Terms and abbreviations (continued)

Term/Abbreviation	Definition
Max-10d	Maximum values of 10-day sampling data
Min-10d	Minimum values of 10-day sampling data
Max-w	Maximum values of weekly data
Min-w	Minimum values of weekly data
Max-2w	Maximum values of biweekly data
Min-2w	Minimum values of biweekly data
Max-15d	Maximum values of 15-day sampling data
Min-15d	Minimum values of 15-day sampling data
Max-m	Maximum values of monthly data
Min-m	Minimum values of monthly data
Max-irreg	Maximum values of data during irregular sampling periods (See *4 of Table 4.1.1)
Min-irreg	Minimum values of data during irregular sampling periods (See *4 of Table 4.1.1)
%	Percentages of monthly or annual data completeness
[<1]	The monthly or the annual value was lower than their reporting limits of O ₃ , PM ₁₀ or PM _{2.5} .
[<0.1]	The monthly or the annual value was lower than their reporting limits of gaseous substances (SO ₂ , HNO ₃ , HCl, NH ₃).
[<0.01]	The monthly or the annual value was lower than their reporting limits of particulate matter components (PMC).
()	Reference data
[***]	No data or no measurement
Data in hatched cell ()	Annual data completeness was not satisfied with EANET criteria. (<70%)
Black cell ()	Monitoring was not carried out.

For information on long-term trends of air concentrations, annual averages of gases and particulate matter concentrations from 2009 to 2023 are summarized in Table 4.21 through Table 4.38.

Monthly and annual dry deposition amounts of gaseous and particulate substances in 2023 are summarized in Table 4.39 through Table 4.49. The Inferential Method is adopted to estimate the dry depositions of EANET priority chemical species. Dry deposition amounts of gaseous and particulate substances are estimated by the product of an atmospheric concentration and a deposition velocity expressed as, $F_{dry} = V_d \times C$, where F_{dry} , V_d , and C denote the dry deposition flux, the calculated deposition velocity, and the measured atmospheric concentrations, respectively for each species and type of surface. The V_d was calculated by meteorological parameters at the site and parameterization described in the “Technical

Manual on Dry Deposition Flux Estimation in East Asia (Network Center for EANET, 2010)". Since V_d of gases and particulate matter is different in different types of land surfaces, the V_d at each site was first calculated for forest and grass surfaces, and the weighted-average of V_d was then estimated according to the land-use ratio of forest and grass within 1 km square from the site. The estimation of dry deposition flux was made only for the sites in which hourly meteorological data and land use data are available.

In Table 4.3.1 through Table 4.38, ppb unit is used for gases and $\mu\text{g}/\text{m}^3$ unit for particulate matter concentrations. In Table 4.39 through Table 4.49, mmol m^{-2} unit is used for monthly or annual dry deposition amounts. For comparing the other networks' data, conversion ratios from ppb to $\mu\text{g}/\text{m}^3$, which are based on 20 °C, 1 atm, are provided in Table 4.50.

Reporting limits for individual species depend on specifications of instruments and/or procedures of sampling and analyzing. The NC sets up the reporting limits as shown in Table 4.51 considering methods adopted by each country. The data that air concentrations were less than the reporting limit are specified in the summarized tables. Regarding the particulate matter components measured by the filter pack method, their detection limits for particulate matter components were determined as $0.01 \mu\text{g}/\text{m}^3$ for sampled air volume of 20.16 m^3 considering the value of 3σ , where σ is the standard deviation of blank values obtained at Japan sites in 2003.

Table 4.3.1 SO₂ - Measured by AT

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
China	Jinyunshan	Mean	1.8	1.8	2.9	3.2	3.4	3.2	3.2	3.2	3.5	2.7	3.5	3.9	3.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-d	2.6	3.8	4.9	4.5	4.9	4.5	3.8	4.5	6.0	4.1	5.6	5.6	6.0
		Min-d	0.4	0.8	1.9	2.3	2.3	2.3	2.3	2.6	2.3	2.3	2.3	2.3	0.4
	Hongwen	Mean	0.7	1.0	1.4	1.1	0.9	1.0	0.8	0.8	1.0	1.0	1.0	1.0	1.0
		%	100	100	100	100	100	100	100	94	100	100	100	100	99
		Max-d	1.5	1.9	2.3	1.9	1.5	1.5	1.5	1.5	2.3	1.5	1.5	1.5	2.3
		Min-d	0.4	0.4	0.8	0.8	0.4	0.8	0.4	0.4	0.4	0.8	0.8	0.8	0.4
	Haibin-Park	Mean	2.8	2.5	1.9	2.2	2.5	2.0	1.5	1.7	1.8	2.3	2.7	2.2	2.2
		%	100	100	100	100	100	100	100	94	100	100	100	100	99
		Max-d	3.4	3.0	2.3	3.0	3.8	3.0	2.3	1.9	2.6	2.6	3.4	3.4	3.8
		Min-d	2.3	1.5	1.5	1.5	2.3	0.8	1.1	1.5	0.8	1.9	2.3	1.1	0.8
	Wuzhishan	Mean	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2
		%	100	100	97	100	100	97	97	100	100	100	100	100	99
		Max-d	0.8	0.3	0.7	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.7	0.7	0.8
		Min-d	0.2	0.2	0.2	0.2	0.1	0.2	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1
	Lijiang	Mean	0.2	0.1	0.3	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.2	0.1	0.1
		%	74	100	90	90	81	80	97	100	90	100	100	94	91
		Max-d	0.6	0.4	0.6	0.2	0.3	0.2	0.5	<0.1	0.2	0.3	0.3	0.3	0.6
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Japan	Rishiri	Mean	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
		%	98	99	90	98	98	99	98	98	84	98	98	99	97
		Max-d	0.5	0.4	0.3	0.5	0.2	0.2	0.1	0.1	<0.1	<0.1	0.1	1.7	1.7
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	Mean	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.3	0.1
		%	92	91	91	88	79	85	91	91	89	53	79	97	86
		Max-d	0.5	0.5	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.4	3.3	3.3
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Sado-seki	Mean	<0.1	0.1	0.3	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1
		%	96	98	98	98	89	98	86	75	98	97	55	32	85
		Max-d	0.6	0.7	1.0	1.1	0.4	0.6	0.6	0.2	0.4	0.2	0.7	0.4	1.1
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Happo	Mean	<0.1	0.1	0.3	0.2	0.2	<0.1	0.1	0.1	0.2	<0.1	0.1	<0.1	0.1
		%	98	61	98	98	98	98	98	98	98	98	98	98	95
		Max-d	0.3	0.5	0.7	1.4	0.9	0.3	1.4	1.6	3.8	0.3	0.6	0.4	3.8
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ijira	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Oki	Mean	0.2	0.1	0.4	0.2	0.4	0.3	0.1	0.3	<0.1	0.2	0.5	***	0.2
		%	98	98	97	97	98	98	97	98	69	76	18	***	78
		Max-d	0.7	0.8	1.4	1.2	2.4	0.9	1.3	0.7	0.2	0.4	0.7	***	2.4
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	***	<0.1
	Yusuhara	Mean	0.3	0.7	1.1	***	***	***	***	***	***	***	***	***	0.5
		%	98	98	17	***	***	***	***	***	***	***	***	***	17
		Max-d	2.9	3.8	3.8	***	***	***	***	***	***	***	***	***	3.8
		Min-d	<0.1	<0.1	0.3	***	***	***	***	***	***	***	***	***	<0.1
	Hedo	Mean	0.2	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1
		%	97	70	97	98	97	95	96	82	98	98	98	98	94
		Max-d	0.5	0.3	0.4	0.4	0.4	0.2	0.6	0.3	<0.1	0.4	0.4	0.3	0.6
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ogasawara	Mean	1.1	0.4	0.1	0.2	<0.1	0.6	0.3	<0.1	<0.1	<0.1	0.2	***	0.2
		%	98	91	64	99	99	98	98	99	96	99	67	***	84
		Max-d	7.2	5.5	0.5	1.9	1.4	7.3	7.2	0.3	0.2	0.6	0.6	***	7.3
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	<0.1
	Niigata-maki	Mean	<0.1	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2	<0.1	0.2	0.1	0.2
		%	98	87	98	98	98	98	98	84	98	98	98	98	96
		Max-d	0.2	0.8	1.0	0.9	0.5	0.5	0.8	0.3	0.5	0.3	0.6	0.4	1.0
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mongolia	Ulaanbaatar	Mean	26.9	21.1	15.7	7.3	3.5	1.8	2.4	1.9	1.7	8.2	11.4	19.6	10.2
		%	100	99	99	100	94	99	98	98	100	96	99	100	98
		Max-d	50.2	36.2	30.3	17.7	8.9	3.3	10.5	5.1	5.1	16.1	26.4	40.7	50.2
		Min-d	5.7	6.4	2.2	1.9	0.9	0.5	<0.1	0.6	0.1	1.3	1.9	4.0	<0.1
Philippines	Manila Observatory	Mean	***	***	***	***	***	***	***	***	***	24.9	32.2	***	28.3
		%	***	***	***	***	***	***	***	***	***	100	90	***	16
		Max-d	***	***	***	***	***	***	***	***	***	37.8	38.6	***	38.6
		Min-d	***	***	***	***	***	***	***	***	***	18.9	23.9	***	18.9

Table 4.3.1 SO₂ - Measured by AT (continued)

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	1.6	1.8	1.5	1.8	2.1	2.4	2.5	2.5	2.4	2.1	2.2	2.0	2.1
		%	98	95	87	98	98	98	98	97	94	97	98	98	96
		Max-d	2.3	4.1	2.2	2.2	2.4	2.7	2.9	3.2	2.8	4.0	3.3	3.7	4.1
		Min-d	0.9	1.2	0.6	1.0	1.8	2.2	1.8	1.9	2.0	1.3	1.5	1.1	0.6
	Jeju	Mean	0.5	0.5	0.6	0.4	0.4	0.3	0.5	0.5	0.6	0.6	0.5	0.3	0.5
		%	99	99	98	99	97	96	95	95	94	97	100	100	97
		Max-d	1.3	1.1	1.4	0.8	0.7	0.4	1.2	1.3	0.8	1.0	0.9	1.1	1.4
		Min-d	0.3	0.4	0.3	0.1	0.3	<0.1	0.3	0.2	0.4	0.4	0.2	<0.1	<0.1
	Imsil	Mean	1.2	1.4	1.7	1.4	1.5	1.3	1.4	1.2	1.4	1.8	1.8	1.7	1.5
		%	95	97	90	98	91	97	87	97	97	98	96	95	95
		Max-d	1.9	1.7	2.4	2.1	1.9	1.8	2.7	1.5	1.9	2.0	2.7	2.3	2.7
		Min-d	0.9	1.2	1.4	1.2	1.3	1.2	0.9	1.2	1.1	1.7	1.5	1.5	0.9
Thailand	Si Phum	Mean	1.3	1.9	***	***	***	***	***	***	***	***	***	***	1.6
		%	96	96	***	***	***	***	***	***	***	***	***	***	16
		Max-d	1.8	2.0	***	***	***	***	***	***	***	***	***	***	2.0
		Min-d	1.0	1.6	***	***	***	***	***	***	***	***	***	***	1.0
	Nai Mueang	Mean	0.9	1.2	1.2	1.2	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.2	1.1
		%	96	96	96	96	96	96	96	96	96	96	96	96	96
		Max-d	2.2	2.6	1.8	1.8	1.1	1.5	1.5	1.4	1.2	1.2	1.6	1.7	2.6
		Min-d	0.2	0.7	0.7	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.2

Table 4.3.2 SO₂ - Measured by FP

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.2	0.2	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.2	0.1	<0.1	0.2	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.2	0.2	<0.1	0.1	0.2	<0.1	<0.1	0.3	0.3	<0.1	0.3	0.3
		Min-2w	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	Mean	0.3	0.3	0.1	0.2	0.1	<0.1	0.2	0.1	0.2	0.2	0.3	0.5	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.7	0.7
		Min-2w	0.3	0.3	<0.1	0.1	<0.1	<0.1	0.1	<0.1	0.2	0.1	0.2	0.2	<0.1
	Sado-seki	Mean	0.1	0.1	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.1	0.1	0.1	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.1	0.4	0.2	0.6	0.5	0.3	0.3	0.5	0.1	0.1	0.1	0.6
		Min-2w	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	<0.1	0.1	<0.1	<0.1	<0.1
	Happo	Mean	0.1	0.2	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.2	0.3	0.6	0.5	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.6
		Min-2w	<0.1	0.2	0.4	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.2	<0.1
	Ijira	Mean	<0.1	<0.1	0.2	0.3	0.3	0.2	***	0.2	<0.1	<0.1	0.1	<0.1	0.1
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	<0.1	<0.1	0.2	0.3	0.5	0.3	***	0.3	0.1	0.1	0.2	0.2	0.5
		Min-2w	<0.1	<0.1	<0.1	0.2	0.2	<0.1	***	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Oki	Mean	0.3	0.2	0.2	0.2	0.4	<0.1	0.3	0.2	<0.1	0.1	0.2	0.1	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.2	0.2	0.2	0.6	0.1	0.3	0.2	0.1	0.2	0.2	0.1	0.6
		Min-2w	0.2	0.1	0.2	0.2	0.2	<0.1	0.3	0.1	<0.1	<0.1	0.2	0.1	<0.1
	Yusuhara	Mean	0.3	0.5	0.4	0.3	0.1	0.2	0.2	<0.1	<0.1	0.2	0.2	0.4	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	0.7	0.6	0.4	0.2	0.2	0.3	<0.1	0.1	0.3	0.3	0.5	0.7
		Min-2w	0.1	0.4	0.1	0.2	0.1	0.2	<0.1	<0.1	<0.1	0.2	0.1	0.4	<0.1

Table 4.3.2 SO₂ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Japan	Hedo	Mean	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	<0.1
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	0.2
		Min-2w	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	<0.1
	Ogasawara	Mean	1.0	0.3	<0.1	0.2	0.4	0.3	0.3	<0.1	0.2	0.1	***	***	0.3
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	1.2	0.6	0.1	0.2	0.6	0.5	0.5	0.2	0.4	0.2	***	***	1.2
		Min-2w	0.7	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	***	***	<0.1
	Tokyo	Mean	0.6	0.6	0.7	0.5	0.7	1.1	1.1	1.1	0.7	0.7	0.4	0.6	0.7
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.7	0.6	0.8	0.5	0.8	1.4	1.2	1.3	0.7	0.9	0.5	0.6	1.4
		Min-2w	0.6	0.6	0.6	0.5	0.6	0.9	1.0	0.9	0.7	0.5	0.3	0.6	0.3
	Niigata-maki	Mean	0.1	0.1	0	0.2	0.3	0.2	0.3	0.2	0.2	0.1	<0.1	<0.1	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.1	0.2	0.3	0.3	0.4	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.4
		Min-2w	0.1	<0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	<0.1	<0.1	<0.1	<0.1
	Tsushima	Mean	0.5	0.5	0.4	0.4	0.3	0.2	0.1	0.3	0.2	0.3	0.4	0.3	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.6	0.7	0.4	0.4	0.5	0.2	0.1	0.3	0.4	0.4	0.4	0.4	0.7
		Min-2w	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.3	0.1	0.3	0.3	0.3	0.1
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.5	0.3	0.4	0.5	0.7	1.1	0.5	0.8	1.0	0.6	0.5	0.1	0.6
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	1.2	0.7	0.9	1.1	1.2	1.7	0.6	1.2	2.3	0.9	0.8	0.2	2.3
		Min-w	<0.1	<0.1	<0.1	0.1	0.3	0.5	0.3	0.2	0.5	0.4	0.2	<0.1	<0.1
	Tanah Rata	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4
		Min-w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Danum Valley	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mongolia	Ulaanbaatar	Mean	4.7	1.4	1.0	0.9	0.3	0.4	0.2	0.3	0.2	0.4	0.7	1.7	1.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	16.0	2.3	1.3	1.1	0.5	0.5	0.3	0.4	0.3	0.7	1.8	3.1	16.0
		Min-w	0.7	0.7	0.5	0.5	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.5	0.1
	Terelj	Mean	1.4	0.8	0.4	0.2	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.5	1.8	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
Myanmar	Yangon	Max-2w	2.2	1.0	0.5	0.2	<0.1	<0.1	<0.1	<0.1	0.3	0.4	0.6	1.8	2.2
		Min-2w	0.5	0.6	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	1.8	<0.1
		Mean	0.5	0.3	0.2	0.2	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
Philippines	Manila Observatory	Max-2w	0.5	0.3	0.4	0.4	0.5	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.5
		Min-2w	0.5	0.3	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
		Mean	0.7	2.3	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	0.6	0.2	0.3	0.5
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
	Los Baños	Max-irreg	0.9	3.8	1.8	<0.1	<0.1	0.1	<0.1	<0.1	4.1	1.5	0.3	0.6	4.1
		Min-irreg	0.4	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Mean	<0.1	<0.1	<0.1	<0.1	<0.1	2.8	0.3	0.6	2.6	0.8	0.3	0.2	0.7
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	0.2	0.3	<0.1	0.2	0.1	10.9	1.1	1.2	7.4	1.8	0.6	0.3	10.9
		Min-irreg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	<0.1	<0.1	0.1	<0.1

Table 4.3.2 SO₂ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Russia	Mondy	Mean	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		Min-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
	Listvyanka	Mean	5.9	12.2	4.7	3.8	2.6	1.5	1.0	1.0	2.3	3.6	6.6	10.5	4.6
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	8.0	23.3	7.7	4.9	3.8	2.0	1.9	1.3	3.3	5.5	11.2	14.8	23.3
		Min-w	3.2	4.4	2.1	2.0	1.6	1.0	0.2	0.6	1.1	1.8	3.0	6.3	0.2
	Irkutsk	Mean	11.4	11.9	5.9	10.0	8.7	3.8	3.0	1.8	6.0	10.3	13.2	30.6	9.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	21.1	21.6	8.5	13.3	13.0	5.1	7.9	4.0	11.9	14.4	21.8	40.3	40.3
		Min-w	4.2	5.9	4.5	7.5	4.3	3.1	0.6	0.5	0.9	5.3	5.9	25.3	0.5
	Primorskaya	Mean	0.3	0.7	0.6	0.4	0.9	0.3	0.6	0.5	2.5	0.4	0.1	0.1	0.6
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.3	0.8	0.6	0.4	1.2	0.4	0.7	0.7	4.7	0.4	0.2	0.2	4.7
		Min-15d	0.3	0.6	0.5	0.3	0.5	0.3	0.6	0.4	0.4	0.3	<0.1	<0.1	<0.1
Thailand	Bangkok	Mean	***	***	<0.1	0.3	0.1	***	0.1	0.2	0.3	0.6	0.7	0.4	0.3
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	<0.1	0.4	0.2	***	0.2	0.3	0.4	1.1	1.1	0.4	1.1
		Min-10d	***	***	<0.1	0.2	<0.1	***	<0.1	0.1	0.3	0.3	0.4	0.4	<0.1
Vietnam	Hanoi	Mean	0.6	0.3	0.8	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.9	0.4	1.2	0.8	0.4	0.5	0.5	0.5	0.4	0.4	0.6	0.5	1.2
		Min-w	0.4	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.2
	Hoa Binh	Mean	0.5	0.7	0.8	0.8	0.6	0.9	0.9	0.9	1.2	0.8	0.7	1.2	0.8
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.7	0.9	1.1	1.2	0.8	1.3	1.1	1.6	1.7	0.8	1.1	1.3	1.7
		Min-w	0.4	0.5	0.6	0.5	0.5	0.6	0.7	0.5	0.7	0.6	0.5	1.0	0.4
	Can Tho	Mean	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.7	0.6	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.8
		Min-w	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.5	0.5	0.5	0.4
	Ho Chi Minh	Mean	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.6	0.6	0.5	0.7
		Min-w	0.4	0.5	0.4	0.5	0.4	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.4
	Yen Bai	Mean	0.4	0.6	0.5	0.5	0.5	0.4	0.5	0.7	0.8	1.0	0.6	0.6	0.6
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.6	0.8	0.7	0.8	0.8	0.6	0.8	1.1	0.9	1.1	0.9	0.7	1.1
		Min-w	0.3	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.7	0.8	0.4	0.4	0.3

Table 4.3.3 SO₂ - Measured by PS

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Indonesia	Jakarta	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
	Kototabang	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 4.2.

Table 4.4.1 HNO₃ - Measured by FP

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Sado-seki	Mean	<0.1	<0.1	0.1	0.1	0.2	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	<0.1	<0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.1	<0.1	<0.1	<0.1	0.3
		Min-2w	<0.1	<0.1	0.1	<0.1	0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Happo	Mean	<0.1	<0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	<0.1	0.2	<0.1	0.2
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	<0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.2	<0.1	0.2	<0.1	0.4
		Min-2w	<0.1	<0.1	<0.1	<0.1	0.3	0.3	0.3	0.2	0.2	<0.1	0.2	<0.1	<0.1
	Ijira	Mean	<0.1	<0.1	0.1	0.1	0.2	0.2	***	0.2	0.1	0.1	<0.1	<0.1	0.1
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	<0.1	<0.1	0.2	0.2	0.3	0.2	***	0.2	0.1	0.2	<0.1	<0.1	0.3
		Min-2w	<0.1	<0.1	<0.1	<0.1	0.1	0.1	***	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Okii	Mean	<0.1	<0.1	<0.1	0.1	0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	<0.1	<0.1	0.1	0.2	0.1	0.3	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.3
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Yusuhara	Mean	0.1	0.1	0.2	0.1	0.2	0.2	0.2	<0.1	<0.1	0.2	<0.1	0.1	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.1	0.3	0.2	0.3	0.2	0.2	<0.1	<0.1	0.3	0.1	0.1	0.3
		Min-2w	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.2	<0.1	<0.1	0.1	<0.1	0.1	<0.1
	Hedo	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	<0.1
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	<0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	<0.1
	Ogasawara	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	<0.1
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	<0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	<0.1
	Tokyo	Mean	0.2	0.3	0.4	0.3	0.4	1.2	1.0	0.3	0.3	0.5	0.3	0.3	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.3	0.5	0.3	0.7	1.3	1.1	0.4	0.4	0.6	0.3	0.3	1.3
		Min-2w	0.2	0.3	0.3	0.3	0.3	1.0	0.8	0.2	0.2	0.4	0.2	0.3	0.2
	Niigata-maki	Mean	<0.1	<0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	<0.1	<0.1	<0.1	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	<0.1	<0.1	0.2	0.3	0.3	0.5	0.4	0.3	0.2	0.1	<0.1	<0.1	0.5
		Min-2w	<0.1	<0.1	0.1	<0.1	0.1	0.1	0.3	0.1	0.1	<0.1	<0.1	<0.1	<0.1
	Tsushima	Mean	0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.3	<0.1	0.3	0.2	0.1	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.2	0.3	0.3	0.4	0.6	0.3	0.3	0.1	0.5	0.2	0.2	0.6
		Min-2w	0.1	<0.1	0.3	<0.1	0.1	0.2	0.3	0.2	<0.1	0.1	0.1	<0.1	<0.1

Table 4.4.1 HNO₃ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.4	0.5	0.7	0.7	0.6	0.7	0.6	0.5	0.6	0.9	0.4	0.4	0.6
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.7	0.6	1.2	1.0	0.7	1.0	0.9	0.6	0.9	1.4	0.6	0.6	1.4
		Min-w	0.2	0.2	0.3	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.2	<0.1	<0.1
	Tanah Rata	Mean	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	<0.1	<0.1	<0.1	0.3	<0.1	0.2	0.1	0.2	0.2	0.2	<0.1	<0.1	0.3
		Min-w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Danum Valley	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mongolia	Ulaanbaatar	Mean	0.2	0.1	<0.1	0.1	<0.1	<0.1	0.7	<0.1	<0.1	0.3	0.3	0.1	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.4	0.2	0.1	0.2	0.2	0.1	2.3	0.1	0.1	0.7	0.6	0.3	2.3
		Min-w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
	Terelj	Mean	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.3
		Min-2w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Yangon	Mean	<0.1	0.2	0.4	0.2	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.4	<0.1	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
Philippines	Manila Observatory	Max-2w	0.2	0.3	0.5	0.3	0.3	0.1	<0.1	0.1	<0.1	<0.1	0.4	<0.1	0.5
		Min-2w	<0.1	<0.1	0.4	0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.4	<0.1	<0.1
	Los Baños	Mean	0.2	0.2	0.3	1.5	1.6	0.2	0.3	<0.1	0.3	0.5	<0.1	0.2	0.4
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	0.3	0.2	0.6	3.3	2.3	0.5	0.7	<0.1	1.1	1.4	0.1	0.3	3.3
		Min-irreg	0.1	0.2	<0.1	0.6	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Mt. Sto. Tomas	Mean	1.0	0.3	0.2	0.5	0.3	<0.1	0.1	<0.1	1.0	<0.1	0.1	0.3	0.3
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	1.7	0.4	0.6	0.9	1.0	0.3	0.6	<0.1	3.1	<0.1	0.2	0.8	3.1
		Min-irreg	0.6	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Republic of Korea	Ganghwa	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Jeju	Mean	<0.1	0.1	0.4	0.3	0.6	0.9	0.8	0.2	0.2	0.5	0.2	0.2	0.4
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	<0.1	0.2	1.2	1.0	1.6	1.8	1.8	0.4	0.5	1.4	0.5	0.3	1.8
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Imsil	Mean	0.2	0.3	0.4	0.1	0.2	0.6	<0.1	<0.1	0.2	0.2	0.1	0.3	0.2
		%	16	18	13	13	10	13	13	10	13	16	17	16	13
		Max-d	0.7	0.5	0.8	0.3	0.4	1.0	<0.1	<0.1	0.3	0.4	0.3	0.6	1.0
		Min-d	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Russia	Mondy	Mean	***	0.9	0.4	0.1	0.3	0.6	<0.1	<0.1	0.2	0.4	0.3	0.3	0.3
		%	***	7	16	7	16	13	10	16	17	10	17	6	11
		Max-d	***	1.5	0.5	0.2	1.0	1.0	<0.1	<0.1	0.5	1.0	0.9	0.5	1.5
		Min-d	***	0.3	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
	Listvyanka	Mean	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		Min-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
	Irkutsk	Mean	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.1	0.2	0.2	0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.6	0.6
		Min-w	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Primorskaya	Mean	<0.1	<0.1	0.1	<0.1	0.2	0.2	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.2	<0.1	0.1	0.1	0.6	0.3	0.2	0.3	<0.1	0.1	0.2	<0.1	0.6
		Min-w	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Primorskaya	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.1	<0.1	0.5	<0.1	<0.1	<0.1	0.5
		Min-15d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table 4.4.1 HNO₃ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	<0.1	0.9	0.3	***	0.3	0.2	0.3	0.8	1.1	1.2	0.6
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	<0.1	1.2	0.4	***	0.4	0.3	0.5	1.3	1.5	1.3	1.5
		Min-10d	***	***	<0.1	0.5	0.2	***	<0.1	0.1	0.3	0.2	0.9	1.2	<0.1
Vietnam	Hanoi	Mean	0.8	0.3	0.8	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.5	0.3	1.6	1.0	0.3	0.4	0.4	0.5	0.4	0.4	0.6	0.6	1.6
		Min-w	0.3	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.3	0.5	0.1
	Hoa Binh	Mean	0.5	0.8	0.7	0.6	0.7	0.6	0.6	0.8	0.8	0.5	0.6	0.9	0.7
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.6	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	0.6	0.9	1.0	1.0
		Min-w	0.3	0.7	0.5	0.4	0.5	0.3	0.4	0.5	0.6	0.4	0.4	0.8	0.3
	Can Tho	Mean	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.3
		Min-w	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1
	Ho Chi Minh	Mean	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.5	0.6	0.4	0.6
		Min-w	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3
	Yen Bai	Mean	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.7	0.8	0.9	0.6	0.8	0.6
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.4	0.7	0.7	0.7	0.5	0.6	0.7	1.2	1.2	1.2	0.8	1.0	1.2
		Min-w	0.4	0.4	0.3	0.3	0.4	0.2	0.2	0.4	0.5	0.7	0.3	0.6	0.2

Terms and abbreviations are given in Table 4.2.

Table 4.5.1 HCl - Measured by FP

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.1	0.3	0.3	0.2	0.4	0.5	0.6	0.4	0.3	0.3	0.2	0.2	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.3	0.3	0.3	0.5	0.5	0.8	0.5	0.4	0.5	0.3	0.3	0.8
		Min-2w	<0.1	0.3	0.3	0.1	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.2	<0.1
	Ochiishi	Mean	0.1	0.2	0.1	0.2	0.3	0.4	0.6	0.5	0.3	0.2	0.1	0.2	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.1	0.2	0.2	0.3	0.4	0.4	0.7	0.5	0.4	0.3	0.1	0.2	0.7
		Min-2w	<0.1	0.2	0.1	0.1	0.2	0.4	0.4	0.4	0.2	0.2	<0.1	0.2	<0.1
	Sado-seki	Mean	0.3	0.4	0.6	0.4	0.5	0.5	0.7	0.5	0.5	0.5	0.3	0.2	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	0.4	0.8	0.6	0.6	0.6	0.8	0.6	0.7	0.7	0.3	0.2	0.8
		Min-2w	0.1	0.4	0.4	0.2	0.5	0.4	0.5	0.5	0.3	0.3	0.3	0.2	0.1
	Happo	Mean	<0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	<0.1	0.2	0.2	<0.1	0.1
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	<0.1	0.3	0.2	0.1	0.3
		Min-2w	<0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	<0.1	0.2	0.2	<0.1	<0.1
	Ijira	Mean	<0.1	<0.1	0.2	0.2	0.2	0.1	***	0.3	0.2	0.1	0.1	<0.1	0.2
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	<0.1	0.1	0.2	0.2	0.2	0.2	***	0.5	0.2	0.2	0.1	<0.1	0.5
		Min-2w	<0.1	<0.1	0.1	0.2	0.2	0.1	***	0.2	0.1	0.1	<0.1	<0.1	<0.1
	Okii	Mean	0.3	0.5	0.6	0.4	0.5	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.4	0.5	0.7	0.6	0.7	0.7	0.8	0.5	0.4	0.6	0.6	0.5	0.8
		Min-2w	0.2	0.4	0.4	0.2	0.4	0.6	0.5	0.4	0.3	0.4	0.3	0.2	0.2
	Yusuhara	Mean	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.4	0.3	0.3	0.3	0.3	0.2	0.4	0.3	0.2	0.3	0.3	0.2	0.4
		Min-2w	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1
	Hedo	Mean	0.7	0.7	0.6	0.3	0.2	0.2	0.1	***	***	***	***	***	0.4
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	0.9	0.7	0.7	0.3	0.2	0.2	0.2	***	***	***	***	***	0.9
		Min-2w	0.6	0.7	0.6	0.2	0.2	<0.1	0.1	***	***	***	***	***	<0.1
	Ogasawara	Mean	0.5	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.1	0.2	***	***	0.3
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.5	0.5	0.3	0.3	0.4	0.5	0.3	0.2	0.2	0.2	***	***	0.5
		Min-2w	0.4	0.2	0.3	0.1	0.3	0.3	0.1	0.2	0.1	0.2	***	***	0.1
	Tokyo	Mean	0.2	0.3	0.7	0.7	0.8	0.8	1.1	0.8	0.7	0.7	0.5	0.4	0.6
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.4	0.7	0.7	1.0	1.0	1.2	0.8	0.7	0.8	0.6	0.5	1.2
		Min-2w	0.2	0.3	0.6	0.7	0.6	0.5	1.0	0.7	0.6	0.6	0.4	0.4	0.2
	Niigata-maki	Mean	0.2	0.4	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.4	0.3	0.3	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.4	0.7	0.8	0.6	0.5	0.7	0.6	0.7	0.5	0.4	0.3	0.8
		Min-2w	0.2	0.4	0.4	0.3	0.4	0.4	0.6	0.5	0.5	0.4	0.3	0.3	0.2
	Tsushima	Mean	0.3	0.4	0.6	0.3	0.5	0.4	0.5	0.6	0.4	0.5	0.3	0.2	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.4	0.6	0.4	0.5	0.5	0.5	0.6	0.4	0.6	0.3	0.3	0.6
		Min-2w	0.3	0.3	0.6	0.2	0.4	0.2	0.5	0.5	0.4	0.5	0.3	0.2	0.2

Table 4.5.1 HCl - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	1.0	0.7	0.7	0.7	0.8	0.7	1.2	0.7	1.2	0.9	0.7	0.7	0.8
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	1.1	1.0	1.0	0.9	1.0	1.0	2.7	0.9	1.6	1.2	0.9	1.0	2.7
		Min-w	0.7	0.5	0.5	0.4	0.5	0.5	0.7	0.6	0.8	0.6	0.5	0.2	0.2
	Tanah Rata	Mean	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.1	0.3	0.3	0.6	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.4	0.6
		Min-w	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	<0.1
	Danum Valley	Mean	0.2	0.2	0.3	0.2	0.3	<0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.2
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.2	0.2	0.4	0.2	0.4	0.1	0.2	0.1	0.2	0.2	0.2	0.5	0.5
		Min-2w	0.1	0.2	0.3	0.2	<0.1	<0.1	0.2	0.1	0.1	0.2	0.1	0.2	<0.1
Mongolia	Ulaanbaatar	Mean	3.0	2.3	2.7	2.6	2.5	3.1	2.8	3.1	2.9	3.6	2.8	2.9	2.9
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.6	2.6	3.2	3.0	2.8	3.6	3.0	4.3	3.3	5.3	3.2	3.3	5.3
		Min-w	2.4	1.6	2.4	2.3	2.2	2.7	2.6	2.3	2.3	2.7	2.4	2.7	1.6
	Terelj	Mean	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4
		Min-2w	0.3	0.3	<0.1	0.3	<0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	<0.1
Myanmar	Yangon	Mean	0.7	0.5	0.2	0.1	0.3	<0.1	0.9	<0.1	<0.1	0.1	<0.1	0.5	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.8	0.6	0.4	0.2	0.5	0.1	0.9	0.1	<0.1	0.1	<0.1	0.5	0.9
		Min-2w	0.6	0.3	<0.1	<0.1	0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	0.4	<0.1
Philippines	Manila Observatory	Mean	0.5	0.6	1.4	1.4	1.1	0.8	0.3	0.5	0.6	2.6	0.3	0.7	0.9
		%	100	76	100	100	100	100	100	80	100	100	100	96	
		Max-irreg	0.6	0.7	3.4	1.8	1.4	1.9	0.8	0.7	1.4	5.2	0.5	0.8	5.2
		Min-irreg	0.4	0.5	0.6	0.9	0.6	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	0.6	<0.1
	Los Baños	Mean	1.7	0.8	0.5	1.2	0.3	1.1	0.4	1.7	1.4	2.9	2.4	2.5	1.4
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	2.6	1.2	1.0	2.9	0.7	2.6	1.7	3.5	3.2	6.0	4.5	3.8	6.0
		Min-irreg	0.7	0.6	<0.1	0.2	0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.8	<0.1
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	Mean	<0.1	0.1	0.1	0.2	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1
		%	16	18	16	13	6	3	6	3	3	16	13	19	10
		Max-d	0.1	0.2	0.3	0.5	0.2	<0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5
		Min-d	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1
	Jeju	Mean	0.2	0.1	0.3	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.1
		%	16	18	13	13	10	7	13	3	13	16	17	16	12
		Max-d	0.4	0.2	0.4	0.1	0.2	<0.1	0.1	<0.1	0.2	<0.1	0.3	0.6	0.4
		Min-d	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
	Imsil	Mean	***	0.1	0.2	<0.1	<0.1	***	***	***	<0.1	0.1	0.2	0.2	0.1
		%	***	7	16	3	10	***	***	***	13	10	17	6	6
		Max-d	***	0.2	0.4	<0.1	<0.1	***	***	***	<0.1	0.2	0.3	0.3	0.4
		Min-d	***	<0.1	<0.1	<0.1	<0.1	***	***	***	<0.1	<0.1	<0.1	0.1	<0.1
Russia	Mondy	Mean	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
		Min-irreg	<0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
	Listvyanka	Mean	0.1	0.2	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.2
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.2	0.2	0.4	0.4	0.2	0.2	0.2	0.3	0.2	0.6	0.4	0.8	0.8
		Min-w	<0.1	0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	0.1	<0.1	0.3	0.1	<0.1
	Irkutsk	Mean	0.1	<0.1	0.2	0.3	0.5	0.2	0.4	0.3	0.3	0.6	0.4	0.4	0.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.2	0.1	0.4	0.7	1.3	0.2	0.7	0.3	0.6	1.8	0.6	0.6	1.8
		Min-w	<0.1	<0.1	<0.1	0.2	0.2	<0.1	0.2	0.2	<0.1	0.2	0.1	0.3	<0.1
	Primorskaya	Mean	0.2	<0.1	<0.1	0.1	0.5	0.2	0.3	0.3	1.5	0.2	0.2	0.2	0.3
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.2	<0.1	<0.1	0.2	0.8	0.3	0.3	0.6	2.9	0.2	0.3	0.2	2.9
		Min-15d	0.2	<0.1	<0.1	0.1	0.2	0.2	0.2	<0.1	0.2	0.2	0.2	0.2	<0.1

Table 4.5.1 HCl - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.2	0.7	0.3	***	0.4	0.4	0.4	0.4	0.6	0.6	0.5
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	0.2	0.9	0.4	***	0.5	0.6	0.4	0.4	0.7	0.6	0.9
		Min-10d	***	***	0.2	0.5	0.2	***	0.2	0.3	0.3	0.3	0.5	0.5	0.2
Vietnam	Hanoi	Mean	1.6	0.7	1.8	1.1	0.6	0.9	0.9	0.9	0.9	0.7	1.1	1.2	1.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.6	0.9	4.1	2.1	0.8	1.4	1.4	1.3	1.3	0.9	1.3	1.3	4.1
		Min-w	0.8	0.5	1.0	0.5	0.5	0.5	0.7	0.4	0.8	0.6	0.9	1.1	0.4
	Hoa Binh	Mean	1.3	2.3	2.3	2.3	2.1	2.5	2.3	2.0	2.4	2.2	1.9	3.2	2.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.9	2.7	2.8	2.7	2.3	3.3	2.7	3.1	3.3	2.8	2.5	4.0	4.0
		Min-w	0.9	1.7	1.4	2.1	2.0	1.9	1.7	1.3	1.7	1.7	1.1	2.6	0.9
	Can Tho	Mean	1.6	1.7	1.8	1.4	1.7	1.8	1.7	1.7	1.4	1.7	1.9	1.7	1.7
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.8	1.9	2.2	1.6	2.1	2.0	2.2	2.2	1.5	2.2	2.2	2.1	2.2
		Min-w	1.5	1.4	1.6	1.2	1.5	1.4	1.4	1.4	1.4	1.1	1.6	1.5	1.1
	Ho Chi Minh	Mean	1.3	1.5	1.3	1.3	1.3	1.2	1.5	1.3	1.1	1.3	1.3	1.2	1.3
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.6	1.7	1.6	1.4	1.5	1.9	1.6	1.8	1.3	1.6	1.8	1.3	1.9
		Min-w	1.1	1.4	1.0	1.2	1.1	0.8	1.3	0.9	0.8	1.0	0.9	1.1	0.8
	Yen Bai	Mean	1.0	1.8	1.4	1.4	1.6	1.4	1.5	1.9	2.6	2.3	1.6	2.0	1.7
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.3	2.9	2.3	1.9	2.2	1.7	2.0	2.9	3.2	2.7	2.4	3.0	3.2
		Min-w	0.9	1.1	0.9	0.9	1.1	0.9	0.9	1.0	2.2	1.9	1.3	1.2	0.9

Terms and abbreviations are given in Table 4.2.

Table 4.6.1 NH₃ - Measured by FP

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.5	0.5	1.0	1.0	0.9	1.0	1.5	1.1	1.4	1.1	0.7	0.4	0.9
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	0.7	1.3	1.4	1.3	1.0	1.7	1.2	1.7	1.6	0.8	0.4	1.7
		Min-2w	0.5	0.2	0.7	0.6	0.5	0.9	1.3	0.9	1.0	0.7	0.5	0.3	0.2
	Ochiishi	Mean	0.1	<0.1	0.2	0.4	0.4	0.3	0.7	0.5	0.5	0.6	0.6	0.2	0.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.1	<0.1	0.2	0.5	0.5	0.4	0.8	0.5	0.6	0.6	0.8	0.3	0.8
		Min-2w	<0.1	<0.1	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.2	<0.1
	Sado-seki	Mean	0.4	0.5	1.3	1.3	1.6	1.7	1.6	1.5	1.1	0.8	0.4	0.3	1.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.4	0.6	1.4	1.4	1.8	2.2	2.2	1.7	1.2	1.0	0.4	0.4	2.2
		Min-2w	0.4	0.4	1.3	1.2	1.5	1.2	1.0	1.4	1.0	0.6	0.3	0.2	0.2
	Happo	Mean	0.1	0.1	0.6	0.7	0.9	1.0	0.8	0.4	0.3	0.3	0.5	0.1	0.5
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.1	0.2	0.8	0.8	0.9	1.1	1.2	0.5	0.3	0.3	0.5	0.2	1.2
		Min-2w	<0.1	0.1	0.3	0.6	0.9	0.8	0.4	0.3	0.3	0.3	0.5	<0.1	<0.1
	Ijira	Mean	0.3	0.3	0.8	1.4	0.8	1.2	***	1.4	1.0	0.6	0.3	0.4	0.8
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.4	0.4	1.1	1.8	1.2	1.4	***	1.5	1.1	0.7	0.4	0.5	1.8
		Min-2w	0.2	0.3	0.6	1.0	0.5	0.9	***	1.3	1.0	0.6	0.3	0.3	0.2
	Okii	Mean	0.4	0.4	1.1	1.1	1.1	1.2	1.2	0.9	0.6	0.8	0.5	0.4	0.8
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	0.5	1.4	1.3	1.3	1.4	1.3	0.9	0.7	1.0	0.5	0.6	1.4
		Min-2w	0.4	0.4	0.8	1.0	0.9	1.0	1.1	0.9	0.5	0.8	0.5	0.3	0.3
	Yusuhara	Mean	0.3	0.2	0.4	0.7	0.7	0.7	0.9	0.5	0.4	0.6	0.3	0.3	0.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	0.3	0.5	0.7	1.0	0.8	1.2	0.5	0.5	0.6	0.3	0.3	1.2
		Min-2w	0.2	0.2	0.3	0.7	0.6	0.6	0.6	0.5	0.3	0.5	0.3	0.2	0.2
	Hedo	Mean	1.1	1.0	0.9	0.6	0.6	0.9	0.9	***	***	***	***	***	0.8
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	1.2	1.1	1.0	0.8	0.6	0.9	0.9	***	***	***	***	***	1.2
		Min-2w	0.9	0.8	0.8	0.5	0.5	0.9	0.8	***	***	***	***	***	0.5
	Ogasawara	Mean	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.5	0.5	***	***	0.5
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	***	***	0.6
		Min-2w	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.5	0.4	0.4	***	***	0.3
	Tokyo	Mean	3.1	2.9	3.7	3.1	3.6	4.7	6.0	5.0	4.7	4.0	3.3	4.0	4.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.8	3.1	3.9	3.2	4.2	4.9	6.0	5.3	5.0	4.8	3.3	4.5	6.0
		Min-2w	2.4	2.8	3.6	3.0	2.9	4.5	6.0	4.7	4.4	3.4	3.3	3.6	2.4
	Niigata-maki	Mean	0.4	0.6	1.6	1.7	1.8	1.9	1.9	2.4	2.1	1.1	0.6	0.6	1.4
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.4	0.6	1.9	1.8	2.4	2.2	2.2	2.5	2.3	1.3	0.7	0.7	2.5
		Min-2w	0.3	0.6	1.2	1.7	1.4	1.7	1.6	2.3	1.9	0.8	0.5	0.5	0.3
	Tsushima	Mean	0.5	0.5	1.6	1.3	1.3	1.4	1.3	0.8	0.8	1.2	0.6	0.5	1.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.6	0.6	1.6	1.4	1.4	1.4	1.3	0.9	0.8	1.3	0.6	0.6	1.6
		Min-2w	0.5	0.5	1.6	1.2	1.2	1.4	1.3	0.6	0.7	1.1	0.6	0.3	0.3

Table 4.6.1 NH₃ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	6.4	5.5	7.1	8.5	9.5	7.5	11.5	8.4	8.2	8.3	7.9	6.9	7.9
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	7.3	6.2	8.6	9.0	11.0	8.7	25.3	10.7	10.2	10.1	9.4	8.9	25.3
		Min-w	4.4	4.6	5.6	7.3	7.7	6.9	5.9	7.3	6.5	7.2	6.5	3.4	3.4
	Tanah Rata	Mean	0.8	1.1	1.6	2.1	1.7	1.1	1.3	1.3	1.3	1.9	1.9	1.4	1.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.0	1.5	2.0	3.5	2.0	1.7	1.7	1.9	2.0	2.2	2.6	2.1	3.5
		Min-w	0.6	0.6	1.3	1.4	1.3	0.8	1.0	0.6	0.7	1.5	1.5	0.8	0.6
	Danum Valley	Mean	0.8	1.1	1.2	2.4	3.9	1.3	1.5	2.2	1.8	1.8	1.6	1.4	1.7
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.8	1.1	1.5	2.4	6.8	1.4	1.9	2.3	2.7	1.8	1.8	1.6	6.8
		Min-2w	0.7	1.1	1.0	2.4	1.0	1.2	1.2	2.1	1.3	1.7	1.5	1.2	0.7
Mongolia	Ulaanbaatar	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Terelj	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Myanmar	Yangon	Mean	0.3	0.9	1.5	1.4	0.5	0.1	0.2	1.7	0.1	0.6	<0.1	0.1	0.6
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.5	1.2	1.8	2.4	0.6	0.1	0.2	1.9	0.2	1.5	0.1	0.1	2.4
		Min-2w	0.2	0.6	1.3	0.4	0.2	<0.1	0.2	1.4	<0.1	<0.1	<0.1	0.1	<0.1
Philippines	Manila Observatory	Mean	18.3	17.1	16.3	19.0	16.4	11.1	15.9	8.3	6.0	5.9	7.0	17.0	13.4
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	31.8	19.4	22.4	22.7	17.9	18.0	19.5	11.3	14.2	8.6	15.2	18.5	31.8
		Min-irreg	13.1	13.9	11.1	17.3	13.9	2.6	9.9	<0.1	0.2	1.8	<0.1	15.2	<0.1
	Los Baños	Mean	14.1	2.0	12.1	6.2	3.5	13.8	2.9	3.0	4.3	3.9	3.2	4.4	6.1
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	40.0	3.5	41.0	13.7	9.1	42.7	8.2	9.4	7.0	4.3	4.5	5.6	42.7
		Min-irreg	4.6	1.4	1.4	1.6	0.3	1.1	1.3	0.2	1.2	3.4	<0.1	3.4	<0.1
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	Mean	2.4	2.5	2.3	3.4	3.6	4.2	3.9	4.6	2.3	2.6	1.2	2.2	3.2
		%	16	18	16	17	13	17	16	16	17	16	17	16	16
		Max-d	3.7	3.6	2.8	4.9	4.1	5.6	6.4	5.2	3.6	3.9	2.3	2.9	6.4
		Min-d	1.3	1.7	1.8	2.3	2.5	3.4	2.3	4.2	1.3	2.1	0.3	0.9	1.3
	Jeju	Mean	2.3	2.0	4.1	3.1	3.7	3.7	2.9	4.5	4.2	2.8	1.8	1.1	3.2
		%	16	18	13	13	10	13	13	10	13	16	17	10	13
		Max-d	3.7	2.8	6.7	3.9	6.5	5.5	4.9	7.3	6.1	5.4	4.3	2.5	7.3
		Min-d	0.7	1.1	2.6	1.6	1.5	2.7	2.1	0.2	2.9	0.9	0.5	<0.1	0.2
	Imsil	Mean	***	9.0	8.1	2.8	4.9	9.5	3.3	5.2	3.9	3.9	4.5	2.6	5.8
		%	***	7	16	7	16	13	10	16	17	10	17	6	11
		Max-d	***	9.4	10.0	5.0	6.0	16.5	3.7	8.4	5.0	6.0	6.8	3.7	16.5
		Min-d	***	8.6	5.4	0.6	3.1	6.3	2.6	3.2	2.8	2.4	2.1	1.5	0.6
Russia	Mondy	Mean	0.1	<0.1	***	***	***	***	***	***	***	***	***	***	0.1
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	0.1	<0.1	***	***	***	***	***	***	***	***	***	***	0.1
		Min-irreg	0.1	<0.1	***	***	***	***	***	***	***	***	***	***	<0.1
	Listvyanka	Mean	0.5	0.4	0.8	0.9	0.7	1.4	2.2	2.3	0.9	0.9	0.7	3.2	1.3
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	1.1	0.5	1.1	1.5	2.1	3.6	2.5	2.8	1.1	1.5	0.9	6.6	6.6
		Min-w	0.1	0.1	0.6	0.5	<0.1	0.2	1.9	0.9	0.6	0.6	0.5	<0.1	<0.1
	Irkutsk	Mean	0.8	0.9	2.7	2.5	4.4	3.1	4.7	3.9	3.7	2.2	2.1	2.1	2.8
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.2	1.2	3.7	2.8	7.3	3.7	7.0	8.4	6.7	3.4	3.7	3.0	8.4
		Min-w	0.4	0.7	1.8	2.3	3.1	2.2	1.1	<0.1	0.7	0.9	1.1	0.6	<0.1
	Primorskaya	Mean	<0.1	<0.1	<0.1	2.9	1.7	3.2	2.4	2.3	13.1	0.8	0.4	0.2	2.4
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	<0.1	0.1	<0.1	4.0	3.4	3.4	3.1	4.6	21.9	0.8	0.8	0.2	21.9
		Min-15d	<0.1	<0.1	<0.1	1.8	<0.1	2.9	1.6	<0.1	4.3	0.8	<0.1	0.2	<0.1

Table 4.6.1 NH₃ - Measured by FP (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	1.5	5.3	1.7	***	1.1	2.6	10.0	6.5	***	***	4.4
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	1.5	6.3	2.4	***	3.2	7.4	11.6	7.9	***	***	11.6
		Min-10d	***	***	1.5	4.4	0.9	***	<0.1	0.1	8.0	5.1	***	***	<0.1
Vietnam	Hanoi	Mean	2.8	1.2	3.7	2.0	1.3	1.4	1.7	1.7	1.7	1.5	1.9	2.4	2.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.8	1.3	6.1	2.9	1.5	1.7	1.9	2.4	1.8	1.8	2.3	2.8	6.1
		Min-w	1.9	1.1	2.9	1.2	1.2	1.0	1.5	1.1	1.6	1.2	1.8	2.1	1.0
	Hoa Binh	Mean	1.4	1.8	1.5	1.3	1.6	1.5	1.6	1.5	1.8	1.4	1.2	2.1	1.5
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.6	3.0	1.6	1.5	1.8	1.6	1.7	2.0	2.0	1.5	1.5	2.1	3.0
		Min-w	1.1	1.2	1.3	1.2	1.3	1.2	1.4	1.2	1.6	1.3	1.0	2.0	1.0
	Can Tho	Mean	5.0	5.5	5.3	5.4	5.0	5.5	5.3	5.3	5.2	4.7	4.9	4.9	5.2
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	5.5	6.4	6.5	5.6	5.2	6.2	5.8	6.2	5.9	5.0	5.9	5.4	6.5
		Min-w	3.9	4.4	4.2	5.3	4.5	4.7	4.7	4.4	4.6	4.0	3.9	4.5	3.9
	Ho Chi Minh	Mean	3.4	3.3	3.1	2.3	3.1	3.0	3.2	3.3	3.6	2.7	2.9	3.5	3.1
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.7	3.9	3.7	2.5	3.5	3.4	3.8	4.3	4.2	3.0	3.5	3.9	4.3
		Min-w	2.9	2.5	2.5	2.0	2.9	2.7	2.7	2.5	2.5	2.1	2.3	3.2	2.0
	Yen Bai	Mean	2.8	3.3	2.9	2.6	3.2	2.8	3.1	3.0	3.4	2.7	2.8	3.0	3.0
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.1	3.6	3.4	3.1	3.7	3.3	3.8	3.3	3.5	3.3	3.1	3.2	3.8
		Min-w	2.6	3.0	2.4	2.2	2.6	2.3	2.2	2.6	3.1	2.3	2.5	2.7	2.2

Terms and abbreviations are given in Table 4.2.

Table 4.7 NO - Measured by AT

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	2.2	0.9	0.7	***	***	2.0	1.6	***	***	***	0.4	4.5	2.1
		%	1	100	43	***	***	78	59	***	***	***	23	100	33
		Max-d	<0.1	2.3	1.7	***	***	4.7	2.4	***	***	***	0.6	15.5	15.5
		Min-d	<0.1	0.5	0.3	***	***	0.8	0.9	***	***	***	0.2	0.3	<0.1
China	Jinyunshan	Mean	1.6	1.9	2.2	1.9	1.9	1.8	1.8	1.8	2.4	2.5	2.3	2.0	2.0
		%	100	100	100	100	100	100	100	100	97	94	87	100	98
		Max-d	2.4	2.4	2.4	3.2	2.4	2.4	2.4	2.4	7.2	5.6	6.4	3.2	7.2
		Min-d	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Japan	Rishiri	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	98	98	89	98	98	98	98	98	85	98	98	98	96
		Max-d	0.1	<0.1	0.1	0.1	0.2	0.1	0.2	0.2	<0.1	0.1	0.1	<0.1	0.2
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	***	<0.1
		%	91	91	91	91	87	91	91	88	89	91	38	***	78
		Max-d	0.1	0.1	0.2	0.1	0.3	0.2	0.6	0.5	0.2	0.2	<0.1	***	0.6
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	<0.1
	Sado-seki	Mean	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		%	95	98	97	98	73	73	13	96	97	97	55	32	77
		Max-d	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.5	0.4	0.2	<0.1	0.1	0.5
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Happo	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Ijira	Mean	<0.1	0.2	0.1	0.3	<0.1	0.4	0.3	0.7	0.2	<0.1	0.2	0.3	0.2
		%	97	98	89	98	98	98	98	98	98	98	98	98	97
		Max-d	0.4	0.3	0.4	0.9	0.6	0.8	0.7	4.2	0.7	<0.1	0.6	0.8	4.2
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Oki	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Yusuhara	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Hedo	Mean	0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	***	***	<0.1
		%	97	69	88	97	98	***	***	***	***	***	***	***	37
		Max-d	0.3	0.1	<0.1	0.1	0.1	***	***	***	***	***	***	***	0.3
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	***	***	<0.1
	Ogasawara	Mean	***	<0.1	<0.1	<0.1	<0.1	0.1	***	***	***	***	***	***	<0.1
		%	***	81	95	99	98	29	***	***	***	***	***	***	33
		Max-d	***	0.3	0.2	0.2	0.3	0.2	***	***	***	***	***	***	0.3
		Min-d	***	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	***	<0.1
	Niigata-maki	Mean	0.2	<0.1	<0.1	0.2	0.1	<0.1	0.1	0.2	0.4	<0.1	0.1	0.3	0.2
		%	96	85	96	97	95	95	96	81	95	95	96	95	94
		Max-d	1.2	0.5	0.3	0.3	0.5	0.6	0.7	0.3	0.6	0.3	0.4	0.7	1.2
		Min-d	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	Mean	28.0	18.7	21.0	7.3	4.1	5.0	5.7	8.3	12.9	32.0	25.7	30.0	16.6
		%	100	99	100	100	94	98	100	99	100	96	99	100	99
		Max-d	79.8	43.5	54.3	34.6	14.7	10.1	16.0	19.1	33.8	60.4	81.4	71.4	81.4
		Min-d	1.5	3.5	0.5	0.5	0.4	1.5	2.3	3.7	2.5	7.0	5.3	5.9	0.4
Thailand	Nai Mueang	Mean	6.4	6.9	4.9	3.2	3.2	7.8	10.0	9.2	10.8	8.1	8.6	7.5	7.2
		%	93	96	95	95	96	96	96	96	96	96	96	96	96
		Max-d	15.4	17.3	9.0	9.7	9.6	12.9	18.0	13.4	17.6	14.4	31.9	20.7	31.9
		Min-d	2.7	2.1	1.2	0.4	0.7	3.8	3.8	5.3	3.6	3.1	1.4	1.3	0.4

Terms and abbreviations are given in Table 4.2.

Table 4.8.1 NO₂ - Measured by AT

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	20.4	6.4	6.7	***	***	1.8	0.7	***	***	***	1.5	2.4	3.4
		%	1	100	43	***	***	72	59	***	***	***	21	97	32
		Max-d	<0.1	12.1	9.4	***	***	5.4	1.3	***	***	***	2.7	4.1	12.1
		Min-d	<0.1	3.8	4.4	***	***	0.4	0.2	***	***	***	0.5	0.6	<0.1
China	Hongwen	Mean	11.8	17.6	15.6	8.2	5.3	3.7	4.6	8.5	4.9	5.5	7.3	10.3	8.6
		%	100	100	100	100	100	100	100	94	100	100	100	100	99
		Max-d	25.6	28.8	28.2	13.6	10.5	8.4	10.5	14.1	13.1	13.6	14.1	21.4	28.8
		Min-d	3.7	11.5	6.8	3.7	1.0	1.0	1.0	1.6	1.0	3.1	3.7	4.7	1.0
	Haibin-Park	Mean	10.5	11.0	11.8	8.6	6.4	5.0	5.6	6.6	7.7	8.0	11.6	18.2	9.3
		%	100	100	100	100	100	97	100	90	100	100	100	100	99
		Max-d	26.1	22.0	27.7	17.8	17.8	8.9	10.5	9.9	11.5	14.1	23.5	41.3	41.3
		Min-d	3.7	5.2	5.2	3.7	1.6	1.0	3.1	4.2	2.6	2.6	4.2	8.9	1.0
	Wuzhishan	Mean	1.3	0.9	1.2	0.7	0.7	0.3	0.5	0.6	0.5	0.8	1.0	1.3	0.8
		%	100	100	100	100	100	100	94	100	100	100	100	100	99
		Max-d	2.7	3.5	2.6	1.4	1.8	1.0	0.7	1.0	1.3	2.4	2.6	3.2	3.5
		Min-d	0.3	0.2	0.6	0.2	<0.1	0.2	0.2	0.4	0.3	0.2	0.2	0.3	<0.1
	Lijiang	Mean	1.5	0.8	0.8	0.8	1.0	0.8	0.7	0.5	0.7	0.7	0.7	0.6	0.8
		%	71	82	77	93	81	57	100	97	100	100	80	90	86
		Max-d	3.2	1.9	1.1	1.7	2.0	1.2	1.3	1.1	1.3	1.5	2.0	1.6	3.2
		Min-d	0.2	<0.1	0.3	0.1	0.4	0.5	0.2	0.3	0.3	0.4	0.1	0.1	<0.1
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	Mean	34.1	34.0	28.4	21.8	18.9	12.7	12.0	12.0	13.5	22.1	24.8	28.2	21.9
		%	100	99	100	100	94	98	100	99	100	96	99	100	99
		Max-d	51.9	43.8	38.7	33.3	28.7	22.4	18.0	16.3	19.9	30.2	41.6	43.4	51.9
		Min-d	12.2	18.2	12.7	10.1	10.0	6.0	4.9	8.1	5.2	11.4	7.6	12.9	4.9
Philippines	Manila Observatory	Mean	***	***	***	***	***	8.4	7.2	***	***	***	***	***	7.8
		%	***	***	***	***	***	73	84	***	***	***	***	***	13
		Max-d	***	***	***	***	***	14.1	10.7	***	***	***	***	***	14.1
		Min-d	***	***	***	***	***	4.5	4.4	***	***	***	***	***	4.4
Republic of Korea	Ganghwa	Mean	7.8	5.9	6.8	6.4	5.7	5.0	7.0	3.7	3.5	5.6	7.1	9.0	6.2
		%	98	96	92	98	98	98	98	97	93	97	98	98	97
		Max-d	22.9	11.6	15.9	11.8	8.8	8.5	10.2	8.5	5.2	9.9	21.6	36.2	36.2
		Min-d	2.6	3.0	3.0	3.4	3.1	3.8	5.7	0.9	2.4	3.1	2.4	2.6	0.9
	Jeju	Mean	3.3	3.5	4.7	3.1	3.1	3.0	1.9	2.6	2.8	2.7	2.5	3.4	3.1
		%	99	99	95	97	97	97	95	95	93	97	97	100	97
		Max-d	7.9	6.6	7.1	6.2	5.4	4.5	4.2	4.3	4.3	5.0	4.5	7.8	7.9
		Min-d	0.9	1.3	1.3	1.6	1.3	1.8	1.3	1.1	1.4	1.5	1.2	1.1	0.9
	Imsil	Mean	6.2	7.3	7.5	5.2	3.6	3.3	2.6	2.8	3.0	3.4	4.7	5.6	4.6
		%	98	97	96	98	91	92	86	97	97	98	96	97	95
		Max-d	10.0	10.8	11.6	8.3	5.2	3.8	3.4	3.4	4.5	4.7	6.6	9.7	11.6
		Min-d	3.2	5.3	4.9	3.5	2.4	2.8	2.0	2.3	2.1	2.3	2.8	2.6	2.0
Thailand	Nai Mueang	Mean	18.5	20.2	20.5	16.9	14.7	12.4	12.3	11.7	10.3	10.1	14.9	17.6	15.0
		%	93	96	95	95	96	96	96	96	96	96	96	96	96
		Max-d	34.1	45.6	33.8	26.5	21.7	17.7	19.3	16.6	16.3	17.1	23.6	30.9	45.6
		Min-d	9.7	8.9	8.9	9.3	8.1	6.8	6.0	8.6	3.0	5.0	7.3	8.9	3.0

Table 4.8.2 NO₂ - Measured by PS

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Indonesia	Jakarta	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
	Kototabang	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***

Terms and abbreviations are given in Table 4.2.

Table 4.9 NOx - Measured by AT

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	22.6	7.4	7.4	***	***	3.6	1.9	***	***	***	1.7	6.8	5.4
		%	1	100	43	***	***	78	59	***	***	***	23	100	33
		Max-d	<0.1	13.7	10.0	***	***	7.2	2.9	***	***	***	2.6	18.0	18.0
		Min-d	<0.1	4.3	4.8	***	***	1.5	1.1	***	***	***	0.8	1.3	<0.1
China	Jinyunshan (NOx*)	Mean	14.6	15.3	10.8	8.8	8.2	8.6	7.2	6.5	7.7	7.9	10.4	12.3	9.8
		%	100	100	100	100	100	100	100	100	97	94	87	100	98
		Max-d	26.2	25.9	16.0	16.3	12.3	12.6	9.7	8.7	14.0	13.7	16.0	19.1	26.2
		Min-d	8.4	9.4	5.8	5.3	5.8	5.8	4.7	4.7	4.7	4.7	6.8	7.4	4.7
Japan	Rishiri (NOx*)	Mean	0.5	0.7	1.1	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5
		%	98	98	89	98	98	98	98	98	85	98	98	98	96
		Max-d	1.8	1.5	2.3	1.0	0.9	1.5	0.7	1.1	0.7	1.0	1.1	1.0	2.3
		Min-d	<0.1	0.4	0.5	<0.1	<0.1	0.2	<0.1	<0.1	0.1	0.2	0.2	0.2	<0.1
	Ochiishi (NOx*)	Mean	0.7	0.8	1.1	1.0	1.0	0.9	0.8	0.8	0.6	0.9	0.8	***	0.9
		%	91	91	91	91	87	91	91	88	89	91	38	***	78
		Max-d	2.5	1.5	2.4	2.1	2.1	1.6	2.6	2.2	1.5	2.0	1.3	***	2.6
		Min-d	0.3	0.5	0.5	0.4	0.3	0.2	0.3	0.2	0.3	0.2	0.5	***	0.2
	Sado-seki (NOx*)	Mean	0.6	0.7	1.0	0.9	0.6	0.6	0.3	0.7	0.6	0.6	0.8	0.6	0.7
		%	95	98	97	98	73	73	13	96	97	97	55	32	77
		Max-d	1.7	2.3	3.1	1.5	1.1	2.4	0.4	1.8	1.2	1.2	1.2	0.8	3.1
		Min-d	0.1	<0.1	0.4	0.5	0.2	0.3	0.2	0.2	0.3	0.3	0.4	0.5	<0.1
	Happo (NOx*)	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Ijira (NOx*)	Mean	0.7	1.0	1.7	1.8	1.4	1.6	2.0	2.7	1.6	1.0	1.2	1.1	1.5
		%	98	98	89	98	98	98	98	98	98	98	98	98	97
		Max-d	2.1	3.5	5.7	3.3	3.2	3.6	3.9	6.5	3.0	2.6	2.6	2.5	6.5
		Min-d	0.1	0.3	<0.1	0.5	<0.1	0.5	0.5	0.8	0.3	0.2	<0.1	0.3	<0.1
	Oki (NOx*)	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Yusuhara (NOx*)	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
	Hedo (NOx*)	Mean	1.6	0.7	0.6	0.9	0.7	***	***	***	***	***	***	***	0.9
		%	97	69	88	97	98	***	***	***	***	***	***	***	37
		Max-d	2.4	1.1	1.3	1.6	1.3	***	***	***	***	***	***	***	2.4
		Min-d	0.7	0.4	<0.1	0.1	<0.1	***	***	***	***	***	***	***	<0.1
	Ogasawara (NOx*)	Mean	***	0.2	0.2	0.2	<0.1	<0.1	***	***	***	***	***	***	0.1
		%	***	82	95	99	98	29	***	***	***	***	***	***	33
		Max-d	***	0.7	0.7	1.7	0.7	<0.1	***	***	***	***	***	***	1.7
		Min-d	***	<0.1	<0.1	<0.1	<0.1	<0.1	***	***	***	***	***	***	<0.1
	Niigata-maki (NOx*)	Mean	2.0	1.8	2.2	1.9	1.5	1.5	1.3	1.9	2.3	1.2	1.7	2.5	1.8
		%	96	85	96	97	95	95	96	81	95	95	96	96	94
		Max-d	5.8	4.1	4.2	3.5	2.7	3.3	2.8	4.1	3.8	2.1	3.5	7.6	7.6
		Min-d	0.4	0.2	0.6	0.8	0.4	0.6	0.2	0.7	1.0	0.6	0.2	0.7	0.2
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	Mean	62.1	52.7	49.4	29.2	23.0	17.6	17.8	20.3	26.4	54.1	50.5	58.2	38.5
		%	100	99	100	100	94	98	100	99	100	96	99	100	99
		Max-d	131.3	87.1	93.0	67.4	38.9	31.3	32.7	35.5	53.4	90.0	122.9	114.8	131.3
		Min-d	13.7	22.8	13.3	10.6	10.4	8.3	7.3	12.9	7.6	18.6	12.9	22.3	7.3
Thailand	Nai Mueang	Mean	24.9	27.0	25.2	19.9	17.9	20.1	22.2	20.9	20.9	18.2	23.5	25.0	22.1
		%	93	96	95	95	96	96	96	96	96	96	96	96	96
		Max-d	49.3	63.0	40.6	36.1	25.5	28.7	37.2	27.0	33.5	29.2	48.0	51.7	63.0
		Min-d	12.3	10.9	10.5	9.3	9.8	10.5	9.5	15.3	6.5	9.3	10.2	11.3	6.5

NOx* : NOx measured by CLD in remote or rural sites

Terms and abbreviations are given in Table 4.2.

Table 4.10.1 O₃ - Measured by AT

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	17	19	21	26	20	14	29	6	8	8	22	25	19
		%	100	100	100	100	100	91	41	9	67	69	100	100	81
		Max-d	27	36	31	44	30	21	86	8	10	11	37	38	86
		Min-d	3	10	14	13	13	10	15	8	4	4	14	15	3
Japan	Rishiri	Mean	37	41	48	43	41	33	24	19	27	34	34	37	35
		%	99	100	91	99	99	100	99	99	86	99	99	100	98
		Max-d	49	54	61	57	64	53	46	32	38	58	42	44	64
		Min-d	30	36	35	31	25	19	12	8	18	23	22	31	8
	Ochiishi	Mean	32	36	41	42	39	33	28	22	31	33	34	33	34
		%	100	100	100	100	95	100	100	99	100	99	92	100	99
		Max-d	35	43	53	52	57	47	44	35	39	47	42	37	57
		Min-d	29	31	33	33	28	24	20	8	16	26	28	29	8
	Sado-seki	Mean	39	44	53	55	53	46	38	28	34	42	41	38	42
		%	97	99	98	99	90	99	89	99	99	99	99	99	97
		Max-d	46	52	76	69	85	74	73	41	53	56	61	42	85
		Min-d	34	39	43	46	41	24	22	14	15	30	34	32	14
	Happo	Mean	43	49	55	59	55	50	45	29	33	45	46	45	46
		%	99	98	99	99	99	98	99	99	99	99	99	99	99
		Max-d	54	56	80	74	81	66	66	39	45	61	62	51	81
		Min-d	36	41	42	46	34	30	23	16	19	35	38	37	16
	Ijira	Mean	25	29	32	36	34	23	18	***	***	***	***	***	29
		%	99	99	92	99	99	98	28	***	***	***	***	***	51
		Max-d	34	41	41	53	53	45	29	***	***	***	***	***	53
		Min-d	15	12	12	24	15	7	11	***	***	***	***	***	7
	Oki	Mean	***	***	51	55	53	47	34	25	35	47	44	42	43
		%	***	***	74	99	99	99	99	99	99	99	99	99	81
		Max-d	***	***	70	70	80	72	65	39	53	69	64	50	80
		Min-d	***	***	38	49	34	18	16	15	14	35	35	34	14
	Yusuhara	Mean	39	43	45	49	45	***	***	***	***	***	***	***	44
		%	99	99	88	98	98	***	***	***	***	***	***	***	40
		Max-d	54	49	53	61	70	***	***	***	***	***	***	***	70
		Min-d	29	37	28	37	15	***	***	***	***	***	***	***	15
	Hedo	Mean	38	38	41	36	***	***	***	***	***	***	***	***	38
		%	99	65	14	55	***	***	***	***	***	***	***	***	19
		Max-d	46	48	45	49	***	***	***	***	***	***	***	***	49
		Min-d	26	22	34	16	***	***	***	***	***	***	***	***	16
	Ogasawara	Mean	42	36	45	47	***	***	***	***	***	***	***	***	42
		%	98	97	97	73	***	***	***	***	***	***	***	***	30
		Max-d	50	55	56	61	***	***	***	***	***	***	***	***	61
		Min-d	32	18	30	29	***	***	***	***	***	***	***	***	18
	Niigata-maki	Mean	33	38	43	45	43	38	31	25	27	32	32	31	35
		%	99	88	99	99	99	99	99	86	99	99	99	99	97
		Max-d	38	43	60	56	64	62	51	35	41	45	41	38	64
		Min-d	27	29	36	40	30	21	16	15	13	22	23	22	13
	Tsushima	Mean	41	***	***	***	***	***	***	***	***	***	***	***	41
		%	73	***	***	***	***	***	***	***	***	***	***	***	6
		Max-d	55	***	***	***	***	***	***	***	***	***	***	***	55
		Min-d	31	***	***	***	***	***	***	***	***	***	***	***	31
Mongolia	Ulaanbaatar	Mean	5	6	10	16	17	17	14	11	8	7	6	5	10
		%	100	100	100	100	94	99	100	100	80	96	100	100	97
		Max-d	17	15	22	22	24	24	24	18	22	15	15	12	24
		Min-d	<1	2	3	8	10	10	9	5	3	3	1	2	<1
Philippines	Manila Observatory	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***

Table 4.10.1 O₃ - Measured by AT (continued)

Unit : ppb

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	33	42	40	37	33	24	16	36	40	42	33	31	34
		%	98	96	94	98	98	97	98	97	94	97	98	98	97
		Max-d	39	46	64	53	61	44	44	66	62	58	64	45	66
		Min-d	22	35	28	25	9	13	4	7	26	29	24	18	4
	Jeju	Mean	42	46	55	53	50	46	28	37	42	51	43	42	45
		%	100	100	99	100	98	97	96	99	95	98	100	100	98
		Max-d	58	57	84	77	81	66	68	62	71	65	58	63	84
		Min-d	35	39	37	42	5	16	9	13	14	39	34	32	5
	Imsil	Mean	28	32	43	41	37	39	24	23	24	28	30	32	32
		%	98	97	97	98	91	97	97	97	97	98	96	97	97
		Max-d	38	40	55	64	53	52	41	35	38	41	39	51	64
		Min-d	20	22	31	25	12	17	8	11	14	16	22	21	8
Thailand	Bangkok	Mean	39	41	41	40	37	28	20	18	19	24	30	34	31
		%	96	95	96	96	95	96	94	96	96	96	96	96	96
		Max-d	51	83	70	58	52	44	33	27	37	45	48	49	83
		Min-d	18	18	22	26	24	16	13	11	9	11	14	21	9
	Nai Mueang	Mean	31	37	41	35	20	25	18	19	14	20	17	15	24
		%	96	96	96	96	96	96	96	96	96	95	96	96	96
		Max-d	44	57	50	55	35	38	26	29	25	36	30	21	57
		Min-d	14	17	30	14	8	14	11	13	7	10	9	10	7

Table 4.11 PM₁₀ - Measured by ATUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
China	Jinyunshan	Mean	76	50	36	40	33	24	22	24	24	25	43	62	38
		%	100	100	100	100	100	100	97	100	100	100	100	100	100
		Max-d	138	112	69	78	65	60	44	52	58	62	98	138	138
		Min-d	20	10	8	7	12	7	10	11	7	7	9	12	7
	Hongwen	Mean	38	46	50	44	40	23	22	28	24	37	46	44	37
		%	100	100	100	97	100	100	100	90	100	100	100	100	99
		Max-d	87	106	81	80	79	38	38	45	43	75	82	85	106
		Min-d	10	14	19	18	14	10	8	11	8	20	18	16	8
	Haibin-Park	Mean	44	40	42	36	30	15	17	18	17	32	47	54	33
		%	97	100	100	100	97	100	100	87	93	100	100	100	98
		Max-d	77	73	89	73	53	37	39	30	35	52	81	98	98
		Min-d	13	16	11	19	15	6	7	9	7	12	21	19	6
	Wuzhishan	Mean	13	14	23	19	18	10	8	11	6	8	12	8	12
		%	100	100	100	100	90	100	100	100	100	100	87	100	98
		Max-d	41	50	40	46	42	14	16	22	21	24	41	28	50
		Min-d	2	4	6	2	3	2	4	<1	2	<1	3	1	<1
	Lijiang	Mean	8	13	11	17	10	5	6	5	8	5	6	6	8
		%	100	100	90	93	84	80	100	100	100	100	100	94	95
		Max-d	19	24	17	40	23	13	18	15	19	12	19	16	40
		Min-d	2	2	2	2	<1	<1	1	<1	2	<1	1	<1	<1
Japan	Rishiri	Mean	9	17	42	39	27	17	19	14	14	19	19	14	21
		%	14	45	54	100	100	99	100	100	93	100	100	99	84
		Max-d	10	19	108	180	98	75	63	59	29	52	52	51	180
		Min-d	5	7	8	10	6	5	2	4	5	8	5	5	2
	Ochiishi	Mean	12	14	21	26	17	11	15	17	19	18	17	11	16
		%	99	100	100	99	98	99	99	99	99	99	99	99	99
		Max-d	24	25	54	108	38	23	36	68	48	32	46	31	108
		Min-d	6	8	3	6	4	3	5	3	8	10	7	4	3
	Sado-seki	Mean	***	***	***	***	***	16	20	13	14	19	24	20	18
		%	***	***	***	***	***	99	100	100	100	99	100	100	58
		Max-d	***	***	***	***	***	36	46	41	32	34	54	55	55
		Min-d	***	***	***	***	***	5	8	5	4	5	5	7	4
	Happo	Mean	***	***	***	***	***	***	***	7	6	6	7	4	6
		%	***	***	***	***	***	***	***	22	97	100	84	83	32
		Max-d	***	***	***	***	***	***	***	12	13	18	22	16	22
		Min-d	***	***	***	***	***	***	***	4	<1	<1	<1	<1	<1
	Ijira	Mean	7	7	18	23	16	19	19	17	17	9	11	9	14
		%	99	100	98	100	100	94	57	53	99	100	100	100	92
		Max-d	16	13	40	70	39	61	29	23	27	17	35	45	70
		Min-d	3	3	3	7	6	6	7	11	7	3	2	2	2
	Oki	Mean	***	***	74	54	28	25	28	18	23	22	32	32	30
		%	***	***	27	100	100	99	99	100	100	100	100	92	77
		Max-d	***	***	147	213	115	48	57	46	45	38	52	70	213
		Min-d	***	***	31	15	6	9	15	9	11	6	10	13	6
	Yusuhara	Mean	14	10	20	26	15	13	14	7	10	12	10	8	13
		%	100	100	98	100	100	100	99	96	99	99	99	100	99
		Max-d	46	21	44	68	39	28	35	19	26	20	21	18	68
		Min-d	2	3	4	2	3	2	3	2	4	4	2	3	2
	Hedo	Mean	28	27	28	32	24	19	15	28	29	***	***	***	25
		%	99	99	82	100	74	98	93	81	52	***	***	***	65
		Max-d	49	45	53	65	43	42	48	64	54	***	***	***	65
		Min-d	11	16	16	7	14	10	6	10	10	***	***	***	6
	Ogasawara	Mean	16	16	16	26	22	21	16	23	17	21	20	19	19
		%	100	100	99	100	100	99	100	99	93	100	99	100	99
		Max-d	28	28	25	54	48	53	34	51	28	37	42	44	54
		Min-d	8	6	8	11	7	10	8	8	10	11	11	8	6
	Niigata-maki	Mean	19	22	39	43	30	21	25	19	20	20	25	22	25
		%	100	100	100	100	100	100	100	99	100	100	96	100	99
		Max-d	35	41	147	161	121	39	50	34	30	41	59	59	161
		Min-d	11	9	11	12	11	10	14	10	13	6	9	6	6
	Tsushima	Mean	25	17	40	40	21	15	15	13	13	16	16	17	21
		%	100	100	93	100	100	100	99	99	99	94	100	100	99
		Max-d	90	41	125	160	84	27	38	26	27	39	32	50	160
		Min-d	2	5	2	4	<1	4	2	3	4	9	6	3	<1
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***

Table 4.11 PM₁₀ - Measured by AT (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Mongolia	Ulaanbaatar	Mean	113	106	114	74	55	60	52	59	58	114	79	84	81
		%	100	100	100	99	92	98	100	99	100	96	77	100	97
		Max-d	212	166	191	167	108	141	105	108	115	173	156	152	212
		Min-d	32	56	23	17	15	18	15	28	20	41	18	30	15
Philippines	North Caloocan	Mean	49	77	92	65	53	43	47	42	44	48	44	50	56
		%	84	100	100	100	100	80	100	81	63	87	43	100	87
		Max-d	85	108	152	92	77	62	74	62	83	91	60	117	152
		Min-d	23	35	49	32	38	22	22	22	28	27	30	23	22
	Sta. Rosa	Mean	16	18	16	25	22	22	16	15	24	12	21	38	21
		%	37	76	100	100	94	100	97	81	64	38	93	96	81
		Max-d	22	31	20	55	40	43	30	20	75	32	29	63	75
		Min-d	12	15	14	13	12	11	9	10	14	13	15	20	9
Republic of Korea	Ganghwa	Mean	50	46	63	65	36	21	18	15	24	36	36	42	39
		%	98	97	94	97	97	98	97	53	92	97	98	98	93
		Max-d	165	85	158	222	155	46	44	29	55	52	88	86	222
		Min-d	18	23	30	9	8	8	5	5	10	19	21	15	5
	Jeju	Mean	37	27	56	61	34	16	22	22	22	27	30	34	33
		%	86	97	98	98	82	51	98	91	99	98	98	92	91
		Max-d	98	56	113	354	120	30	39	37	55	51	70	99	354
		Min-d	8	12	7	11	6	8	10	14	12	18	16	14	6
	Imsil	Mean	42	40	62	49	24	27	16	15	16	21	22	30	30
		%	98	97	93	97	81	93	92	97	91	95	97	97	94
		Max-d	167	73	159	182	87	39	34	27	44	43	62	75	182
		Min-d	12	25	37	18	5	14	6	3	9	11	10	5	3
Thailand	Bangkok	Mean	46	47	48	50	35	21	20	24	19	27	34	40	34
		%	100	100	100	100	99	100	99	100	100	99	94	100	99
		Max-d	92	104	94	77	48	39	30	31	30	51	60	57	104
		Min-d	24	22	23	29	23	15	11	18	12	16	19	21	11
	Samutprakarn	Mean	53	68	64	***	***	***	***	***	***	***	***	***	61
		%	100	77	80	***	***	***	***	***	***	***	***	***	21
		Max-d	120	148	112	***	***	***	***	***	***	***	***	***	148
		Min-d	30	27	32	***	***	***	***	***	***	***	***	***	27
	Si Phum	Mean	48	70	100	122	40	26	***	***	***	***	***	***	75
		%	100	100	100	100	100	5	***	***	***	***	***	***	42
		Max-d	75	135	202	259	73	26	***	***	***	***	***	***	259
		Min-d	26	28	50	50	24	26	***	***	***	***	***	***	24
	Nai Mueang	Mean	49	62	73	56	45	29	25	31	28	34	***	***	43
		%	100	100	100	38	100	100	48	100	100	84	***	***	72
		Max-d	96	118	115	83	70	51	34	40	40	57	***	***	118
		Min-d	24	33	52	37	25	19	20	21	15	24	***	***	15

Terms and abbreviations are given in Table 4.2.

Table 4.12 PM_{2.5} - Measured by ATUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	20	27	34	31	20	13	10	11	10	12	15	20	19
		%	100	100	91	100	100	100	79	100	100	70	48	100	91
		Max-d	34	43	50	40	28	26	15	14	18	23	19	30	50
		Min-d	9	10	25	22	15	7	5	7	6	7	9	10	5
China	Jinyunshan	Mean	48	33	21	17	15	13	13	11	12	14	25	43	22
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-d	98	75	49	28	33	33	23	23	36	39	66	106	106
		Min-d	12	8	5	5	5	4	6	5	4	4	5	7	4
	Hongwen	Mean	22	28	27	24	19	11	9	13	11	20	22	25	19
		%	94	100	100	93	100	100	97	84	90	100	100	100	96
		Max-d	32	77	47	38	41	26	21	22	22	53	40	53	77
		Min-d	3	12	10	8	4	2	3	5	3	9	6	8	2
	Haibin-Park	Mean	25	21	22	19	18	8	9	9	10	18	22	28	18
		%	100	100	100	100	97	100	100	94	97	94	100	100	98
		Max-d	44	41	45	38	43	14	27	20	25	34	46	71	71
		Min-d	3	4	4	7	9	4	4	3	4	6	7	6	3
Japan	Rishiri	Mean	4	8	13	11	9	6	7	5	5	6	6	5	7
		%	14	45	54	100	100	100	100	100	93	100	100	99	84
		Max-d	4	11	28	37	25	13	19	17	8	16	15	13	37
		Min-d	2	3	4	3	3	2	<1	<1	2	2	1	1	<1
	Ochiishi	Mean	5	7	9	10	7	4	6	5	4	5	6	4	6
		%	100	100	100	100	99	99	99	99	99	99	99	99	99
		Max-d	11	12	16	28	14	8	15	14	9	11	18	11	28
		Min-d	2	4	1	2	2	1	2	<1	2	2	2	1	<1
	Sado-seki	Mean	***	***	***	***	***	8	10	7	5	6	8	6	7
		%	***	***	***	***	***	99	100	100	100	99	100	100	58
		Max-d	***	***	***	***	***	16	19	10	12	11	19	16	19
		Min-d	***	***	***	***	***	3	3	4	2	2	3	2	2
	Happo	Mean	***	***	***	***	***	***	***	5	4	3	4	1	3
		%	***	***	***	***	***	***	***	22	97	100	87	83	33
		Max-d	***	***	***	***	***	***	***	9	9	10	16	6	16
		Min-d	***	***	***	***	***	***	***	2	<1	<1	<1	<1	<1
	Ijira	Mean	4	4	8	11	7	6	8	5	5	5	7	5	6
		%	99	100	98	100	100	94	57	57	100	100	100	100	92
		Max-d	10	9	20	22	19	16	11	9	8	12	24	19	24
		Min-d	1	1	<1	2	2	<1	2	2	1	<1	<1	<1	<1
	Oki	Mean	***	***	16	12	9	7	9	6	5	6	8	7	8
		%	***	***	27	100	100	99	99	100	100	100	100	92	77
		Max-d	***	***	28	37	23	15	19	13	10	12	13	16	37
		Min-d	***	***	7	4	<1	3	2	3	2	1	1	2	<1
	Yusuhara	Mean	9	8	12	14	10	10	9	5	7	9	8	7	9
		%	100	100	99	100	100	100	99	96	99	99	99	100	99
		Max-d	35	14	25	27	26	23	20	14	20	16	17	14	35
		Min-d	2	3	3	2	3	2	3	2	3	3	2	2	2
	Hedo	Mean	9	9	10	12	11	8	6	10	9	***	***	***	9
		%	99	99	82	100	74	98	93	81	52	***	***	***	65
		Max-d	18	17	20	21	19	16	12	17	20	***	***	***	21
		Min-d	4	4	5	3	6	3	4	3	3	***	***	***	3
	Ogasawara	Mean	7	6	6	9	6	5	4	5	3	6	6	6	6
		%	100	100	99	100	100	99	100	100	93	100	99	100	99
		Max-d	13	10	9	19	11	15	12	12	5	11	12	11	19
		Min-d	2	2	3	4	2	2	2	2	2	3	2	2	2
	Niigata-maki	Mean	5	7	10	11	9	7	9	7	5	5	6	5	7
		%	100	100	100	100	100	100	100	99	100	100	96	100	99
		Max-d	10	18	21	23	25	14	17	11	11	9	13	12	25
		Min-d	2	2	3	3	2	3	3	4	3	2	2	1	1
	Tsushima	Mean	13	10	15	13	10	9	8	7	6	8	8	9	10
		%	100	100	93	100	100	100	99	99	99	94	100	100	99
		Max-d	48	29	47	38	24	15	29	18	16	20	19	33	48
		Min-d	2	3	1	1	<1	1	<1	2	<1	4	4	<1	<1

Table 4.12 PM_{2.5} - Measured by AT(continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-d	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-d	***	***	***	***	***	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	Mean	48	37	28	16	11	10	11	9	11	22	30	39	23
		%	100	100	100	100	94	99	99	99	99	96	100	99	99
		Max-d	102	65	63	36	25	18	28	15	22	36	79	74	102
		Min-d	12	11	6	7	4	5	5	5	6	9	8	13	4
Myanmar	Yangon	Mean	45	47	51	41	20	11	9	12	11	17	25	31	27
		%	98	100	92	99	90	92	81	96	100	100	99	100	95
		Max-d	65	81	84	58	36	18	13	21	25	24	39	42	84
		Min-d	30	25	29	25	8	7	6	7	6	6	13	20	6
Philippines	North Caloocan	Mean	23	36	36	30	26	23	25	20	25	22	20	23	26
		%	84	100	100	100	100	80	100	81	63	87	43	100	87
		Max-d	45	57	71	49	53	38	43	30	56	42	28	83	83
		Min-d	10	11	17	12	12	10	11	9	12	12	13	7	7
	Sta. Rosa	Mean	13	15	13	21	19	20	15	14	20	11	16	24	17
		%	37	76	100	100	91	100	96	82	62	37	92	95	81
		Max-d	17	27	17	50	36	39	28	18	55	27	21	39	55
		Min-d	10	11	11	10	10	10	9	10	13	13	12	16	9
	Mt. Sto. Tomas	Mean	3	4	11	16	6	3	2	1	3	3	3	3	5
		%	99	98	98	100	90	94	78	97	98	98	99	100	96
		Max-d	7	22	18	40	16	6	5	3	11	9	8	7	40
		Min-d	<1	<1	4	7	<1	<1	<1	<1	<1	<1	1	1	<1
Republic of Korea	Ganghwa	Mean	30	33	30	25	17	12	10	8	13	23	25	31	22
		%	95	96	94	96	91	92	70	52	90	96	96	93	88
		Max-d	95	73	70	79	40	26	25	16	39	36	54	69	95
		Min-d	11	13	11	4	4	2	4	6	4	14	15	13	2
	Jeju	Mean	17	14	17	9	12	11	11	12	12	12	10	16	13
		%	90	94	97	95	68	56	98	92	98	98	95	90	89
		Max-d	54	34	57	28	32	18	29	21	31	24	18	30	57
		Min-d	4	5	3	3	1	3	5	6	7	8	6	7	1
	Imsil	Mean	27	32	31	23	16	16	10	11	9	14	16	22	19
		%	92	97	95	93	87	88	88	94	83	95	96	97	92
		Max-d	93	61	59	55	31	25	27	20	27	27	36	54	93
		Min-d	7	18	14	11	8	7	2	2	4	7	8	5	2
Thailand	Bangkok	Mean	24	27	29	30	18	10	10	11	9	14	17	21	18
		%	100	100	100	100	99	100	99	100	100	99	98	100	99
		Max-d	53	64	62	48	28	19	15	16	16	30	34	37	64
		Min-d	12	10	10	16	11	7	5	8	5	7	6	8	5
	Samutprakarn	Mean	34	39	38	38	23	15	15	16	16	21	26	31	26
		%	100	97	100	100	100	100	100	100	100	100	100	100	100
		Max-d	74	98	79	59	30	26	24	20	29	41	43	62	98
		Min-d	20	16	16	21	12	10	8	10	9	12	15	15	8
	Khanchanaburi (Vajiralongkorn Dam)	Mean	20	31	42	36	18	18	17	18	17	19	24	37	25
		%	99	100	98	100	99	99	100	100	100	100	100	97	99
		Max-d	35	51	83	52	23	20	19	20	20	25	34	52	83
		Min-d	12	14	22	16	14	16	16	17	16	16	17	21	12
	Chang Phueak	Mean	33	51	88	105	31	16	12	15	11	12	19	24	34
		%	100	100	100	100	99	100	100	100	100	100	100	100	100
		Max-d	49	100	188	220	57	24	17	23	17	20	33	34	220
		Min-d	19	18	39	43	14	11	9	9	7	8	10	15	7
	Si Phum	Mean	34	52	80	106	26	11	8	17	10	12	18	22	33
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-d	56	116	173	236	60	17	13	28	17	19	31	36	236
		Min-d	14	15	35	39	12	6	5	9	6	5	8	13	5
	Nai Mueang	Mean	32	41	48	39	28	18	17	19	14	18	25	28	27
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-d	61	79	78	53	39	27	24	23	20	37	39	42	79
		Min-d	16	21	32	21	16	12	13	13	8	10	10	14	8
Vietnam	Hoa Binh	Mean	***	***	***	***	***	***	***	5	4	7	15	21	13
		%	***	***	***	***	***	***	94	100	97	99	100	99	49
		Max-d	***	***	***	***	***	***	13	7	14	25	46	50	50
		Min-d	***	***	***	***	***	***	<1	<1	2	5	4	7	<1

Terms and abbreviations are given in Table 4.2.

Table 4.13.1 Particulate matter component: SO₄²⁻ - Measured by FP

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	1.52	1.98	3.65	2.71	2.42	1.80	2.91	1.30	1.17	1.81	1.39	1.48	2.02
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.93	2.05	3.84	3.18	3.10	2.12	3.69	1.68	1.61	3.08	1.67	1.54	3.84
		Min-2w	1.11	1.91	3.47	2.23	1.94	1.48	2.13	0.91	0.74	0.92	1.12	1.42	0.74
	Ochiishi	Mean	1.58	2.14	1.49	2.64	2.34	1.44	2.07	2.20	1.57	2.17	2.01	1.57	1.96
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.66	2.23	2.80	2.69	2.82	1.49	2.78	2.30	1.84	2.34	2.31	1.71	2.82
		Min-2w	1.50	2.05	0.18	2.59	1.77	1.39	1.35	2.10	1.30	1.85	1.71	1.44	0.18
	Sado-seki	Mean	2.47	2.87	1.75	2.97	2.02	2.32	3.35	2.23	1.72	2.00	1.52	2.44	2.28
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.74	2.89	2.14	3.44	3.20	2.54	3.67	2.25	1.92	2.82	1.66	2.91	3.67
		Min-2w	2.20	2.85	1.35	2.50	1.08	2.10	3.04	2.20	1.52	1.59	1.39	1.98	1.08
	Happo	Mean	0.56	0.93	1.29	1.48	1.72	1.61	2.38	1.87	1.20	0.67	1.14	0.41	1.27
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.66	1.08	1.76	1.80	1.72	1.71	3.36	1.91	1.20	0.79	1.14	0.60	3.36
		Min-2w	0.45	0.78	0.83	1.13	1.72	1.51	1.41	1.83	1.20	0.55	1.14	0.22	0.22
	Ijira	Mean	1.15	1.37	1.74	2.30	1.83	1.89	***	1.86	1.46	1.76	0.94	1.13	1.60
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	1.39	1.38	2.31	2.53	2.16	1.93	***	2.38	1.75	2.53	0.95	1.13	2.53
		Min-2w	0.91	1.35	1.18	2.07	1.53	1.85	***	1.35	1.18	1.32	0.94	1.13	0.91
	Okii	Mean	2.76	2.80	3.06	3.21	2.80	2.92	3.79	2.28	1.96	2.50	3.11	3.54	2.87
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.04	2.94	3.89	3.45	3.47	3.48	4.24	2.56	2.17	3.10	3.32	3.85	4.24
		Min-2w	2.48	2.65	2.23	2.96	1.98	2.37	3.35	2.01	1.75	2.16	2.89	3.23	1.75
	Yusuhara	Mean	2.19	1.99	2.41	2.54	1.83	2.43	2.56	1.09	1.58	2.63	2.00	1.89	2.11
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.82	2.16	3.47	2.98	2.26	2.85	3.05	1.18	2.25	3.07	2.40	2.25	3.47
		Min-2w	1.55	1.83	1.36	2.11	1.40	2.02	2.07	0.99	0.90	2.35	1.60	1.52	0.90
	Hedo	Mean	3.68	3.55	3.12	2.03	1.26	1.02	0.87	***	***	***	***	***	2.16
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	3.85	3.80	3.23	2.37	1.45	1.29	0.92	***	***	***	***	***	3.85
		Min-2w	3.51	3.31	3.02	1.68	1.11	0.75	0.82	***	***	***	***	***	0.75
	Ogasawara	Mean	2.35	2.07	1.82	2.30	2.08	1.66	1.08	1.13	0.97	1.03	***	***	1.68
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	2.49	2.64	2.10	3.01	2.12	1.82	1.31	1.21	1.15	1.27	***	***	3.01
		Min-2w	2.20	1.49	1.54	1.39	2.04	1.51	0.85	1.06	0.80	0.80	***	***	0.80
	Tokyo	Mean	1.24	1.61	2.46	2.75	2.49	3.78	3.50	3.00	2.02	2.15	1.38	1.44	2.32
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.39	1.80	2.98	3.01	3.29	4.38	3.76	3.19	2.29	3.04	1.40	1.61	4.38
		Min-2w	1.10	1.41	1.94	2.49	1.87	3.17	3.25	2.82	1.75	1.50	1.36	1.27	1.10
	Niigata-maki	Mean	1.6	2.3	2.5	2.60	2.27	2.15	3.31	2.06	1.95	1.57	1.44	1.55	2.10
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.8	2.3	3.0	2.66	3.22	2.51	3.89	2.21	2.34	2.06	1.46	1.75	3.89
		Min-2w	1.5	2.3	2.0	2.54	1.71	1.79	2.74	1.91	1.55	1.30	1.43	1.35	1.30
	Tsushima	Mean	3.0	2.5	3.4	2.88	2.90	3.03	2.34	3.62	1.81	2.32	2.17	2.22	2.66
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.8	2.7	3.4	3.25	3.76	4.10	2.34	3.90	1.90	2.83	2.42	2.66	4.10
		Min-2w	2.3	2.3	3.4	2.52	1.99	1.96	2.34	3.34	1.72	1.80	1.92	1.78	1.72

Table 4.13 Particulate matter component: SO₄²⁻ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	1.18	1.52	3.16	4.81	2.94	3.43	2.50	3.82	5.62	5.56	2.16	1.38	3.20
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	2.51	2.51	3.99	7.66	3.90	4.23	4.46	5.24	9.46	9.34	3.94	2.55	9.46
		Min-w	0.07	0.29	1.53	1.74	2.18	1.94	0.38	2.52	2.18	2.48	0.79	0.02	0.02
	Tanah Rata	Mean	0.37	0.99	1.87	3.43	1.84	2.28	2.13	2.27	2.74	3.56	0.65	0.70	1.90
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.00	1.63	2.88	6.07	2.68	3.51	3.12	2.84	5.74	5.70	1.04	0.96	6.07
		Min-w	0.04	0.32	1.07	1.10	0.73	0.84	1.10	0.86	0.39	1.50	0.32	0.58	0.04
	Danum Valley	Mean	0.17	0.78	0.97	1.01	0.60	0.44	1.33	1.21	1.40	1.76	0.78	0.63	0.91
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.39	0.78	1.41	1.01	0.83	0.87	1.40	1.47	1.94	1.85	0.96	0.67	1.94
		Min-2w	0.03	0.78	0.54	1.01	0.38	0.02	1.27	0.95	0.62	1.68	0.60	0.59	0.02
Mongolia	Ulaanbaatar	Mean	0.55	0.07	<0.01	0.05	<0.01	0.04	0.02	0.29	0.05	<0.01	0.23	0.26	0.13
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.29	0.09	<0.01	0.10	<0.01	0.10	0.10	1.15	0.10	<0.01	0.80	0.69	1.29
		Min-w	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Terelj	Mean	0.29	0.29	0.20	0.16	0.12	0.17	0.19	0.13	0.05	0.14	0.10	0.21	0.17
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.56	0.32	0.24	0.17	0.25	0.18	0.24	0.16	0.06	0.16	0.18	0.33	0.56
		Min-2w	0.02	0.26	0.16	0.14	0.05	0.16	0.14	0.09	0.03	0.12	0.02	0.09	0.02
Myanmar	Yangon	Mean	0.42	0.05	0.11	0.09	0.17	<0.01	0.93	0.17	0.32	0.75	0.97	0.08	0.35
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.52	0.09	0.14	0.18	0.24	<0.01	1.01	0.18	0.42	0.94	1.03	0.08	1.03
		Min-2w	0.33	0.01	0.09	<0.01	0.13	<0.01	0.85	0.15	0.22	0.37	0.92	0.07	<0.01
Philippines	Manila Observatory	Mean	0.87	1.63	2.64	6.68	6.35	6.25	4.64	1.08	4.29	1.77	0.26	0.70	3.16
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	2.74	2.90	3.30	11.76	13.79	7.77	5.44	4.34	14.49	4.12	0.75	1.09	14.49
		Min-irreg	0.02	0.40	2.13	3.91	<0.01	4.72	3.35	<0.01	0.02	0.24	<0.01	0.36	<0.01
	Los Baños	Mean	19.01	0.34	0.15	3.75	0.72	5.65	3.36	5.10	5.65	2.88	1.02	0.81	4.10
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	29.88	0.72	0.61	10.03	2.17	15.76	12.62	20.42	21.59	5.69	1.81	0.98	29.88
		Min-irreg	8.58	<0.01	<0.01	0.59	<0.01	0.33	0.38	<0.01	<0.01	0.35	<0.01	0.64	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	0.01	0.02	***	***	***	***	***	***	***	***	***	***	0.02
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	0.01	0.02	***	***	***	***	***	***	***	***	***	***	0.02
		Min-irreg	0.01	0.02	***	***	***	***	***	***	***	***	***	***	0.01
	Listvyanka	Mean	0.67	1.12	0.40	0.51	0.40	0.45	0.39	0.33	0.48	0.43	0.23	1.22	0.56
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	1.40	2.66	0.87	1.45	0.79	0.84	1.16	0.66	0.75	0.82	0.56	2.63	2.66
		Min-w	0.17	0.22	0.14	0.12	0.14	0.13	0.10	0.10	0.15	0.07	<0.01	0.10	<0.01
	Irkutsk	Mean	1.95	3.61	0.57	0.89	0.56	0.51	1.07	1.00	2.70	3.43	4.17	5.07	2.06
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.71	5.89	0.85	2.01	1.00	0.78	2.24	1.94	3.78	5.29	7.74	8.03	8.03
		Min-w	0.77	1.94	0.38	0.27	0.35	0.25	0.24	0.48	1.89	1.54	1.57	3.10	0.24
	Primorskaya	Mean	1.66	1.18	0.39	1.22	1.21	1.14	2.50	0.70	2.08	0.20	0.55	0.36	1.07
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	1.66	1.27	0.41	2.07	1.78	1.29	2.72	1.13	4.02	0.24	1.06	0.52	4.02
		Min-15d	1.66	1.09	0.38	0.36	0.64	0.99	2.27	0.26	0.13	0.16	0.04	0.21	0.04

Table 4.13.1 Particulate matter component: SO₄²⁻ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.10	7.92	0.85	***	0.15	0.83	0.60	2.01	1.91	2.72	2.07
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	0.10	12.19	0.97	***	0.45	1.68	1.02	3.82	3.06	2.88	12.19
		Min-10d	***	***	0.10	1.51	0.73	***	<0.01	0.15	0.11	0.21	0.28	2.57	<0.01
Vietnam	Hanoi	Mean	7.94	2.21	8.55	5.06	3.33	3.39	5.55	5.03	4.21	3.39	4.35	6.66	5.00
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	9.81	3.18	9.62	7.24	4.51	4.69	7.69	7.99	6.51	4.05	6.71	7.70	9.81
		Min-w	5.06	0.73	6.81	2.32	1.81	1.85	4.05	2.69	2.88	2.81	1.97	4.86	0.73
	Hoa Binh	Mean	3.60	5.27	4.71	4.04	3.67	4.14	3.97	4.28	5.56	4.11	5.13	7.81	4.68
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	4.21	7.91	5.66	5.07	5.74	5.67	5.25	5.20	7.07	5.30	7.05	8.49	8.49
		Min-w	2.86	3.19	3.73	2.75	2.73	3.00	2.93	2.74	4.31	2.85	2.41	7.19	2.41
	Can Tho	Mean	6.63	6.18	6.32	6.10	6.12	6.02	6.06	6.20	6.13	6.43	6.63	6.06	6.24
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	7.14	6.37	6.96	6.75	6.63	6.67	6.49	6.61	6.45	7.10	7.62	6.59	7.62
		Min-w	6.29	5.97	5.75	5.62	5.85	5.46	5.67	5.65	5.62	5.75	5.67	5.67	5.46
	Ho Chi Minh	Mean	7.07	6.55	6.95	8.67	7.79	6.38	7.38	7.71	6.23	6.90	6.37	6.58	7.03
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	8.71	7.62	7.62	9.40	10.16	8.17	8.15	8.65	6.98	9.01	6.59	6.87	10.16
		Min-w	5.83	5.91	6.25	7.68	6.17	5.44	6.77	7.18	5.65	5.99	6.11	6.37	5.44
	Yen Bai	Mean	4.54	5.00	3.99	4.33	4.62	4.29	5.04	5.15	5.92	6.61	5.34	7.14	5.12
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	5.51	6.90	5.93	5.74	6.33	5.94	7.96	7.22	8.70	7.83	8.50	8.33	8.70
		Min-w	3.76	2.84	2.34	2.53	3.17	3.22	2.76	2.28	3.77	4.27	3.14	5.69	2.28

Table 4.13.2 Particulate matter component: SO₄²⁻ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	6.17	2.60	3.17	2.33	2.58	3.90	4.29	4.08	1.77	2.22	2.19	3.02	3.40
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	8.82	3.38	6.36	2.81	4.09	5.05	8.50	5.95	3.21	6.36	3.93	5.17	8.82
		Min-d	3.18	2.01	1.30	1.93	0.54	3.42	1.96	0.77	0.29	0.73	1.12	1.16	0.29
	Jeju	Mean	2.45	2.40	3.33	1.52	1.31	2.25	1.43	2.99	2.18	1.97	1.27	2.79	2.19
		%	16	18	13	13	10	13	13	10	13	16	17	16	13
		Max-d	6.74	3.09	5.24	2.12	2.24	2.55	3.56	3.35	2.77	3.72	2.23	8.05	6.74
		Min-d	0.78	1.50	1.11	0.53	0.18	1.88	0.28	2.72	1.54	0.73	0.39	0.60	0.18
	Imsil	Mean	***	2.54	2.35	1.42	1.54	5.24	2.31	2.66	0.80	1.72	1.28	1.32	2.29
		%	***	7	16	7	16	13	10	16	17	10	17	6	11
		Max-d	***	2.68	3.08	2.72	3.08	13.38	3.69	4.41	0.99	3.94	2.16	1.74	13.38
		Min-d	***	2.41	1.76	0.13	0.05	1.35	0.48	0.66	0.50	0.56	0.47	0.90	0.05

Terms and abbreviations are given in Table 4.2.

Table 4.14.1 Particulate matter component: NO₃⁻ - Measured by FPUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.87	0.65	2.52	1.49	1.13	0.63	0.70	0.42	0.44	1.02	0.58	0.53	0.93
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.53	0.78	2.73	2.18	1.38	0.63	0.77	0.58	0.58	2.12	0.91	0.59	2.73
		Min-2w	0.21	0.53	2.31	0.79	0.99	0.62	0.63	0.26	0.31	0.32	0.25	0.47	0.21
	Ochiishi	Mean	0.67	0.79	0.85	1.63	1.20	0.62	0.75	0.62	0.57	1.09	0.65	0.63	0.86
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.95	1.01	1.65	1.75	1.48	0.66	0.95	0.62	0.69	1.45	0.96	0.81	1.75
		Min-2w	0.39	0.57	0.05	1.51	0.87	0.57	0.55	0.61	0.46	0.61	0.33	0.46	0.05
	Sado-seki	Mean	1.16	1.68	1.15	2.13	1.33	1.03	1.13	1.04	0.88	1.18	0.48	0.81	1.17
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.88	1.88	1.27	2.27	1.88	1.13	1.52	1.14	0.96	2.14	0.62	0.97	2.27
		Min-2w	0.44	1.48	1.03	1.99	0.60	0.94	0.75	0.95	0.80	0.55	0.34	0.65	0.34
	Happo	Mean	0.15	0.31	1.14	1.15	0.45	0.24	0.20	0.08	0.05	0.27	0.40	0.12	0.43
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.24	0.41	1.82	1.81	0.45	0.36	0.31	0.14	0.05	0.37	0.40	0.17	1.82
		Min-2w	0.07	0.21	0.46	0.53	0.45	0.13	0.08	0.02	0.05	0.16	0.40	0.06	0.02
	Ijira	Mean	0.42	0.35	1.02	1.08	0.53	0.14	***	0.36	0.27	0.44	0.37	0.48	0.50
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.44	0.39	1.35	1.14	0.73	0.17	***	0.65	0.38	0.45	0.38	0.64	1.35
		Min-2w	0.40	0.32	0.69	1.03	0.18	0.11	***	0.07	0.16	0.42	0.37	0.31	0.07
	Okii	Mean	1.73	1.97	2.53	2.28	1.63	1.18	1.00	0.75	0.73	1.60	1.82	2.06	1.61
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.15	2.17	3.53	2.56	1.80	1.22	1.38	0.75	0.74	2.25	2.23	2.33	3.53
		Min-2w	1.32	1.77	1.53	1.99	1.46	1.13	0.63	0.75	0.73	0.96	1.41	1.78	0.63
	Yusuhara	Mean	2.26	0.77	1.06	1.47	0.48	0.03	0.08	0.11	0.11	0.61	1.43	0.88	0.76
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.43	0.77	1.45	1.68	0.83	0.06	0.09	0.15	0.21	0.79	1.82	1.10	3.43
		Min-2w	1.08	0.77	0.67	1.27	0.11	<0.01	0.06	0.06	0.02	0.43	1.05	0.66	<0.01
	Hedo	Mean	2.12	1.92	1.73	1.05	0.69	0.40	0.21	***	***	***	***	***	1.13
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	2.72	1.98	1.84	1.30	0.86	0.53	0.27	***	***	***	***	***	2.72
		Min-2w	1.52	1.86	1.62	0.81	0.59	0.28	0.16	***	***	***	***	***	0.16
	Ogasawara	Mean	0.77	0.75	0.67	0.79	0.60	0.26	0.17	0.12	0.16	0.24	***	***	0.47
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.89	0.92	0.87	1.33	0.73	0.26	0.18	0.17	0.16	0.28	***	***	1.33
		Min-2w	0.65	0.57	0.48	0.49	0.46	0.25	0.15	0.06	0.16	0.20	***	***	0.06
	Tokyo	Mean	3.09	3.20	3.59	3.30	2.81	2.06	3.21	2.00	2.16	2.78	2.40	3.22	2.82
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.55	3.68	3.83	3.78	3.29	2.73	3.31	2.07	2.33	3.60	2.65	3.43	3.83
		Min-2w	2.63	2.71	3.35	2.82	2.45	1.40	3.10	1.93	1.99	2.05	2.16	3.01	1.40
	Niigata-maki	Mean	1.0	1.6	2.1	2.08	1.42	0.79	0.80	0.89	0.94	0.85	0.65	0.81	1.15
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.3	1.9	2.7	2.18	1.54	0.95	1.06	1.13	1.05	1.19	0.71	0.82	2.67
		Min-2w	0.6	1.3	1.4	1.98	1.22	0.63	0.55	0.65	0.84	0.55	0.59	0.80	0.55
	Tsushima	Mean	4.8	3.6	4.3	3.09	1.36	0.54	0.32	0.27	0.52	1.47	2.73	2.61	2.06
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	6.8	3.9	4.3	4.06	1.51	0.57	0.32	0.27	0.60	1.90	3.25	3.04	6.80
		Min-2w	2.8	3.2	4.3	2.11	1.26	0.52	0.32	0.27	0.44	1.17	2.20	2.18	0.27

Table 4.14.1 Particulate matter component: NO₃⁻ - Measured by FP (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.70	0.99	1.71	0.95	1.40	1.36	1.38	1.63	1.37	0.75	0.70	0.73	1.15
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	1.34	1.47	2.82	1.46	1.91	1.92	2.93	1.93	1.83	1.15	1.12	0.99	2.93
		Min-w	0.10	0.22	0.98	0.62	0.71	0.57	0.14	1.32	0.59	0.50	0.42	0.01	0.01
	Tanah Rata	Mean	0.06	0.27	0.38	0.22	0.23	0.13	0.34	0.13	0.18	0.12	0.06	0.14	0.19
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.12	0.70	0.64	0.56	0.47	0.32	0.58	0.36	0.35	0.32	0.12	0.20	0.70
		Min-w	<0.01	0.03	0.03	0.01	0.09	0.03	0.08	<0.01	0.03	0.01	0.02	0.07	<0.01
	Danum Valley	Mean	0.06	0.20	0.24	<0.01	0.01	<0.01	0.05	0.03	<0.01	0.04	0.04	0.15	0.06
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.14	0.20	0.34	<0.01	0.01	0.01	0.09	0.04	0.01	0.07	0.04	0.18	0.34
		Min-2w	0.01	0.20	0.14	<0.01	0.01	<0.01	<0.01	0.02	<0.01	0.01	0.04	0.12	<0.01
Mongolia	Ulaanbaatar	Mean	0.07	<0.01	0.55	0.05	0.42	0.07	0.01	1.15	<0.01	0.06	0.04	<0.01	0.22
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.23	<0.01	2.34	0.15	1.68	0.16	0.04	5.15	0.04	0.15	0.14	<0.01	5.15
		Min-w	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Terelj	Mean	0.10	0.06	0.04	0.02	0.02	0.05	0.17	0.03	<0.01	0.02	0.01	0.03	0.05
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.19	0.07	0.06	0.03	0.04	0.06	0.29	0.03	0.01	0.03	0.03	0.07	0.29
		Min-2w	0.01	0.04	0.02	<0.01	0.01	0.03	0.05	0.02	<0.01	0.01	<0.01	<0.01	<0.01
Myanmar	Yangon	Mean	0.06	0.23	0.28	0.13	0.40	0.10	0.59	0.14	0.20	0.10	0.09	0.05	0.20
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.07	0.37	0.30	0.14	0.87	0.15	1.00	0.19	0.26	0.20	0.09	0.05	1.00
		Min-2w	0.05	0.09	0.26	0.13	0.07	0.04	0.17	0.10	0.14	<0.01	0.09	0.04	<0.01
Philippines	Manila Observatory	Mean	0.76	1.30	2.40	2.04	0.78	0.62	2.63	0.62	0.33	0.90	0.25	0.92	1.14
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	2.02	2.19	3.17	3.66	1.77	2.98	3.08	2.47	0.65	2.70	0.61	1.28	3.66
		Min-irreg	<0.01	0.22	1.41	1.11	0.03	<0.01	1.96	<0.01	0.02	<0.01	<0.01	0.70	<0.01
	Los Baños	Mean	18.64	0.18	0.40	2.00	0.26	<0.01	0.54	1.05	1.93	<0.01	0.62	0.83	2.20
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	24.57	0.70	1.60	4.83	0.46	0.02	2.25	4.19	5.05	<0.01	1.10	1.72	24.57
		Min-irreg	12.82	<0.01	<0.01	0.33	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.35	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	0.08	0.04	0.08	0.03	0.02	0.03	0.02	0.03	0.04	0.04	0.03	0.33	0.06
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.14	0.07	0.20	0.08	0.06	0.04	0.07	0.09	0.06	0.08	0.09	0.59	0.59
		Min-w	0.04	0.02	0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
	Irkutsk	Mean	1.06	2.07	0.27	0.16	0.09	0.09	0.25	0.22	0.62	1.46	2.05	1.29	0.76
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.43	3.40	0.41	0.36	0.23	0.16	0.46	0.53	0.99	2.19	3.62	2.66	3.62
		Min-w	0.30	0.80	0.22	0.05	0.03	0.05	0.07	0.08	0.31	0.47	0.72	0.48	0.03
	Primorskaya	Mean	2.92	1.44	0.85	2.02	1.41	0.19	0.18	0.08	0.66	0.07	0.62	0.42	0.82
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	2.92	1.69	0.87	3.06	1.55	0.20	0.23	0.11	1.32	0.08	1.22	0.60	3.06
		Min-15d	2.92	1.19	0.83	0.98	1.28	0.19	0.13	0.04	<0.01	0.06	0.03	0.25	<0.01

Table 4.14.1 Particulate matter component: NO₃⁻ - Measured by FP (continued)

 Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.10	2.55	0.98	***	0.24	1.01	1.02	1.88	2.75	3.60	1.64
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	0.10	3.92	1.48	***	0.55	1.41	1.68	3.36	4.42	3.98	4.42
		Min-10d	***	***	0.10	1.33	0.48	***	<0.01	0.64	0.67	0.70	0.44	3.22	<0.01
Vietnam	Hanoi	Mean	6.96	1.89	5.15	3.47	3.08	2.44	4.06	3.41	3.48	1.94	3.24	4.94	3.66
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	9.09	3.00	7.32	4.42	5.19	3.36	8.15	5.56	5.25	2.31	5.66	7.87	9.09
		Min-w	5.32	0.92	3.82	2.57	1.70	1.27	2.30	1.84	2.54	1.54	1.13	2.49	0.92
	Hoa Binh	Mean	2.55	5.18	4.10	3.12	2.86	2.82	3.20	2.98	3.53	2.79	3.16	4.86	3.42
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.35	6.54	4.79	4.02	4.47	3.68	4.59	4.37	4.31	3.70	4.42	5.94	6.54
		Min-w	2.06	3.07	3.49	2.37	2.23	2.23	2.17	1.97	2.50	2.24	2.15	4.23	1.97
	Can Tho	Mean	2.61	2.20	2.25	2.27	2.12	2.15	2.10	2.64	2.25	2.21	2.19	2.48	2.29
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.06	2.46	2.58	2.46	2.40	2.32	2.20	3.67	2.60	2.82	2.30	2.62	3.67
		Min-w	2.14	1.92	1.87	2.12	1.87	2.06	1.88	2.12	1.88	1.92	2.00	2.24	1.87
	Ho Chi Minh	Mean	4.06	5.09	5.02	5.21	5.10	4.79	5.67	5.77	4.37	4.76	5.34	4.23	4.97
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	4.38	5.89	6.07	5.87	7.94	6.15	7.90	6.43	4.96	5.95	6.35	4.94	7.94
		Min-w	3.45	4.35	3.85	4.38	3.75	4.11	4.46	4.82	3.89	4.09	4.44	3.57	3.45
	Yen Bai	Mean	3.73	3.63	2.87	3.26	3.27	2.93	3.47	3.50	4.18	4.47	4.16	5.53	3.72
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	5.18	4.61	3.78	5.56	4.14	3.80	4.46	6.02	5.62	6.02	6.79	7.38	7.38
		Min-w	2.59	2.68	1.92	1.71	2.53	1.94	1.28	1.41	2.95	3.11	1.88	3.64	1.28

Table 4.14.2 Particulate matter component: NO₃⁻ - Measured by FP with PM_{2.5} cyclone

 Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	2.49	5.87	7.84	1.30	0.47	0.49	0.12	0.05	0.04	1.03	1.82	3.97	2.06
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	4.10	10.42	16.50	2.31	1.19	1.39	0.24	0.05	0.06	4.60	5.72	6.85	16.50
		Min-d	1.31	2.49	0.49	0.17	0.08	0.04	0.02	0.04	0.02	0.07	0.27	1.85	0.02
	Jeju	Mean	3.41	2.70	3.54	0.63	0.16	0.33	0.18	0.06	0.08	0.34	0.33	2.94	1.37
		%	16	18	13	13	10	13	13	10	13	16	13	16	13
		Max-d	14.49	6.29	9.04	0.87	0.25	0.85	0.34	0.10	0.13	0.67	0.54	10.06	14.49
		Min-d	0.33	0.17	1.18	0.49	0.10	0.11	0.06	0.03	0.05	0.17	0.19	0.19	0.03
	Imsil	Mean	***	6.58	5.87	0.20	0.07	0.08	0.03	0.04	0.12	1.25	1.73	2.14	1.39
		%	***	7	16	7	16	13	10	16	17	10	17	6	11
		Max-d	***	7.77	9.91	0.38	0.12	0.11	0.05	0.06	0.37	3.45	4.41	2.19	9.91
		Min-d	***	5.39	2.39	0.01	0.03	0.04	0.02	0.02	0.03	0.12	0.54	2.10	0.01

Terms and abbreviations are given in Table 4.2.

Table 4.15.1 Particulate matter component: Cl⁻ - Measured by FPUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	1.73	1.45	0.91	5.61	3.88	0.54	1.46	1.15	2.39	4.54	3.93	2.54	2.64
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.44	2.21	1.07	6.01	5.58	0.61	2.73	1.46	2.62	6.07	4.11	3.64	6.07
		Min-2w	1.02	0.69	0.76	5.22	1.81	0.47	0.18	0.84	2.17	2.60	3.75	1.45	0.18
	Ochiishi	Mean	2.80	3.21	2.82	6.57	5.41	1.46	1.04	4.11	4.67	8.82	9.06	4.55	4.74
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.95	3.96	5.17	7.59	7.43	2.05	1.59	6.70	5.25	9.79	10.26	6.54	10.26
		Min-2w	2.65	2.45	0.46	5.55	4.28	0.88	0.49	1.52	4.09	8.20	7.87	2.55	0.46
	Sado-seki	Mean	6.47	5.17	2.30	4.46	1.95	0.86	1.75	1.27	1.91	4.47	6.30	9.66	3.83
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	7.20	5.78	3.15	7.07	3.52	1.46	3.44	1.86	1.96	5.24	6.47	13.58	13.58
		Min-2w	5.74	4.57	1.44	1.86	0.59	0.27	0.07	0.68	1.85	3.41	6.13	5.73	0.07
	Happo	Mean	0.02	0.03	0.06	0.12	0.01	<0.01	0.02	0.02	0.03	0.49	0.03	0.02	0.08
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.03	0.03	0.09	0.22	0.01	<0.01	0.03	0.02	0.03	0.92	0.03	0.02	0.92
		Min-2w	0.02	0.03	0.03	0.07	0.01	<0.01	0.02	<0.01	0.03	0.07	0.03	0.02	<0.01
	Ijira	Mean	0.15	0.11	0.12	0.12	0.08	<0.01	***	0.08	0.04	0.15	0.20	0.13	0.11
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.23	0.14	0.14	0.16	0.19	0.01	***	0.15	0.07	0.32	0.29	0.19	0.32
		Min-2w	0.06	0.09	0.11	0.07	<0.01	<0.01	***	<0.01	0.02	0.02	0.11	0.08	<0.01
	Okii	Mean	8.35	4.94	3.09	4.20	1.46	1.33	1.70	1.19	2.19	4.29	10.20	12.59	4.49
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	11.52	5.64	4.01	4.33	2.42	2.21	3.24	1.88	2.57	5.52	10.28	17.80	17.80
		Min-2w	5.19	4.24	2.17	4.07	0.89	0.44	0.16	0.50	1.82	3.38	10.12	7.38	0.16
	Yusuhara	Mean	0.39	0.08	0.10	0.32	0.12	<0.01	0.03	0.02	0.02	0.06	0.42	0.15	0.14
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.40	0.12	0.11	0.47	0.31	<0.01	0.04	0.03	0.04	0.08	0.47	0.17	0.47
		Min-2w	0.38	0.04	0.10	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.37	0.13	<0.01
	Hedo	Mean	10.96	9.14	6.34	3.97	2.50	1.66	2.49	***	***	***	***	***	5.11
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	14.14	12.55	6.41	4.59	3.47	2.00	3.24	***	***	***	***	***	14.14
		Min-2w	7.78	5.74	6.27	3.35	1.20	1.31	1.73	***	***	***	***	***	1.20
	Ogasawara	Mean	3.64	4.53	4.39	4.99	4.84	1.65	2.08	3.38	3.58	3.13	***	***	3.69
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	3.79	5.22	5.47	6.95	5.66	2.19	2.57	4.57	4.41	3.28	***	***	6.95
		Min-2w	3.49	3.84	3.32	3.23	4.02	1.11	1.60	2.20	2.75	2.97	***	***	1.11
	Tokyo	Mean	0.50	0.42	0.66	1.04	0.70	0.07	0.22	1.59	0.55	0.38	0.57	0.60	0.60
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.58	0.57	0.71	1.12	1.17	0.08	0.24	2.43	0.73	0.51	0.82	0.65	2.43
		Min-2w	0.42	0.27	0.60	0.96	0.23	0.06	0.21	0.75	0.38	0.26	0.33	0.55	0.06
	Niigata-maki	Mean	3.0	2.5	1.8	1.91	0.67	0.36	0.29	0.31	0.83	2.34	4.13	4.38	1.84
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	3.3	2.9	2.0	2.90	0.95	0.63	0.57	0.46	0.84	3.26	4.31	6.40	6.40
		Min-2w	2.6	2.1	1.6	0.92	0.17	0.09	0.02	0.16	0.82	0.92	3.96	2.36	0.02
	Tsushima	Mean	1.0	0.7	0.9	1.27	0.25	0.16	0.68	0.05	0.83	0.40	0.64	0.68	0.59
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.1	0.7	0.9	1.85	0.57	0.26	0.68	0.06	1.02	0.47	0.75	1.01	1.85
		Min-2w	0.9	0.7	0.9	0.68	0.09	0.05	0.68	0.04	0.64	0.30	0.52	0.35	0.04

Table 4.15 Particulate matter component: Cl^- - Measured by FP (continued)Unit : $\mu\text{g}/\text{m}^3$

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.09	0.10	0.13	0.07	0.27	0.12	0.18	0.14	0.21	0.05	0.07	0.20	0.14
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.19	0.27	0.31	0.13	0.56	0.23	0.51	0.23	0.62	0.07	0.11	0.74	0.74
		Min-w	0.05	0.05	0.07	0.03	0.04	0.07	0.02	0.05	0.04	0.03	0.03	<0.01	<0.01
	Tanah Rata	Mean	0.09	0.13	0.13	0.02	0.02	0.01	0.04	0.03	0.01	0.02	0.02	0.11	0.05
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.22	0.25	0.49	0.04	0.04	0.03	0.08	0.12	0.02	0.03	0.04	0.20	0.49
		Min-w	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
	Danum Valley	Mean	0.69	0.29	0.32	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.13	0.14
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	1.92	0.29	0.54	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.03	0.16	1.92
		Min-2w	0.06	0.29	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.10	<0.01
Mongolia	Ulaanbaatar	Mean	0.05	0.07	0.05	0.07	0.05	0.28	0.12	0.14	0.09	0.09	0.27	0.13	0.12
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.12	0.21	0.13	0.12	0.12	1.05	0.26	0.35	0.15	0.15	0.44	0.31	1.05
		Min-w	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.13	0.03	0.03
	Terelj	Mean	0.22	0.06	0.17	0.03	0.04	0.18	0.04	0.02	0.02	0.02	0.05	0.07	0.07
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.43	0.10	0.32	0.05	0.06	0.33	0.04	0.02	0.02	0.03	0.09	0.12	0.43
		Min-2w	0.02	0.02	0.01	0.01	0.02	0.03	0.03	0.01	0.01	<0.01	<0.01	0.02	<0.01
Myanmar	Yangon	Mean	0.08	0.05	0.38	0.06	0.37	0.04	0.50	0.03	0.09	0.04	0.11	0.06	0.15
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.11	0.11	0.67	0.08	0.80	0.08	0.77	0.04	0.14	0.09	0.12	0.06	0.80
		Min-2w	0.05	<0.01	0.08	0.04	<0.01	<0.01	0.23	0.02	0.04	0.01	0.10	0.05	<0.01
Philippines	Manila Observatory	Mean	0.59	2.39	1.22	0.42	0.55	0.26	0.22	1.71	0.01	0.51	0.23	0.69	0.70
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	1.74	2.89	2.79	1.02	2.01	1.04	0.57	2.91	0.03	1.45	0.75	1.09	2.91
		Min-irreg	<0.01	1.67	0.55	0.03	0.04	<0.01	0.03	0.78	<0.01	<0.01	<0.01	0.36	<0.01
	Los Baños	Mean	16.33	0.12	0.25	4.11	0.07	0.07	0.04	0.22	0.08	<0.01	1.19	1.89	1.95
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	21.90	0.19	0.77	11.70	0.17	0.22	0.16	0.70	0.33	0.03	1.81	2.74	21.90
		Min-irreg	5.11	0.07	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.25	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	0.02	0.02	0.01	<0.01	0.01	0.03	0.03	0.02	<0.01	0.02	0.01	0.07	0.02
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.03	0.04	0.02	0.01	0.02	0.04	0.05	0.04	0.03	0.06	0.02	0.19	0.19
		Min-w	0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01
	Irkutsk	Mean	0.12	0.25	0.21	0.06	0.02	0.02	0.05	0.22	0.10	0.30	1.26	0.82	0.27
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.19	0.38	0.31	0.09	0.04	0.04	0.09	0.26	0.24	0.51	2.49	1.36	2.49
		Min-w	0.05	0.17	0.14	0.01	0.01	<0.01	0.01	0.17	0.03	0.16	0.46	0.43	<0.01
	Primorskaya	Mean	0.42	0.23	0.22	0.73	0.59	0.03	<0.01	0.02	0.18	<0.01	0.02	0.04	0.20
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.42	0.28	0.24	0.97	0.65	0.04	0.01	0.02	0.35	<0.01	0.04	0.07	0.97
		Min-15d	0.42	0.18	0.20	0.48	0.52	0.03	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01

Table 4.15.1 Particulate matter component: Cl⁻ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.04	0.29	0.10	***	0.19	0.43	0.21	0.14	0.19	0.18	0.22
		%	***	***	100	100	100	***	100	100	100	100	100	100	67
		Max-10d	***	***	0.04	0.51	0.12	***	0.30	0.69	0.29	0.19	0.40	0.27	0.69
		Min-10d	***	***	0.04	0.12	0.08	***	0.08	0.25	0.17	0.06	0.04	0.10	0.04
Vietnam	Hanoi	Mean	3.81	1.21	4.00	2.40	1.93	1.74	2.15	1.90	2.48	1.59	2.20	4.81	2.51
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	7.87	2.14	6.65	4.62	2.34	3.01	3.02	3.29	3.94	1.75	2.93	5.80	7.87
		Min-w	1.78	0.73	2.02	0.45	1.35	1.15	1.10	0.93	1.70	1.40	1.87	3.52	0.45
	Hoa Binh	Mean	3.29	4.84	3.52	3.08	3.70	3.32	2.94	3.24	3.08	3.34	3.17	5.03	3.53
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	4.25	6.96	4.53	5.02	5.30	4.41	4.04	4.93	3.87	4.38	4.71	6.83	6.96
		Min-w	2.39	2.28	2.21	1.67	2.60	2.51	1.97	2.58	2.40	2.35	1.30	3.46	1.30
	Can Tho	Mean	2.37	2.32	2.29	2.22	2.48	2.60	2.22	2.04	2.06	2.29	2.00	2.23	2.26
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.76	2.90	2.76	2.62	2.88	2.96	2.84	2.54	2.50	2.58	2.50	2.52	2.96
		Min-w	1.83	1.83	1.85	1.75	1.98	2.16	1.47	1.47	1.47	1.85	1.75	2.06	1.47
	Ho Chi Minh	Mean	3.12	3.41	3.45	3.16	3.73	3.14	2.87	2.73	3.37	3.77	3.19	3.47	3.27
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	4.23	4.23	4.23	5.02	4.35	3.69	3.10	3.08	3.79	4.23	3.71	4.27	5.02
		Min-w	2.64	2.68	3.02	2.40	2.86	2.64	2.58	2.24	2.30	3.27	2.46	2.76	2.24
	Yen Bai	Mean	3.27	3.03	2.43	2.64	2.92	2.87	3.35	3.26	3.37	3.87	3.57	3.54	3.18
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	4.52	3.78	3.31	4.35	3.40	3.53	4.80	4.36	3.92	5.72	5.58	3.84	5.72
		Min-w	2.44	2.35	1.83	1.90	1.93	1.82	1.78	1.75	2.50	2.63	1.93	3.13	1.75

Table 4.15.2 Particulate matter component: Cl⁻ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	0.35	0.10	0.12	0.20	***	0.01	0.10	***	***	0.03	0.07	0.18	0.17
		%	16	18	13	13	***	7	6	***	***	6	17	19	8
		Max-d	0.44	0.27	0.15	0.52	***	0.01	0.20	***	***	0.04	0.12	0.33	0.52
		Min-d	0.22	0.04	0.04	0.02	***	<0.01	<0.01	***	***	<0.01	0.01	0.06	<0.01
	Jeju	Mean	0.07	0.05	0.31	0.13	0.06	***	0.30	0.01	0.02	0.12	0.11	0.14	0.14
		%	16	14	13	13	10	***	13	3	7	16	10	16	10
		Max-d	0.11	0.07	0.78	0.29	0.14	***	0.55	0.01	0.04	0.29	0.16	0.27	0.78
		Min-d	0.02	0.03	0.04	0.02	0.01	***	0.02	0.01	<0.01	<0.01	0.03	0.04	<0.01
	Imsil	Mean	***	0.11	0.20	***	***	0.02	0.02	***	0.05	0.04	0.07	0.10	0.13
		%	***	7	16	***	***	3	3	***	3	6	13	6	4
		Max-d	***	0.14	0.29	***	***	0.02	0.02	***	0.05	0.05	0.18	0.14	0.29
		Min-d	***	0.07	0.09	***	***	0.02	0.02	***	0.05	0.04	<0.01	0.06	0.02

Terms and abbreviations are given in Table 4.2.

Table 4.16.1 Particulate matter component: NH₄⁺ - Measured by FP

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.39	0.50	0.92	0.48	0.40	0.29	0.47	0.18	0.16	0.29	0.25	0.31	0.38
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.57	0.50	1.08	0.79	0.51	0.30	0.55	0.21	0.22	0.49	0.34	0.35	1.08
		Min-2w	0.20	0.50	0.77	0.18	0.22	0.28	0.38	0.16	0.11	0.13	0.15	0.26	0.11
	Ochiishi	Mean	0.41	0.55	0.47	0.43	0.32	0.25	0.32	0.17	0.10	0.27	0.22	0.29	0.32
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.51	0.68	0.90	0.55	0.41	0.28	0.47	0.26	0.12	0.41	0.27	0.35	0.90
		Min-2w	0.31	0.42	0.04	0.30	0.26	0.22	0.17	0.09	0.08	0.14	0.18	0.24	0.04
	Sado-seki	Mean	0.41	0.70	0.23	0.35	0.32	0.41	0.43	0.37	0.19	0.23	0.14	0.22	0.33
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.58	0.76	0.27	0.46	0.70	0.57	0.66	0.39	0.20	0.45	0.17	0.28	0.76
		Min-2w	0.24	0.63	0.18	0.24	0.05	0.25	0.20	0.35	0.18	0.10	0.11	0.15	0.05
	Happo	Mean	0.13	0.24	0.32	0.41	0.28	0.52	0.62	0.50	0.33	0.11	0.18	0.09	0.32
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.16	0.29	0.49	0.68	0.28	0.56	1.03	0.52	0.33	0.14	0.18	0.16	1.03
		Min-2w	0.09	0.19	0.14	0.27	0.28	0.48	0.21	0.49	0.33	0.09	0.18	0.02	0.02
	Ijira	Mean	0.38	0.42	0.47	0.48	0.35	0.42	***	0.36	0.28	0.44	0.25	0.29	0.38
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.45	0.44	0.66	0.56	0.41	0.47	***	0.51	0.37	0.71	0.28	0.36	0.71
		Min-2w	0.31	0.40	0.28	0.39	0.28	0.37	***	0.21	0.19	0.30	0.23	0.22	0.19
	Okii	Mean	0.42	0.64	0.52	0.35	0.51	0.62	0.58	0.39	0.29	0.43	0.40	0.46	0.47
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.51	0.65	0.80	0.48	0.75	0.91	0.86	0.47	0.36	0.57	0.48	0.72	0.91
		Min-2w	0.33	0.63	0.23	0.22	0.35	0.33	0.30	0.31	0.23	0.29	0.32	0.20	0.20
	Yusuhara	Mean	0.99	0.59	0.61	0.42	0.30	0.65	0.46	0.18	0.25	0.61	0.62	0.60	0.52
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.44	0.67	0.99	0.45	0.35	0.67	0.48	0.19	0.32	0.81	0.84	0.85	1.44
		Min-2w	0.53	0.50	0.22	0.38	0.26	0.62	0.43	0.17	0.18	0.49	0.39	0.34	0.17
	Hedo	Mean	0.30	0.40	0.37	0.18	0.14	0.11	0.07	***	***	***	***	***	0.22
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	0.37	0.41	0.41	0.20	0.17	0.12	0.09	***	***	***	***	***	0.41
		Min-2w	0.24	0.39	0.32	0.17	0.10	0.11	0.06	***	***	***	***	***	0.06
	Ogasawara	Mean	0.27	0.18	0.20	0.16	0.15	0.16	0.10	0.08	0.07	0.08	***	***	0.15
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.32	0.25	0.30	0.18	0.16	0.19	0.11	0.09	0.08	0.11	***	***	0.32
		Min-2w	0.22	0.12	0.09	0.13	0.14	0.13	0.08	0.07	0.07	0.05	***	***	0.05
	Tokyo	Mean	1.00	1.02	0.88	0.70	0.58	0.92	0.84	0.64	0.45	0.70	0.54	0.86	0.75
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.15	1.09	1.03	0.76	0.81	0.96	0.84	0.79	0.55	1.17	0.67	0.96	1.17
		Min-2w	0.86	0.94	0.72	0.63	0.39	0.87	0.84	0.48	0.35	0.41	0.41	0.77	0.35
	Niigata-maki	Mean	0.5	0.7	0.52	0.40	0.41	0.40	0.55	0.32	0.24	0.26	0.17	0.25	0.39
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.6	0.8	0.74	0.49	0.66	0.53	0.86	0.39	0.28	0.44	0.19	0.33	0.86
		Min-2w	0.4	0.7	0.29	0.31	0.27	0.27	0.24	0.25	0.20	0.15	0.15	0.16	0.15
	Tsushima	Mean	1.6	1.3	1.18	0.55	0.57	0.71	0.41	0.70	0.29	0.61	0.92	0.93	0.80
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.3	1.4	1.18	0.92	0.82	1.22	0.41	0.77	0.37	0.77	1.17	1.41	2.30
		Min-2w	0.9	1.2	1.18	0.19	0.36	0.21	0.41	0.64	0.20	0.45	0.67	0.46	0.19

Table 4.16.1 Particulate matter component: NH₄⁺ - Measured by FP (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.48	0.35	1.03	1.63	0.73	0.87	0.86	1.41	1.68	1.82	0.59	0.49	1.00
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.97	0.65	1.41	2.51	1.34	1.05	1.19	2.20	2.53	3.05	1.24	0.75	3.05
		Min-w	0.22	<0.01	0.57	0.67	0.39	0.69	0.62	0.80	0.51	0.99	0.18	0.05	<0.01
	Tanah Rata	Mean	0.17	0.19	0.41	1.19	0.49	0.61	0.46	0.64	0.83	1.28	0.21	0.24	0.56
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.38	0.30	0.61	2.07	0.72	0.94	0.58	0.92	1.74	1.88	0.37	0.31	2.07
		Min-w	0.06	0.06	0.25	0.30	0.23	0.23	0.31	0.14	0.16	0.52	0.13	0.20	0.06
	Danum Valley	Mean	0.09	0.06	0.02	0.19	0.18	0.10	0.26	0.31	0.34	0.49	0.15	0.12	0.20
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.10	0.06	0.03	0.19	0.26	0.18	0.30	0.33	0.59	0.51	0.18	0.15	0.59
		Min-2w	0.08	0.06	0.02	0.19	0.10	0.02	0.22	0.29	0.20	0.48	0.13	0.08	0.02
Mongolia	Ulaanbaatar	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Terelj	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Myanmar	Yangon	Mean	0.15	1.19	0.59	0.61	0.31	0.09	0.02	0.24	0.11	0.09	0.08	0.08	0.29
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.19	1.39	1.05	1.10	0.59	0.13	0.03	0.27	0.12	0.13	0.09	0.08	1.39
		Min-2w	0.11	0.98	0.13	0.12	0.12	0.04	0.01	0.21	0.10	0.06	0.08	0.07	0.01
Philippines	Manila Observatory	Mean	0.13	0.12	0.12	0.47	0.80	0.72	0.38	0.38	0.83	0.13	***	***	0.41
		%	100	76	100	100	100	100	100	100	80	100	***	***	79
		Max-irreg	0.39	0.21	0.15	1.06	2.29	2.15	0.48	0.47	2.74	0.34	***	***	2.74
		Min-irreg	0.04	0.08	0.09	0.16	0.03	0.07	0.32	0.25	<0.01	0.02	***	***	<0.01
	Los Baños	Mean	1.12	0.33	0.27	0.76	0.19	0.50	0.73	0.96	1.38	1.05	***	***	0.73
		%	84	100	100	60	100	100	100	100	100	100	***	***	77
		Max-irreg	1.67	0.55	0.67	1.36	0.46	0.97	2.62	3.22	5.08	1.94	***	***	5.08
		Min-irreg	0.74	0.09	0.09	0.14	0.02	0.08	0.11	0.08	0.04	0.10	***	***	0.02
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	0.12	0.16	0.11	0.15	0.15	0.15	0.18	0.08	0.10	0.05	0.01	0.27	0.13
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.38	0.39	0.27	0.49	0.35	0.43	0.53	0.27	0.19	0.14	0.03	0.91	0.91
		Min-w	<0.01	0.01	0.03	0.01	0.02	0.05	0.03	0.01	0.02	<0.01	<0.01	<0.01	<0.01
	Irkutsk	Mean	0.66	1.10	0.10	0.26	0.14	0.16	0.26	0.15	0.49	0.61	1.24	1.70	0.55
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.35	1.66	0.17	0.70	0.30	0.23	0.86	0.44	0.59	1.04	2.62	2.90	2.90
		Min-w	0.12	0.63	0.05	0.05	0.07	0.08	0.03	0.02	0.42	0.21	0.37	0.54	0.02
	Primorskaya	Mean	0.74	0.68	0.36	0.86	0.83	0.29	0.68	0.14	0.54	0.03	0.28	0.12	0.45
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.74	0.72	0.38	1.17	0.93	0.33	0.76	0.22	1.08	0.06	0.55	0.15	1.17
		Min-15d	0.74	0.65	0.34	0.56	0.72	0.24	0.59	0.06	<0.01	<0.01	<0.01	0.09	<0.01

Table 4.16.1 Particulate matter component: NH₄⁺ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.04	1.88	0.37	***	2.81	0.15	0.11	0.56	***	***	0.98
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	0.04	2.63	0.42	***	4.48	0.25	0.16	0.73	***	***	4.48
		Min-10d	***	***	0.04	0.56	0.32	***	0.11	0.03	0.02	0.39	***	***	0.02
Vietnam	Hanoi	Mean	1.70	0.46	1.06	0.68	0.58	0.53	1.16	0.81	0.79	0.44	0.79	1.67	0.88
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.34	0.80	1.36	0.96	0.82	1.12	2.65	1.07	1.13	0.53	1.59	2.71	3.34
		Min-w	0.18	0.08	0.55	0.43	0.28	0.22	0.54	0.57	0.34	0.29	0.34	0.79	0.08
	Hoa Binh	Mean	0.91	1.09	1.07	0.77	0.96	1.01	1.12	1.14	1.29	1.07	0.99	2.07	1.12
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.45	1.52	1.48	1.10	1.38	1.41	1.51	1.67	1.82	1.39	1.65	2.51	2.51
		Min-w	0.57	0.66	0.53	0.56	0.70	0.53	0.75	0.76	0.83	0.85	0.25	1.43	0.25
	Can Tho	Mean	1.24	1.18	1.18	0.82	0.88	0.86	1.04	1.23	1.14	1.26	0.96	1.10	1.07
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.37	1.41	1.55	0.93	1.19	1.19	1.23	1.77	1.27	1.41	1.45	1.47	1.77
		Min-w	1.13	0.89	0.95	0.77	0.71	0.65	0.79	0.91	0.91	1.13	0.58	0.77	0.58
	Ho Chi Minh	Mean	0.63	0.60	0.69	0.93	1.13	0.56	0.89	1.22	1.46	1.26	1.00	0.60	0.91
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.81	0.71	0.87	1.94	1.55	0.75	1.33	1.47	2.02	1.61	1.17	0.73	2.02
		Min-w	0.34	0.36	0.50	0.20	0.75	0.46	0.50	0.93	0.56	0.83	0.75	0.40	0.20
	Yen Bai	Mean	1.09	1.02	1.00	1.06	1.08	0.96	1.25	1.03	1.59	1.71	1.25	2.09	1.24
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.63	1.51	1.19	1.54	1.77	1.73	2.57	1.57	2.99	2.42	2.10	2.55	2.99
		Min-w	0.73	0.66	0.73	0.57	0.61	0.35	0.51	0.44	0.38	0.80	0.61	1.44	0.35

Table 4.16.2 Particulate matter component: NH₄⁺ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	3.11	3.04	3.23	0.79	0.86	1.53	1.55	1.36	0.55	1.08	1.11	2.21	1.77
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	4.10	4.97	6.22	1.16	1.51	2.40	3.23	2.14	0.99	3.90	2.78	4.29	6.22
		Min-d	1.84	1.43	0.32	0.50	0.23	1.17	0.65	0.24	0.06	0.26	0.44	0.65	0.06
	Jeju	Mean	1.73	1.51	2.10	0.50	0.47	0.98	0.46	1.14	0.82	0.67	0.45	1.61	1.07
		%	16	18	10	13	10	13	13	10	13	16	13	16	13
		Max-d	6.53	2.74	3.83	1.05	0.77	1.12	1.23	1.36	1.12	1.46	0.63	5.15	6.53
		Min-d	0.31	0.59	0.73	0.20	0.07	0.67	0.04	0.95	0.62	0.19	0.34	0.18	0.04
	Imsil	Mean	***	2.75	2.17	0.62	0.57	2.06	0.91	1.08	0.50	0.96	0.81	0.77	1.23
		%	***	7	16	7	16	13	10	16	17	10	17	6	11
		Max-d	***	3.13	3.49	1.15	1.19	5.07	1.45	1.90	0.99	2.38	1.57	1.18	5.07
		Min-d	***	2.36	0.70	0.09	0.02	0.60	0.16	0.24	0.24	0.23	0.44	0.35	0.02

Terms and abbreviations are given in Table 4.2.

Table 4.17.1 Particulate matter component: Na⁺ - Measured by FPUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.98	1.01	3.46	3.30	2.61	0.82	1.46	0.96	1.57	2.66	2.34	1.71	1.96
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.34	1.41	3.81	3.61	3.76	0.84	2.32	1.29	1.82	3.22	2.36	2.31	3.81
		Min-2w	0.63	0.60	3.12	2.99	1.54	0.80	0.59	0.64	1.32	1.65	2.33	1.11	0.59
	Ochiishi	Mean	1.69	2.06	1.70	4.04	3.55	1.23	1.19	2.91	3.01	5.28	5.20	2.67	3.00
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	1.77	2.43	3.12	4.54	4.68	1.54	1.30	4.24	3.41	5.89	5.94	3.79	5.94
		Min-2w	1.62	1.69	0.27	3.54	2.98	0.92	1.07	1.58	2.62	4.85	4.46	1.55	0.27
	Sado-seki	Mean	3.96	3.28	1.62	3.00	1.50	1.07	1.66	1.35	1.62	3.00	3.69	5.57	2.58
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	4.18	3.60	2.12	4.34	2.05	1.48	2.79	1.68	1.69	3.29	3.86	7.67	7.67
		Min-2w	3.74	2.95	1.12	1.65	0.92	0.66	0.52	1.03	1.54	2.72	3.52	3.47	0.52
	Happo	Mean	0.04	0.07	0.13	0.15	0.11	0.05	0.09	0.12	0.05	0.42	0.18	0.04	0.12
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.04	0.08	0.18	0.20	0.11	0.08	0.09	0.18	0.05	0.60	0.18	0.06	0.60
		Min-2w	0.04	0.06	0.08	0.12	0.11	0.03	0.08	0.07	0.05	0.25	0.18	0.03	0.03
	Ijira	Mean	0.18	0.21	0.32	0.39	0.31	0.15	***	0.34	0.21	0.32	0.26	0.21	0.27
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.20	0.24	0.38	0.39	0.44	0.23	***	0.48	0.26	0.46	0.34	0.26	0.48
		Min-2w	0.15	0.19	0.27	0.39	0.19	0.07	***	0.19	0.16	0.20	0.19	0.17	0.07
	Okii	Mean	5.06	3.40	2.35	3.04	1.52	1.40	1.68	1.20	1.68	2.98	6.27	7.54	3.11
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	6.63	3.84	3.12	3.29	2.24	1.96	2.79	1.60	1.88	3.45	6.34	10.32	10.32
		Min-2w	3.48	2.97	1.59	2.78	1.15	0.84	0.58	0.80	1.49	2.73	6.19	4.76	0.58
	Yusuhara	Mean	0.37	0.30	0.33	0.58	0.34	0.11	0.36	0.21	0.19	0.44	0.59	0.33	0.35
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.41	0.31	0.38	0.65	0.49	0.19	0.49	0.30	0.20	0.57	0.63	0.38	0.65
		Min-2w	0.33	0.29	0.28	0.51	0.24	0.03	0.24	0.12	0.17	0.28	0.55	0.27	0.03
	Hedo	Mean	6.83	5.92	4.19	2.58	1.68	1.16	1.54	***	***	***	***	***	3.30
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	8.38	7.73	4.20	2.88	2.17	1.43	1.99	***	***	***	***	***	8.38
		Min-2w	5.28	4.10	4.19	2.29	0.96	0.89	1.10	***	***	***	***	***	0.89
	Ogasawara	Mean	2.65	3.05	2.87	3.18	3.18	1.34	1.41	2.12	2.20	2.00	***	***	2.44
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	2.73	3.23	3.47	4.29	3.66	1.58	1.63	2.74	2.68	2.14	***	***	4.29
		Min-2w	2.58	2.87	2.26	2.15	2.70	1.10	1.20	1.50	1.72	1.85	***	***	1.10
	Tokyo	Mean	0.31	0.40	0.96	1.28	1.23	0.67	1.11	1.59	0.98	0.84	0.71	0.52	0.90
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.32	0.47	0.99	1.31	1.42	0.95	1.27	2.05	1.00	1.18	0.93	0.68	2.05
		Min-2w	0.30	0.33	0.93	1.25	1.08	0.39	0.94	1.13	0.97	0.65	0.48	0.35	0.30
	Niigata-maki	Mean	1.9	1.7	1.5	1.59	0.88	0.68	0.80	0.75	1.08	1.65	2.54	2.60	1.45
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	2.0	1.9	1.5	2.01	1.01	0.91	1.12	0.86	1.14	2.09	2.62	3.67	3.67
		Min-2w	1.7	1.5	1.5	1.18	0.72	0.45	0.49	0.63	1.03	0.98	2.47	1.53	0.45
	Tsushima	Mean	0.8	0.8	1.1	1.36	0.72	0.53	0.88	0.59	0.96	0.77	0.84	0.74	0.82
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.9	0.8	1.1	1.51	0.94	0.78	0.88	0.60	1.16	0.94	0.92	1.03	1.51
		Min-2w	0.8	0.8	1.1	1.22	0.57	0.29	0.88	0.58	0.75	0.67	0.76	0.45	0.29

Table 4.17.1 Particulate matter component: Na⁺ (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.33	0.20	0.62	0.23	0.37	0.37	0.42	0.63	0.62	0.27	0.06	0.21	0.37
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-irreg	0.64	0.56	0.99	0.34	0.50	0.57	1.07	0.91	1.01	0.48	0.09	0.31	1.07
		Min-irreg	0.12	<0.01	0.26	0.10	0.24	0.14	<0.01	0.34	0.22	0.09	0.02	<0.01	<0.01
	Tanah Rata	Mean	0.09	0.29	0.35	0.13	0.14	0.11	0.16	0.18	0.18	0.12	0.04	0.17	0.17
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-irreg	0.16	0.58	0.61	0.19	0.22	0.14	0.28	0.25	0.30	0.19	0.06	0.23	0.61
		Min-irreg	0.03	0.07	0.03	0.05	0.06	0.07	0.07	0.07	0.04	0.03	0.02	0.06	0.02
	Danum Valley	Mean	0.19	0.49	0.69	0.27	0.05	0.04	0.14	0.15	0.13	0.12	0.14	0.28	0.21
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.23	0.49	0.81	0.27	0.05	0.07	0.23	0.17	0.21	0.13	0.14	0.34	0.81
		Min-2w	0.13	0.49	0.57	0.27	0.05	<0.01	0.05	0.12	0.07	0.11	0.14	0.21	<0.01
Myanmar	Yangon	Mean	0.07	0.10	0.30	0.12	0.75	0.06	0.25	0.12	0.16	0.07	0.12	0.06	0.20
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.09	0.13	0.42	0.22	1.18	0.10	0.48	0.13	0.29	0.12	0.13	0.07	1.18
		Min-2w	0.04	0.06	0.18	0.02	<0.01	0.03	0.02	0.11	0.02	0.03	0.12	0.06	<0.01
Philippines	Manila Observatory	Mean	0.43	1.70	1.39	1.31	0.77	0.91	1.35	2.37	0.33	0.22	0.21	0.97	0.99
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-w	1.40	2.17	2.50	2.08	1.67	2.20	2.71	3.96	0.68	0.60	0.49	1.36	3.96
		Min-w	<0.01	1.03	0.97	0.83	0.03	0.23	0.54	1.11	0.02	<0.01	<0.01	0.49	<0.01
	Los Baños	Mean	12.18	0.18	0.09	3.63	0.14	0.39	0.70	1.88	0.27	0.90	0.99	0.87	1.81
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-w	16.07	0.28	0.12	10.22	0.28	0.75	2.79	7.31	0.87	1.61	2.15	1.25	16.07
		Min-w	5.20	0.11	0.06	0.11	0.01	0.05	0.16	<0.01	<0.01	0.55	<0.01	0.49	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	0.03	0.06	0.07	0.03	0.03	0.03	0.04	0.05	0.03	0.02	0.02	0.14	0.04
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.04	0.10	0.11	0.04	0.05	0.04	0.06	0.11	0.05	0.05	0.03	0.28	0.28
		Min-w	0.02	0.02	0.05	0.02	0.02	0.01	0.03	0.01	0.02	<0.01	<0.01	0.02	<0.01
	Irkutsk	Mean	0.09	0.22	0.18	0.10	0.06	0.12	0.29	0.50	0.19	0.24	0.89	0.87	0.30
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.12	0.33	0.28	0.16	0.08	0.36	0.98	0.89	0.41	0.36	2.13	1.54	2.13
		Min-w	0.06	0.13	0.09	0.04	0.04	0.03	0.07	0.23	0.10	0.14	0.31	0.62	0.03
	Primorskaya	Mean	0.08	0.07	0.06	0.25	0.24	0.06	0.08	0.03	<0.01	0.02	0.02	0.05	0.08
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.08	0.09	0.07	0.42	0.39	0.08	0.08	0.03	<0.01	0.03	0.04	0.08	0.42
		Min-15d	0.08	0.06	0.05	0.08	0.10	0.04	0.08	0.03	<0.01	<0.01	<0.01	0.01	<0.01

Table 4.17.1 Particulate matter component: Na⁺ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.04	0.92	0.27	***	0.34	0.46	0.24	0.18	***	***	0.40
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	0.04	1.49	0.28	***	0.42	0.80	0.38	0.24	***	***	1.49
		Min-10d	***	***	0.04	0.54	0.26	***	0.28	0.20	0.12	0.12	***	***	0.04
Vietnam	Hanoi	Mean	1.20	0.26	0.85	0.51	0.36	0.41	0.66	0.53	0.42	0.24	0.60	0.96	0.58
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.01	0.30	1.18	0.70	0.51	1.01	0.87	0.78	0.54	0.46	0.75	1.26	2.01
		Min-w	0.71	0.18	0.69	0.37	0.14	0.20	0.45	0.27	0.29	0.07	0.34	0.42	0.07
	Hoa Binh	Mean	0.77	1.02	0.78	0.96	0.69	0.72	0.58	0.85	0.91	0.84	1.02	1.56	0.89
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.91	1.51	1.09	1.71	1.24	0.96	1.06	1.51	1.05	1.17	2.03	2.73	2.73
		Min-w	0.65	0.49	0.37	0.43	0.33	0.53	0.25	0.60	0.70	0.48	0.48	1.03	0.25
	Can Tho	Mean	0.21	0.16	0.27	0.18	0.22	0.20	0.18	0.28	0.16	0.14	0.29	0.27	0.22
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.24	0.26	0.34	0.28	0.30	0.30	0.24	0.34	0.20	0.20	0.34	0.36	0.36
		Min-w	0.18	<0.01	0.20	0.08	0.18	0.10	0.08	0.12	0.10	0.12	0.24	0.22	<0.01
	Ho Chi Minh	Mean	0.87	0.85	0.90	0.90	1.10	0.82	0.78	0.94	0.78	0.70	0.79	1.14	0.88
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.03	0.95	1.07	1.11	1.33	1.11	1.29	1.25	0.97	0.83	1.07	1.33	1.33
		Min-w	0.71	0.60	0.63	0.71	1.01	0.62	0.26	0.75	0.56	0.46	0.46	0.83	0.26
	Yen Bai	Mean	0.75	0.75	0.73	1.03	0.58	0.91	0.68	0.87	0.75	0.90	0.81	1.00	0.82
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.41	1.05	1.14	1.63	0.66	1.15	1.14	1.12	0.86	1.22	1.17	1.16	1.63
		Min-w	0.51	0.49	0.48	0.47	0.50	0.47	0.36	0.36	0.60	0.46	0.42	0.84	0.36

Table 4.17.2 Particulate matter component: Na⁺ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	0.09	0.07	0.11	0.35	0.12	0.14	0.18	0.07	0.04	0.08	0.22	0.19	0.13
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	0.20	0.11	0.15	1.21	0.20	0.28	0.33	0.12	0.06	0.12	0.71	0.56	1.21
		Min-d	0.06	0.05	0.08	0.07	0.04	0.06	0.07	0.05	0.01	0.04	0.04	0.02	0.01
	Jeju	Mean	0.16	0.11	0.40	0.22	0.04	0.07	0.38	0.07	0.20	0.20	0.23	0.31	0.19
		%	16	18	13	13	10	13	13	10	13	16	17	16	13
		Max-d	0.22	0.15	0.81	0.44	0.06	0.09	0.62	0.13	0.28	0.35	0.43	0.52	0.81
		Min-d	0.11	0.07	0.10	0.11	0.02	0.05	0.21	0.04	0.09	0.09	0.13	0.12	0.02
	Imsil	Mean	***	0.07	0.21	0.04	0.02	0.07	0.07	0.05	0.05	0.06	0.15	0.19	0.08
		%	***	7	16	7	13	13	6	16	13	10	17	6	10
		Max-d	***	0.10	0.60	0.07	0.04	0.16	0.09	0.06	0.07	0.09	0.31	0.28	0.60
		Min-d	***	0.04	0.03	0.01	<0.01	0.03	0.05	0.03	0.03	0.02	0.07	0.10	<0.01

Terms and abbreviations are given in Table 4.2.

Table 4.18.1 Particulate matter component: K⁺ - Measured by FPUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.09	0.11	0.33	0.22	0.15	0.07	0.11	0.03	0.10	0.20	0.14	0.10	0.14
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.12	0.12	0.34	0.24	0.20	0.08	0.15	0.06	0.12	0.26	0.16	0.12	0.34
		Min-2w	0.05	0.10	0.31	0.20	0.10	0.07	0.07	<0.01	0.09	0.11	0.13	0.09	<0.01
	Ochiishi	Mean	0.08	0.10	0.08	0.20	0.13	0.05	0.05	0.11	0.11	0.21	0.20	0.10	0.12
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.09	0.12	0.14	0.22	0.18	0.06	0.06	0.15	0.13	0.24	0.22	0.14	0.24
		Min-2w	0.08	0.09	0.01	0.19	0.09	0.03	0.05	0.07	0.09	0.18	0.18	0.06	0.01
	Sado-seki	Mean	0.18	0.36	0.10	0.21	0.11	0.07	0.09	0.06	0.07	0.15	0.14	0.22	0.15
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.18	0.39	0.14	0.27	0.11	0.07	0.13	0.07	0.08	0.16	0.14	0.30	0.39
		Min-2w	0.18	0.32	0.06	0.15	0.11	0.07	0.04	0.06	0.07	0.13	0.13	0.15	0.04
	Happo	Mean	0.01	0.02	0.03	0.04	0.04	0.03	0.03	0.02	0.02	0.03	0.03	<0.01	0.03
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.02	0.02	0.05	0.05	0.04	0.03	0.03	0.02	0.02	0.03	0.03	0.01	0.05
		Min-2w	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.01	<0.01
	Ijira	Mean	0.05	0.05	0.08	0.12	0.10	0.12	***	0.11	0.11	0.08	0.05	0.06	0.09
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.06	0.06	0.10	0.12	0.11	0.12	***	0.12	0.12	0.11	0.05	0.07	0.12
		Min-2w	0.04	0.04	0.06	0.11	0.10	0.11	***	0.10	0.11	0.07	0.05	0.04	0.04
	Okii	Mean	0.22	0.17	0.16	0.23	0.11	0.09	0.09	0.07	0.09	0.16	0.25	0.30	0.16
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.28	0.17	0.20	0.25	0.12	0.11	0.14	0.07	0.10	0.16	0.26	0.39	0.39
		Min-2w	0.17	0.17	0.13	0.20	0.09	0.08	0.05	0.07	0.09	0.15	0.24	0.21	0.05
	Yusuhara	Mean	0.08	0.05	0.06	0.08	0.05	0.04	0.04	0.03	0.03	0.06	0.06	0.04	0.05
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.11	0.06	0.08	0.09	0.06	0.04	0.04	0.03	0.04	0.07	0.07	0.05	0.11
		Min-2w	0.05	0.04	0.04	0.07	0.04	0.03	0.04	0.03	0.03	0.05	0.05	0.03	0.03
	Hedo	Mean	0.32	0.29	0.21	0.13	0.09	0.08	0.08	***	***	***	***	***	0.17
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	0.38	0.33	0.23	0.14	0.10	0.11	0.09	***	***	***	***	***	0.38
		Min-2w	0.27	0.26	0.20	0.13	0.05	0.06	0.07	***	***	***	***	***	0.05
	Ogasawara	Mean	0.12	0.16	0.08	0.15	0.13	0.07	0.06	0.11	0.09	0.09	***	***	0.11
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.12	0.19	0.09	0.18	0.15	0.08	0.07	0.13	0.11	0.11	***	***	0.19
		Min-2w	0.12	0.13	0.08	0.11	0.12	0.06	0.06	0.08	0.07	0.07	***	***	0.06
	Tokyo	Mean	0.10	0.09	0.11	0.16	0.12	0.12	0.13	0.13	0.12	0.13	0.18	0.12	0.13
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.12	0.10	0.12	0.16	0.14	0.13	0.14	0.14	0.12	0.16	0.20	0.13	0.20
		Min-2w	0.08	0.08	0.10	0.16	0.11	0.11	0.12	0.12	0.11	0.12	0.16	0.11	0.08
	Niigata-maki	Mean	0.1	0.1	0.1	0.17	0.10	0.08	0.08	0.07	0.10	0.11	0.11	0.12	0.11
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.1	0.1	0.1	0.19	0.11	0.09	0.09	0.07	0.11	0.13	0.12	0.16	0.19
		Min-2w	0.1	0.1	0.1	0.15	0.08	0.06	0.07	0.06	0.09	0.10	0.11	0.08	0.06
	Tsushima	Mean	0.2	0.1	0.1	0.15	0.09	0.08	0.08	0.06	0.07	0.09	0.09	0.08	0.10
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.1	0.1	0.17	0.10	0.08	0.08	0.07	0.07	0.10	0.10	0.09	0.20
		Min-2w	0.1	0.1	0.1	0.14	0.08	0.08	0.08	0.06	0.07	0.08	0.08	0.07	0.06

Table 4.18.1 Particulate matter component: K⁺ - Measured by FP (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.58	0.15	0.27	0.55	0.35	0.35	0.29	0.35	0.47	0.33	0.11	0.23	0.34
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.97	0.26	0.31	1.16	0.37	0.51	0.58	0.41	0.70	0.50	0.19	0.43	1.16
		Min-w	0.13	<0.01	0.21	0.26	0.29	0.22	<0.01	0.27	0.28	0.17	0.03	<0.01	<0.01
	Tanah Rata	Mean	0.05	0.09	0.11	0.19	0.09	0.14	0.16	0.14	0.19	0.22	0.15	0.05	0.13
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.10	0.16	0.15	0.38	0.13	0.16	0.25	0.21	0.35	0.29	0.42	0.07	0.42
		Min-w	0.02	0.06	0.05	0.09	0.06	0.08	0.10	0.07	0.06	0.11	0.05	0.05	0.02
	Danum Valley	Mean	0.07	0.13	0.17	0.16	0.14	0.09	0.15	0.19	0.17	0.18	0.14	0.14	0.14
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.11	0.13	0.17	0.16	0.16	0.17	0.18	0.26	0.21	0.18	0.18	0.15	0.26
		Min-2w	0.01	0.13	0.16	0.16	0.12	<0.01	0.11	0.12	0.12	0.17	0.10	0.12	<0.01
Mongolia	Ulaanbaatar	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Terelj	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Myanmar	Yangon	Mean	0.27	0.72	0.47	0.50	0.36	0.08	0.48	1.11	0.55	0.10	0.16	0.08	0.39
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.40	0.81	0.86	0.96	1.07	0.16	0.50	1.20	0.99	0.14	0.21	0.08	1.20
		Min-2w	0.15	0.63	0.08	0.05	<0.01	<0.01	0.47	1.01	0.11	0.08	0.12	0.08	<0.01
Philippines	Manila Observatory	Mean	0.40	0.26	0.38	0.50	0.27	0.26	0.28	0.30	0.15	0.43	0.04	0.16	0.29
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	0.90	0.33	0.49	0.70	0.41	0.35	0.45	0.38	0.43	1.20	0.11	0.25	1.20
		Min-irreg	<0.01	0.14	0.30	0.41	0.01	0.16	<0.01	0.23	<0.01	<0.01	<0.01	0.08	<0.01
	Los Baños	Mean	2.94	<0.01	0.25	0.33	0.04	0.29	0.17	0.20	0.29	3.14	0.31	0.33	0.70
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	3.77	<0.01	0.86	0.93	0.09	0.87	0.70	0.68	1.09	11.20	0.60	0.44	11.20
		Min-irreg	1.83	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.37	<0.01	0.18	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	<0.01	0.04	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	0.01
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.01	0.08	0.05	<0.01	0.02	0.02	<0.01	<0.01	0.01	<0.01	<0.01	0.08	0.08
		Min-w	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Irkutsk	Mean	0.17	0.16	0.03	0.04	0.02	0.04	0.11	0.26	0.15	0.35	0.36	0.44	0.17
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.27	0.29	0.05	0.07	0.04	0.07	0.22	0.41	0.39	0.45	0.42	0.99	0.99
		Min-w	0.09	0.08	0.02	0.02	<0.01	0.02	0.06	0.05	0.07	0.17	0.29	0.09	<0.01
	Primorskaya	Mean	0.22	0.06	0.03	0.09	0.09	0.04	0.05	0.04	0.08	0.02	0.06	0.03	0.06
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.22	0.06	0.03	0.15	0.18	0.04	0.05	0.05	0.15	0.04	0.11	0.05	0.22
		Min-15d	0.22	0.06	0.03	0.02	0.01	0.04	0.05	0.03	<0.01	<0.01	<0.01	0.01	<0.01

Table 4.18.1 Particulate matter component: K⁺ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.04	0.65	0.15	***	0.19	0.18	0.16	0.32	***	***	0.27
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	0.04	0.92	0.18	***	0.28	0.30	0.27	0.34	***	***	0.92
		Min-10d	***	***	0.04	0.39	0.12	***	0.12	0.07	0.05	0.30	***	***	0.04
Vietnam	Hanoi	Mean	0.41	0.10	0.57	0.29	0.19	0.09	0.24	0.15	0.16	0.14	0.22	0.46	0.25
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.62	0.14	1.24	0.58	0.28	0.13	0.36	0.27	0.29	0.17	0.37	0.65	1.24
		Min-w	0.17	0.05	0.19	0.12	0.06	0.05	0.12	0.09	0.09	0.08	0.07	0.29	0.05
	Hoa Binh	Mean	0.20	0.42	0.23	0.16	0.18	0.13	0.12	0.15	0.14	0.17	0.16	0.25	0.19
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.29	1.11	0.45	0.21	0.32	0.20	0.16	0.23	0.17	0.25	0.32	0.34	1.11
		Min-w	0.10	0.13	0.11	0.09	0.13	0.07	0.08	0.08	0.08	0.09	0.06	0.20	0.06
	Can Tho	Mean	0.26	0.31	0.28	0.20	0.31	0.22	0.25	0.24	0.24	0.33	0.23	0.30	0.26
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.34	0.38	0.38	0.24	0.46	0.32	0.36	0.34	0.34	0.40	0.34	0.36	0.46
		Min-w	0.22	0.24	0.20	0.16	0.22	0.14	0.18	0.16	0.14	0.26	0.16	0.26	0.14
	Ho Chi Minh	Mean	0.83	0.97	0.75	0.79	0.92	0.92	0.87	1.02	0.78	0.80	0.84	0.76	0.86
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	1.13	1.05	0.93	0.91	1.07	1.05	0.89	1.37	0.97	0.89	1.09	0.95	1.37
		Min-w	0.69	0.85	0.63	0.67	0.79	0.67	0.81	0.79	0.65	0.71	0.60	0.65	0.60
	Yen Bai	Mean	0.21	0.32	0.16	0.11	0.13	0.16	0.16	0.11	0.31	0.16	0.12	0.34	0.19
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.41	0.68	0.46	0.16	0.23	0.18	0.25	0.18	0.49	0.28	0.22	0.46	0.68
		Min-w	0.09	0.14	0.05	0.07	0.09	0.14	0.07	0.05	0.17	0.06	<0.01	0.15	<0.01

Table 4.18.2 Particulate matter component: K⁺ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	0.32	0.17	0.16	0.07	0.09	0.07	0.03	0.06	0.06	0.13	0.16	0.21	0.12
		%	16	18	16	17	13	17	16	16	17	16	17	19	16
		Max-d	0.74	0.27	0.22	0.09	0.15	0.15	0.07	0.14	0.16	0.23	0.27	0.33	0.74
		Min-d	0.15	0.09	0.07	0.05	<0.01	0.02	<0.01	0.02	0.02	0.06	0.07	0.13	<0.01
	Jeju	Mean	0.06	0.03	0.10	0.01	0.02	<0.01	<0.01	0.01	0.01	<0.01	0.07	0.06	0.03
		%	16	18	13	13	10	7	6	10	10	3	17	16	11
		Max-d	0.18	0.08	0.14	0.02	0.03	0.01	<0.01	0.02	0.01	<0.01	0.13	0.18	0.18
		Min-d	<0.01	0.01	0.08	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	0.02	<0.01
	Imsil	Mean	***	0.05	0.13	<0.01	0.05	0.04	0.02	0.05	-	0.17	0.13	0.02	0.06
		%	***	7	16	3	13	13	10	10	0	3	17	6	8
		Max-d	***	0.06	0.18	<0.01	0.06	0.08	0.04	0.10	-	0.17	0.26	0.03	0.18
		Min-d	***	0.03	0.11	<0.01	0.04	0.01	<0.01	0.02	-	0.17	0.02	0.01	<0.01

Terms and abbreviations are given in Table 4.2.

Table 4.19.1 Particulate matter component: Mg²⁺ - Measured by FP

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.12	0.13	0.43	0.40	0.32	0.10	0.19	0.11	0.19	0.33	0.29	0.20	0.24
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.17	0.18	0.48	0.43	0.46	0.10	0.28	0.14	0.21	0.40	0.29	0.28	0.48
		Min-2w	0.08	0.07	0.39	0.37	0.19	0.10	0.10	0.07	0.17	0.20	0.29	0.13	0.07
	Ochiishi	Mean	0.19	0.23	0.18	0.47	0.41	0.14	0.13	0.34	0.35	0.62	0.61	0.31	0.34
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.20	0.27	0.34	0.54	0.53	0.17	0.14	0.49	0.39	0.69	0.71	0.45	0.71
		Min-2w	0.18	0.18	0.03	0.40	0.34	0.10	0.13	0.18	0.30	0.57	0.52	0.18	0.03
	Sado-seki	Mean	0.47	0.39	0.21	0.38	0.21	0.13	0.21	0.16	0.20	0.37	0.40	0.66	0.32
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.49	0.43	0.28	0.53	0.28	0.18	0.36	0.20	0.21	0.40	0.42	0.91	0.91
		Min-2w	0.45	0.35	0.15	0.23	0.14	0.09	0.07	0.12	0.19	0.35	0.39	0.42	0.07
	Happo	Mean	<0.01	0.01	0.04	0.05	0.05	0.02	0.03	0.02	0.01	0.05	0.03	<0.01	0.03
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.01	0.02	0.05	0.07	0.05	0.02	0.04	0.02	0.01	0.07	0.03	<0.01	0.07
		Min-2w	<0.01	0.01	0.02	0.03	0.05	0.01	0.01	0.01	0.01	0.02	0.03	<0.01	<0.01
	Ijira	Mean	0.02	0.02	0.06	0.09	0.06	0.03	***	0.04	0.03	0.04	0.03	0.04	0.04
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.03	0.02	0.07	0.10	0.07	0.03	***	0.06	0.03	0.05	0.04	0.07	0.10
		Min-2w	0.02	0.02	0.04	0.09	0.04	0.02	***	0.03	0.02	0.03	0.02	0.02	0.02
	Okii	Mean	0.60	0.41	0.28	0.38	0.19	0.16	0.20	0.14	0.19	0.35	0.75	0.90	0.37
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.80	0.46	0.37	0.42	0.27	0.22	0.33	0.18	0.22	0.41	0.76	1.23	1.23
		Min-2w	0.41	0.35	0.19	0.35	0.14	0.10	0.07	0.10	0.17	0.33	0.73	0.57	0.07
	Yusuhara	Mean	0.06	0.03	0.05	0.10	0.06	0.02	0.05	0.02	0.02	0.06	0.08	0.04	0.05
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.07	0.03	0.06	0.12	0.08	0.03	0.07	0.03	0.02	0.07	0.08	0.05	0.12
		Min-2w	0.05	0.03	0.04	0.07	0.05	0.01	0.03	0.02	0.02	0.05	0.08	0.04	0.01
	Hedo	Mean	0.85	0.73	0.52	0.34	0.21	0.14	0.19	***	***	***	***	***	0.41
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	1.04	0.96	0.52	0.36	0.27	0.18	0.24	***	***	***	***	***	1.04
		Min-2w	0.66	0.51	0.52	0.32	0.12	0.11	0.13	***	***	***	***	***	0.11
	Ogasawara	Mean	0.35	0.39	0.31	0.40	0.39	0.17	0.18	0.28	0.27	0.23	***	***	0.30
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.36	0.41	0.38	0.51	0.44	0.20	0.22	0.36	0.34	0.25	***	***	0.51
		Min-2w	0.35	0.37	0.25	0.27	0.33	0.13	0.15	0.19	0.20	0.21	***	***	0.13
	Tokyo	Mean	0.06	0.08	0.13	0.19	0.18	0.11	0.16	0.21	0.14	0.12	0.10	0.09	0.13
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.07	0.08	0.13	0.20	0.20	0.15	0.18	0.24	0.15	0.15	0.12	0.12	0.24
		Min-2w	0.05	0.07	0.12	0.18	0.16	0.08	0.13	0.18	0.13	0.09	0.08	0.06	0.05
	Niigata-maki	Mean	0.2	0.2	0.2	0.23	0.13	0.09	0.11	0.09	0.13	0.20	0.32	0.33	0.19
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.2	0.2	0.29	0.15	0.11	0.16	0.11	0.14	0.25	0.33	0.47	0.47
		Min-2w	0.2	0.2	0.2	0.18	0.11	0.07	0.07	0.08	0.12	0.13	0.31	0.19	0.07
	Tsushima	Mean	0.2	0.1	0.2	0.19	0.10	0.06	0.10	0.07	0.11	0.10	0.11	0.11	0.11
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.2	0.1	0.2	0.21	0.12	0.08	0.10	0.07	0.12	0.12	0.11	0.15	0.21
		Min-2w	0.1	0.1	0.2	0.18	0.09	0.04	0.10	0.07	0.09	0.09	0.11	0.06	0.04

Table 4.19.1 Particulate matter component: Mg²⁺ - Measured by FP(continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.08	0.02	0.07	0.07	0.06	0.03	0.06	0.06	0.07	0.03	<0.01	0.03	0.05
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.12	0.05	0.11	0.14	0.08	0.05	0.15	0.08	0.12	0.07	<0.01	0.08	0.15
		Min-w	0.01	<0.01	0.04	0.03	0.04	0.02	<0.01	0.04	0.03	<0.01	<0.01	<0.01	<0.01
	Tanah Rata	Mean	<0.01	0.03	0.04	0.03	0.02	0.02	0.04	0.02	0.03	0.01	0.01	0.01	0.02
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.01	0.07	0.07	0.04	0.03	0.02	0.07	0.04	0.05	0.02	0.02	0.02	0.07
		Min-w	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Danum Valley	Mean	0.01	0.05	0.07	0.03	<0.01	<0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.02
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.02	0.05	0.08	0.03	<0.01	0.01	0.03	0.03	0.04	0.01	0.01	0.03	0.08
		Min-2w	<0.01	0.05	0.06	0.03	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.01	0.01	<0.01
Mongolia	Ulaanbaatar	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Terelj	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Myanmar	Yangon	Mean	0.04	0.09	0.07	0.05	<0.01	0.02	0.04	0.02	0.03	0.05	<0.01	<0.01	0.03
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.07	0.10	0.11	0.06	0.01	0.04	0.06	0.02	0.03	0.11	0.01	<0.01	0.11
		Min-2w	0.02	0.07	0.02	0.03	<0.01	<0.01	0.03	0.01	0.02	0.01	<0.01	<0.01	<0.01
Philippines	Manila Observatory	Mean	0.02	0.17	0.13	0.11	0.06	0.04	0.09	0.25	<0.01	<0.01	0.02	0.13	0.08
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	0.04	0.21	0.26	0.22	0.15	0.20	0.27	0.47	<0.01	<0.01	0.06	0.17	0.47
		Min-irreg	<0.01	0.11	0.07	0.06	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.01	0.10	<0.01
	Los Baños	Mean	0.54	<0.01	<0.01	0.39	<0.01	<0.01	<0.01	0.14	<0.01	<0.01	0.08	0.06	0.09
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	1.04	<0.01	<0.01	1.16	<0.01	<0.01	<0.01	0.56	<0.01	<0.01	0.28	0.09	1.16
		Min-irreg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		Min-irreg	<0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	<0.01	0.04	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	0.01
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.01	0.08	0.05	<0.01	0.02	0.02	<0.01	<0.01	0.01	<0.01	<0.01	0.08	0.08
		Min-w	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Irkutsk	Mean	0.04	0.11	0.03	0.01	0.01	0.01	0.05	0.03	0.09	0.10	0.05	0.11	0.05
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.06	0.21	0.05	0.03	0.02	0.02	0.10	0.08	0.14	0.19	0.10	0.23	0.23
		Min-w	0.01	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.06	<0.01	0.05	<0.01
	Primorskaya	Mean	0.05	0.03	0.02	0.03	0.05	0.01	0.03	<0.01	0.02	<0.01	<0.01	<0.01	0.02
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.05	0.04	0.03	0.06	0.10	0.02	0.03	<0.01	0.03	<0.01	<0.01	0.02	0.10
		Min-15d	0.05	0.03	0.02	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 4.19.1 Particulate matter component: Mg²⁺ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.02	0.51	0.09	***	0.12	0.08	0.04	0.03	***	***	0.15
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	0.02	1.18	0.09	***	0.17	0.16	0.06	0.04	***	***	1.18
		Min-10d	***	***	0.02	0.09	0.09	***	0.06	0.04	0.03	<0.01	***	***	<0.01
Vietnam	Hanoi	Mean	0.22	0.09	0.31	0.15	0.16	0.11	0.18	0.14	0.16	0.13	0.14	0.30	0.18
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.29	0.11	0.46	0.27	0.28	0.17	0.27	0.26	0.25	0.16	0.22	0.32	0.46
		Min-w	0.17	0.06	0.19	0.08	0.10	0.07	0.08	0.07	0.10	0.09	0.07	0.28	0.06
	Hoa Binh	Mean	0.11	0.12	0.14	0.09	0.12	0.10	0.13	0.11	0.11	0.12	0.11	0.19	0.12
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.17	0.20	0.17	0.12	0.15	0.14	0.14	0.18	0.14	0.14	0.17	0.28	0.28
		Min-w	0.08	0.09	0.10	0.06	0.09	0.06	0.09	0.08	0.07	0.10	0.06	0.15	0.06
	Can Tho	Mean	0.46	0.42	0.39	0.31	0.39	0.43	0.48	0.42	0.40	0.42	0.40	0.48	0.42
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.54	0.46	0.54	0.34	0.50	0.50	0.56	0.50	0.54	0.48	0.58	0.56	0.58
		Min-w	0.32	0.38	0.30	0.28	0.34	0.34	0.40	0.30	0.32	0.36	0.32	0.40	0.28
	Ho Chi Minh	Mean	0.55	0.46	0.64	0.58	0.57	0.50	0.48	0.51	0.55	0.58	0.52	0.59	0.54
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.62	0.52	0.75	0.71	0.73	0.58	0.54	0.60	0.62	0.67	0.56	0.71	0.75
		Min-w	0.42	0.36	0.50	0.50	0.48	0.46	0.46	0.46	0.46	0.50	0.46	0.54	0.36
	Yen Bai	Mean	0.11	0.15	0.13	0.09	0.11	0.12	0.16	0.10	0.23	0.16	0.15	0.23	0.14
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.12	0.21	0.23	0.14	0.16	0.13	0.21	0.14	0.35	0.31	0.29	0.25	0.35
		Min-w	0.10	0.09	0.05	0.06	0.08	0.10	0.06	0.07	0.09	0.06	0.07	0.16	0.05

Table 4.19.2 Particulate matter component: Mg²⁺ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	0.03	0.01	0.02	0.05	0.02	0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02
		%	16	18	16	17	13	17	16	13	10	16	17	16	15
		Max-d	0.08	0.02	0.04	0.14	0.04	0.03	0.03	0.01	0.01	0.01	0.07	0.06	0.14
		Min-d	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Jeju	Mean	0.02	<0.01	0.05	0.02	0.02	<0.01	0.03	<0.01	0.01	0.02	0.03	0.03	0.02
		%	16	14	13	13	3	7	13	10	10	16	17	16	11
		Max-d	0.04	0.01	0.09	0.04	0.02	<0.01	0.06	<0.01	0.02	0.03	0.05	0.05	0.09
		Min-d	<0.01	<0.01	0.02	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	0.01	0.01	<0.01
	Imsil	Mean	***	<0.01	0.03	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	0.03	0.04	0.01
		%	***	7	16	3	10	3	6	6	3	10	17	6	6
		Max-d	***	0.01	0.07	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	0.04	0.07	0.07
		Min-d	***	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	0.03	<0.01	<0.01

Terms and abbreviations are given in Table 4.2.

Table 4.20.1 Particulate matter component: Ca²⁺ - Measured by FPUnit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Japan	Rishiri	Mean	0.10	0.09	0.44	0.46	0.18	0.06	0.14	0.04	0.10	0.22	0.14	0.13	0.18
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.14	0.12	0.51	0.60	0.25	0.07	0.15	0.07	0.12	0.30	0.17	0.18	0.60
		Min-2w	0.06	0.05	0.38	0.32	0.14	0.05	0.13	0.01	0.08	0.10	0.12	0.08	0.01
	Ochiishi	Mean	0.09	0.10	0.09	0.43	0.19	0.05	0.06	0.11	0.12	0.23	0.22	0.17	0.16
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.11	0.11	0.16	0.59	0.29	0.06	0.06	0.16	0.14	0.25	0.27	0.24	0.59
		Min-2w	0.08	0.08	0.02	0.27	0.12	0.04	0.05	0.06	0.10	0.20	0.17	0.11	0.02
	Sado-seki	Mean	0.26	0.22	0.46	0.86	0.32	0.11	0.19	0.09	0.09	0.21	0.21	0.36	0.28
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.29	0.22	0.66	1.31	0.35	0.12	0.31	0.09	0.11	0.28	0.22	0.56	1.31
		Min-2w	0.23	0.22	0.25	0.41	0.28	0.09	0.06	0.08	0.08	0.17	0.21	0.17	0.06
	Happo	Mean	0.07	0.09	0.36	0.42	0.30	0.08	0.18	0.02	0.03	0.03	0.16	0.04	0.16
		%	100	100	100	100	100	100	100	100	50	100	100	100	96
		Max-2w	0.10	0.10	0.52	0.72	0.30	0.11	0.31	0.03	0.03	0.04	0.16	0.05	0.72
		Min-2w	0.04	0.07	0.20	0.20	0.30	0.05	0.04	0.02	0.03	0.02	0.16	0.03	0.02
	Ijira	Mean	0.10	0.07	0.27	0.40	0.19	0.08	***	0.07	0.06	0.09	0.06	0.14	0.14
		%	100	100	100	100	100	100	***	100	100	100	100	100	92
		Max-2w	0.13	0.08	0.33	0.48	0.20	0.08	***	0.07	0.07	0.13	0.06	0.24	0.48
		Min-2w	0.06	0.07	0.21	0.32	0.19	0.07	***	0.06	0.06	0.06	0.05	0.04	0.04
	Okii	Mean	0.44	0.22	0.74	0.90	0.27	0.09	0.12	0.07	0.08	0.23	0.38	0.54	0.33
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.58	0.24	0.75	1.18	0.40	0.10	0.18	0.08	0.08	0.26	0.43	0.82	1.18
		Min-2w	0.30	0.19	0.74	0.63	0.16	0.09	0.05	0.07	0.07	0.20	0.33	0.27	0.05
	Yusuhara	Mean	0.21	0.08	0.29	0.58	0.20	0.05	0.08	0.02	0.02	0.13	0.14	0.08	0.16
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.23	0.10	0.35	0.85	0.26	0.05	0.14	0.02	0.02	0.21	0.17	0.09	0.85
		Min-2w	0.19	0.06	0.23	0.31	0.12	0.04	0.03	0.02	0.02	0.08	0.11	0.07	0.02
	Hedo	Mean	0.61	0.42	0.39	0.39	0.17	0.08	0.09	***	***	***	***	***	0.30
		%	100	100	100	100	100	100	100	***	***	***	***	***	57
		Max-2w	0.66	0.47	0.40	0.52	0.21	0.11	0.10	***	***	***	***	***	0.66
		Min-2w	0.57	0.37	0.39	0.25	0.11	0.04	0.07	***	***	***	***	***	0.04
	Ogasawara	Mean	0.23	0.20	0.20	0.39	0.20	0.09	0.07	0.12	0.10	0.09	***	***	0.18
		%	100	100	100	100	100	100	100	100	100	70	***	***	81
		Max-2w	0.27	0.21	0.23	0.70	0.21	0.12	0.09	0.16	0.12	0.09	***	***	0.70
		Min-2w	0.20	0.19	0.16	0.21	0.19	0.07	0.06	0.08	0.08	0.08	***	***	0.06
	Tokyo	Mean	0.46	0.41	0.58	0.69	0.47	0.43	0.56	0.36	0.33	0.40	0.34	0.44	0.45
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.52	0.41	0.73	0.89	0.52	0.49	0.60	0.37	0.35	0.55	0.39	0.54	0.89
		Min-2w	0.40	0.41	0.42	0.50	0.42	0.38	0.52	0.35	0.31	0.31	0.28	0.34	0.28
	Niigata-maki	Mean	0.1	0.1	0.5	0.71	0.31	0.09	0.15	0.11	0.10	0.14	0.16	0.22	0.23
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.1	0.2	0.6	1.00	0.35	0.11	0.21	0.13	0.10	0.14	0.17	0.34	1.00
		Min-2w	0.1	0.1	0.5	0.41	0.26	0.08	0.10	0.10	0.09	0.14	0.15	0.09	0.08
	Tsushima	Mean	0.6	0.2	0.8	0.81	0.27	0.07	0.05	0.06	0.05	0.17	0.22	0.23	0.27
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.6	0.2	0.8	1.03	0.29	0.09	0.05	0.06	0.05	0.19	0.27	0.33	1.03
		Min-2w	0.5	0.2	0.8	0.59	0.24	0.04	0.05	0.05	0.05	0.16	0.17	0.13	0.04

Table 4.20.1 Particulate matter component: Ca²⁺ - Measured by FP (continued)Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Lao PDR	Vientiane	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-m	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-m	***	***	***	***	***	***	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	Mean	0.21	0.09	0.27	0.19	0.33	0.24	0.33	0.28	0.26	0.24	0.05	0.15	0.22
		%	100	100	100	100	100	100	100	75	100	100	75	100	96
		Max-w	0.37	0.16	0.30	0.29	0.40	0.37	0.72	0.31	0.42	0.42	0.11	0.29	0.72
		Min-w	0.11	<0.01	0.23	0.12	0.17	0.15	<0.01	0.24	0.15	0.08	<0.01	<0.01	<0.01
	Tanah Rata	Mean	0.02	0.04	0.07	0.13	0.12	0.13	0.26	0.10	0.06	0.04	0.02	0.03	0.08
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.05	0.13	0.14	0.26	0.25	0.19	0.49	0.15	0.10	0.07	0.03	0.03	0.49
		Min-w	<0.01	<0.01	0.02	0.04	0.02	0.06	0.09	0.06	0.01	<0.01	<0.01	0.02	<0.01
	Danum Valley	Mean	0.01	0.02	0.04	0.04	<0.01	<0.01	0.03	0.03	0.01	0.01	0.01	0.01	0.02
		%	100	100	100	48	72	100	100	100	100	100	100	100	94
		Max-2w	0.03	0.02	0.04	0.04	<0.01	0.01	0.05	0.04	0.03	0.01	0.01	0.01	0.05
		Min-2w	<0.01	0.02	0.03	0.04	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01
Mongolia	Ulaanbaatar	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
	Terelj	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-2w	***	***	***	***	***	***	***	***	***	***	***	***	***
Myanmar	Yangon	Mean	0.03	0.47	0.07	0.04	0.25	0.05	0.05	0.05	0.25	0.21	0.06	<0.01	0.14
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-2w	0.05	0.75	0.10	0.04	0.62	0.07	0.08	0.11	0.47	0.59	0.07	<0.01	0.75
		Min-2w	<0.01	0.19	0.05	0.04	0.03	0.03	0.03	<0.01	0.03	<0.01	0.05	<0.01	<0.01
Philippines	Manila Observatory	Mean	0.79	1.79	2.58	2.13	1.58	0.89	0.93	1.05	0.55	0.02	0.14	0.55	1.11
		%	100	76	100	100	100	100	100	100	80	100	100	100	96
		Max-irreg	2.34	3.04	3.82	2.42	2.25	1.66	1.87	1.55	1.39	0.06	0.41	0.89	3.82
		Min-irreg	0.03	0.31	1.92	1.76	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.31	<0.01
	Los Baños	Mean	20.06	<0.01	0.52	1.26	0.12	1.46	0.05	0.20	1.07	<0.01	0.54	1.08	2.19
		%	84	100	100	60	100	100	100	100	100	100	100	100	95
		Max-irreg	22.03	<0.01	0.95	1.78	0.22	4.92	0.15	0.52	4.28	<0.01	1.06	1.33	22.03
		Min-irreg	18.66	<0.01	<0.01	0.28	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.94	<0.01
	Mt. Sto. Tomas	Mean	***	***	***	***	***	***	***	***	***	***	***	***	***
		%	***	***	***	***	***	***	***	***	***	***	***	***	***
		Max-w	***	***	***	***	***	***	***	***	***	***	***	***	***
		Min-w	***	***	***	***	***	***	***	***	***	***	***	***	***
Russia	Mondy	Mean	0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
		%	100	100	***	***	***	***	***	***	***	***	***	***	19
		Max-irreg	0.01	<0.01	***	***	***	***	***	***	***	***	***	***	0.01
		Min-irreg	0.01	<0.01	***	***	***	***	***	***	***	***	***	***	<0.01
	Listvyanka	Mean	0.08	0.13	0.02	0.03	0.04	0.06	0.03	0.04	0.06	0.02	0.02	0.35	0.07
		%	100	100	75	100	100	100	100	100	100	100	100	100	98
		Max-w	0.14	0.43	0.03	0.06	0.07	0.15	0.08	0.06	0.09	0.05	0.06	0.79	0.79
		Min-w	0.03	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01	0.01	<0.01	<0.01	0.03	<0.01
	Irkutsk	Mean	0.24	0.64	0.12	0.08	0.07	0.07	0.17	0.24	0.60	0.93	0.49	1.04	0.38
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	0.29	1.14	0.18	0.20	0.15	0.11	0.34	0.66	0.80	1.70	1.01	1.25	1.70
		Min-w	0.12	0.30	0.04	0.01	0.03	0.04	0.04	0.08	0.39	0.54	0.14	0.78	0.01
	Primorskaya	Mean	0.24	0.27	0.17	0.27	0.33	0.09	0.22	0.01	0.18	0.02	0.04	0.06	0.15
		%	48	100	100	100	100	100	100	100	100	100	100	100	95
		Max-15d	0.24	0.27	0.19	0.48	0.57	0.14	0.22	0.02	0.34	0.02	0.06	0.10	0.57
		Min-15d	0.24	0.27	0.15	0.07	0.09	0.04	0.21	<0.01	0.02	0.02	0.02	0.01	<0.01

Table 4.20.1 Particulate matter component: Ca²⁺ - Measured by FP (continued)

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thailand	Bangkok	Mean	***	***	0.04	1.07	0.30	***	0.66	0.46	0.35	0.72	***	***	0.57
		%	***	***	100	100	100	***	100	100	100	60	***	***	50
		Max-10d	***	***	0.04	1.55	0.34	***	0.98	0.85	0.56	0.74	***	***	1.55
		Min-10d	***	***	0.04	0.49	0.26	***	0.24	0.25	0.20	0.69	***	***	0.04
Vietnam	Hanoi	Mean	4.34	1.24	4.66	2.84	2.00	2.03	2.68	2.68	2.52	1.85	2.27	3.77	2.75
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	6.18	1.92	5.62	3.95	2.93	2.54	3.96	4.84	3.59	2.19	3.82	4.83	6.18
		Min-w	2.31	0.67	3.33	0.88	1.19	1.16	1.78	1.41	1.69	1.63	1.12	3.02	0.67
	Hoa Binh	Mean	2.13	4.20	3.08	2.62	2.52	2.48	2.16	2.25	2.88	2.24	2.59	3.55	2.71
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.84	5.65	4.16	2.91	3.15	3.44	2.47	2.63	3.76	2.74	4.14	4.13	5.65
		Min-w	1.14	2.68	2.21	1.90	1.93	1.96	1.77	1.78	2.38	1.79	1.45	3.12	1.14
	Can Tho	Mean	2.00	1.89	1.63	1.91	1.87	1.78	1.70	1.67	2.09	1.87	1.74	1.86	1.82
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	2.30	2.10	1.81	2.06	2.28	2.04	2.00	2.12	2.30	2.04	1.98	2.48	2.48
		Min-w	1.65	1.59	1.45	1.65	1.47	1.41	1.47	1.19	1.83	1.75	1.45	1.45	1.19
	Ho Chi Minh	Mean	2.61	2.60	2.74	2.91	2.55	2.42	2.97	2.80	2.15	2.53	2.30	2.27	2.57
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.27	2.84	3.08	3.83	3.27	2.84	4.07	2.90	2.48	2.82	2.76	2.80	4.07
		Min-w	1.96	2.38	2.34	1.94	1.67	2.02	2.16	2.72	1.94	2.18	1.67	1.67	1.67
	Yen Bai	Mean	2.80	2.84	1.71	2.12	2.67	2.14	2.67	2.96	2.71	3.11	2.88	3.31	2.64
		%	100	100	100	100	100	100	100	100	100	100	100	100	100
		Max-w	3.17	3.81	2.10	3.59	3.93	2.55	3.81	3.62	3.64	3.74	4.34	4.36	4.36
		Min-w	2.50	1.95	1.30	1.30	1.76	1.80	1.34	1.27	1.78	2.43	1.51	2.69	1.27

Table 4.20.2 Particulate matter component: Ca²⁺ - Measured by FP with PM_{2.5} cyclone

Unit : µg/m³

Country	Site		2023												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Republic of Korea	Ganghwa	Mean	0.04	0.03	0.12	0.11	0.07	0.03	0.02	<0.01	0.02	<0.01	0.04	0.07	0.05
		%	16	18	16	17	13	17	16	13	10	16	13	16	15
		Max-d	0.08	0.04	0.20	0.23	0.18	0.05	0.06	0.01	0.03	0.01	0.06	0.19	0.23
		Min-d	0.02	0.02	0.07	0.02	<0.01	0.02	0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01
	Jeju	Mean	0.03	0.01	0.07	0.12	0.03	<0.01	0.01	<0.01	<0.01	0.02	0.04	0.06	0.03
		%	16	18	13	13	10	3	13	6	13	16	17	10	12
		Max-d	0.07	0.02	0.13	0.23	0.07	<0.01	0.02	<0.01	0.01	0.02	0.07	0.10	0.23
		Min-d	<0.01	<0.01	0.03	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
	Imsil	Mean	***	0.04	0.11	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.06	0.20	0.04
		%	***	7	16	3	10	13	10	10	13	10	17	6	9
		Max-d	***	0.05	0.28	0.03	0.04	0.03	0.05	0.02	0.03	0.03	0.09	0.38	0.28
		Min-d	***	0.02	0.02	0.03	0.03	<0.01	0.02	<0.01	<0.01	<0.01	0.03	0.02	<0.01

Terms and abbreviations are given in Table 4.2.

Table 4.21 Annual SO₂ concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		1.8	1.5	1.3	1.1	0.8	0.5	0.6	1.3	***	***	***	***	***	***
China	Jinyunshan	AT	12.5	12.9	9.3	9.8	8.6	7.5	5.3	3.3	3.6	2.6	2.9	2.8	2.7	2.7	3.0
	Hongwen	AT	5.2	4.9	5.8	7.2	5.6	6.3	2.4	3.3	3.6	3.3	2.0	1.8	1.5	1.3	1.0
		FP	7.9	8.4	6.7	***	***	***	***	2.9	2.9						
	Xiang Zhou	AT	5.9	5.9	5.6												
	Haibin-Park	AT				3.2	3.9	3.9	3.1	3.8	2.9	2.6	1.6	1.4	2.2	2.7	2.2
	Wuzhishan	AT											0.2	0.3	0.3	0.2	0.2
	Lijiang	AT											0.1	0.1	0.2	0.2	0.1
Indonesia	Jakarta	FP						6.0	5.4	2.5	1.7	2.7	1.8	3.2	4.2	4.0	***
		PS ^{*1}	8.3	6.3	5.0	6	5.3	4.5	5.2	5.6	4.4	6.2	6.5	5.4	7	7.2	***
	Serpong	FP	1.1	0.8	1.4	0.9	0.8	0.7	1.5	0.7	0.8	1.0	0.4	0.9	0.8	0.2	***
	Kototabang	PS ^{*1}	7.9	11.7	2.2	***	1.8	3.5	6.7	2.0	1.3	1.3	1.1	1.5	2	1.1	***
	Bandung	FP						4.1	1.3	1.9	1.7	4.3	4.2	2.7	4.5	4.9	***
		PS	4.7	4.2	4.0	4.0	4.0	4.3	3.2	4.8	4.1	3.0	2.8	2.1	2.9	3.8	***
Japan	Rishiri	AT	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	<0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1
		FP	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1
	Ochiishi	AT	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1
		FP	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
	Tappi	AT	***	***	0.4	0.4	0.5	0.5	0.3	0.3	0.3	0.3					
		FP	0.4	0.5	0.4	0.5	0.4	0.5	0.3	0.3	0.3	0.3					
	Sado-seki	AT	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.1	<0.1	<0.1	0.1
		FP	0.4	0.4	0.5	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	***	0.2	0.2
	Happo	AT	0.4	0.8	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	<0.1	0.1
		FP	0.2	0.2	0.3	0.5	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
	Ijira	AT	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	<0.1	0.2	0.1	0.2	0.1	***	***
		FP	0.3	0.4	0.3	0.5	0.8	0.6	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
	Okii	AT	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.3	0.4	0.4	0.3	0.2	0.1	0.1	0.2
		FP	0.6	0.5	0.6	0.7	0.6	0.5	0.4	0.5	0.7	0.4	0.4	0.2	0.2	0.2	0.2
	Banryu	AT	0.6	0.6	0.5	0.6	0.5	0.4	0.3	0.3	0.3	0.2					
		FP	0.7	0.8	0.8	0.8	0.7	0.7	0.5	0.7	0.6	0.7					
	Yusuhara	AT	0.9	1.6	0.9	0.9	0.9	1.0	0.6	0.6	0.6	0.6	0.9	0.6	0.3	0.4	0.5
		FP	0.6	0.7	0.7	0.7	0.8	0.9	0.5	0.5	0.5	0.4	0.6	0.4	0.3	0.3	0.3
	Hedo	AT	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	<0.1
		FP	0.3	0.2	0.2	0.3	0.4	0.3	0.4	0.2	0.2	0.3	0.4	0.4	0.3	0.2	<0.1
	Ogasawara	AT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.2
		FP	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.4	0.3
	Tokyo	FP	2.0	1.8	1.6	1.4	1.6	1.5	1.3	1.3	1.4	1.3	1.2	0.7	0.7	0.7	0.7
	Niigata-maki	AT											0.2	0.1	<0.1	<0.1	0.2
		FP												0.3	0.3	0.2	0.2
	Tsushima	FP												0.5	0.4	0.4	0.3
Lao PDR	Vientiane	FP							0.4	0.4	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	1.8	1.4	2.0	1.8	1.3	1.6	1.2	1.2	1.1	1.3	***	0.6	0.4	0.4	0.6
	Tanah Rata	FP	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	***	<0.1	<0.1	<0.1	<0.1
	Danum Valley	FP	0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	***	<0.1	<0.1	<0.1	<0.1
Mongolia	Ulaanbaatar	AT						8.9	9.8	10.0	11.5	7.3	6.9	12.2	15.3	19.4	10.2
		FP	4.3	9.1	6.1	***	***	***	***	7.5	4.8	3.4	5.0	5.0	5.4	***	1.0
	Terelj	FP	0.7	0.6	0.7	***	***	***	***	0.6	0.2	0.1	0.3	0.2	0.4	***	0.5
Myanmar	Yangon	FP			1.6	2.9	1.3	1.2	0.5	0.4	0.5	0.7	0.8	0.8	0.7	0.2	0.2
Philippines	Manila Observatory	AT															28.3
		FP	***	2.2	***	***	***	***	***	***	***	***	0.4	2.4	2.0	1.3	0.5
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	7.4	0.7
	Sta.Rosa	AT														11.2	***
	Mt. Sto. Tomas	FP	<0.1	1.1	***	0.2	0.1	0.1	0.1	0.2	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	AT	3.2	2.9	4.1	4.4	3.4	2.8	2.2	2.8	1.9	2.3	2.1	1.4	1.4	1.5	2.1
	Jeju	AT	2.7	2.5	2.5	0.9	0.6	0.5	0.5	0.5	0.5	0.8	1.0	0.7	0.7	0.5	0.5
	Imsil	AT	1.4	2.7	4.8	1.3	1.8	2.3	1.7	1.7	2.3	5.0	1.5	1.7	1.5	2.1	1.5
Russia	Mondy	FP	0.1	0.6	0.1	0.6	0.1	0.1	0.1	<0.1	0.2	0.2	0.3	<0.1	<0.1	<0.1	<0.1
	Listvyanka	FP	4.0	4.5	2.8	5.2	2.6	1.1	2.8	4.1	2.9	2.2	2.2	1.9	4.4	2.7	4.6
	Irkutsk	FP	4.6	7.3	5.6	7.2	4.2	1.6	3.5	5.5	4.6	4.3	2.1	2.3	2.4	3.1	9.5
	Primorskaya	FP	1.0	1.7	1.2	1.2	0.7	0.4	0.7	0.8	0.4	0.1	0.2	0.3	0.2	0.5	0.6

Table 4.21 Annual SO₂ concentration from 2009 to 2023 (continued)

unit: ppb

Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Thailand	Bangkok	AT	1.9	1.6	1.6	1.5	1.9	1.4									
		FP	1.2	1.2	1.2	0.9	0.8	1.6	0.6	0.8	0.8	0.9	0.8	0.7	***	0.6	0.3
	Samutprakarn	AT	4.9	4.6	2.6	2.5	3.0	3.7	3.0	2.0	1.5	2.0	1.0	1.5	***	***	***
	Pathumthani	FP	1.1	1.2	0.6	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	AT	1.2	1.6	1.3	0.6	1.0	1.8	1.2	1.7	1.4	1.4	0.7	***	***	0.2	***
		FP	0.2	0.2	<0.1	0.2	<0.1	0.1	<0.1	0.4	0.1	0.3	0.2	***	***	***	***
	Mae Hia	FP	0.3	0.3	0.3	0.2	0.2	<0.1	<0.1	0.2	0.2	<0.1	0.1				
	Chang Phueak	AT	0.6	0.8	0.6	0.9	1.3	0.9	1.3	0.8	0.8	0.9	0.6	0.4	1.2	0.4	***
	Si Phum	AT					1.4	1.7	1.4	1.1	1.1	1.2	1.2	1.2	1.1	1.1	1.6
	Sakaerat	FP	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.2	0.7	0.6				
	Nai Mueang	AT	***	1.3	1.4	1.1	1.2	1.0	2.9	3.2	0.7	0.7	0.9	0.6	0.6	0.8	1.1
Vietnam	Hanoi	FP	1.3	1.4	1.9	2.2	2.1	3.2	4.5	1.8	1.0	0.5	0.4	0.7	0.9	0.9	0.4
	Hoa Binh	FP	0.9	0.7	1.2	1.2	1.1	2.8	3.6	1.3	0.6	0.5	0.3	0.8	1.0	0.7	0.8
	Can Tho	FP						1.2	1.0	0.3	0.2	0.6	0.5	0.6	0.5	0.5	0.6
	Ho Chi Minh	FP						1.6	1.5	0.5	0.4	0.6	0.6	0.6	0.6	0.5	0.5
	Yen Bai	FP							4.2	1.5	0.8	0.8	0.5	0.4	0.8	0.6	0.6

*1: Some annual averages are integers only, depending on their submitted unit and significant digits.

Terms and abbreviations are given in Table 4.2.

Table 4.22 Annual HNO₃ concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		0.3	0.3	0.3	0.5	0.4	0.5	0.4	0.5	***	***	***	***	***	***
China	Hongwen	FP	1.1	1.0	2.1	***	***	***	***	1.2	1.1						
Indonesia	Jakarta	FP						3.1	1.4	1.0	1.0	1.4	0.9	1.1	1.3	1.0	***
	Serpong	FP	0.3	0.3	0.8	0.9	0.6	0.9	1.1	0.8	0.8	1.5	1.1	0.9	0.8	0.7	***
	Bandung	FP						0.7	0.5	0.5	0.4	0.8	0.9	0.4	0.5	0.4	***
Japan	Rishiri	FP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	FP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Tappi	FP	<0.1	0.2	0.2	0.2	0.1	0.2	<0.1	<0.1	0.1	0.1					
	Sado-seki	FP	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.1	<0.1	***	0.1	0.1
	Happo	FP	<0.1	<0.1	<0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
	Ijira	FP	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1
	Okii	FP	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1		<0.1	<0.1	<0.1	<0.1
	Banryu	FP	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.2					
	Yusuhara	FP	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
	Hedo	FP	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ogasawara	FP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Tokyo	FP	0.8	0.8	0.6	0.6	0.8	0.8	0.7	0.6	0.7	0.6	0.5	0.5	0.4	0.4	0.4
	Niigata-maki	FP													0.1	0.1	0.1
	Tsushima	FP													0.4	0.3	0.2
Lao PDR	Vientiane	FP							0.3	0.2	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	1.0	0.7	0.7	0.5	0.7	0.8	0.7	0.4	0.5	0.9	***	0.4	0.5	0.5	0.6
	Tanah Rata	FP	0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	***	<0.1	<0.1	<0.1	<0.1
	Danum Valley	FP	0.2	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	***	<0.1	<0.1	<0.1	<0.1
Mongolia	Ulaanbaatar	FP	0.2	0.3	0.2	***	***	***	***	0.1	<0.1	<0.1	0.1	<0.1	<0.1	***	0.2
	Terelj	FP	<0.1	<0.1	0.1	***	***	***	***	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	<0.1
Myanmar	Yangon	FP			0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.6	<0.1	0.1
Philippines	Manila Observatory	FP	***	0.2	***	***	***	***	***	***	***	***	0.1	0.3	0.4	0.7	0.4
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	0.6	0.3
	Mt. Sto. Tomas	FP	<0.1	0.4	***	0.2	<0.1	0.1	<0.1	<0.1	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP	0.5	0.4	***	***	0.4	0.5	0.3	0.4	0.1	0.1	<0.1	0.3	0.4	0.4	0.4
	Jeju	FP	0.6	0.5	***	***	0.4	0.8	0.5	0.6	0.3	0.4	<0.1	0.4	0.4	0.5	0.2
	Imsil	FP	0.5	0.3	***	***	0.6	0.6	0.4	0.7	0.6	0.4	<0.1	0.2	0.3	0.3	0.3
Russia	Mondy	FP	<0.1	2.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Listvyanka	FP	<0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Irkutsk	FP	0.2	1.9	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
	Primorskaya	FP	0.1	0.7	<0.1	0.1	0.3	0.2	0.2	0.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thailand	Bangkok	FP	0.5	0.6	0.5	0.6	0.4	0.9	0.7	0.4	0.3	0.8	0.5	0.5	***	0.3	0.6
	Pathumthani	FP	0.7	0.9	0.3	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	0.5	<0.1	<0.1	0.3	0.1	0.2	0.3	1.7	0.2	0.4	0.5	***	***	***	***
	Mae Hia	FP	0.7	1.9	0.1	0.2	0.2	<0.1	<0.1	0.2	0.2	0.1	0.2				
	Sakaerat	FP	0.2	0.2	<0.1	0.2	<0.1	0.3	0.3	0.4	0.2	0.3	0.3				
Vietnam	Hanoi	FP	0.9	0.8	0.9	1.0	0.7	0.5	0.7	0.9	1.6	0.4	0.4	0.6	0.8	0.8	0.4
	Hoa Binh	FP	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.7	0.9	0.4	0.3	0.6	0.5	0.6	0.7
	Can Tho	FP						0.5	0.4	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
	Ho Chi Minh	FP						0.6	0.6	0.2	0.4	0.4	0.3	0.4	0.4	0.3	0.4
	Yen Bai	FP							0.7	0.6	1.3	0.5	0.4	0.6	1.1	0.6	0.6

Terms and abbreviations are given in Table 4.2.

Table 4.23 Annual HCl concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		0.5	0.4	0.7	1.3	1.1	1.3	1.2	1.6	***	***	***	***	***	***
China	Hongwen	FP	1.5	14.5	13.3	***	***	***	***	1.8	1.5						
Indonesia	Jakarta	FP						3.2	1.9	0.9	1.1	1.5	0.8	0.9	1.5	1.8	***
	Serpong	FP	0.4	0.8	0.7	0.8	0.7	0.8	1.0	0.7	0.9	1.3	1.3	1.0	1.1	1.1	***
	Bandung	FP						0.8	0.5	1.1	0.9	0.9	0.9	0.7	0.8	1.1	***
Japan	Rishiri	FP	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.8	0.4	0.3	0.3	0.3
	Ochiishi	FP	0.4	0.4	0.6	0.6	0.5	0.4	0.8	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
	Tappi	FP	0.5	1.5	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.4					
	Sado-seki	FP	0.9	0.7	0.8	0.9	0.8	0.9	1.2	0.7	0.8	1.0	0.5	0.5	***	0.6	0.5
	Happo	FP	<0.1	<0.1	<0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
	Ijira	FP	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2
	Okii	FP	0.8	0.8	1.0	0.9	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.4	0.6	0.5
	Banryu	FP	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.6	0.7	0.6					
	Yusuhara	FP	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2
	Hedo	FP	0.9	0.5	0.4	0.6	1.0	1.1	1.1	1.0	0.9	0.9	0.9	0.8	0.5	0.6	0.4
	Ogasawara	FP	0.5	0.4	0.4	0.4	0.6	0.6	0.5	0.4	0.4	0.3	0.4	0.7	0.3	0.3	0.3
	Tokyo	FP	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.6
	Niigata-maki	FP												0.5	0.4	0.5	0.5
	Tsushima	FP												0.6	0.5	0.5	0.4
Lao PDR	Vientiane	FP							0.3	0.2	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	0.7	0.5	0.8	1.2	1.3	1.1	0.7	2.8	0.3	1.5	***	1.2	1.2	1.0	0.8
	Tanah Rata	FP	0.1	<0.1	0.2	0.4	0.3	0.3	0.4	0.7	0.2	<0.1	***	0.3	0.3	0.2	0.2
	Danum Valley	FP	0.5	0.3	0.2	0.5	1.0	0.4	0.3	0.3	0.1	0.2	***	0.2	0.6	0.2	0.2
Mongolia	Ulaanbaatar	FP	0.7	1.7	1.1	***	***	***	***	11.3	1.7	0.8	0.4	0.7	0.6	***	2.9
	Terelj	FP	0.3	0.5	0.5	***	***	***	***	4.3	0.5	0.3	0.1	0.4	0.3	***	0.3
Myanmar	Yangon	FP			1.5	1.5	0.6	0.7	0.7	0.2	0.4	0.5	0.6	0.8	0.7	0.3	0.3
Philippines	Manila Observatory	FP	***	0.8	***	***	***	***	***	***	***	***	0.6	0.4	1.0	1.2	0.9
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	1.8	1.4
	Mt. Sto. Tomas	FP	0.2	1.2	***	0.2	0.2	0.2	0.7	<0.1	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP	0.1	0.2	***	***	0.3	0.2	0.1	<0.1	<0.1	<0.1	0.7	0.1	0.1	0.1	0.1
	Jeju	FP	0.2	0.2	***	***	0.2	0.2	0.2	0.2	0.2	0.2	1.1	0.1	0.2	<0.1	0.1
	Imsil	FP	0.2	0.1	***	***	0.2	0.2	0.2	0.2	0.2	0.2	1.2	<0.1	<0.1	<0.1	0.1
Russia	Mondy	FP	<0.1	0.5	0.4	0.7	0.7	0.8	1.9	1.6	2.7	2.6	1.0	0.2	0.1	0.2	<0.1
	Listvyanka	FP	0.2	0.6	1.8	9.8	2.1	2.6	7.4	9.0	6.0	5.3	7.0	1.0	0.6	0.4	0.2
	Irkutsk	FP	0.2	0.5	1.4	2.6	1.7	1.4	7.0	3.2	4.7	5.3	1.8	0.3	0.4	0.3	0.3
	Primorskaya	FP	0.2	0.7	1.1	1.0	0.5	0.4	0.4	0.8	0.6	0.2	0.1	0.6	0.2	0.4	0.3
Thailand	Bangkok	FP	0.9	0.7	0.7	0.7	0.6	1.2	0.7	1.5	0.7	1.0	0.9	1.2	***	0.4	0.5
	Pathumthani	FP	0.9	0.7	0.5	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	0.2	<0.1	0.2	0.2	0.2	0.3	0.2	1.4	0.3	0.3	0.5	***	***	***	***
	Mae Hia	FP	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.4				
	Sakaerat	FP	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.4	0.2	0.2	0.3				
Vietnam	Hanoi	FP	1.5	2.0	2.0	2.1	1.6	3.0	2.0	3.3	2.0	1.1	1.1	1.4	3.2	2.2	1.0
	Hoa Binh	FP	1.2	1.5	1.6	1.7	1.6	3.2	1.8	2.4	1.6	1.2	1.3	2.3	2.1	2.0	2.2
	Can Tho	FP						1.7	1.4	1.2	0.9	1.8	1.7	1.8	1.6	1.7	1.7
	Ho Chi Minh	FP						1.6	1.1	1.5	1.3	1.6	3.3	1.5	1.4	1.3	1.3
	Yen Bai	FP							2.4	2.4	2.3	1.8	1.4	1.9	2.3	2.0	1.7

Terms and abbreviations are given in Table 4.2.

Table 4.24 Annual NH₃ concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		14.3	11.5	9.9	9.4	6.9	7.3	6.8	7.5	***	***	***	***	***	***
China	Hongwen	FP	11.2	12.2	9.5	***	***	***	***	10.7	9.3						
Indonesia	Jakarta	FP						38.3	13.7	10.5	4.1	15.2	2.4	9.2	10.8	12.6	***
	Serpong	FP	5.9	5.4	11.0	16.1	11.7	11.8	18.3	11.1	5.8	8.3	5.2	9.8	6.1	8.1	***
	Bandung	FP						8.4	9.4	6.6	8.6	8.7	10.5	10.1	10.3	10.1	***
		PS										9.8	11.9	20.7	15.5	15.6	***
Japan	Rishiri	FP	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.5	1.1	0.5	0.5	0.6	0.9
	Ochiishi	FP	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4
	Tappi	FP	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4					
	Sado-seki	FP	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.6	0.7	1.0	0.7	0.6	***	1.2	1.1
	Happo	FP	0.2	0.3	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.5	0.6	0.6	0.5
	Ijira	FP	1.0	1.1	1.0	1.0	1.3	0.9	1.0	0.8	0.9	1.1	1.0	0.8	0.9	0.8	0.8
	Okii	FP	1.0	0.8	0.7	0.5	0.6	0.6	0.7	0.9	0.6	0.9	0.9	0.8	0.9	0.8	0.8
	Banryu	FP	1.0	1.0	0.9	0.8	0.7	0.7	0.7	1.0	0.7	1.2					
	Yusuhara	FP	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.5
	Hedo	FP	1.2	1.2	0.9	1.3	1.1	1.1	1.3	1.2	1.3	1.1	1.4	1.2	1.1	0.9	0.8
	Ogasawara	FP	0.5	0.5	0.7	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.4	0.5
	Tokyo	FP	5.0	4.9	4.4	3.9	4.6	4.6	4.2	4.2	4.2	3.8	3.8	3.7	3.6	3.9	4.0
	Niigata-maki	FP												1.1	1.4	1.5	1.4
	Tsushima	FP												0.9	1.0	1.0	1.0
Lao PDR	Vientiane	FP							2.6	2.7	***	***	***	***	***	<0.1	***
Malaysia	Petaling Jaya	FP	7.3	6.7	6.7	6.5	8.6	10.0	9.2	11.2	7.6	10.4	***	7.4	6.2	6.8	7.9
	Tanah Rata	FP	0.8	0.9	1.2	0.9	1.2	2.2	3.0	2.3	1.8	<0.1	***	1.7	1.4	1.2	1.5
	Danum Valley	FP	1.9	1.5	0.9	0.7	3.8	1.2	1.4	1.4	1.1	1.0	***	1.7	2.4	1.5	1.7
Mongolia	Ulaanbaatar	FP	7.4	14.8	8.7	***	***	***	***	***	9.7	7.3	7.0	5.8	6.3	***	***
	Terelj	FP	1.9	1.4	1.5	***	***	***	***	***	1.7	2.1	1.3	1.2	1.5	***	***
Myanmar	Yangon	FP			15.5	10.2	6.2	8.9	7.6	7.1	5.8	2.0	2.1	1.0	2.7	4.1	0.6
Philippines	Manila Observatory	FP	***	7.5	***	***	***	***	***	***	***	***	13.1	9.6	7.8	10.4	13.4
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	8.5	6.1
	Mt. Sto. Tomas	FP	0.4	2.5	***	1.0	1.1	2.2	1.9	1.9	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP	3.2	4.6	***	***	7.4	3.7	4.3	0.8	0.4	0.5	3.8	3.6	3.8	3.0	3.2
	Jeju	FP	4.9	7.0	***	***	3.2	6.9	7.5	4.0	7.0	7.1	7.2	3.1	3.3	3.5	3.2
	Imsil	FP	6.0	6.5	***	***	3.0	6.3	5.6	4.3	8.4	9.4	10.8	3.4	4.0	7.6	5.8
Russia	Mondy	FP	0.4	0.4	0.4	0.7	0.6	0.4	0.8	1.5	1.0	1.2	1.4	1.1	0.7	1.3	0.1
	Listvyanka	FP	2.4	2.8	0.8	0.6	1.3	2.4	2.8	3.9	2.9	1.7	2.9	3.3	4.3	3.1	1.3
	Irkutsk	FP	2.9	2.2	1.7	1.4	1.5	4.8	2.8	3.0	2.3	3.1	2.8	3.2	2.0	2.5	2.8
	Primorskaya	FP	1.8	2.2	4.2	1.3	1.1	1.3	1.4	2.5	0.8	1.4	6.4	1.4	1.1	1.0	2.4
Thailand	Bangkok	FP	8.7	7.9	8.8	8.3	8.7	14.6	9.2	9.7	6.4	12.2	6.8	7.5	***	1.7	4.4
	Pathumthani	FP	8.1	7.8	5.2	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	2.6	1.6	1.5	2.4	3.4	4.8	3.0	7.9	4.2	3.8	3.1	***	***	***	***
	Mae Hia	FP	5.8	9.0	5.3	4.4	3.5	1.5	0.9	5.0	4.6	4.6	4.8				
	Sakaerat	FP	2.3	2.0	1.8	3.3	2.9	3.5	3.9	4.6	3.5	4.6	5.8				
Vietnam	Hanoi	FP	4.8	5.7	6.4	4.8	1.4	1.6	2.6	4.3	3.9	2.4	2.1	2.8	3.8	4.2	2.0
	Hoa Binh	FP	3.9	2.1	2.4	2.6	1.7	1.4	1.2	1.3	1.8	1.4	1.4	1.3	1.2	1.5	1.5
	Can Tho	FP						2.6	2.5	3.3	3.4	4.9	5.4	4.9	4.3	5.0	5.2
	Ho Chi Minh	FP						3.0	2.8	4.3	5.6	4.6	4.1	4.6	4.1	3.9	3.1
	Yen Bai	FP							2.9	2.8	3.5	3.2	3.4	2.5	3.1	3.6	3.0

Terms and abbreviations are given in Table 4.2.

Table 4.25 Annual NO concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	AT(CLD)											4.1	3.0	1.6	3.9	2.1
China	Jinyunshan	AT(DOAS)	3.3	2.0	1.6	2.1	1.6	1.7	1.5	3.3	8.7	7.6	6.0	8.1	2.8	2.6	2.0
Japan	Rishiri	AT(CLD)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ochiishi	AT(CLD)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Tappi	AT(CLD)	***	***	0.2	0.1	0.1	<0.1	<0.1	0.2	0.1	<0.1					
	Sado-seki	AT(CLD)	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Happo	AT(CLD)	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***
	Ijira	AT(CLD)	0.2	0.3	0.2	0.1	0.2	0.2	0.5	0.3	0.1	0.3	0.5	0.3	0.4	0.1	0.2
	Okii	AT(CLD)	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***
	Banryu	AT(CLD)	0.2	0.2	<0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1					
	Yusuhara	AT(CLD)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	***	***
	Hedo	AT(CLD)	<0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ogasawara	AT(CLD)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Niigata-maki	AT(CLD)											0.1	0.1	0.2	0.1	0.2
Lao PDR	Vientiane	AT(CLD)						8.4	10.9	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	AT(CLD)						21.8	27.8	22.7	19.4	12.7	15.2	15.4	18.3	17.1	16.6
Philippines	Manila Observatory	AT(CLD)							17.6	13.9	***	***	***	***	***	***	***
Thailand	Bangkok	AT(CLD)	11.6	8.8	10.3	9.5	8.5	6.5	6.2	5.0	6.6	6.0	4.4	3.4	2.9	***	***
	Samutprakarn	AT(CLD)	15.2	13.3	15.1	17.1	12.6	11.6	9.5	8.5	7.3	7.1	7.0	2.7	***	***	***
	Khanchanaburi	AT(CLD)	0.2	0.3	1.1	0.5	3.3	7.0	1.0	0.1	0.5	2.9	1.0	0.3	***	11.9	***
	ChangPhueak	AT(CLD)	2.1	3.0	2.0	4.3	1.9	2.3	3.5	2.8	2.4	2.0	1.6	1.4	1.2	1.1	***
	Si Phum	AT(CLD)					6.9	7.0	11.8	13.5	9.1	7.7	7.9	10.8	***	***	***
	Nai Mueang	AT(CLD)	***	15.3	16.5	15.6	15.4	11.7	11.3	13.6	13.0	10.3	11.4	8.4	6.3	7.6	7.2

Terms and abbreviations are given in Table 4.2.

Table 4.26 Annual NO₂ concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	AT(CLD)											10.0	7.7	2.5	7.2	3.4
China	Hongwen	AT(DOAS)	18.8	21.1	20.2	20.0	19.5	18.6	14.8	16.1	14.7	13.5	11.2	8.7	10.0	9.6	8.6
	Xiang Zhou	AT(DOAS)	15.4	17.0	18.6												
	Haibin-Park	AT(DOAS)				13.8	17.6	18.7	15.6	16.9	15.9	15.5	13.3	11.2	12.1	9.3	9.2
	Wuzhishan	AT(CLD)											0.9	0.9	1.1	0.9	0.8
	Lijiang	AT(CLD)											0.6	1.2	1.4	1.4	0.8
Indonesia	Jakarta	PS ^{*1}	48.5	31.2	***	16	26.5	25.9	25.7	26.5	28.4	22.8	21.4	16.0	17	18.9	***
	Kototabang	PS ^{*1}	3.5	0.5	***	***	2.5	0.7	1.2	1.0	1.2	1.0	0.9	0.9	1	0.6	***
	Bandung	PS	13.3	31.5	39.0	42.8	41.0	40.6	54.4	74.6	36.0	30.3	35.9	31.2	17.3	21.2	***
Japan	Banryu	AT(CLD)	2.8	2.6	2.5	1.9	1.7	1.8	1.6	1.8	2.0	1.7					
Lao PDR	Vientiane	AT(CLD)						10.0	11.4	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	AT(CLD)						26.9	30.3	35.9	42.9	34.3	33.5	21.9	23.4	25.2	21.9
Philippines	Manila Observatory	AT(CLD)							15.5	12.9	***	***	***	***	***	***	7.8
	Sta. Rosa	AT(CLD)														48.7	***
Republic of Korea	Ganghwa	AT(CLD)	7.1	6.4	5.4	5.0	5.7	5.9	7.4	6.8	5.7	4.9	5.4	4.6	6.0	5.6	6.2
	Jeju	AT(CLD)	3.1	4.1	4.4	3.0	3.4	3.3	3.7	3.1	2.7	3.6	4.6	4.3	3.7	3.2	3.1
	Imsil	AT(CLD)	4.5	5.1	5.0	4.6	5.1	4.0	4.4	4.6	4.0	4.1	4.2	4.0	5.2	5.2	4.6
Thailand	Bangkok	AT(CLD)	23.6	21.2	24.5	24.7	25.3	20.3	14.4	16.1	17.6	19.1	17.5	15.1	14.0	***	***
	Samutprakarn	AT(CLD)	19.0	15.5	21.5	17.1	15.1	12.4	10.5	13.4	15.6	17.4	17.7	15.4	***	***	***
	ChangPhueak	AT(CLD)	8.8	9.5	9.6	11.2	12.3	11.2	10.2	9.3	8.4	5.8	9.1	8.3	11.9	4.3	***
	Si Phum	AT(CLD)					16.1	14.9	18.1	18.9	14.5	19.0	15.3	24.4	***	***	***
	Nai Mueang	AT(CLD)	***	17.9	17.6	18.7	19.4	15.6	15.0	17.7	22.7	19.0	16.2	16.8	14.4	15.0	15.0

*1: Some annual averages are integers only, depending on their submitted unit and significant digits.

Terms and abbreviations are given in Table 4.2.

Table 4.27 Annual NO_x concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	AT(CLD)											14.0	10.7	3.8	11.1	5.4
China	Jinyunshan (NOx*)	AT(CLD)	8.2	11.4	10.0	8.4	9.1	8.9	9.6	13.5	18.5	17.9	14.1	16.0	12.9	11.5	9.8
Japan	Rishiri (NOx*)	AT(CLD)	0.9	0.8	0.6	0.7	0.6	0.7	0.5	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5
	Ochiishi (NOx*)	AT(CLD)	1.1	1.0	1.1	1.0	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.8	0.9
	Tappi (NOx*)	AT(CLD)	***	***	1.1	1.2	1.4	1.5	1.4	1.4	1.3	1.2					
	Sado-seki (NOx*)	AT(CLD)	0.9	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.4	0.5	0.7
	Happo (NOx*)	AT(CLD)	1.3	1.2	1.1	1.1	0.9	1.1	0.9	0.7	0.7	0.8	0.6	0.6	0.6	***	***
	Ijira (NOx*)	AT(CLD)	2.5	2.3	2.0	2.2	1.7	1.7	2.4	1.6	1.4	1.9	1.8	1.0	1.5	1.3	1.5
	Oki (NOx*)	AT(CLD)	1.3	1.3	1.3	1.0	1.1	1.3	1.1	1.0	1.0	1.1	1.0	0.7	0.5	0.6	***
	Banryu	AT(CLD)	3.0	2.8	2.5	2.0	1.9	2.0	1.8	1.9	2.1	1.8					
	Yusuhara (NOx*)	AT(CLD)	1.1	1.8	1.3	1.4	1.4	1.2	1.3	1.3	1.5	1.2	1.4	1.0	1.0	***	***
	Hedo (NOx*)	AT(CLD)	0.7	0.7	0.7	0.5	0.9	0.7	0.7	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.9
	Ogasawara (NOx*)	AT(CLD)	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.7	0.2	0.3	0.1
	Niigata-miki (NOx*)	AT(CLD)												2.1	1.8	2.0	1.7
Lao PDR	Vientiane	AT(CLD)						18.4	22.4	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	AT(CLD)						48.7	58.2	58.6	62.3	47.0	48.7	37.3	41.8	42.3	38.5
Philippines	Manila Observatory	AT(CLD)							33.2	26.9	***	***	***	***	***	***	***
Thailand	Bangkok	AT(CLD)	35.2	30.2	35.0	34.5	34.0	27.0	20.6	21.2	24.2	25.1	22.0	18.5	16.9	***	***
	Samutprakarn	AT(CLD)	34.1	28.7	36.7	34.1	27.7	24.0	20.0	21.8	22.8	24.5	24.6	18.1	***	***	***
	Khanchanaburi (NOx*)	AT(CLD)	1.4	3.1	4.1	2.0	4.7	11.6	3.0	2.7	1.4	6.1	3.0	3.0	***	15.8	***
	Chang Phueak	AT(CLD)	10.8	12.5	11.6	15.5	14.2	13.5	13.7	12.1	10.7	7.9	10.7	9.5	13.0	5.2	***
	Si Phum	AT(CLD)					23.0	21.9	29.8	32.3	23.5	26.6	23.1	35.2	***	***	***
	Nai Mueang	AT(CLD)	***	33.2	34.0	34.2	34.6	27.3	26.2	31.3	35.7	29.3	27.5	25.0	20.6	22.5	22.1

Terms and abbreviations are given in Table 4.2.

Table 4.28 Annual O₃ concentration from 2009 to 2023

unit: ppb																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	AT(UVP)											18	19	24	17	19
Indonesia	Bandung	AT(UVP) PS							26	10	11	15	8	***	***	***	***
Japan	Rishiri	AT(UVP)	42	40	37	34	37	39	40	39	37	36	32	34	35	35	35
	Ochiishi	AT(UVP)	37	38	35	39	39	42	40	38	42	40	33	35	34	33	34
	Tappi	AT(UVP)	***	***	38	41	40	39	38	41	45	45					
	Sado-seki	AT(UVP)	49	53	49	46	46	47	45	45	45	44	44	40	36	38	42
	Happo	AT(UVP)	52	48	53	49	49	48	48	47	47	50	51	45	47	45	46
	Ijira	AT(UVP)	21	19	20	24	26	28	26	25	28	28	24	17	25	22	29
	Oki	AT(UVP)	46	45	46	46	48	47	47	46	47	46	45	43	43	43	43
	Banryu	AT(UVP)	36	35	33	33	33	33	33	33	35	32					
	Yusuhara	AT(UVP)	41	36	33	34	39	40	40	37	41	39	39	39	38	37	44
	Hedo	AT(UVP)	39	38	33	35	38	40	39	36	36	29	37	30	29	27	38
	Ogasawara	AT(UVP)	30	38	29	32	37	33	35	29	36	30	45	41	29	28	42
	Niigata-maki	AT(UVP)											38	35	36	35	35
	Tsushima	AT(UVP)											47	43	45	44	41
Mongolia	Ulaanbaatar	AT(UVP)						12	13	12	9	11	12	12	11	11	10
Philippines	Manila Observatory	AT(UVP)							7	10	***	***	***	***	***	***	29
	Sta. Rosa	AT(UVP)														42	***
Republic of Korea	Ganghwa	AT(UVP)	43	43	39	44	46	50	47	45	43	41	46	42	43	44	34
	Jeju	AT(UVP)	44	42	35	39	41	45	46	39	47	42	46	42	45	45	45
	Imsil	AT(UVP)	33	30	30	33	31	31	36	36	29	28	36	29	31	31	32
Russia	Mondy	AT(UVP)	45	44	40	38	38	35	40	43	27	***	***	***	***	***	***
		PS										42	50	***	***	27	***
	Listvyanka	PS						39	39	35	25	36	45	***	***	31	***
	Irkutsk	PS								30	14	22	24	20	***	18	***
Thailand	Bangkok	AT(UVP)	17	17	19	17	21	19	43	21	22	22	26	29	29	27	31
	Samutprakarn	AT(UVP)	18	15	17	19	20	22	23	16	17	20	21	29	26	27	***
	Khanchanaburi	AT(UVP)	14	23	12	16	13	22	20	19	18	25	26	23	***	36	***
	ChangPhueak	AT(UVP)	26	24	25	21	21	20	22	25	22	29	31	26	31	32	***
	Si Phum	AT(UVP)					22	19	***	***	***	***	***	***	***	***	***
	Nai Mueang	AT(UVP)	***	17	***	19	22	22	21	22	26	22	25	26	26	25	24

Terms and abbreviations are given in Table 4.2.

Table 4.29 Annual PM₁₀ concentration from 2009 to 2023

unit: $\mu\text{g}/\text{m}^3$																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
China	Jinyunshan	AT(β -ray)	40	51	45	43	64	57	48	56	50	48	39	35	38	33	38
	Hongwen	AT(TEOM)	60	63	61	59	58	54	43	42	43	41	37	33	35	32	37
	Xiang Zhou	AT(TEOM)	48	48	49												
	Haibin-Park	AT(TEOM)				44	54	46	50	41	42	40	37	31	34	29	33
	Wuzhishan	AT(Hybrid)											14	11	12	11	12
	Lijiang	AT(Hybrid)											8	7	9	9	8
Japan	Rishiri	TEOM/AT(β -ray)	16	18	15	13	12	26	19	16	17	17	22	18	19	20	21
	Ochiishi	AT(β -ray)	24	22	23	20	16	26	22	18	16	15	15	13	16	15	16
	Tappi	AT(β -ray)	16	28	18	17	18	20	20	18	16	16					
	Sado-seki	TEOM/AT(β -ray)	22	21	21	19	20	23	24	20	21	22	24	20	21	***	18
	Happo	AT(β -ray)	12	12	12	11	11	12	10	10	7	9	6	7	9	9	6
	Ijira	AT(β -ray)	18	18	19	16	18	17	17	16	18	17	15	13	13	12	14
	Oki	AT(β -ray)	26	29	25	23	27	31	32	29	28	29	30	29	36	***	30
	Banryu	AT(β -ray)	26	28	24	22	25	25	24	22	24	22					
	Yusuhara	AT(β -ray)	18	18	16	15	17	15	16	14	14	15	13	13	14	12	13
	Hedo	AT(β -ray)	28	31	28	27	26	27	31	28	29	31	29	29	29	26	25
	Ogasawara	AT(β -ray)	12	12	10	11	12	11	18	19	19	20	20	19	16	16	19
	Niigata-maki	AT(β -ray)												21	23	22	25
	Tsushima	AT(β -ray)											23	19	22	17	21
Lao PDR	Vientiane	AT(β -ray)						72	72	***	***	***	***	***	***	***	***
Mongolia	Ulaanbaatar	AT(β -ray)						211	106	97	102	121	126	92	84	87	81
Philippines	Manila Observatory	AT(β -ray)							33	29	***	***	***	***	***	***	***
	North Caloocan	AT(β -ray)														51	56
	Sta. Rosa	AT(β -ray)														32	21
Republic of Korea	Ganghwa	AT(β -ray)	51	51	44	45	48	49	52	51	49	42	43	36	32	29	39
	Jeju	AT(β -ray)	43	47	42	37	45	47	45	42	37	39	39	30	30	30	33
	Imsil	AT(β -ray)	34	40	38	36	39	44	43	42	39	37	49	34	38	31	30
Thailand	Bangkok	AT(β -ray)	39	38	38	37	41	37	32	35	36	36	34	32	32	31	34
	Samutprakarn	AT(β -ray)	43	38	54	39	44	41	35	38	38	42	40	34	35	35	61
	Khanchanaburi	AT(β -ray)	28	46	23	10	28	90	23	34	17	35	33	121	***	41	***
	ChangPhueak	AT(β -ray)	42	45	33	42	41	45	43	48	43	50	56	52	46	37	***
	Si Phum	AT(β -ray)					47	47	49	52	45	41	50	46	38	33	75
	Nai Mueang	AT(β -ray)	***	44	***	54	59	51	45	55	54	53	49	50	44	41	43

Terms and abbreviations are given in Table 4.2.

Table 4.30 Annual PM_{2.5} concentration from 2009 to 2023

unit: µg/m³

Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	AT(β-ray)									13	19	28	20	18	17	19
China	Jinyunshan	AT(β-ray)														29	22
	Hongwen	AT(β-ray)														16	19
	Haibin-Park	AT(β-ray)														19	18
Indonesia	Jakarta	AT(β-ray)								***	39	46	38	34	***	***	***
Japan	Rishiri	AT(β-ray)	8	9	8	8	7	8	8	7	8	7	8	7	6	6	7
	Ochiishi	AT(β-ray)	12	12	10	9	7	7	9	8	7	6	7	5	6	6	6
	Tappi	AT(β-ray)							10	9	8	9					
	Sadoseki	AT(β-ray)						11	10	10	10	9	9	7	4	***	7
	Happo	AT(β-ray)							7	6	6	6	5	5	5	5	3
	Ijira	AT(β-ray)							11	9	11	8	8	6	6	6	6
	Oki	AT(β-ray)	12	12	14	13	15	13	13	12	11	12	10	9	11	***	8
	Barryu	AT(β-ray)							13	12	13	11					
	Yusuhara	AT(β-ray)							11	10	10	10	10	9	9	8	9
	Hedo	AT(β-ray)							10	10	11	11	10	10	9	8	9
	Ogasawara	AT(β-ray)							7	6	6	6	6	6	6	5	6
	Niigata-maki	AT(β-ray)												7	6	7	7
	Tsushima	AT(β-ray)											12	10	10	9	10
Lao PDR	Vientiane	AT(β-ray)										31	32	31	***	***	***
Mongolia	Ulaanbaatar	AT(β-ray)						50	50	53	48	43	39	***	49	26	23
Myanmar	Yangon	AT(β-ray)										24	24	22	28	26	27
	Mandalay	AT(β-ray)							47	33	37	16	41	77	***	***	***
Philippines	Manila Observatory	AT(β-ray)							22	20	18	17	16	12	13	***	***
	North Caloocan	AT(β-ray)														20	26
	Sta. Rosa	AT(β-ray)														21	17
	Mt. Sto. Tomas	AT(β-ray)													3	3	5
Republic of Korea	Ganghwa	AT(β-ray)								28	25	22	23	19	19	18	22
	Jeju	AT(β-ray)								21	16	16	20	15	12	13	13
	Imsil	AT(β-ray)											19	16	18	18	19
Thailand	Bangkok	AT(β-ray)							18	23	25	21	21	19	18	16	18
	Samutprakarn	AT(β-ray)								28	24	23	22	19	20	23	26
	Khanchanaburi	AT(β-ray)							24	***	7	27	7	104	***	15	25
	ChangPhueak	AT(β-ray)								24	30	29	36	33	29	23	34
	Si Phum	AT(β-ray)					35	33	33	32	23	30	31	28	24	19	33
	Nai Mueang	AT(β-ray)											24	27	25	24	27
Vietnam	Hoa Binh	AT(β-ray)							40	49	37	37	34	30	29	***	13

Terms and abbreviations are given in Table 4.2.

Table 4.31 Annual SO₄²⁻ in PM concentration from 2009 to 2023

Country	Site	Method	unit: µg/m ³										unit: µg/m ³ : µg/m ³				
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		2.85	2.95	2.63	2.91	2.11	2.20	1.54	2.11	***	***	***	***	***	***
China	Hongwen	FP	12.72	14.10	17.60	***	***	***	***	10.92	9.08						
Indonesia	Jakarta	FP						11.44	6.76	3.53	4.23	6.68	5.52	4.07	6.42	5.47	***
	Serpong	FP	0.79	0.50	0.65	4.03	3.54	3.69	5.16	3.41	4.43	6.42	6.05	4.99	5.49	3.78	***
	Bandung	FP						6.93	2.69	2.73	2.28	7.52	8.08	5.03	7.14	8.12	***
Japan	Rishiri	FP	2.50	2.74	2.71	2.32	2.72	2.21	2.52	2.05	2.13	2.05	3.82	2.13	1.81	1.92	2.02
	Ochiishi	FP	2.61	2.31	2.13	1.95	2.19	2.52	2.05	1.98	2.38	2.03	2.05	1.67	2.14	2.09	1.96
	Tappi	FP	4.29	4.12	3.99	3.76	3.83	5.38	4.30	3.08	3.02	2.56					
	Sado-seki	FP	3.58	3.20	3.50	3.53	3.71	3.54	4.03	2.88	2.82	3.73	2.50	2.08	***	2.01	2.28
	Happo	FP	0.59	0.86	1.02	2.36	2.50	2.49	2.16	1.80	1.57	1.56	1.24	1.54	1.06	1.02	1.27
	Ijira	FP	3.88	3.25	3.55	2.52	2.88	3.84	2.84	2.91	2.50	2.45	2.51	1.64	1.60	1.78	1.60
	Oki	FP	4.29	4.43	4.76	4.90	5.56	5.25	4.69	4.84	4.31	4.12	3.68	3.47	2.79	3.12	2.87
	Banryu	FP	5.44	4.37	4.55	5.05	5.56	4.99	4.60	4.24	3.52	3.59					
	Yusuhara	FP	5.16	4.46	4.03	4.44	5.28	4.72	3.75	3.29	3.16	2.94	2.88	2.53	2.15	2.37	2.11
	Hedo	FP	5.62	3.53	2.48	4.28	5.43	5.39	5.12	4.57	4.37	4.37	3.84	3.79	2.86	2.88	2.16
	Ogasawara	FP	2.64	2.17	2.46	2.41	3.10	2.58	2.69	1.93	1.94	1.67	1.86	3.01	2.00	1.67	1.68
	Tokyo	FP	4.62	4.28	4.06	3.14	4.38	4.11	3.79	3.16	3.08	3.28	3.11	2.53	2.18	2.26	2.32
	Niigata-maki	FP												1.93	1.62	1.69	2.10
	Tsushima	FP												3.19	2.78	2.58	2.66
Lao PDR	Vientiane	FP							4.75	3.77	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	3.01	2.94	4.22	3.24	3.17	4.81	4.19	2.96	2.77	4.72	***	2.65	2.40	2.61	3.20
	Tanah Rata	FP	1.39	0.95	1.18	1.52	1.48	2.59	3.29	2.01	1.28	0.15	***	1.42	1.09	1.13	1.90
	Danum Valley	FP	3.64	1.73	0.86	0.38	0.78	1.11	1.80	1.10	0.75	1.05	***	0.77	0.72	0.73	0.91
Mongolia	Ulaanbaatar	FP	2.24	4.70	4.11	***	***	***	***	2.10	2.23	1.25	1.15	0.95	1.27	***	0.13
	Terelj	FP	1.07	0.61	1.06	***	***	***	***	1.70	0.11	0.07	0.15	0.11	0.27	***	0.17
Myanmar	Yangon	FP			3.77	3.59	1.40	1.56	0.90	0.54	1.70	1.52	1.51	2.40	0.88	0.33	0.35
Philippines	Manila Observatory	FP	***	1.43	***	***	***	***	***	***	***	***	2.33	3.18	3.88	3.12	3.16
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	3.80	4.10
	Mt. Sto. Tomas	FP	0.16	1.40	***	0.15	0.17	0.38	0.27	0.30	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	6.04	6.19	***	***	7.43	7.17	6.12	6.11	4.20	3.37	3.37	4.23	3.58	3.46	3.40
	Jeju	FP with PM _{2.5} cyclone	4.68	3.82	***	***	4.37	7.81	5.62	4.75	2.01	3.45	4.35	3.41	2.31	2.34	2.19
	Imsil	FP with PM _{2.5} cyclone	4.66	5.03	***	***	5.61	5.86	4.66	5.07	3.55	3.30	3.77	2.65	2.13	3.06	2.29
Russia	Mondy	FP	0.39	0.14	0.19	0.22	0.22	0.05	0.29	0.45	0.58	0.35	0.21	0.09	0.06	0.04	0.02
	Listvyanka	FP	1.58	0.89	1.00	1.09	0.67	1.00	0.86	0.88	0.85	0.78	0.53	0.31	0.38	0.44	0.56
	Irkutsk	FP	2.36	2.29	2.28	3.07	1.71	2.14	2.18	2.03	1.85	2.28	1.15	1.00	1.01	1.50	2.06
	Primorskaya	FP	3.71	4.04	3.60	3.27	3.66	3.62	3.24	2.23	1.08	0.52	0.38	0.59	0.66	0.47	1.07
Thailand	Bangkok	FP	2.71	3.63	3.31	2.26	2.80	4.38	2.64	4.10	1.47	3.77	3.10	2.12	***	0.67	2.07
	Pathumthani	FP	3.12	3.78	1.64	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	1.32	0.29	2.08	2.34	1.40	3.19	1.97	15.58	1.82	3.27	3.71	***	***	***	***
	Mae Hia	FP	1.97	1.29	1.34	1.12	0.39	0.10	0.08	0.86	0.87	0.83	1.17				
	Sakaerat	FP	3.44	2.12	2.74	2.44	2.89	3.31	2.70	2.79	2.35	3.26	2.17				
Vietnam	Hanoi	FP	8.77	15.63	14.40	7.82	11.54	8.47	10.83	8.84	7.96	4.50	5.19	6.95	8.30	10.24	5.00
	Hoa Binh	FP	2.49	2.26	3.81	1.59	2.58	4.95	6.38	5.78	3.24	4.43	2.90	3.26	3.49	3.62	4.68
	Can Tho	FP						1.40	1.22	1.42	5.58	5.40	5.83	5.46	5.26	5.85	6.24
	Ho Chi Minh	FP						2.08	2.42	2.15	7.68	6.75	7.11	7.24	5.82	5.97	7.03
	Yen Bai	FP							8.68	6.49	6.61	7.14	5.30	5.67	7.73	6.18	5.12

Terms and abbreviations are given in Table 4.2.

Table 4.32 Annual NO₃⁻ in PM concentration from 2009 to 2023

unit: µg/m ³																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		1.32	1.27	1.20	1.18	1.22	2.03	1.37	1.58	***	***	***	***	***	***
China	Hongwen	FP	7.98	11.66	11.66	***	***	***	***	7.62	8.26						
Indonesia	Jakarta	FP						4.67	2.37	1.34	1.36	2.78	2.47	1.39	1.51	1.56	***
	Serpong	FP	0.13	0.21	0.57	1.09	0.53	0.86	1.12	0.82	1.05	1.54	1.22	0.83	0.75	0.65	***
	Bandung	FP						1.92	1.19	1.00	0.73	1.57	1.92	1.66	2.16	2.05	***
Japan	Rishiri	FP	0.64	0.77	0.66	0.63	0.60	0.51	0.75	0.63	0.70	0.74	1.49	0.74	0.66	0.68	0.93
	Ochiishi	FP	0.67	0.55	0.67	0.43	0.42	0.71	0.57	0.67	0.82	0.82	0.75	0.60	0.78	0.75	0.86
	Tappi	FP	1.29	1.24	1.27	0.98	1.04	1.45	1.29	1.23	1.27	1.18					
	Sado-seki	FP	1.05	0.82	1.13	0.90	0.92	1.06	1.23	1.02	1.10	1.42	0.91	0.92	***	0.95	1.17
	Happo	FP	0.10	0.11	0.14	0.31	0.36	0.58	0.34	0.39	0.36	0.42	0.20	0.27	0.34	0.29	0.43
	Ijira	FP	0.40	0.40	0.47	0.25	0.30	0.42	0.39	0.46	0.41	0.47	0.49	0.32	0.54	0.41	0.50
	Oki	FP	1.31	1.50	1.85	1.51	1.82	1.79	1.66	2.10	2.70	1.98	1.87	1.58	1.76	1.80	1.61
	Banryu	FP	1.43	1.53	1.68	1.51	1.65	1.45	1.47	1.67	2.13	1.72					
	Yusuhara	FP	0.52	0.66	0.61	0.41	0.66	0.55	0.50	0.54	0.56	0.57	0.56	0.56	0.89	0.73	0.76
	Hedo	FP	1.63	1.09	0.80	1.27	1.62	1.72	1.87	1.59	1.75	1.58	1.60	1.39	1.41	1.23	1.13
	Ogasawara	FP	0.60	0.53	0.53	0.53	0.60	0.48	0.71	0.52	0.55	0.48	0.56	0.53	0.65	0.43	0.47
	Tokyo	FP	3.85	3.80	3.76	2.73	3.13	3.13	3.55	3.19	2.99	3.34	3.10	2.65	2.86	2.69	2.82
	Niigata-maki	FP												0.78	0.95	0.82	1.15
	Tsushima	FP												1.57	2.39	2.23	2.06
Lao PDR	Vientiane	FP							0.47	0.40	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	1.22	1.25	1.14	1.23	1.65	1.53	1.70	1.46	1.29	1.77	***	1.37	1.21	1.30	1.15
	Tanah Rata	FP	0.15	0.12	0.13	0.18	0.34	0.40	0.54	0.26	0.13	0.01	***	0.16	0.18	0.15	0.19
	Danum Valley	FP	0.21	0.36	0.04	0.08	0.09	0.11	0.11	0.10	0.08	0.06	***	0.08	0.11	0.07	0.06
Mongolia	Ulaanbaatar	FP	0.93	1.25	1.81	***	***	***	***	0.10	0.18	0.18	0.16	0.14	0.37	***	0.22
	Terelj	FP	0.24	0.11	0.29	***	***	***	***	<0.01	0.01	0.01	0.01	0.02	0.04	***	0.05
Myanmar	Yangon	FP			0.31	0.92	0.54	0.33	0.44	0.48	1.65	0.82	0.60	0.91	0.58	0.20	0.20
Philippines	Manila Observatory	FP	***	0.85	***	***	***	***	***	***	***	***	1.35	1.66	1.64	1.67	1.14
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	1.13	2.20
	Mt. Sto. Tomas	FP	0.12	0.78	***	0.19	0.14	0.26	0.27	0.14	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	2.38	3.50	***	***	3.51	2.54	3.40	3.25	2.82	2.74	3.10	2.75	4.15	1.99	2.06
	Jeju	FP with PM _{2.5} cyclone	0.49	0.67	***	***	0.74	1.10	0.79	0.75	1.92	1.41	1.15	0.61	0.49	0.49	1.37
	Imsil	FP with PM _{2.5} cyclone	2.67	3.82	***	***	2.95	2.82	1.93	1.17	2.72	3.17	2.56	2.67	1.65	3.20	1.39
Russia	Mondy	FP	0.02	0.19	0.02	0.03	0.02	<0.01	0.03	0.01	0.04	0.03	0.03	0.01	<0.01	<0.01	<0.01
	Listvyanka	FP	0.25	0.17	0.25	0.12	0.09	0.18	0.27	0.20	0.07	0.10	0.05	0.01	0.06	0.18	0.06
	Irkutsk	FP	0.83	0.91	0.88	0.92	0.49	0.80	0.66	0.67	0.63	0.75	0.25	0.25	0.25	0.64	0.76
	Primorskaya	FP	1.10	0.79	0.27	0.68	1.17	1.37	1.15	0.77	0.53	0.19	0.39	1.08	0.27	1.00	0.82
Thailand	Bangkok	FP	1.62	1.86	2.00	1.91	1.41	2.77	2.20	1.98	1.28	2.68	2.29	2.26	***	1.26	1.64
	Pathumthani	FP	1.73	1.93	0.92	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	3.55	0.06	0.04	0.10	0.11	0.17	0.20	0.83	0.24	0.20	0.19	***	***	***	***
	Mae Hia	FP	0.66	10.25	0.24	0.31	0.30	0.11	0.13	0.18	0.18	0.20	0.35				
	Sakaerat	FP	0.34	0.18	0.31	0.28	0.41	0.58	0.32	0.30	0.27	0.38	0.50				
Vietnam	Hanoi	FP	3.52	7.81	6.82	5.57	6.73	5.86	7.26	6.58	11.14	4.19	4.50	5.91	6.52	8.66	3.66
	Hoa Binh	FP	0.49	0.61	1.14	0.92	1.11	1.88	2.95	3.21	3.28	2.95	2.22	2.85	2.61	2.89	3.42
	Can Tho	FP						0.67	0.55	0.66	2.19	2.16	2.15	2.15	1.97	2.16	2.29
	Ho Chi Minh	FP						1.09	1.07	2.06	5.67	5.80	5.84	5.75	5.03	5.12	4.97
	Yen Bai	FP							3.19	4.36	8.00	5.89	3.91	4.70	5.71	5.02	3.72

Terms and abbreviations are given in Table 4.2.

Table 4.33 Annual CI in PM concentration from 2009 to 2023

unit: $\mu\text{g}/\text{m}^3$																		
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Cambodia	Phnom Penh	FP		0.20	0.24	0.24	0.40	0.26	0.54	0.56	0.32	***	***	***	***	***	***	
China	Hongwen	FP	1.73	2.28	1.51	***	***	***	***	0.99	0.95							
Indonesia	Jakarta	FP						1.35	0.51	0.41	0.54	0.84	1.25	0.52	0.39	0.47	***	
	Serpong	FP	0.09	0.25	0.10	0.16	0.20	0.18	0.28	0.29	0.23	0.25	0.23	0.28	0.34	0.16	***	
	Bandung	FP						0.31	0.27	0.20	0.57	0.17	0.21	0.36	0.35	0.38	***	
Japan	Rishiri	FP	2.42	2.79	2.31	1.94	2.00	2.95	3.57	2.21	2.66	2.93	4.54	2.66	2.67	3.27	2.64	
	Ochiishi	FP	6.88	4.34	3.28	3.06	4.58	4.12	4.46	3.89	3.81	3.97	3.89	3.14	6.72	7.97	4.74	
	Tappi	FP	8.97	6.01	5.93	8.15	5.91	15.78	12.97	5.79	5.70	5.54						
	Sado-seki	FP	3.38	3.78	3.06	3.02	3.43	3.00	4.39	3.77	3.52	5.80	4.30	3.74	***	3.31	3.83	
	Happo	FP	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.01	0.03	0.03	0.02	0.08	
	Ijira	FP	0.06	0.05	0.04	0.02	0.03	0.06	0.05	0.06	0.06	0.10	0.08	0.07	0.08	0.07	0.11	
	Oki	FP	3.69	4.54	4.29	4.20	4.98	4.96	4.58	5.25	10.45	5.07	4.09	5.26	5.68	6.24	4.49	
	Banryu	FP	1.59	1.38	1.53	0.99	1.52	1.60	1.40	0.78	2.79	1.45						
	Yusuhara	FP	0.21	0.10	0.08	0.17	0.06	0.06	0.07	0.07	0.06	0.06	0.08	0.08	0.15	0.09	0.14	
	Hedo	FP	6.02	4.62	3.09	6.02	7.27	7.61	5.86	7.53	7.16	7.69	6.57	7.17	7.36	7.20	5.11	
	Ogasawara	FP	3.93	3.44	3.79	3.55	3.51	3.50	4.32	3.83	3.71	3.59	4.09	3.75	5.46	3.72	3.69	
	Tokyo	FP	0.68	0.66	0.70	0.49	0.59	0.53	0.53	0.57	0.43	0.66	0.62	0.52	0.72	0.48	0.60	
	Niigata-maki	FP													1.12	1.82	1.44	1.84
	Tsushima	FP													0.82	0.74	0.62	0.59
Lao PDR	Vientiane	FP							0.06	0.06	***	***	***	***	***	***	***	
Malaysia	Petaling Jaya	FP	0.11	0.19	0.11	0.13	0.16	0.23	0.15	0.21	0.13	0.13	***	0.17	0.11	0.16	0.14	
	Tanah Rata	FP	0.03	0.05	0.03	0.03	0.07	0.10	0.11	0.09	0.04	<0.01	***	0.06	0.04	0.03	0.05	
	Danum Valley	FP	0.15	0.33	0.04	0.02	0.11	0.13	0.11	0.07	0.08	0.02	***	0.13	0.12	0.06	0.14	
Mongolia	Ulaanbaatar	FP	1.84	1.06	1.18	***	***	***	***	0.08	0.20	0.14	0.20	0.12	0.18	***	0.12	
	Terelj	FP	0.22	0.18	0.23	***	***	***	***	0.02	0.03	0.02	0.02	<0.01	0.02	***	0.07	
Myanmar	Yangon	FP			0.59	0.56	0.21	0.27	0.63	0.57	0.13	0.52	0.23	0.48	0.27	0.15	0.15	
Philippines	Manila Observatory	FP	***	0.66	***	***	***	***	***	***	***	***	0.69	1.05	1.00	0.98	0.70	
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	1.12	1.95	
	Mt. Sto. Tomas	FP	0.05	0.32	***	0.05	0.04	0.10	0.08	0.04	***	***	***	***	***	***	***	
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	0.64	0.44	***	***	0.47	0.13	0.13	0.10	0.28	0.11	0.09	0.08	0.15	0.08	0.17	
	Jeju	FP with PM _{2.5} cyclone	0.29	0.46	***	***	1.12	0.72	0.37	0.60	0.54	0.62	0.23	0.19	0.08	0.12	0.14	
	Imsil	FP with PM _{2.5} cyclone	0.45	0.61	***	***	0.48	0.25	0.38	0.31	0.39	0.41	0.20	0.14	0.08	0.22	0.13	
Russia	Mondy	FP	<0.01	0.33	0.04	0.24	0.14	0.04	0.05	0.01	0.03	0.02	0.07	0.02	<0.01	0.03	<0.01	
	Listvyanka	FP	0.11	0.11	0.04	0.26	0.06	0.09	0.12	0.06	0.05	0.04	0.03	0.03	0.06	0.09	0.02	
	Irkutsk	FP	0.40	0.31	0.43	0.46	0.24	0.26	0.17	0.23	0.19	0.15	0.11	0.13	0.10	0.21	0.27	
	Primorskaya	FP	0.14	0.20	0.09	0.29	0.28	0.14	0.15	0.10	0.12	0.03	0.09	0.49	0.41	0.40	0.20	
Thailand	Bangkok	FP	0.26	0.28	0.32	0.26	0.16	0.31	0.19	0.34	0.09	0.27	0.28	0.22	***	0.3	0.22	
	Pathumthani	FP	0.20	0.14	0.15	***	***	***	***	***	***	***	***	***	***	***	***	
	Khanchanaburi	FP	0.04	0.10	0.05	<0.01	0.05	0.04	0.08	0.26	0.22	0.03	0.10	***	***	***	***	
	Mae Hia	FP	0.09	0.16	0.12	0.13	0.12	0.08	0.06	0.21	0.15	0.13	0.22					
	Sakaerat	FP	0.07	0.02	0.06	0.10	0.12	0.16	0.08	0.21	0.04	0.08	0.09					
Vietnam	Hanoi	FP	0.58	1.66	1.33	1.11	1.75	1.34	1.94	2.32	4.04	2.33	1.72	3.92	5.27	4.23	2.51	
	Hoa Binh	FP	0.11	0.35	0.27	0.43	0.59	1.18	0.79	1.18	1.04	1.88	2.79	2.61	1.97	2.92	3.53	
	Can Tho	FP						0.56	0.46	1.78	1.08	2.14	2.23	2.36	2.01	2.22	2.26	
	Ho Chi Minh	FP						0.74	0.59	1.29	1.40	4.03	4.42	4.45	3.70	3.71	3.27	
	Yen Bai	FP							1.01	1.25	3.58	3.52	2.78	2.92	3.20	3.49	3.18	

Terms and abbreviations are given in Table 4.2.

Table 4.34 Annual NH₄⁺ in PM concentration from 2009 to 2023

unit: $\mu\text{g}/\text{m}^3$																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		0.61	0.50	0.34	0.57	0.52	0.54	0.54	0.38	***	***	***	***	***	***
China	Hongwen	FP	5.48	6.72	5.85	***	***	***	***	3.68	2.83						
Indonesia	Jakarta	FP						0.57	0.71	0.40	0.32	1.11	1.03	0.69	1.26	1.29	***
	Serpong	FP	0.11	0.14	0.32	0.78	0.38	0.47	0.67	0.55	0.50	1.07	0.88	1.01	0.87	0.82	***
	Bandung	FP						1.20	1.17	1.42	1.13	1.60	1.38	1.29	1.93	2.11	***
Japan	Rishiri	FP	0.45	0.47	0.47	0.41	0.45	0.35	0.46	0.40	0.42	0.43	0.73	0.42	0.33	0.33	0.38
	Ochiishi	FP	0.40	0.29	0.37	0.32	0.28	0.38	0.24	0.32	0.38	0.35	0.35	0.25	0.28	0.25	0.32
	Tappi	FP	0.66	0.68	0.64	0.53	0.58	0.69	0.46	0.48	0.49	0.42					
	Sado-seki	FP	0.53	0.50	0.56	0.54	0.62	0.61	0.69	0.48	0.44	0.56	0.39	0.27	***	0.27	0.33
	Happo	FP	0.15	0.22	0.26	0.64	0.63	0.80	0.59	0.53	0.47	0.43	0.33	0.36	0.28	0.28	0.32
	Ijira	FP	1.06	0.87	0.95	0.69	0.81	1.11	0.76	0.82	0.68	0.64	0.65	0.44	0.40	0.47	0.38
	Oki	FP	0.86	0.92	0.93	0.94	1.10	1.05	0.90	1.13	0.77	0.83	0.74	0.54	0.49	0.54	0.47
	Banryu	FP	1.30	1.02	1.06	1.24	1.40	1.22	1.11	1.17	0.93	0.90					
	Yusuhara	FP	1.25	1.00	0.96	1.06	1.25	1.10	0.91	0.86	0.89	0.72	0.74	0.60	0.52	0.65	0.52
	Hedo	FP	0.86	0.42	0.43	0.71	0.69	0.61	0.66	0.51	0.53	0.46	0.41	0.34	0.25	0.29	0.22
	Ogasawara	FP	0.21	0.17	0.22	0.22	0.31	0.23	0.25	0.19	0.22	0.16	0.17	0.25	0.16	0.12	0.15
	Tokyo	FP	1.83	1.71	1.57	1.10	1.44	1.42	1.40	1.18	1.16	1.11	1.02	0.85	0.72	0.71	0.75
	Niigata-maki	FP												0.34	0.31	0.33	0.39
	Tsushima	FP												0.75	0.80	0.87	0.80
Lao PDR	Vientiane	FP							1.22	1.12	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	0.73	0.80	1.12	0.75	0.94	1.37	1.18	0.92	0.74	1.28	***	0.80	0.70	0.76	1.00
	Tanah Rata	FP	0.29	0.25	0.49	0.46	0.39	0.63	1.11	0.46	0.32	<0.01	***	0.39	0.28	0.31	0.56
	Danum Valley	FP	0.39	0.12	0.13	0.08	0.13	0.12	0.25	0.10	0.09	0.14	***	0.13	0.10	0.11	0.20
Mongolia	Ulaanbaatar	FP	0.95	1.69	1.80	***	***	***	***	0.67	0.58	0.34	0.32	0.12	0.61	***	***
	Terelj	FP	0.28	0.12	0.43	***	***	***	***	0.06	0.04	<0.01	0.05	0.01	0.14	***	***
Myanmar	Yangon	FP			0.34	0.38	0.30	0.50	0.45	0.37	0.80	0.33	0.40	0.59	1.05	0.18	0.29
Philippines	Manila Observatory	FP	***	0.14	***	***	***	***	***	***	***	***	0.59	0.09	0.51	0.53	0.41
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	0.61	0.73
	Mt. Sto. Tomas	FP	0.03	0.10	***	<0.01	0.01	0.10	0.05	<0.01	***	***	***	***	***	***	***
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	2.51	2.93	***	***	3.54	3.58	3.48	3.20	2.50	2.13	1.99	2.06	2.38	1.86	1.77
	Jeju	FP with PM _{2.5} cyclone	1.54	1.32	***	***	1.80	2.83	2.30	1.86	1.19	1.38	1.59	1.16	0.76	0.81	1.07
	Imsil	FP with PM _{2.5} cyclone	2.34	2.54	***	***	2.82	2.87	2.36	2.02	1.96	1.92	1.86	1.56	1.21	2.20	1.23
Russia	Mondy	FP	0.07	0.01	0.02	0.04	<0.01	0.02	0.03	0.09	0.12	0.05	0.03	0.01	<0.01	<0.01	<0.01
	Listvyanka	FP	0.24	0.15	0.22	0.22	0.10	0.35	0.20	0.21	0.32	0.10	0.13	0.04	0.06	0.08	0.13
	Irkutsk	FP	0.66	0.49	0.62	0.80	0.40	0.55	0.70	0.93	0.57	0.73	0.35	0.28	0.24	0.39	0.55
	Primorskaya	FP	0.99	0.75	0.77	0.70	1.06	0.88	1.04	0.80	0.45	0.13	0.27	0.45	0.32	0.40	0.45
Thailand	Bangkok	FP	0.70	0.69	0.60	0.53	0.79	1.27	0.65	0.75	1.02	0.77	0.63	0.56	***	0.21	0.98
	Pathumthani	FP	1.50	0.84	0.26	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	0.83	0.18	0.46	0.07	0.30	0.67	0.60	2.73	0.58	0.57	0.50	***	***	***	***
	Mae Hia	FP	0.58	3.70	0.31	0.23	0.09	0.09	0.11	0.38	0.25	0.18	0.24				
	Sakaerat	FP	0.87	0.73	0.96	0.84	0.90	1.01	0.88	0.80	0.77	1.62	1.36				
Vietnam	Hanoi	FP	1.68	3.28	4.50	2.83	3.32	2.46	2.06	2.32	3.41	1.37	0.71	1.19	2.66	1.95	0.88
	Hoa Binh	FP	0.90	0.64	1.55	0.66	0.90	1.76	1.99	1.90	1.03	1.42	0.96	0.73	0.85	0.97	1.12
	Can Tho	FP						0.63	1.08	0.77	1.39	1.21	1.12	1.09	0.98	1.00	1.07
	Ho Chi Minh	FP						1.00	1.35	1.44	1.23	1.37	1.33	1.33	0.95	1.01	0.91
	Yen Bai	FP							2.00	2.62	3.17	2.58	1.35	1.15	1.96	1.53	1.24

Terms and abbreviations are given in Table 4.2.

Table 4.35 Annual Na⁺ in PM concentration from 2009 to 2023

unit: $\mu\text{g}/\text{m}^3$																		
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Cambodia	Phnom Penh	FP		0.53	0.63	0.57	0.67	0.59	0.81	0.64	0.63	***	***	***	***	***	***	
China	Hongwen	FP	1.55	1.76	1.62	***	***	***	***	1.61	1.58							
Indonesia	Jakarta	FP						1.84	0.97	0.56	0.49	1.10	0.97	0.82	0.78	0.96	***	
	Serpong	FP	0.10	0.09	0.16	0.45	0.37	0.40	0.69	0.36	0.32	0.70	0.54	0.52	0.61	0.31	***	
	Bandung	FP						0.57	0.64	0.41	0.49	0.67	0.49	0.48	0.47	0.36	***	
Japan	Rishiri	FP	1.91	2.14	1.84	1.58	1.64	2.13	2.44	1.65	1.88	2.08	3.43	1.90	1.87	2.11	1.96	
	Ochiishi	FP	4.37	2.87	2.45	2.15	3.00	2.72	2.86	2.56	2.64	2.64	2.60	2.11	4.15	4.78	3.00	
	Tappi	FP	6.01	4.24	3.97	5.12	4.05	9.88	7.92	3.81	3.77	3.58						
	Sado-seki	FP	2.56	2.67	2.43	2.38	2.56	2.34	3.17	2.68	2.57	3.91	2.81	2.57	***	2.38	2.58	
	Happo	FP	0.03	0.03	0.05	0.09	0.09	0.09	0.09	0.09	0.08	0.10	0.06	0.09	0.11	0.07	0.12	
	Ijira	FP	0.25	0.22	0.25	0.16	0.16	0.21	0.23	0.24	0.25	0.28	0.30	0.23	0.26	0.23	0.27	
	Oki	FP	2.75	3.35	3.28	3.25	3.80	3.74	3.40	3.89	6.68	3.66	3.09	3.67	3.77	4.18	3.11	
	Banryu	FP	1.64	1.41	1.59	1.29	1.62	1.60	1.46	1.07	2.23	1.46						
	Yusuhara	FP	0.54	0.41	0.42	0.39	0.45	0.34	0.30	0.30	0.28	0.32	0.30	0.32	0.38	0.33	0.35	
	Hedo	FP	4.63	3.38	2.28	4.34	5.27	4.79	4.43	5.21	5.03	5.29	4.58	4.84	4.73	4.64	3.30	
	Ogasawara	FP	2.80	2.38	2.61	2.45	2.65	2.54	3.06	2.54	2.50	2.40	2.74	2.75	3.45	2.44	2.44	
	Tokyo	FP	0.94	0.91	0.89	0.71	0.87	0.77	0.87	0.86	0.76	0.98	0.94	0.76	0.93	0.84	0.90	
	Niigata-maki	FP													1.07	1.37	1.20	1.45
	Tsushima	FP													1.02	1.00	0.87	0.82
Lao PDR	Vientiane	FP							0.28	0.25	***	***	***	***	***	***	***	
Malaysia	Petaling Jaya	FP	0.24	0.26	0.32	0.27	0.42	0.47	0.53	0.36	0.30	0.44	***	0.47	0.32	0.33	0.37	
	Tanah Rata	FP	0.10	0.10	0.12	0.12	0.16	0.21	0.24	0.20	0.08	<0.01	***	0.19	0.14	0.12	0.17	
	Danum Valley	FP	0.59	0.72	0.17	0.05	0.16	0.32	0.35	0.25	0.18	0.19	***	0.32	0.17	0.14	0.21	
Mongolia	Ulaanbaatar	FP	0.08	0.21	0.20	***	***	***	***	0.20	0.31	0.18	0.22	0.17	0.12	***	***	
	Terelj	FP	0.11	0.02	0.09	***	***	***	***	0.03	0.03	0.02	0.03	0.01	0.03	***	***	
Myanmar	Yangon	FP			0.59	0.74	0.21	0.34	0.12	0.31	0.19	0.58	0.27	1.88	0.42	0.16	0.20	
Philippines	Manila Observatory	FP	***	0.54	***	***	***	***	***	***	***	***	0.66	0.77	0.99	0.46	0.99	
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	1.10	1.81	
	Mt. Sto. Tomas	FP	0.16	0.52	***	0.07	0.10	0.31	0.58	0.24	***	***	***	***	***	***	***	
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	0.52	0.40	***	***	0.51	0.30	0.26	0.25	0.23	0.20	0.26	0.24	0.14	0.14	0.13	
	Jeju	FP with PM _{2.5} cyclone	0.51	0.45	***	***	0.64	0.57	0.28	0.39	0.38	0.39	0.30	0.31	0.25	0.30	0.19	
	Imsil	FP with PM _{2.5} cyclone	0.54	0.40	***	***	0.24	0.20	0.21	0.24	0.26	0.26	0.21	0.15	0.07	0.08	0.08	
Russia	Mondy	FP	0.03	0.36	<0.01	0.08	0.06	0.01	0.06	0.02	0.16	0.03	0.02	0.03	0.01	0.22	<0.01	
	Listvyanka	FP	0.16	0.08	0.04	0.24	0.05	0.06	0.06	0.13	0.24	0.05	0.02	0.06	0.05	0.05	0.04	
	Irkutsk	FP	0.50	0.26	0.28	0.28	0.14	0.16	0.13	0.14	0.45	0.16	0.11	0.15	0.14	0.18	0.30	
	Primorskaya	FP	0.25	0.26	0.11	0.22	0.27	0.79	0.18	0.14	0.10	0.05	0.03	0.12	0.04	0.08	0.08	
Thailand	Bangkok	FP	0.57	0.54	0.54	0.43	0.47	1.03	0.53	0.71	0.15	0.49	0.51	0.54	***	0.14	0.40	
	Pathumthani	FP	0.38	0.30	0.22	***	***	***	***	***	***	***	***	***	***	***	***	
	Khanchanaburi	FP	0.09	0.06	0.09	0.07	0.13	0.25	0.19	1.49	0.20	0.09	0.16	***	***	***	***	
	Mae Hia	FP	0.48	0.17	0.10	0.16	0.11	0.07	0.08	0.29	0.25	0.21	0.33					
	Sakaerat	FP	0.21	0.16	0.17	0.18	0.13	0.27	0.43	0.33	0.18	0.37	0.52					
Vietnam	Hanoi	FP	0.58	1.03	0.67	0.70	0.75	0.58	1.23	1.58	1.44	0.66	0.48	0.80	1.78	1.11	0.58	
	Hoa Binh	FP	0.13	0.28	0.23	0.31	0.44	0.26	0.78	1.21	0.54	0.49	0.84	0.65	0.47	0.84	0.89	
	Can Tho	FP						0.24	0.31	0.24	0.48	0.24	0.13	0.22	0.19	0.18	0.22	
	Ho Chi Minh	FP						0.26	0.37	0.38	1.08	1.05	1.36	1.18	0.84	0.88	0.88	
	Yen Bai	FP							0.83	1.18	0.88	0.78	0.90	0.78	1.14	1.03	0.82	

Terms and abbreviations are given in Table 4.2.

Table 4.36 Annual K⁺ in PM concentration from 2009 to 2023

unit: µg/m ³																	
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	Phnom Penh	FP		0.63	0.59	0.46	0.73	0.67	0.75	0.50	0.56	***	***	***	***	***	***
China	Hongwen	FP	0.68	3.46	0.72	***	***	***	***	0.55	0.51						
Indonesia	Jakarta	FP						0.96	0.48	0.32	0.22	0.71	0.71	0.34	0.38	0.61	***
	Serpong	FP	0.08	0.14	0.37	0.45	0.37	0.40	0.45	0.39	0.28	0.71	0.61	0.48	0.55	0.40	***
	Bandung	FP						0.55	0.74	0.48	0.47	0.64	0.73	0.39	0.44	0.46	***
Japan	Rishiri	FP	0.14	0.15	0.14	0.10	0.10	0.15	0.16	0.12	0.13	0.15	0.31	0.15	0.12	0.13	0.14
	Ochiishi	FP	0.18	0.13	0.12	0.10	0.12	0.13	0.15	0.14	0.11	0.12	0.12	0.08	0.17	0.19	0.12
	Tappi	FP	0.31	0.28	0.23	0.24	0.19	0.38	0.31	0.19	0.19	0.18					
	Sado-seki	FP	0.18	0.17	0.17	0.14	0.15	0.16	0.18	0.14	0.14	0.19	0.13	0.12	***	0.11	0.15
	Happo	FP	0.02	0.01	0.02	0.04	0.04	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.03
	Ijira	FP	0.13	0.09	0.11	0.06	0.07	0.11	0.09	0.09	0.10	0.11	0.09	0.06	0.08	0.08	0.09
	Oki	FP	0.20	0.22	0.24	0.22	0.24	0.24	0.20	0.54	0.29	0.20	0.19	0.18	0.19	0.19	0.16
	Banryu	FP	0.21	0.16	0.19	0.16	0.18	0.17	0.15	0.27	0.17	0.12					
	Yusuhara	FP	0.16	0.12	0.15	0.09	0.12	0.13	0.09	0.08	0.07	0.06	0.08	0.05	0.06	0.06	0.05
	Hedo	FP	0.29	0.21	0.12	0.25	0.26	0.28	0.24	0.26	0.25	0.25	0.24	0.24	0.23	0.22	0.17
	Ogasawara	FP	0.16	0.13	0.13	0.12	0.13	0.12	0.18	0.11	0.12	0.10	0.12	0.13	0.15	0.11	0.11
	Tokyo	FP	0.21	0.18	0.17	0.12	0.16	0.16	0.16	0.13	0.13	0.14	0.14	0.12	0.12	0.11	0.13
	Niigata-maki	FP												0.08	0.09	0.08	0.11
	Tsushima	FP												0.10	0.11	0.09	0.10
Lao PDR	Vientiane	FP							0.36	0.36	***	***	***	***	***	***	***
Malaysia	Petaling Jaya	FP	0.23	0.27	0.34	0.27	0.37	0.45	0.41	0.24	0.28	0.42	***	0.35	0.33	0.33	0.34
	Tanah Rata	FP	0.08	0.08	0.12	0.11	0.13	0.18	0.22	0.12	0.08	<0.01	***	0.13	0.10	0.10	0.13
	Danum Valley	FP	0.43	0.29	0.16	0.06	0.14	0.20	0.21	0.17	0.15	0.16	***	0.14	0.12	0.11	0.14
Mongolia	Ulaanbaatar	FP	0.16	0.22	0.29	***	***	***	***	0.08	0.15	0.06	0.05	0.06	0.04	***	***
	Terelj	FP	0.16	0.04	0.08	***	***	***	***	0.03	0.03	0.02	0.01	0.01	0.01	***	***
Myanmar	Yangon	FP			1.24	0.76	0.24	0.55	0.94	0.40	0.47	0.40	1.40	0.67	1.05	0.34	0.39
Philippines	Manila Observatory	FP	***	0.22	***	***	***	***	***	***	***	***	0.63	1.25	0.22	0.72	0.29
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	0.41	0.70
	Mt. Sto. Tomas	FP	0.14	0.15	***	0.01	0.01	0.07	0.06	0.10		***	***	***	***	***	***
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	0.49	0.20	***	***	0.29	0.29	0.21	0.20	0.17	0.09	0.17	0.14	0.17	0.13	0.12
	Jeju	FP with PM _{2.5} cyclone	0.21	0.12	***	***	0.15	0.25	0.11	0.15	0.10	0.07	0.09	0.06	0.03	0.03	0.03
	Imsil	FP with PM _{2.5} cyclone	0.35	0.25	***	***	0.16	0.16	0.13	0.15	0.15	0.13	0.14	0.08	0.04	0.08	0.06
Russia	Mondy	FP	0.02	0.04	0.02	0.08	0.08	0.01	0.03	0.03	0.08	0.04	0.05	0.04	0.04	0.03	<0.01
	Listvyanka	FP	0.11	0.07	0.06	0.28	0.06	0.05	0.05	0.07	0.28	0.05	0.04	0.06	0.02	0.06	0.01
	Irkutsk	FP	0.16	0.13	0.25	0.32	0.15	0.16	0.09	0.15	0.53	0.16	0.11	0.28	0.14	0.23	0.17
	Primorskaya	FP	0.37	0.44	0.27	0.30	0.40	0.20	0.23	0.19	0.14	0.06	0.05	0.09	0.05	0.09	0.06
Thailand	Bangkok	FP	0.43	0.39	0.41	0.37	0.47	0.85	0.49	0.87	0.21	0.47	0.41	0.43	***	0.43	0.27
	Pathumthani	FP	0.54	0.47	0.24	***	***	***	***	***	***	***	***	***	***	***	***
	Khanchanaburi	FP	0.27	0.06	0.13	0.06	0.19	0.43	0.27	1.78	6.90	0.35	0.44	***	***	***	***
	Mae Hia	FP	0.47	0.42	0.27	0.21	0.17	0.05	0.07	0.26	0.19	0.23	0.21				
	Sakaerat	FP	0.31	0.18	0.64	0.51	0.16	0.33	0.30	0.25	0.22	0.64	0.54				
Vietnam	Hanoi	FP	0.79	1.15	0.85	1.36	2.34	0.64	0.98	1.09	0.96	0.55	0.40	0.43	0.21	0.53	0.25
	Hoa Binh	FP	0.70	0.65	0.32	0.56	1.30	0.83	0.70	0.90	0.31	0.35	0.14	0.15	0.16	0.17	0.19
	Can Tho	FP						0.89	0.19	0.30	0.29	0.24	0.23	0.23	0.22	0.27	0.26
	Ho Chi Minh	FP						0.53	0.34	0.58	0.66	0.97	1.04	1.10	0.81	0.85	0.86
	Yen Bai	FP							1.11	0.94	0.91	0.85	0.27	0.31	0.44	0.31	0.19

Terms and abbreviations are given in Table 4.2.

Table 4.37 Annual Mg²⁺ in PM concentration from 2009 to 2023

unit: $\mu\text{g}/\text{m}^3$																		
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Cambodia	Phnom Penh	FP		0.12	0.14	0.11	0.14	0.13	0.17	0.12	0.16	***	***	***	***	***	***	
China	Hongwen	FP	0.33	0.48	0.31	***	***	***	***	0.25	0.30							
Indonesia	Jakarta	FP						0.34	0.16	0.09	0.07	0.18	0.20	0.12	0.20	0.16	***	
	Serpong	FP	0.02	0.02	0.05	0.09	0.08	0.09	0.07	0.06	0.05	0.11	0.15	0.09	0.14	0.07	***	
	Bandung	FP						0.14	0.21	0.17	0.15	0.17	0.19	0.12	0.13	0.11	***	
Japan	Rishiri	FP	0.24	0.26	0.22	0.19	0.19	0.25	0.29	0.19	0.23	0.26	0.43	0.23	0.24	0.26	0.24	
	Ochiishi	FP	0.56	0.34	0.30	0.25	0.35	0.33	0.34	0.28	0.30	0.31	0.30	0.24	0.49	0.55	0.34	
	Tappi	FP	0.68	0.48	0.46	0.60	0.49	1.11	0.90	0.43	0.44	0.42						
	Sado-seki	FP	0.31	0.32	0.30	0.29	0.31	0.29	0.38	0.32	0.32	0.48	0.33	0.30	***	0.29	0.32	
	Happo	FP	<0.01	<0.01	0.01	0.02	0.03	0.03	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.03	
	Ijira	FP	0.04	0.04	0.04	0.02	0.02	0.04	0.03	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.04	
	Oki	FP	0.34	0.44	0.36	0.39	0.46	0.44	0.40	0.47	0.79	0.44	0.38	0.44	0.45	0.50	0.37	
	Banryu	FP	0.20	0.20	0.21	0.17	0.22	0.22	0.20	0.14	0.28	0.19						
	Yusuhara	FP	0.08	0.08	0.07	0.06	0.08	0.06	0.05	0.05	0.04	0.05	0.05	0.05	0.06	0.05	0.05	
	Hedo	FP	0.58	0.44	0.29	0.53	0.63	0.67	0.55	0.65	0.65	0.69	0.63	0.63	0.60	0.57	0.41	
	Ogasawara	FP	0.36	0.30	0.32	0.31	0.33	0.31	0.36	0.31	0.31	0.29	0.33	0.34	0.40	0.29	0.30	
	Tokyo	FP	0.13	0.12	0.13	0.11	0.14	0.13	0.13	0.12	0.12	0.13	0.14	0.11	0.12	0.12	0.13	
	Niigata-maki	FP													0.13	0.16	0.15	0.19
	Tsushima	FP													0.13	0.14	0.11	0.11
Lao PDR	Vientiane	FP							0.05	0.05	***	***	***	***	***	***	***	
Malaysia	Petaling Jaya	FP	0.03	0.05	0.04	0.03	0.07	0.08	0.08	0.04	0.04	0.06	***	0.06	0.03	0.04	0.05	
	Tanah Rata	FP	0.01	0.02	0.02	0.02	0.03	0.04	0.04	0.02	<0.01	<0.01	***	0.02	0.02	0.02	0.02	
	Danum Valley	FP	0.07	0.10	0.02	<0.01	0.01	0.04	0.05	0.03	0.02	0.03	***	0.03	0.02	0.02	0.02	
Mongolia	Ulaanbaatar	FP	0.04	0.18	0.38	***	***	***	***	0.04	0.05	0.04	0.02	<0.01	0.02	***	***	
	Terelj	FP	0.04	0.04	0.05	***	***	***	***	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	***	***	
Myanmar	Yangon	FP			0.18	0.13	0.04	0.09	0.15	0.20	0.04	0.06	0.05	1.12	0.08	0.04	0.03	
Philippines	Manila Observatory	FP	***	0.10	***	***	***	***	***	***	***	***	0.10	0.13	0.19	<0.01	0.08	
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	0.05	0.09	
	Mt. Sto. Tomas	FP	<0.01	0.06	***	0.03	0.04	0.03	0.04	0.04	***	***	***	***	***	***	***	
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	0.03	0.04	***	***	0.08	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	0.02	
	Jeju	FP with PM _{2.5} cyclone	<0.01	0.04	***	***	0.04	0.04	0.03	0.07	0.03	0.03	<0.01	0.01	0.02	0.03	0.02	
	Imsil	FP with PM _{2.5} cyclone	0.02	0.05	***	***	0.03	0.03	0.03	0.08	0.03	0.02	<0.01	<0.01	<0.01	0.01	0.01	
Russia	Mondy	FP	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	
	Listvyanka	FP	0.03	0.02	0.02	0.01	<0.01	<0.01	<0.01	0.04	0.02	0.01	<0.01	<0.01	<0.01	0.01	0.01	
	Irkutsk	FP	0.08	0.08	0.09	0.06	0.04	0.05	0.04	0.06	0.04	0.26	0.02	0.02	0.02	0.05	0.05	
	Primorskaya	FP	0.07	0.08	0.07	0.06	0.08	0.20	0.05	0.07	0.01	<0.01	<0.01	0.02	<0.01	0.01	0.02	
Thailand	Bangkok	FP	0.09	0.14	0.09	0.07	0.11	0.20	0.13	0.12	0.07	0.13	0.10	0.07	***	0.03	0.15	
	Pathumthani	FP	0.07	0.05	0.04	***	***	***	***	***	***	***	***	***	***	***	***	
	Khanchanaburi	FP	0.03	<0.01	0.03	0.03	0.03	0.06	0.05	0.41	0.03	0.05	0.12	***	***	***	***	
	Mae Hia	FP	0.04	0.04	0.02	0.03	0.03	0.01	0.02	0.04	0.04	0.08	0.05					
	Sakaerat	FP	0.04	0.02	0.01	0.01	<0.01	0.02	0.03	0.22	0.05	0.29	0.36					
Vietnam	Hanoi	FP	0.32	0.48	0.35	0.41	0.46	0.41	0.57	0.50	0.38	0.26	0.17	0.24	0.16	0.36	0.18	
	Hoa Binh	FP	0.11	0.11	0.08	0.14	0.28	0.19	0.21	0.25	0.14	0.22	0.07	0.08	0.09	0.08	0.12	
	Can Tho	FP						0.15	0.20	0.22	0.40	0.37	0.42	0.42	0.37	0.36	0.42	
	Ho Chi Minh	FP						0.23	0.46	0.72	0.44	0.68	0.58	0.68	0.88	0.69	0.54	
	Yen Bai	FP							0.19	2.26	0.13	0.22	0.18	0.18	0.20	0.19	0.14	

Terms and abbreviations are given in Table 4.2.

Table 4.38 Annual Ca²⁺ in PM concentration from 2009 to 2023

unit: µg/m ³																		
Country	Site	Method	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Cambodia	Phnom Penh	FP		0.87	0.82	0.76	0.87	0.71	1.32	1.07	1.17	***	***	***	***	***	***	
China	Hongwen	FP	2.73	9.44	1.59	***	***	***	***	1.56	1.80							
Indonesia	Jakarta	FP						3.18	1.14	0.83	0.59	1.13		0.61	0.66	0.66	***	
	Serpong	FP	0.07	0.09	0.18	0.59	0.51	0.54	0.68	0.43	0.41	0.94	0.86	0.44	0.52	0.39	***	
	Bandung	FP						1.32	1.61	1.28	1.09	1.51	1.53	0.89	1.38	1.72	***	
Japan	Rishiri	FP	0.16	0.18	0.13	0.13	0.14	0.13	0.18	0.12	0.15	0.16	0.27	0.13	0.15	0.14	0.18	
	Ochiishi	FP	0.24	0.14	0.14	0.10	0.17	0.24	0.14	0.12	0.15	0.15	0.13	0.10	0.19	0.20	0.16	
	Tappi	FP	0.39	0.36	0.29	0.27	0.26	0.45	0.41	0.24	0.24	0.21						
	Sado-seki	FP	0.25	0.24	0.25	0.19	0.25	0.25	0.31	0.23	0.22	0.30	0.21	0.19	***	0.16	0.28	
	Happo	FP	0.07	0.05	0.04	0.11	0.19	0.18	0.13	0.10	0.07	0.12	0.05	0.10	0.08	0.09	0.16	
	Ijira	FP	0.14	0.15	0.17	0.08	0.09	0.13	0.11	0.12	0.11	0.13	0.12	0.07	0.12	0.09	0.14	
	Oki	FP	0.30	0.47	0.38	0.25	0.30	0.30	0.28	0.35	0.45	0.32	0.27	0.27	0.32	0.29	0.33	
	Banryu	FP	0.29	0.44	0.26	0.20	0.25	0.21	0.21	0.23	0.26	0.23						
	Yusuhara	FP	0.36	0.33	0.21	0.15	0.26	0.19	0.12	0.12	0.12	0.16	0.11	0.12	0.19	0.12	0.16	
	Hedo	FP	0.43	0.48	0.18	0.32	0.42	0.41	0.40	0.38	0.38	0.43	0.38	0.38	0.35	0.30	0.30	
	Ogasawara	FP	0.20	0.23	0.17	0.15	0.16	0.14	0.29	0.14	0.15	0.14	0.16	0.18	0.21	0.15	0.18	
	Tokyo	FP	0.51	0.59	0.49	0.36	0.52	0.49	0.45	0.40	0.43	0.46	0.46	0.39	0.41	0.38	0.45	
	Niigata-maki	FP													0.12	0.18	0.12	0.23
	Tsushima	FP													0.19	0.32	0.21	0.27
Lao PDR	Vientiane	FP							0.22	0.22	***	***	***	***	***	***	***	
Malaysia	Petaling Jaya	FP	0.34	0.46	0.37	0.38	0.47	0.81	0.81	0.44	0.35	0.55	***	0.36	0.20	0.26	0.22	
	Tanah Rata	FP	0.07	0.07	0.07	0.09	0.28	0.42	0.18	0.12	0.05	<0.01	***	0.06	0.09	0.08	0.08	
	Danum Valley	FP	0.04	0.07	0.02	0.02	0.04	0.07	0.04	0.03	0.02	0.04	***	0.02	0.01	0.01	0.02	
Mongolia	Ulaanbaatar	FP	1.43	1.45	3.35	***	***	***	***	0.55	0.74	0.83	0.54	0.50	0.79	***	***	
	Terelj	FP	0.32	0.16	0.32	***	***	***	***	0.40	0.06	0.08	0.06	0.05	0.11	***	***	
Myanmar	Yangon	FP			1.82	1.03	0.29	0.51	3.11	1.69	0.40	0.24	0.27	0.54	0.34	0.39	0.14	
Philippines	Manila Observatory	FP	***	0.66	***	***	***	***	***	***	***	***	0.71	1.08	1.39	0.52	1.11	
	Los Baños	FP	***	***	***	***	***	***	***	***	***	***	***	***	***	0.14	2.19	
	Mt. Sto. Tomas	FP	0.22	0.50	***	0.35	0.29	0.39	0.48	0.18	***	***	***	***	***	***	***	
Republic of Korea	Ganghwa	FP with PM _{2.5} cyclone	0.17	0.07	***	***	0.14	0.11	0.02	0.03	0.05	0.03	0.02	0.04	0.06	0.03	0.05	
	Jeju	FP with PM _{2.5} cyclone	0.08	0.07	***	***	0.09	0.10	0.08	0.12	0.05	0.08	0.07	0.03	0.04	0.02	0.03	
	Imsil	FP with PM _{2.5} cyclone	0.08	0.09	***	***	0.08	0.07	0.09	0.14	0.08	0.08	0.06	0.02	0.02	0.03	0.04	
Russia	Mondy	FP	0.05	0.04	0.04	0.05	<0.01	<0.01	0.03	0.08	0.06	0.05	0.01	0.01	<0.01	0.20	<0.01	
	Listvyanka	FP	0.19	0.12	0.10	0.14	0.06	0.08	0.15	0.21	0.07	0.10	0.05	0.04	0.03	0.08	0.07	
	Irkutsk	FP	0.49	0.59	0.35	0.49	0.36	0.42	0.44	0.38	0.23	0.27	0.17	0.13	0.16	0.33	0.38	
	Primorskaya	FP	0.37	0.41	0.28	0.41	0.35	0.35	0.44	0.34	0.09	0.05	0.06	0.17	0.05	0.11	0.15	
Thailand	Bangkok	FP	0.88	0.94	1.03	0.74	1.29	2.09	0.97	1.01	0.49	1.29	1.09	0.73	***	0.27	0.57	
	Pathumthani	FP	0.90	0.98	0.50	***	***	***	***	***	***	***	***	***	***	***	***	
	Khanchanaburi	FP	0.12	0.04	0.12	0.28	0.12	0.23	0.14	1.65	0.07	0.16	0.39	***	***	***	***	
	Mae Hia	FP	0.72	0.53	0.22	0.47	0.46	0.12	0.15	0.42	0.27	0.18	0.30					
	Sakaerat	FP	0.22	0.09	0.16	0.14	0.11	0.16	0.22	0.31	0.22	1.36	0.93					
Vietnam	Hanoi	FP	2.87	7.75	8.67	4.07	6.23	4.11	5.99	4.76	3.01	1.92	2.99	4.38	3.68	5.57	2.75	
	Hoa Binh	FP	1.27	1.24	1.62	1.50	3.12	1.62	1.84	2.04	0.94	1.36	1.50	2.15	1.84	2.03	2.71	
	Can Tho	FP						1.52	1.53	1.74	1.36	1.41	2.00	1.70	1.39	1.83	1.82	
	Ho Chi Minh	FP						1.18	1.05	1.78	2.88	2.63	2.71	2.85	2.28	2.41	2.57	
	Yen Bai	FP							4.08	0.17	2.42	2.63	2.26	3.12	3.02	3.10	2.64	

Terms and abbreviations are given in Table 4.2.

Table 4.39 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}**Site: Rishiri****Country: Japan**

2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.13	0.04	0.14	0.01	0.05	0.05	0.78	0.07	0.70	0.04	0.08	0.04
Feb	0.10	0.05	0.17	0.01	0.07	0.05	0.75	0.12	0.83	0.05	0.10	0.04
Mar	0.02	0.04	0.49	0.11	0.14	0.22	0.81	0.25	2.56	0.14	0.30	0.18
Apr	0.16	0.05	0.82	0.07	0.11	0.14	4.80	0.13	4.50	0.16	0.51	0.36
May	0.02	0.05	0.66	0.06	0.10	0.11	1.41	0.12	1.52	0.05	0.18	0.06
June	0.03	0.11	0.59	0.12	0.07	0.05	0.59	0.07	0.76	0.03	0.09	0.03
July	0.05	0.15	1.06	0.08	0.09	0.05	0.47	0.10	0.80	0.04	0.10	0.05
Aug	0.02	0.04	0.85	0.08	0.06	0.04	0.75	0.06	0.93	0.02	0.10	0.02
Sept	0.01	0.02	0.79	0.09	0.04	0.04	1.04	0.04	1.04	0.04	0.12	0.04
Oct	0.00	0.05	0.51	0.04	0.05	0.08	2.71	0.08	2.53	0.11	0.30	0.11
Nov	0.01	0.05	0.57	0.02	0.06	0.09	4.77	0.09	4.21	0.16	0.49	0.17
Dec	0.07	0.04	0.17	0.03	0.05	0.06	2.55	0.08	2.58	0.09	0.29	0.11
Annual	0.63	0.69	6.83	0.70	0.89	0.98	21.41	1.21	22.95	0.92	2.66	1.22

Table 4.40 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}**Site: Ochiishi****Country: Japan**

2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.20	0.08	0.05	0.01	0.07	0.06	1.59	0.12	1.45	0.04	0.16	0.04
Feb	0.15	0.09	0.05	0.01	0.09	0.08	1.15	0.18	1.13	0.03	0.12	0.03
Mar	0.13	0.08	0.28	0.11	0.07	0.10	1.18	0.16	1.11	0.03	0.11	0.04
Apr	0.09	0.10	0.62	0.13	0.11	0.19	3.63	0.15	3.42	0.09	0.38	0.21
May	0.10	0.10	0.51	0.15	0.10	0.13	1.98	0.12	2.03	0.04	0.22	0.06
June	0.10	0.10	0.56	0.17	0.05	0.06	0.58	0.06	0.67	0.02	0.07	0.02
July	0.12	0.22	1.27	0.16	0.08	0.06	0.30	0.08	0.51	0.01	0.05	0.01
Aug	0.17	0.12	1.02	0.12	0.07	0.05	1.22	0.05	1.32	0.03	0.14	0.03
Sept	0.13	0.04	0.84	0.10	0.04	0.05	1.60	0.03	1.54	0.03	0.17	0.04
Oct	0.09	0.07	0.70	0.06	0.05	0.12	4.41	0.09	4.07	0.09	0.45	0.10
Nov	0.10	0.10	0.51	0.02	0.05	0.09	3.97	0.09	3.55	0.08	0.40	0.09
Dec	0.20	0.10	0.16	***	0.05	0.06	1.89	0.08	1.70	0.04	0.19	0.06
Annual	1.57	1.20	6.57	1.03	0.82	1.05	23.50	1.21	22.50	0.54	2.46	0.72

Table 4.41 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}**Site: Sado-seki^{*3}****Country: Japan**

2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.16	0.31	0.47	0.01	0.55	0.75	69.59	0.74	64.08	1.90	7.11	2.38
Feb	0.20	0.30	0.48	0.01	0.61	0.90	31.47	1.00	30.74	1.96	3.45	1.19
Mar	0.24	0.66	0.99	0.15	0.26	0.42	9.27	0.23	10.21	0.38	1.28	1.64
Apr	0.20	0.69	1.31	0.12	0.42	0.74	20.09	0.30	20.15	0.80	2.46	3.08
May	0.14	0.71	1.35	0.06	0.28	0.40	5.50	0.29	6.58	0.29	0.86	0.81
June	0.11	0.58	1.91	0.09	0.30	0.33	3.54	0.29	6.03	0.24	0.71	0.43
July	0.14	0.70	1.77	0.00	0.40	0.31	5.46	0.29	7.62	0.23	0.93	0.48
Aug	0.05	0.53	0.99	0.16	0.27	0.27	2.23	0.27	3.74	0.11	0.42	0.14
Sept	0.06	0.30	0.94	0.11	0.20	0.24	8.49	0.14	9.74	0.26	1.14	0.32
Oct	0.09	0.32	0.54	0.04	0.31	0.53	31.49	0.27	31.71	0.88	3.71	1.19
Nov	0.09	0.25	0.48	0.03	0.27	0.42	67.86	0.31	61.65	1.37	6.40	2.11
Dec	0.11	0.18	0.40	0.01	0.38	0.55	93.28	0.40	83.37	1.96	9.29	3.05
Annual	1.59	5.52	11.64	0.79	4.25	5.86	348.27	4.53	335.62	10.36	37.75	16.83

1 NO₂ = NO_x- NO

Table 4.42 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Happo												
Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.04	0.37	0.05	***	0.14	0.07	0.15	0.15	0.44	0.08	0.09	0.36
Feb	0.07	0.42	0.07	***	0.19	0.13	0.15	0.24	0.51	0.06	0.09	0.37
Mar	0.14	0.45	0.30	***	0.19	0.32	0.17	0.26	0.52	0.08	0.14	0.84
Apr	0.08	0.49	0.47	***	0.27	0.40	0.66	0.36	1.18	0.19	0.36	2.02
May	0.11	0.77	0.55	***	0.16	0.08	0.03	0.13	0.29	0.06	0.12	0.45
June	0.05	0.87	0.68	***	0.16	0.05	0.02	0.24	0.20	0.06	0.07	0.22
July	0.08	0.82	0.66	***	0.19	0.04	0.05	0.24	0.29	0.05	0.10	0.42
Aug	0.12	0.63	0.17	***	0.17	0.01	0.02	0.23	0.27	0.03	0.03	0.03
Sept	0.16	0.21	0.11	***	0.05	0.01	0.40	0.07	0.44	0.02	0.05	0.04
Oct	0.05	0.25	0.23	***	0.07	0.05	1.31	0.06	1.64	0.06	0.18	0.11
Nov	0.09	0.47	0.26	***	0.13	0.09	0.10	0.10	0.79	0.08	0.12	0.42
Dec	0.05	0.14	0.08	***	0.07	0.04	0.12	0.08	0.37	0.04	0.06	0.23
Annual	1.05	5.89	3.62	***	1.78	1.29	3.19	2.16	6.94	0.81	1.40	5.50

Table 4.43 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Ijira ^{*3}												
Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	0.03	0.05	0.02	0.02	0.01	0.05	0.03	0.10	0.01	0.01	0.03
Feb	***	0.06	0.05	0.02	0.03	0.02	0.05	0.05	0.15	0.02	0.02	0.03
Mar	***	0.17	0.18	0.16	0.05	0.06	0.07	0.08	0.32	0.05	0.05	0.15
Apr	***	0.17	0.32	0.17	0.07	0.07	0.10	0.08	0.43	0.07	0.09	0.23
May	***	0.21	0.22	0.17	0.05	0.03	0.04	0.06	0.25	0.05	0.04	0.09
June	***	0.12	0.28	0.20	0.03	0.01	0.01	0.04	0.09	0.04	0.02	0.03
July	***	0.25	0.32	0.28	0.04	0.01	2.39	0.05	0.13	0.03	0.02	0.04
Aug	***	0.15	0.46	0.37	0.04	0.02	0.04	0.05	0.28	0.06	0.03	0.03
Sept	***	0.07	0.26	0.24	0.02	0.01	0.03	0.02	0.12	0.03	0.01	0.02
Oct	***	0.09	0.07	0.07	0.03	0.02	0.06	0.05	0.20	0.03	0.02	0.03
Nov	***	0.04	0.04	0.05	0.02	0.01	0.06	0.03	0.13	0.02	0.02	0.02
Dec	***	0.02	0.04	0.04	0.01	0.01	0.04	0.02	0.10	0.02	0.02	0.04
Annual	***	1.38	2.29	1.80	0.43	0.27	2.93	0.56	2.30	0.43	0.36	0.74

Table 4.44 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Oki ^{*3}												
Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.39	0.22	0.51	***	0.32	0.02	3.48	0.74	3.26	0.08	0.36	0.15
Feb	0.18	0.18	0.33	***	0.34	0.02	1.30	1.04	1.37	0.04	0.15	0.05
Mar	0.45	0.44	0.88	***	0.42	0.15	0.95	1.14	1.12	0.05	0.13	0.19
Apr	0.33	0.74	0.84	***	0.44	0.13	1.23	0.88	1.40	0.06	0.17	0.23
May	0.43	0.49	0.88	***	0.46	0.11	0.45	1.14	0.74	0.03	0.09	0.08
June	0.49	0.75	1.11	***	0.52	0.11	0.50	1.19	0.82	0.03	0.09	0.04
July	0.25	0.52	1.07	***	0.74	0.09	0.83	1.13	1.21	0.04	0.13	0.04
Aug	0.36	0.35	0.64	***	0.37	0.07	0.41	0.81	0.63	0.02	0.07	0.02
Sept	0.07	0.15	0.57	***	0.31	0.06	0.90	0.49	1.02	0.03	0.11	0.03
Oct	0.20	0.31	0.49	***	0.23	0.05	0.80	0.69	0.86	0.03	0.10	0.04
Nov	0.16	0.35	0.38	***	0.38	0.05	2.13	1.04	2.06	0.05	0.23	0.07
Dec	--	0.25	0.49	***	0.42	0.06	4.81	1.01	4.43	0.10	0.50	0.19
Annual	3.31	4.76	8.18	***	4.95	0.90	17.79	11.29	18.92	0.57	2.13	1.14

1 NO₂ = NOx - NO

Table 4.45 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Yusuhara Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.32	0.36	0.31	***	0.24	0.44	0.97	0.53	1.44	0.16	0.22	0.44
Feb	0.73	0.32	0.21	***	0.20	0.15	0.14	0.32	0.87	0.08	0.09	0.14
Mar	0.16	0.40	0.40	***	0.16	0.14	0.16	0.21	0.77	0.08	0.12	0.37
Apr	***	0.26	0.70	***	0.17	0.19	0.53	0.15	1.42	0.11	0.22	0.72
May	***	0.47	0.65	***	0.12	0.06	0.15	0.11	0.69	0.06	0.11	0.24
June	***	0.31	0.71	***	0.15	0.02	0.01	0.21	0.34	0.05	0.05	0.08
July	***	0.27	0.97	***	0.15	0.01	0.02	0.15	0.66	0.05	0.09	0.09
Aug	***	0.12	0.51	***	0.07	0.02	0.04	0.06	0.63	0.05	0.06	0.03
Sept	***	0.10	0.43	***	0.09	0.02	0.03	0.09	0.38	0.04	0.04	0.03
Oct	***	0.46	0.53	***	0.22	0.10	0.09	0.28	0.94	0.07	0.12	0.14
Nov	***	0.26	0.42	***	0.19	0.24	0.84	0.30	1.85	0.10	0.23	0.24
Dec	***	0.38	0.36	***	0.21	0.22	0.43	0.37	1.38	0.10	0.17	0.21
Annual	1.21	3.72	6.20	***	1.95	1.59	3.41	2.77	11.36	0.95	1.53	2.74

Table 4.46 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Hedo ^{*3} Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.19	0.23	0.43	0.03	0.22	0.44	25.87	0.19	24.48	0.67	2.87	1.17
Feb	0.07	0.17	0.46	0.01	0.21	0.38	17.23	0.23	17.14	0.49	2.01	0.70
Mar	0.16	0.13	0.59	0.08	0.21	0.35	12.41	0.20	12.59	0.38	1.48	0.67
Apr	0.14	0.09	0.48	0.13	0.18	0.27	8.62	0.13	8.81	0.28	1.10	0.84
May	0.08	0.08	0.43	0.11	0.12	0.19	6.80	0.10	7.00	0.21	0.82	0.41
June	0.29	0.10	0.90	***	0.11	0.14	8.11	0.09	8.26	0.29	0.96	0.39
July	0.16	0.05	0.67	***	0.06	0.06	6.04	0.06	5.79	0.17	0.66	0.19
Aug	0.15	***	***	***	***	***	***	***	***	***	***	***
Sept	0.02	***	***	***	***	***	***	***	***	***	***	***
Oct	0.04	***	***	***	***	***	***	***	***	***	***	***
Nov	0.11	***	***	***	***	***	***	***	***	***	***	***
Dec	0.17	***	***	***	***	***	***	***	***	***	***	***
Annual	1.58	0.87	3.96	0.36	1.11	1.84	85.09	1.00	84.08	2.48	9.89	4.36

Table 4.47 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}

Site: Ogasawara Country: Japan												
2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.91	0.04	0.14	***	0.10	0.08	3.44	0.08	3.86	0.10	0.49	0.20
Feb	0.26	0.03	0.21	0.00	0.08	0.09	5.35	0.07	5.43	0.15	0.64	0.20
Mar	0.07	0.02	0.29	0.03	0.09	0.09	5.37	0.08	5.35	0.10	0.57	0.20
Apr	0.59	0.03	0.53	0.03	0.16	0.16	7.89	0.08	7.76	0.21	0.94	0.59
May	0.36	0.04	0.52	0.01	0.12	0.12	8.88	0.08	8.95	0.22	1.03	0.32
June	1.02	0.03	0.61	0.00	0.13	0.06	3.29	0.08	3.82	0.11	0.44	0.15
July	0.61	0.01	0.30	***	0.05	0.02	2.14	0.04	2.26	0.06	0.28	0.07
Aug	0.11	0.01	0.43	***	0.06	0.02	9.25	0.04	8.73	0.25	1.08	0.28
Sept	0.03	0.01	0.32	***	0.03	0.02	4.25	0.03	4.08	0.10	0.47	0.10
Oct	0.14	0.00	0.14	***	0.02	0.02	2.79	0.02	2.79	0.08	0.31	0.07
Nov	0.15	0.00	0.02	***	0.01	0.01	0.76	0.00	0.72	0.02	0.08	0.02
Dec	***	***	***	***	***	***	***	***	***	***	***	***
Annual	4.24	0.21	3.49	0.07	0.86	0.70	53.41	0.60	53.75	1.41	6.32	2.21

1 NO₂ = NO_x- NO

Table 4.48 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}**Site: Niigata-maki****Country: Japan**

2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	0.10	0.13	0.31	0.02	0.04	0.05	0.32	0.09	0.31	0.01	0.03	0.01
Feb	0.17	0.13	0.34	0.02	0.07	0.09	0.23	0.14	0.25	0.01	0.03	0.01
Mar	0.20	0.34	0.80	0.30	0.10	0.15	0.20	0.13	0.28	0.02	0.04	0.06
Apr	0.14	0.32	0.75	0.25	0.10	0.14	0.23	0.09	0.30	0.02	0.04	0.07
May	0.18	0.40	0.96	0.21	0.11	0.11	0.08	0.12	0.17	0.01	0.03	0.04
June	0.10	0.49	1.15	0.32	0.09	0.06	0.06	0.09	0.14	0.01	0.02	0.01
July	0.14	0.56	1.08	0.28	0.16	0.07	0.04	0.15	0.18	0.01	0.02	0.02
Aug	0.08	0.44	1.06	0.32	0.12	0.09	0.06	0.10	0.21	0.01	0.02	0.02
Sept	0.14	0.27	0.88	0.35	0.07	0.06	0.14	0.05	0.23	0.01	0.03	0.01
Oct	0.11	0.14	0.40	0.08	0.05	0.06	0.29	0.06	0.31	0.01	0.04	0.01
Nov	0.35	0.13	0.35	0.10	0.04	0.05	0.40	0.05	0.39	0.01	0.05	0.02
Dec	0.15	0.11	0.51	0.15	0.03	0.04	0.43	0.04	0.40	0.01	0.05	0.02
Annual	1.86	3.45	8.57	2.40	0.97	0.97	2.50	1.12	3.17	0.14	0.39	0.30

Table 4.49 Monthly and annual dry deposition amounts of gaseous and particulate substances^{*2}**Site: Tsushima^{*3}****Country: Japan**

2023	Gases				Particulate matter components							
	SO ₂	HNO ₃	NH ₃	NO ₂ ^{*1}	nss-SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺
	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²	mmol m ⁻²
Jan	***	0.27	0.19	***	0.10	0.26	0.09	0.31	0.12	0.01	0.02	0.04
Feb	***	0.19	0.18	***	0.08	0.19	0.07	0.23	0.11	0.01	0.01	0.02
Mar	***	0.44	0.60	***	0.13	0.28	0.10	0.26	0.19	0.02	0.03	0.07
Apr	***	0.35	0.58	***	0.12	0.19	0.15	0.12	0.25	0.02	0.03	0.08
May	***	0.49	0.68	***	0.12	0.09	0.02	0.14	0.12	0.01	0.02	0.03
June	***	0.49	0.68	***	0.11	0.04	0.01	0.15	0.08	0.01	0.01	0.01
July	***	0.41	0.64	***	0.11	0.02	0.04	0.11	0.12	0.01	0.01	0.01
Aug	***	0.31	0.41	***	0.16	0.02	0.02	0.17	0.13	0.01	0.01	0.01
Sept	***	0.15	0.41	***	0.08	0.04	0.09	0.08	0.17	0.01	0.02	0.01
Oct	***	0.32	0.19	***	0.10	0.12	0.05	0.16	0.17	0.01	0.02	0.02
Nov	***	0.38	0.19	***	0.08	0.14	0.06	0.18	0.13	0.01	0.02	0.02
Dec	***	0.23	0.14	***	0.07	0.15	0.06	0.17	0.11	0.01	0.02	0.02
Annual	***	4.03	4.90	***	1.26	1.55	0.77	2.10	1.72	0.12	0.23	0.34

1 NO₂ = NOx - NO

Table 4.50 Conversion ratios from ppb to $\mu\text{g}/\text{m}^3$ (20°C, 1 atm)

Species	SO ₂	HNO ₃	HCl	NH ₃	NO	NO ₂	O ₃
Ratio	x 2.66	x 2.62	x 1.52	x 0.71	x 1.25	x 1.91	x 2.00

Table 4.51 Reporting limits for summarizing air concentration data

Species	Reporting limit
SO ₂	0.1 ppb
HNO ₃	0.1 ppb
HCl	0.1 ppb
NH ₃	0.1 ppb
NO, NO ₂ , NO _x	0.1 ppb
O ₃	1 ppb
PM	1 $\mu\text{g}/\text{m}^3$
Particulate matter components	0.01 $\mu\text{g}/\text{m}^3$

CHAPTER 5

Soil and Vegetation Monitoring

5. Soil and Vegetation Monitoring

5.1 Method

The basic survey was primarily carried out to achieve the initial objectives (namely, establishment of baseline data and early detection of possible impacts) in the participating countries, in accordance with the *Technical Documents for Soil and Vegetation Monitoring in East Asia (2000)*. General items are described in Table 5.1, but the actual implementation of item sets depended on respective site.

Table 5.1 Basic survey for soil and forest

Item	Parameters
Soil	- pH(H₂O), pH(KCl), Exchangeable base cations (Na⁺, K⁺, Ca²⁺, and Mg²⁺), Exchangeable acidity, Effective cation exchange capacity (ECEC), Carbonate content (if pH > 7) - Exchangeable Al and H, Total C content, Total N content (optional) - Available P, Sulfate (voluntary) - Physical properties (Fine earth bulk density, and Penetration resistance) (optional)
Forest	- General description of the forest (Description of trees, and Understory vegetation) - Observation of tree decline - Photographic record of tree decline, Estimation of decline causes (optional)

5.1.1 Field Operation

Basically, two forest areas with soils of different sensitivities to acid deposition are recommended to be selected in an area. Several plots (at least two) ranging from 5 m x 5 m to 10 m x 10 m should be chosen randomly in each forest area (each soil type). Five subplots, each measuring 1 m x 1 m, should be set up for soil sampling at the center and along the diagonal lines of the plot (Figure 5.1).

Three coaxial circular plots are established for the general description of trees, with areas of 1000, 400 and 200 square meters respectively (Figure 5.2). Observation of tree decline is carried out primarily for twenty selected dominant trees in four directions. The Sub-Manual on Forest Vegetation Monitoring, which was endorsed in 2006, recommends that the observation should be done at least once a year to detect possible effects of meteorological events. Decline symptoms of the observed trees were recorded according to the decline scale shown in Table 5.2.

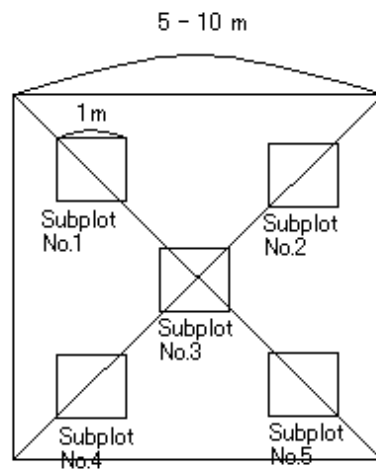


Figure 5.1 Plot for soil sampling

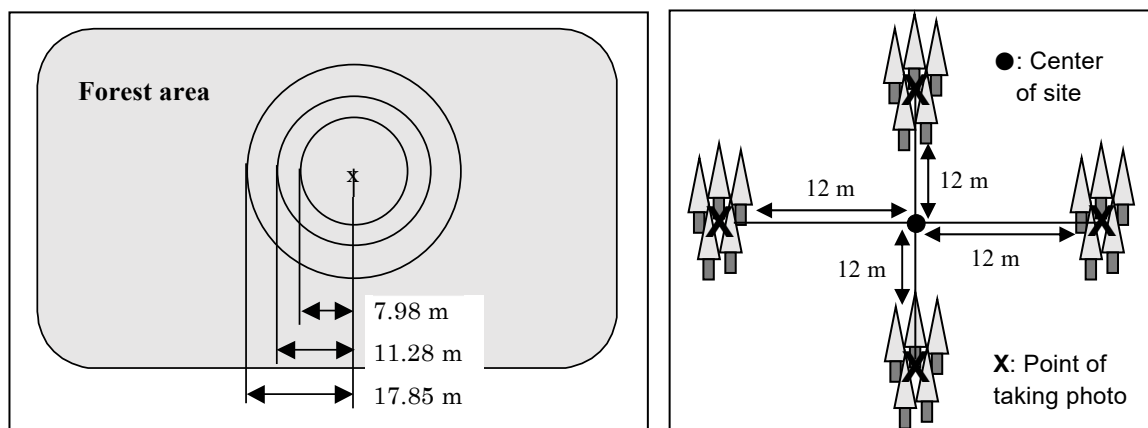


Figure 5.2 Plots for description of trees (Left) and selection of observation trees (Right)

Table 5.2 Observation items and decline scale

Items	Decline scale and observations
Vitality of tree	0. No damage, 1. Slightly damaged, 2. Evidently damaged, 3. Severely damaged, 4. Dead
Form of tree	0. Normal, 1. Some branches lacking, 2. Evidently wanting, 3. Severely wanting, 4. Dead or almost dead
Branch growth	0. Normal growth, 1. Somewhat reduced, 2. Short and slender, 3. Extremely short
Dieback of stem	0. Not found, 1. Slightly dieback, 2. Evidently dieback, 3. Severe dieback if found, 4. Completely dead
Defoliation of crown ^{*1}	0. Not defoliated (0–10%), 1. Slightly defoliated (>10–25%), 2. Moderately defoliated (>25–60%), 3. Severely defoliated (>60%), 4. Dead
Deformation of leaves	0. Normal, 1. Slightly deformed, 2. Evidently deformed, 3. Completely deformed
Size of leaves	0. Normal, 1. Somewhat small, 2. Evidently small, 3. Very small
Discoloration of leaves ^{*1}	0. None (0–10%), 1. Slight (>10–25%), 2. Moderate (>25–60%), 3. Severe (>60%)
Injury of leaves	0. No symptoms, 1. Slightly injured, 2. Evidently injured, 3. Severely injured

^{*1}. Definition of the scale was updated in the Sub-Manual on Forest Vegetation Monitoring (2006).

5.1.2 Laboratory Operation

Analytical methods recommended in the manual are presented in Table 5.3.

Table 5.3 Analytical equipment and methods for soil monitoring

Parameters	Equipment/methods
<i>Chemical Properties of Soil</i>	
a) Moisture Content	Drying oven, Balance
b) pH(H ₂ O) and pH(KCl)	Glass electrode
c) Exchangeable Base Cations (Ca ²⁺ , Mg ²⁺ , K ⁺ and Na ⁺)	AAS or ICP-AES (CH ₃ COONH ₄ -Extraction)
d) Exchangeable Acidity	Titration (KCl-Extraction)
e) Exchangeable Al, H	ibid.
f) Effective Cation Exchange Capacity (ECEC)	Calculation (as sum of exchangeable cations)
g) Carbonate Content (for calcareous soil)	Volumetric calcimeter
h) Total Carbon Content	Titration (Walkley-Black method) or CN-analyzer
i) Total Nitrogen Content	Titration (Kjeldahl method) or CN-analyzer
j) Available Phosphate	Spectrophotometry (Bray-1 test)
k) Sulfate	Turbidimetry, IC or ICP-AES
<i>Physical Properties of Soil</i>	
a) Fine Earth Bulk Density	Metal sampling cylinder, Drying oven, Balance
b) Penetration Resistance (in the fieldwork)	Pocket penetrometer

5.1.3 Monitoring Sites

Soil and vegetation monitoring data were submitted from seven areas in three countries this year. The list of monitoring sites and reported items for 2023 is shown in Table 5.4.1. Observations of the tree decline were conducted at eight sites. In Malaysia, two new sites in the Pasoh area (MYS201 and MYS202) were established, and soil monitoring data and description of trees were submitted. Although the forest survey was conducted in 2022, the data is included in this report as an exception. The number of soil and vegetation plots at each monitoring site, along with the number of surveys conducted until 2023, is shown in Table 5.4.2.

Table 5.4.1 Outline of the Monitoring Sites in 2023

Country	Nearest air concentration / acid deposition monitoring site	Site name EANET site code	Soil type	Items ^{*1}
China	Jinyunshan (Chongqing)	Jinyunshan CNS004	Acidic-Udic Argosol	F ₁
	Jiwozi (Xi'an)	Dabagou CNS007	Brown soil	F ₁
	Xiaoping (Xiamen)	Xiaoping CNS009	Red soil	F ₁
	Zhuxiandong (Zhuhai)	Zhuxiandong CNS011	Red soil	F ₁
Japan	Happo	Sekido-san JPS005	Cambisols	F ₁
		Horyu-zan JPS105	Alisols	F ₁
	Ijira	Ijira JPS006	Cambisols	F ₁
		Yamato JPS106	Andosols	F ₁
Malaysia	Petaling Jaya	Pasoh TEAM Plot 1 MYS201	Haplic Acrisol	S
		Pasoh TEAM Plot 8 MYS202	Haplic Acrisol	S
Philippines	Los Baños	Mt. Makiling PHS002	Eutric Cambisol	S, F ₁ , F ₂
		UP Quezon, Land Grant PHS102	Dystic Nitosol	S, F ₁ , F ₂

^{*1} S, Soil chemical analysis; F₁, Observation of tree decline; F₂, Description of trees and understory vegetation survey

Table 5.4.2 Site locations and number of plots and surveys conducted until 2023

Country	Area (Nearest air concentration / acid deposition monitoring site)	Soil and vegetation monitoring site	EANET site code	Number of plots		Start year	Latest survey	Number of surveys until 2023			
				Forest plot	Soil plot			Tree decline	Forest survey	Understory survey	Soil survey
China	Jiayunshan (Chongqing)	Jiayunshan	CNS004	2	2	2000	2023	18	6	6	7
	Jiwozi (Xi'an)	Dabagou	CNS007	1	2	2001	2023	18	6	6	7
	Xiaoping (Xiamen)	Xiaoping	CNS009	1	1	2000	2023	17	5	4	5
	Zhuxiandong (Zhuhai)	Zhuxiandong	CNS011	3	3	2001	2023	10	8	8	7
Indonesia	Serpong	Bogor Research Forest (Dramaga Experimental Forest)	IDS002	1	1	2001	2019	7	1	1	5
Japan	Happo ^{*1}	Sekido-san	JPS005	1	2	2001	2023	21	5	5	5
		Horyu-zan	JPS105	1	2	2001	2023	21	5	5	5
	Ijira	Ijira	JPS006	1	2	2000	2023	21	5	5	5
		Yamato	JPS106	1	2	2003	2023	21	4	4	4
	Banryu ^{*1}	Banryu-2	JPS008	1	2	2000	2018	17	4	4	4
		Iwami "rinku" Factory Park	JPS108	1	2	2001	2018	17	4	4	4
Malaysia	Petaling Jaya	Pasoh Reserve Forest 1	MYS001	0	1	2000	2018				3
		Pasoh Reserve Forest 2	MYS101	0	1	2014	2018				2
	Petaling Jaya ^{*2}	Pasoh TEAM Plot 1	MYS201	1	1	2022	2023	0	0	0	1
		Pasoh TEAM Plot 8	MYS202	1	1	2022	2023	0	0	0	1
	(Bintulu)	UPMKB Rehabilitated Forest Planted in 1991	MYS005	0	2	2009	2012				2
		UPMKB Rehabilitated Forest Planted in 2008	MYS105	0	2	2009	2012				2
Mongolia	Ulaanbaatar	Bogdkhan Mountain	MNS001	1	2	2005	2017	1	1	0	2
	Terelj	Terelj Mountain	MNS002	0	2	2014	2017				2
Philippines	Los Baños	Mt. Makiling	PHS002	1	2	2000	2023	3	4	4	4
		UP Quezon, Land Grant	PHS102	1	2	2000	2023	4	3	4	5
	Metro Manila	La Mesa Watershed	PHS001	1	2	2007	2010	2	2	2	2
	Mt. Sto Tomas	Boneco Long Term Ecological Research Site	PHS003	1	2	2008	2008	1	1	1	1
Republic of Korea	Imasil	Mt. Naejang	KRS003	1	2	2001	2004	2	2	2	2
Russia	Irkutsk	Irkutsk	RUS003	1	1	2001	2013	2	2	2	2
	Listvyanka	Bolshie Koty	RUS002	1	2	2000	2013	1	1	1	2
		Pereemnaya river catchment	RUS102	1	2	2005	2005	1	1	1	1
	Mondy	Ilchir Lake	RUS001	0	2	1999	1999				1
		Okinskoe Lake	RUS101	0	1	1999	1999				1
		Solar Observatory	RUS201	1	2	1999	2014	1	1	1	2
	Primorskaya	Primorskaya	RUS004	1	1	2006	2013	1	1	1	2
Thailand	Vajiralongkorn Dam	Vajiralongkorn Dam	THS004	1	2	2000	2012	2	4	3	6
	(old name: Kao Lam Dam)	Vajiralongkorn Puye	THS104	1	1	2002	2012	2	5	4	4
Vietnam	Hoa Binh	Cave of Heaven	VNS002	0	2	1999	1999				1
		Thang Ranh	VNS102	0	2	1999	1999				1

Bold letters indicate that soil and/or vegetation monitoring was conducted in 2023. Gray cells indicate sites with soil monitoring only.

*1, Banryu was closed in 2018, and Happo was added alternatively. *2, The Pasoh TEAM 1 and 8 plots in Petaling Jaya were newly added and started monitoring in 2022.

5.2 Results of Monitoring

The results of the basic survey for soil and forest are reported in the following tables:

➤ **Table 5.5: Soil chemical analysis**

Table 5.5.1 Pasoh TEAM Plot 1 (Area: Petaling Jaya, Malaysia) MYS201

Table 5.5.2 Pasoh TEAM Plot 8 (Area: Petaling Jaya, Malaysia) MYS202

Table 5.5.3 Mt. Makiling (Area: Los Baños, Philippines) PHS002

Table 5.5.4 UP Quezon, Land Grant (Area: Los Baños, Philippines) PHS102

➤ **Table 5.6: Observation of tree decline**

Table 5.6.1 Jinyunshan-1 (Area: Jinyunshan, China) CNS004

Table 5.6.2 Jinyunshan-2 (Area: Jinyunshan, China) CNS004

Table 5.6.3 Dabagou (Area: Jiwozi, China) CNS007

Table 5.6.4 Xiaoping (Area: Xiaoping, China) CNS009

Table 5.6.5 Zhuxiandong-1 (Area: Zhuxiandong, China) CNS011

Table 5.6.6 Zhuxiandong-2 (Area: Zhuxiandong, China) CNS011

Table 5.6.7 Zhuxiandong-3 (Area: Zhuxiandong, China) CNS011

Table 5.6.8 Sekido-san (Area: Happo, Japan) JPS005

Table 5.6.9 Horyu-zan (Area: Happo, Japan) JPS105

Table 5.6.10 Ijira (Area: Ijira, Japan) JPS006

Table 5.6.11 Yamato (Area: Ijira, Japan) JPS106

Table 5.6.12 Mt. Makiling (Area: Los Baños, Philippines) PHS002

Table 5.6.13 UP Quezon, Land Grant (Area: Los Baños, Philippines) PHS102

➤ **Table 5.7: Description of trees**

Table 5.7.1 Mt. Makiling (Area: Los Baños, Philippines) PHS002

Table 5.7.2 UP Quezon Land Grant (Area: Los Baños, Philippines) PHS102

➤ **Table 5.8: Understory vegetation survey**

Table 5.8.1 Mt. Makiling (Area: Los Baños, Philippines) PHS002

Table 5.8.2 UP Quezon, Land Grant (Area: Los Baños, Philippines) PHS102

Table 5.5.1 Soil chemical analysis: Pasoh TEAM Plot 1 (Area: Petaling Jaya, Malaysia) MYS201

Soil sampling date: January 2023

Name of analysis laboratory: Forest Research Institute Malaysia (FRIM)

Location	Soil type	Plot No.	Subplot No.	Layer analyzed (cm)	Repeat analysis	Water content (%)	pH		Exchangeable base cations (B)					Ex-acidity		Ex-acid cations		ECEC (A) + (B)	Total C	Total N		Available P	Sulfate -S (mg kg ⁻¹)
							H ₂ O	KCl	Ca	Mg	K	Na	(A)	Al	H	C	N						
Pasoh TEAM Plot 1 MYSS201	Typic Paleudults (USDA) / Haplic Acrisol (FAO)	Tawar	SPF Pasoh	0-15	1	0.8	4.2	3.9	0.10	0.10	0.13	0.012	1.7	0.75	0.95	2.0	1.8	0.1	0.15	0.020			
					2	1.0	4.2	3.9	0.13	0.16	0.16	0.000	1.3	0.65	0.60	1.7	2.4	0.2	0.26	0.030			
					3	0.6	4.3	4.0	0.11	0.10	0.08	0.003	1.3	0.50	0.75	1.5	2.0	0.1	0.21	0.040			
				15-30	1	1.0	4.3	3.9	0.10	0.07	0.11	0.032	1.3	0.50	0.75	1.6	1.4	0.1	0.15	0.030			
					2	0.6	4.3	4.0	0.08	0.12	0.09	0.000	1.3	0.50	0.75	1.5	1.5	0.1	0.20	0.030			
					3	0.4	4.5	4.0	0.06	0.11	0.11	0.042	1.3	0.25	1.0	1.6	1.4	0.1	0.16	0.030			

Note: Soil samples were collected from the uppermost and subsequent layers according to soil horizon, not by fixed layer.

Table 5.5.2 Soil chemical analysis: Pasoh TEAM Plot 8 (Area: Petaling Jaya, Malaysia) MYS202

Soil sampling date: January 2023

Name of analysis laboratory: Forest Research Institute Malaysia (FRIM)

Location	Soil type	Plot No.	Subplot No.	Layer analyzed (cm)	Repeat analysis	Water content (%)	pH		Exchangeable base cations (B)					Ex-acidity		Ex-acid cations			ECEC (A) + (B)	Total		Available P	Sulfate -S
							H ₂ O	KCl	Ca	Mg	K	Na	(A)	Al	H	C	N						
																		(%)		(%)			
Pasoh TEAM Plot 8 MYSS202	Typic Paleudults (USDA) / Haplic Acrisol (FAO)	Kengam	Felda Pasoh 3	0-15	1	0.8	4.3	3.8	0.13	0.14	0.07	0.000	1.5	0.75	0.75	1.8	2.3	0.2	0.13	0.020			
					2	0.4	4.4	3.8	0.20	0.14	0.29	0.000	1.3	0.25	1.00	1.9	1.9	0.2	0.16	0.040			
					3	1.0	4.5	3.9	0.23	0.19	0.45	0.048	1.5	0.75	0.75	2.4	1.5	0.1	0.12	0.030			
				15-30	1	0.8	4.3	3.9	0.08	0.15	0.08	0.008	1.3	0.50	0.75	1.6	1.5	0.1	0.12	0.040			
					2	0.6	4.5	3.9	0.11	0.14	0.13	0.000	1.3	0.50	0.75	1.6	1.4	0.1	0.22	0.030			
					3	0.2	4.4	4.0	0.14	0.13	0.29	0.073	1.3	0.25	1.0	1.9	1.1	0.1	0.12	0.040			

Note: Soil samples were collected from the uppermost and subsequent layers according to soil horizon, not by fixed layer.

Table 5.5.3 Soil chemical analysis: Mt. Makiling (Area: Los Banos, Philippines) PHS002
Soil sampling date: 9 October 2023
Name of analysis laboratory: EMB Central Office Laboratory

Location	Soil type	Plot No.	Subplot No.	Layer analyzed (cm)	Repeat analysis	Water content (%)	pH		Exchangeable base cations (B)				Ex-acidity		Ex-acid cations (A)		ECEC (A) + (B)	Total C (%)	Total N (%)	Available P (mg kg ⁻¹)	Sulfate -S (mg kg ⁻¹)	Bulk density (Mg m ⁻³)	Penetration resistance (kg cm ⁻²)
							H ₂ O	KCl	Ca	Mg	K	Na	(A)	Al	H	(A) + (B)							
Mt. Makiling PHS002 Eutric Cambisol							1																
			2																				
			1																				
			2																				
			1																				
			2																				

Table 5.5.4 Soil chemical analysis: UP Quezon, Land Grant (Area: Los Banos, Philippines) PHS102

Soil sampling date: 10 October 2023

Name of analysis laboratory: EMB Central Office Laboratory

Location	Soil type	Plot No.	Subplot No.	Layer analyzed (cm)	Repeat analysis	Water content (%)	pH		Exchangingable base cations (B)				Ex-acidity		Ex-acid cations (A)		ECEC (A) + (B)	Total C (%)	Total N (%)	Available P (mg kg ⁻¹)	Sulfate -S (mg kg ⁻¹)	Bulk density (Mg m ⁻³)	Penetration resistance (kg cm ⁻²)
							H ₂ O	KCl	Ca	Mg	K	Na	(A)	Al	H								
UP Quezon, Land Grant PHS102 Dystic Nitosol	1		1				11.1	3.9	3.6	0.16	0.23	0.40	0.079	7.5	7.1	0.83	8.3	NA	NA	NA	NA	0.66	0.37
							38.3	4.1	3.8	0.13	0.22	0.21	0.053	5.3	5.0	0.66	6.0	NA	NA	NA	NA	0.70	0.30
							10.1	4.1	3.7	0.13	0.22	0.21	0.066	5.8	5.6	0.49	6.4	NA	NA	NA	NA	0.69	0.57
							17.9	4.1	3.6	0.28	0.19	0.25	0.030	6.2	5.7	0.61	7.0	NA	NA	NA	NA	0.58	0.30
							42.6	4.2	3.7	0.20	0.19	0.33	0.056	6.1	5.6	0.45	6.9	NA	NA	NA	NA	0.56	0.27
		2	1				24.3	4.3	3.7	0.11	0.13	0.18	0.096	7.7	7.6	0.64	8.2	NA	NA	NA	NA	NA	NA
							9.4	4.2	3.9	0.071	0.10	0.14	0.067	4.3	4.2	0.30	4.7	NA	NA	NA	NA	NA	NA
							8.5	4.4	3.8	0.079	0.11	0.11	0.049	3.7	3.6	0.19	4.0	NA	NA	NA	NA	NA	NA
							53.7	4.3	3.7	0.18	0.16	0.21	0.042	7.5	6.9	0.76	8.1	NA	NA	NA	NA	NA	NA
							9.0	4.2	3.7	0.11	0.12	0.27	0.055	3.8	3.5	0.24	4.3	NA	NA	NA	NA	NA	NA
		2					4.2	4.0	3.7	0.25	0.28	0.33	0.12	4.7	4.4	0.40	5.7	NA	NA	NA	NA	0.65	0.43
							44.6	4.1	3.8	0.18	0.14	0.25	0.10	5.7	4.9	0.69	6.4	NA	NA	NA	NA	0.64	0.50
							40.7	4.2	3.8	0.25	0.23	0.20	0.093	5.2	5.0	0.56	5.9	NA	NA	NA	NA	0.69	0.50
							38.9	4.1	3.7	0.27	0.20	0.43	0.15	5.7	5.0	0.52	6.8	NA	NA	NA	NA	0.72	0.37
							34.8	4.0	3.7	0.17	0.15	0.20	0.042	6.6	5.8	0.69	7.1	NA	NA	NA	NA	0.65	0.37
	1		1				9.8	4.1	3.8	0.082	0.10	0.12	0.078	4.8	4.5	0.33	5.2	NA	NA	NA	NA	NA	NA
							35.7	4.3	3.9	0.14	0.095	0.24	0.070	4.9	4.8	0.50	5.5	NA	NA	NA	NA	NA	NA
							34.6	4.1	3.8	0.11	0.11	0.14	0.075	5.4	4.9	0.51	5.9	NA	NA	NA	NA	NA	NA
							28.2	4.2	3.9	0.090	0.087	0.24	0.12	5.2	4.7	0.37	5.7	NA	NA	NA	NA	NA	NA
							25.2	4.2	3.9	0.11	0.091	0.13	0.038	6.8	5.9	0.55	7.2	NA	NA	NA	NA	NA	NA
		2	1				11.1	4.3	4.0	0.13	0.26	0.45	0.11	7.5	7.2	0.39	8.5	NA	NA	NA	NA	-	-
							38.3	4.5	4.2	0.12	0.19	0.21	0.076	4.8	4.3	0.69	5.4	NA	NA	NA	NA	-	-
							10.1	4.4	4.1	0.13	0.20	0.19	0.083	5.7	5.5	0.26	6.3	NA	NA	NA	NA	-	-
							17.9	4.5	4.1	0.26	0.19	0.26	0.064	5.6	5.1	0.70	6.4	NA	NA	NA	NA	-	-
							42.6	4.6	4.1	0.19	0.18	0.34	0.084	5.1	4.9	0.47	5.9	NA	NA	NA	NA	-	-
	2		1				24.3	4.6	4.1	0.094	0.11	0.18	0.11	7.1	6.7	0.51	7.5	NA	NA	NA	NA	-	-
							9.4	4.6	4.2	0.049	0.084	0.13	0.071	4.2	7.9	0.51	4.6	NA	NA	NA	NA	-	-
							8.5	4.4	4.2	0.067	0.11	0.11	0.065	5.4	4.9	0.55	5.7	NA	NA	NA	NA	-	-
							53.7	4.5	4.1	0.15	0.14	0.20	0.061	7.5	6.8	0.84	8.0	NA	NA	NA	NA	-	-
							9.0	4.4	4.1	0.093	0.11	0.28	0.088	5.2	5.0	0.30	5.7	NA	NA	NA	NA	-	-
		2	1				4.2	4.2	4.0	0.29	0.32	0.34	0.14	4.9	4.5	0.44	6.0	NA	NA	NA	NA	-	-
							44.6	4.6	4.1	0.17	0.14	0.27	0.13	4.7	4.6	0.45	5.5	NA	NA	NA	NA	-	-
							40.7	4.6	4.2	0.23	0.26	0.21	0.11	4.9	4.7	0.31	5.7	NA	NA	NA	NA	-	-
							38.9	4.5	4.1	0.25	0.21	0.40	0.15	5.2	4.9	0.60	6.2	NA	NA	NA	NA	-	-
							34.8	4.6	4.1	0.15	0.15	0.18	0.050	6.3	5.7	0.43	6.9	NA	NA	NA	NA	-	-
	2		2				9.8	4.6	4.1	0.076	0.11	0.13	0.11	4.4	4.0	0.28	4.8	NA	NA	NA	NA	-	-
							35.7	4.6	4.2	0.11	0.099	0.23	0.075	4.7	4.4	0.39	5.2	NA	NA	NA	NA	-	-
							34.6	4.6	4.2	0.082	0.11	0.12	0.070	5.3	4.9	0.39	5.7	NA	NA	NA	NA	-	-
							28.2	4.1	4.2	0.078	0.090	0.23	0.14	5.1	4.7	0.49	5.7	NA	NA	NA	NA	-	-
							25.2	4.5	4.1	0.092	0.085	0.11	0.044	6.6	6.0	0.46	6.9	NA	NA	NA	NA	-	-

Table 5.6.1 Observation of tree decline: Jinyunshan-1 (Area: Jinyunshan, China) CNS004

Plot name: Jinyunshan-1, Forest type: Secondary, Stand age: 77 years in 2020

Date: 9 November 2023

Surveyor: Wangziyi

Individual No.	1 (3)	2 (2)	3 (58)	4 (101)	5 (105)	6 (70)	8 (72)	9 (103)	10 (104)	7 (102)
Direction (E, W, S, or N)	E	E	E	S	S	W	W	N	N	S
Plant Name	<i>Cunninghamia lanceolata</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>
Relative height							Dead			Null
Tree height (m)	20.8	12.3	9.3	16.0	15.4	10.8		14.8	14.6	
DBH (cm)	19.5	16.7	13.8	15.6	15.9	11.5		14.8	11.0	
Vitality of tree										
Form of tree	1									
Branch growth										
Dieback of stem										
Defoliation of crown	1									
Deformation of leaves	1								1	
Size of leaves										
Discoloration of leaves										
Injury of leaves										
Damage class ^{*1}										

Estimated cause of decline: Insect pest (termite)

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.2 Observation of tree decline: Jinyunshan-2 (Area: Jinyunshan, China) CNS004

Plot name: Jinyunshan-2, Forest type: Secondary, Stand age: 77 years in 2020

Date: 9 November 2023

Surveyor: Wangziyi

Individual No.	1 (67)	2 (68)	3 (74)	4 (76)	6 (41)	8 (71)	9 (70)	10 (69)
Direction (E, W, S, or N)	E	E	S	S	W	N	N	N
Plant Name	<i>Symplocos setchuensis</i>	<i>Symplocos setchuensis</i>	<i>Adiantum bockiana</i>	<i>Symplocos setchuensis</i>	<i>Adiantum bockiana</i>	<i>Symplocos lanceolata</i>	<i>Elaeagnus japonicus</i>	<i>Macclura pingii</i>
Relative height								Null
Tree height (m)	13.3	12.3	18.3	19.3	22.3	16.9	20.3	
DBH (cm)	14.6	18.7	20.9	26.8	22.0	18.4	41.6	
Vitality of tree								
Form of tree				1				
Branch growth								
Dieback of stem				1			1	
Defoliation of crown								
Deformation of leaves								
Size of leaves								
Discoloration of leaves								
Injury of leaves						1		
Damage class ^{*1}								

Estimated cause of decline: Insect pest (termite)

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.3 Observation of tree decline: Dabagou (Area: Jiwozi, China) CNS007

Plot name: Dabagou, Forest type: Man-made, Stand age: 41-44 years in 2023

Date: 21 November 2023

Surveyor: Song Xue Juan

Individual No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	E	E	E	E	E	S	S	S	S	S	W	W	W	W	W	N	N	N	N	N
Plant Name	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>	<i>Pinus amandii</i>
Relative height																				
Tree height (m)	17.3	14.5	12.2	14.9	12.0	12.0	9.9	9.1	11.0	14.9	14.6	12.6	10.9	15.7	11.4	13.4	11.9	13.8	11.5	8.8
DBH (cm)	26.0	26.0	17.0	21.7	24.8	18.0	12.8	19.2	16.0	19.3	28.8	24.2	15.1	24.6	16.7	24.7	16.4	24.4	16.2	9.2
Vitality of tree																				
Form of tree																				
Branch growth																				
Dieback of stem																				
Defoliation of crown																				
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves																				
Injury of leaves																				
Damage class ^{*1}																				
Estimated cause of decline:																				

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.4 Observation of tree decline: Xiaoping (Area: Xiaoping, China) CNS009

Plot name: XPZ-01, Forest type: Man-made, Stand age: 28 years in 2012

Date: 23 October 2023

Surveyor: Zhang Yashuang

Individual No.	120	210	211	116	203	225	227	301	220	221	337	334	333	313	314	310	309	308
Direction (E, W, S, or N)	E	E	E	E	S	S	S	S	W	W	W	W	W	N	N	N	N	N
Plant Name	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>	<i>Michelia macclurei</i>
Relative height																		
Tree height (m)	17.0	17.6	18.7	17.7	16.8	17.7	18.6	18.2	17.9	18.7	18.1	17.8	18.8	17.5	17.4	17.6	17.4	19.7
DBH (cm)	17.5	21.0	19.9	20.3	21.8	24.9	21.7	20.5	18.5	22.9	20.7	20.5	18.9	21.8	20.7	20.5	21.7	29.9
Vitality of tree																		
Form of tree																		
Branch growth																		
Dieback of stem																		
Defoliation of crown																		
Deformation of leaves																		
Size of leaves																		
Discoloration of leaves																		
Injury of leaves																		
Damage class ^{*1}																		
Estimated cause of decline:																		

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.5 Observation of tree decline: Zhuxiandong-1 (Area: Zhuxiandong, China) CNS011

Plot name: Zhuxiandong-1, Forest type: Man-made, Stand age: Approx. 30 years in 2023

Date: 29 December 2023

Surveyor: Zheng Mingxuan

Individual No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	E	E	E	E	E	S	S	S	S	S	W	W	W	W	W	N	N	N	N	N
Plant Name	<i>Tridacta cochinchinensis</i>	<i>Pinus ellipti</i>	<i>Tridacta cochinchinensis</i>	<i>Acacia confusa</i>	<i>Pinus ellipti</i>	<i>Pinus ellipti</i>	<i>Pinus ellipti</i>	<i>Pinus ellipti</i>	<i>Heplopleurum heptaphyllum</i>	<i>Mangifera indica</i>	<i>Pinus ellipti</i>	<i>Cratogeomys cochinchinensis</i>	<i>Pinus ellipti</i>	<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	<i>Pinus ellipti</i>	<i>Madia paniculata</i>	<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	<i>Pinus ellipti</i>	<i>Cratogeomys cochinchinensis</i>	<i>Cratogeomys cochinchinensis</i>
Relative height																				
Tree height (m)	5.7	12.3	6.5	7.3	14.3	13.2	13.5	14.5	3.8	8.4	14.0	7.1	13.4	5.3	14.5	6.6	5.4	14.5	6.5	6.3
DBH (cm)	15.6	15.6	13.6	9.6	25.7	21.1	20.5	29.1	5.5	14.8	24.6	7.3	18.9	8.3	24.7	8.0	7.3	32.6	7.8	7.6
Vitality of tree	1	1	1	1	1	1	1	1	1	1	2		1	1		1	1	1		
Form of tree	1	2	1	1	2	2	1	2	1	1	2	1	2		2					
Branch growth	1	1		1														1		
Dieback of stem						1														
Defoliation of crown	1		1																	
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves	1					1			1				1	1						
Injury of leaves									1	1				1						
Damage class ^{*1}	1		1			1			1				1	1						
Estimated cause of decline: Not specified.																				

Blank cells indicate "0" (no damage).

The observation trees are not the same for each annual survey

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.6 Observation of tree decline: Zhuxiandong-2 (Area: Zhuxiandong, China) CNS011

Plot name: Zhuxiandong-2, Forest type: Man-made, Stand age: Approx. 27 years in 2023

Date: 29 December 2023

Surveyor: Zheng Mingxuan

Individual No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	E	E	E	E	E	S	S	S	S	S	W	W	W	W	W	N	N	N	N	N
Plant Name	<i>Acacia confusa</i>	<i>Acacia confusa</i>	<i>Cratogeomys cochinchinensis</i>	<i>Microcos paniculata</i>	<i>Acacia confusa</i>	<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	<i>Acacia confusa</i>	<i>Acacia confusa</i>	<i>Malindang paniculata</i>	<i>Acacia confusa</i>	<i>Acacia confusa</i>	<i>Microcos paniculata</i>	<i>Acacia confusa</i>	<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	<i>Microcos paniculata</i>	<i>Heplopleurum heptaphyllum</i>	<i>Acacia confusa</i>	<i>Syngium euonymifolium</i>	<i>Acacia confusa</i>	<i>Acacia confusa</i>
Relative height																				
Tree height (m)	7.9	8.6	6.5	5.6	7.8	3.8	4.5	10.2	5.2	9.6	6.5	6.3	5.8	3.8	5.3	6.3	5.0	4.3	3.8	4.1
DBH (cm)	23.0	23.2	6.5	13.3	19.3	7.9	20.2	22.0	6.4	32.9	19.3	21.6	16.8	5.3	10.5	11.6	19.3	11.0	22.6	22.3
Vitality of tree	1	1		2		1	2	1	2	1	1		1		1		1		1	
Form of tree				2														3	1	
Branch growth	1	1	1	1		1	2	1	1		2	1	1	1		1	2	1	1	1
Dieback of stem				3							1	1							1	1
Defoliation of crown				2									1							
Deformation of leaves				2																
Size of leaves				1																
Discoloration of leaves				1			1		1	1	1						1		1	1
Injury of leaves				1											1				1	
Damage class ^{*1}				2			1		1	1	1		1				1		1	1
Estimated cause of decline: Not specified.																				

Blank cells indicate "0" (no damage).

The observation trees are not the same for each annual survey.

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.7 Observation of tree decline: Zhuxiandong-3 (Area: Zhuxiandong, China) CNS011

Plot name: Zhuxiandong-3, Forest type: Secondary, Stand age: Approx. 20 years in 2023

Date: 29 December 2023

Surveyor: Zheng Mingxuan

Individual No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	W	W	W	W	W	S	S	S	S	S	E	E	E	E	E	N	N	N	N	N
Plant Name	<i>Lisea glutinosa</i>	<i>Machilus velutina</i>	<i>Machilus velutina</i>	<i>Machilus velutina</i>	<i>Eurya nitida</i>	<i>Acacia confusa</i>	<i>Acacia confusa</i>	<i>Eurya nitida</i>	<i>Archidendron lucidum</i>	<i>Archidendron lucidum</i>	<i>Acacia confusa</i>	<i>Machilus velutina</i>	<i>Tridacta cochinchinensis</i>	<i>Acacia confusa</i>	<i>Acacia confusa</i>	<i>Tridacta cochinchinensis</i>	<i>Tridacta cochinchinensis</i>	<i>Tridacta cochinchinensis</i>	<i>Tridacta cochinchinensis</i>	<i>Lisea rotundifolia</i> var. <i>oblongifolia</i>
Relative height																				
Tree height (m)	3.9	4.5	4.8	4.3	4.1	5.9	6.2	3.3	4.2	4.3	4.3	4.1	3.9	5.6	8.2	5.1	5.3	5.2	6.3	3.9
DBH (cm)	5.1	12.7	15.2	6.0	6.0	7.2	11.2	4.5	8.6	10.3	8.1	5.8	11.3	11.5	8.6	4.1	14.1	17.9	22.9	6.6
Vitality of tree	1	1	1		2	1	1	2				2	1	1	1	1	1	1	1	1
Form of tree	3	1	2		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Branch growth	1	1	1		1	1	1	1	1	1	1	1		1	1					1
Dieback of stem	1	2	1		1			1	1	1	1									
Defoliation of crown		2											1			2	2	2	2	
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves	1		1						1	1						1	1	1	1	
Injury of leaves	1		1																	
Damage class ^{*1}	1	2	1						1	1			1			2	2	2	2	

Estimated cause of decline: Not specified.

Blank cells indicate "0" (no damage).

The observation trees are not the same for each annual survey

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.8 Observation of tree decline: Sekido-san (Area: Happo, Japan) JPS005

Plot name: Sekido-san, Forest type: Secondary, Stand age: not specified

Date: 14 September 2023

Surveyor: Akira Ogura

Individual No.	1	2	3	4	5	6	7	8-2	9	10	11	58	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	N	N	N	N	N	W	W	W	W	W	S	S	S	S	S	E	E	E	E	E
Plant Name	<i>Fagus crenata</i>	<i>Betula grossa</i>	<i>Acer pictum</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Carpinus ischonosticti</i>	<i>Fagus crenata</i>	<i>Betula grossa</i>	<i>Acer pictum</i>	<i>Fagus crenata</i>	<i>Acer pictum</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Quercus crispula</i> var. <i>crispula</i>	<i>Cerasus jamasakura</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>
Relative height	+	+	—	+				—		—		—								
Tree height (m)	30.3	35.0	22.4	31.6	25.0	24.8	25.4	18.3	21.6	20.4	26.0	15.4	27.2	24.0	26.5	26.1	21.2	20.6	26.8	22.8
DBH (cm)	42.6	57.4	42.2	66.5	53.1	55.7	55.7	30.4	40.9	33.5	60.0	23.7	67.8	37.6	48.0	50.3	68.4	36.4	60.6	43.5
Vitality of tree																				
Form of tree								1		1		1				1	1			
Branch growth																				
Dieback of stem																				
Defoliation of crown																				
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves																				
Injury of leaves																				
Damage class ^{*1}																				

Estimated cause of decline: 16, Form of tree is declined due to suppression by surrounding trees. 17, Form of tree is declined due to broken lower branch.

Trees locating on the eastern direction are shielded by lower trees.

+ :Significantly taller than other trees. — : Significantly lower than other trees.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes

Table 5.6.9 Observation of tree decline: Horyu-zan (Area: Happo, Japan) JPS105

Plot name: Horyu-zan, Forest type: Secondary, Stand age: 96 years in 2023

Date: 15 September 2023

Surveyor: Akira Ogura

Individual No.	1	2	3	4	5	6	7	8	9	10	95	12	13	14	15	16	17	18	19	20
Direction (E, W, S, or N)	N	N	N	N	N	W	W	W	W	W	S	S	S	S	S	E	E	E	E	E
Plant Name	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Pinus densiflora</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>	<i>Carpinus laxiflora</i>	<i>Fagus crenata</i>	<i>Fagus crenata</i>
Relative height			+	—		+	—							—		—		—		+
Tree height (m)	19.1	18.1	22.2	15.3	18.4	19.7	12.7	16.5	17.4	18.3	17.1	16.8	18.6	15.3	15.6	11.2	17.3	13.6	18.0	20.3
DBH (cm)	24.8	22.9	42.4	19.3	25.1	41.3	14.7	20.2	22.6	25.4	25.8	19.0	25.7	15.3	22.2	12.7	19.9	16.5	24.6	32.2
Vitality of tree																		1		
Form of tree																				
Branch growth							1							1		1		1		
Dieback of stem																				
Defoliation of crown																				
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves																				
Injury of leaves																				
Damage class ^{*1}																				

Estimated cause of decline: 7, 16, 18, Tree height is lowered by suppression of surrounding trees.

+ :Significantly taller than other trees. — : Significantly lower than other trees.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.10 Observation of tree decline: Ijira (Area: Ijira, Japan) JPS006

Plot name: Ijira-lake, Forest type: Man-made, Stand age: 42-52 years in 2023

Date: 25 September 2023

Surveyor: Yoshizumi Hisada

Individual No.	1	2	3-2	4	5-2	6	7	8	9	10	11	12	13	14	15	16	17	18-2	19	20
Direction (E, W, S, or N)	N	N	N	N	N	E	E	E	E	E	S	S	S	S	S	W	W	W	W	W
Plant Name	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Cryptomeria japonica</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>
Relative height				—		+	+									—			—	—
Tree height (m)	16.2	15.1	17.7	12.9	16.9	19.6	20.3	18.0	17.3	16.2	18.2	16.3	16.2	18.6	17.9	13.9	15.6	18.4	13.8	13.8
DBH (cm)	23.9	16.8	18.5	15.7	19.4	26.3	28.6	23.6	18.5	19.6	16.7	16.3	17.0	22.8	21.2	22.4	17.5	25.6	12.4	18.4
Vitality of tree																			1	1
Form of tree	1	1		1	1		1	1		1	1	1	1	1	1	1	1		1	1
Branch growth																				
Dieback of stem																				
Defoliation of crown																				
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves																				
Injury of leaves																				
Damage class ^{*1}																				

Estimated cause of decline: No. 1, 2, 4, 5-2, 8, 11, 12, 14, 15 and 17, bent stem; No. 7, dichotomy; No. 10, bent stem and tip; No. 13, bent stem and dichotomy; No. 16, The presence of tip breakage; No. 19, suppression by other surrounding trees and bent stem; No. 20 suppression by other surrounding trees and dichotomy.

+ :Significantly taller taller than other trees. - : Significantly lower than other trees.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.11 Observation of tree decline: Yamato (Area: Ijira, Japan) JPS106

Plot name: Yamato, Forest type: Man-made, Stand age: 102-112 years in 2023

Date: 22 September 2023

Surveyor: Yoshizumi Hisada

Individual No.	1	2	3	4	5-2	6-2	7-2	8	9-2	10-2	11-2	12-3	13-2	14-2	15	16-2	17	18-2	19-2	20
Direction	N	N	N	N	N	E	E	E	E	E	S	S	S	S	S	W	W	W	W	W
Plant Name	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>	<i>Chamaecyparis obtusa</i>
Relative height	+				—	+		+				—								—
Tree height (m)	33.5	29.9	32.0	30.3	28.3	32.4	30.7	33.0	31.6	28.9	29.6	26.6	32.3	29.0	30.0	29.5	29.0	32.0	32.2	27.3
DBH (cm)	41.1	40.5	45.6	45.3	31.6	46.9	42.8	38.8	42.4	44.6	35.1	33.7	50.5	36.9	45.1	36.5	35.6	48.7	48.3	35.3
Vitality of tree																				
Form of tree					1			1	1			1	1	1			1			1
Branch growth		1																		
Dieback of stem																				
Defoliation of crown																				
Deformation of leaves																				
Size of leaves																				
Discoloration of leaves																				
Injury of leaves																				
Damage class ^{*1}																				

Estimated cause of decline: No. 20, one side branch and leaning; bent stem; No. 8, 12-3 and 17, bent stem and tip; No. 11-2, dichotomy and leaning; No. 18-2, insect damage on stem; No. 13-2, bent tip; No. 5-2 and 9-2, one side branch.

+ :Significantly taller taller than other trees. - : Significantly lower than other trees.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.12 Observation of tree decline: Mt. Makiling (Area: Los Banos, Philippines) PHS002

Plot name: Mt. Makiling, Forest type: Secondary, Stand age: not specified

Date: 9 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Individual No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction (E, W, S, or N)	E	E	E	W	W	W	W	N	N	N	N	N	S	S	S	S
Plant Name	<i>Celtis laevis</i>	<i>Syzygium nitidum</i>	<i>Strombosia philippinensis</i>	<i>Cleistanthus sumatrensis</i>	<i>Semecarpus cuneiformis</i>	<i>Kruegia glomerata</i>	<i>Mimusops elengi</i>	<i>Palauquium merillii</i>	<i>Myristica elliptica</i> ssp. <i>sumatranum</i>	<i>Diplodiscus paniculatus</i>	<i>Diospyros blancoi</i>	<i>Diplodiscus paniculatus</i>	<i>Planchonella nitida</i>	<i>Mimusops elengi</i>	<i>Chiosochloa pentandrus</i> ssp. <i>pentandrus</i>	<i>Diplodiscus paniculatus</i>
Relative height																
Tree height (m)	11.7	21.0	9.0	14.2	10.2	8.3	15.2	19.3	12.3	11.9	3.6	11.4	11.8	9.4	12.0	9.4
DBH (cm)	18.0	52.0	19.0	26.9	14.0	37.3	30.5	31.5	61.0	38.2	3.5	42.5	17.3	12.5	18.6	15.2
Vitality of tree	1	2			1	1	1	1	1	1	1	1				2
Form of tree	2	1	1		2			1	2	1	1	1				2
Branch growth	1	1	2								2					
Dieback of stem												1				2
Defoliation of crown	2		1							1	1	1				
Deformation of leaves																
Size of leaves																
Discoloration of leaves			1							1	1					
Injury of leaves	1		1							1	1					
Damage class ^{*1}			1							1	1					

Estimated cause of decline: Trees that were topped by strong winds during previous typhoons are now infested with termites.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.6.13 Observation of tree decline: UP Quezon, Land Grant (Area: Los Banos, Philippines) PHS102

Plot name: UP Quezon, Land Grant, Forest type: Secondary, Stand age: not specified

Date: 9 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Individual No.	1	2	3	4	5	6	7	8	9	10	11
Direction	E	E	E	E	E	W	W	N	N	S	S
Plant Name	<i>Litsea gorceiae</i>	<i>Litsea cordata</i>	<i>Dipterocarpus grandiflorus</i>	<i>Kibatalia glingensis</i>	<i>Artocarpus odoratissimus</i>	<i>Nephelium rambutan</i>	<i>Calophyllum blancoi</i>	<i>Syzygium calubecob</i>	<i>Syzygium calubecob</i>	<i>Litsea gorceiae</i>	<i>Caesalpinia crista</i>
Relative height											
Tree height (m)	15.0	14.8	19.3	16.2	14.6	14.7	9.7	14.8	13.0	13.1	11.2
DBH (cm)	32.7	15.7	24.7	36.2	14.4	23.6	15.7	18.6	12.4	22.5	20.1
Vitality of tree	3			1	1	1	1	1			1
Form of tree	3		1			1	1		1	1	1
Branch growth		2		2	1	1	2			1	1
Dieback of stem	3	3	2	2	1	2	1			1	1
Defoliation of crown	3	1		2	1		2		2		1
Deformation of leaves						1	1			2	2
Size of leaves										2	1
Discoloration of leaves			1	1	2		1	1		2	2
Injury of leaves	2	3	2	2	2	1	1			1	1
Damage class ^{*1}				2	2		2			1	2

Estimated cause of decline: Trees had been damaged at the top of the crown by strong winds due to the various typhoons that passed by during the past ten years.

Termite infestation has been observed on most trees.

Blank cells indicate "0" (no damage).

*1, The damage class is determined by a combination of defoliation and discoloration classes.

Table 5.7.1 Description of trees: Mt. Makiling (Area: Los Banos, Philippines) PHS002

Plot name: Mt. Makiling

Date: 9 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Survey area 1: radius 7.98 m 1/2

(Height > 1.3 m)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
1	<i>Garcinia binucao</i>	2.5	3.8	
2	<i>Strombosia philippinensis</i>	2.0	3.9	
3	<i>Diospyros pyrrhocarpa</i>	4.6	4.4	
4	<i>Platymitra arborea</i>	2.5	3.6	
5	<i>Diplodiscus paniculatus</i>	1.0	2.1	
6	<i>Antidesma pentandrum</i>	0.3	1.6	
7	<i>Diospyros pyrrhocarpa</i>	1.2	2.6	
8	<i>Papualthia lanceolata</i>	1.5	2.3	
9	<i>Neotrewia cumingii</i>	0.7	2.3	
10	<i>Bridelia insulana</i>	23.0	12.4	
11	<i>Neotrewia cumingii</i>	1.0	2.0	
12	<i>Pterocarpus indicus</i>	5.5	3.7	
13	<i>Dipterocarpus grandiflorus</i>	1.5	2.7	
14	<i>Diplodiscus paniculatus</i>	27.0	9.4	
15	<i>Celtis luzonica</i>	1.8	3.7	
16	<i>Canarium ovatum</i>	1.0	1.9	
17	<i>Macaranga tanarius</i>	1.0	1.8	
18	<i>Neolitsea villosa</i>	2.5	3.6	
19	<i>Celtis luzonica</i>	1.1	2.1	
20	<i>Diospyros pyrrhocarpa</i>	1.2	2.1	
21	<i>Planchonia spectabilis</i>	1.5	1.9	
22	<i>Macaranga tanarius</i>	4.7	5.8	
23	<i>Shorea contorta</i>	1.5	3.6	
24	<i>Pterocymbium tinctorium</i>	2.5	4.5	
25	<i>Ficus fistulosa</i>	1.2	3.7	
26	<i>Nephelium rambutan</i>	2.4	4.6	
29	<i>Celtis luzonica</i>	2.0	3.7	
30	<i>Shorea contorta</i>	3.0	2.9	
31	<i>Celtis luzonica</i>	5.1	3.6	
32	<i>Celtis luzonica</i>	1.3	2.3	
33	<i>Celtis luzonica</i>	4.0	6.3	
34	<i>Chisocheton pentandrus</i>	22.0	9.0	
35	<i>Chisocheton pentandrus</i> ssp. <i>pentandrus</i>	1.2	2.7	
36	<i>Strombosia philippinensis</i>	2.7	3.0	
37	<i>Leea philippinensis</i>	2.1	3.6	
38	<i>Diplodiscus paniculatus</i>	28.2	10.8	
39	<i>Canarium asperum</i>	28.1	9.8	
40	<i>Platymitra arborea</i>	1.2	2.5	
41	<i>Ficus magnoliifolia</i>	5.5	5.4	
42	<i>Chisocheton pentandrus</i> ssp. <i>pentandrus</i>	2.2	4.0	
43	<i>Diplodiscus paniculatus</i>	18.2	7.2	
44	<i>Drypetes maquilingensis</i>	28.6	9.0	
45	<i>Aglaiia edulis</i>	8.1	8.1	
46	<i>Diplodiscus paniculatus</i>	2.1	2.8	
47	<i>Ficus magnoliifolia</i>	2.5	3.0	
48	<i>Cinnamomum mercadoi</i>	2.5	3.9	
49	<i>Diospyros discolor</i>	8.7	4.1	
50	<i>Diplodiscus paniculatus</i>	12.0	7.0	
51	<i>Diplodiscus paniculatus</i>	9.7	6.8	
52	<i>Diplodiscus paniculatus</i>	4.5	7.5	

Survey area 1: radius 7.98 m 2/2
(Height > 1.3 m)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
53	<i>Diplodiscus paniculatus</i>	4.5	6.5	
54	<i>Pterocymbium tinctorium</i>	31.0	11.7	
55	<i>Pterocarpus indicus</i>	2.5	4.3	
56	<i>Platymitra arborea</i>	4.0	6.3	
57	<i>Platymitra arborea</i>	2.5	4.1	
58	<i>Celtis luzonica</i>	2.0	3.6	
59	<i>Chisocheton cumingianus</i> ssp. <i>cumingianus</i>	1.9	3.3	
60	<i>Syzygium nitidum</i>	2.5	3.1	
61	<i>Dysoxylum cumingianum</i>	1.7	2.5	
62	<i>Celtis luzonica</i>	2.3	3.7	
63	<i>Neotrewia cumingii</i>	3.2	4.5	
64	<i>Diospyros pyrrhocarpa</i>	3.0	4.5	
65	<i>Diplodiscus paniculatus</i>	39.1	7.9	
66	<i>Pterocarpus indicus</i>	1.1	2.3	
67	<i>Magnolia candollei</i>	2.5	1.8	
68	<i>Strombosia philippinensis</i>	1.4	5.4	
69	<i>Pterocymbium tinctorium</i>	5.0	6.6	
70	<i>Strombosia philippinensis</i>	4.0	10.1	
71	<i>Celtis luzonica</i>	3.0	7.2	
72	<i>Medinilla astronioides</i>	2.6	21.3	
73	<i>Celtis luzonica</i>	4.1	4.5	
74	<i>Diplodiscus paniculatus</i>	18.5	26.7	
75	<i>Neolitsea villosa</i>	2.1	4.3	
76	<i>Pterospermum diversifolium</i>	2.0	2.0	
77	<i>Cubilia cubili</i>	0.4	1.9	
78	<i>Strombosia philippinensis</i>	2.0	3.6	
79	<i>Celtis luzonica</i>	1.0	2.7	
80	<i>Celtis luzonica</i>	3.1	2.2	
81	<i>Strombosia philippinensis</i>	1.5	2.3	
82	<i>Celtis luzonica</i>	2.0	4.1	
83	<i>Mimusops elengi</i>	1.5	3.5	
84	<i>Chisocheton pentandrus</i> ssp. <i>pentandrus</i>	3.9	4.5	
85	<i>Diospyros pyrrhocarpa</i>	3.2	4.1	
86	<i>Strombosia philippinensis</i>	2.8	3.6	
87	<i>Chisocheton pentandrus</i> ssp. <i>pentandrus</i>	20.1	9.4	
88	<i>Diospyros pyrrhocarpa</i>	2.0	3.9	
89	<i>Celtis luzonica</i>	0.9	2.8	
90	<i>Pongamia pinnata</i>	3.5	4.1	
91	<i>Camellia sinensis</i>	9.6	0.9	
92	<i>Celtis luzonica</i>	3.5	8.4	
93	<i>Camellia sinensis</i>	2.0	2.0	
94	<i>Pterocarpus indicus</i>	3.9	18.3	
95	<i>Celtis luzonica</i>	0.9	2.4	
96	<i>Diplodiscus paniculatus</i>	13.9	7.8	
97	<i>Pouteria duclitan</i>	2.5	4.2	
98	<i>Ailanthus integrifolia</i>	2.0	4.3	
99	<i>Celtis luzonica</i>	4.5	7.4	
100	<i>Nephelium lappaceum</i> var. <i>pallens</i>	4.9	4.2	
101	<i>Celtis luzonica</i>	1.7	3.0	
102	<i>Celtis luzonica</i>	3.1	12.5	
103	<i>Antidesma pleuricum</i>	7.1	14.9	
104	<i>Knema glomerata</i>	2.0	21.1	
105	<i>Gomphandra luzoniensis</i>	2.3	3.0	
106	<i>Platymitra arborea</i>	2.5	2.7	
107	<i>Strombosia philippinensis</i>	3.4	12.6	

Survey area 2: radius 11.28 m
(DBH > 4 cm)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
108	<i>Canarium asperum</i>	21.1	10.8	
109	<i>Goniothalamus amuyon</i>	16.8	5.8	
110	<i>Celtis luzonica</i>	6.4	7.6	
111	<i>Diospyros pyrrhocarpa</i>	4.7	5.2	
112	<i>Syzygium subcaudatum</i>	7.9	9.0	
113	<i>Diplodiscus paniculatus</i>	25.1	10.8	
114	<i>Shorea contorta</i>	73.5	28.0	
115	<i>Diplodiscus paniculatus</i>	17.1	14.0	
116	<i>Pterocarpus indicus</i>	9.5	18.3	
117	<i>Celtis luzonica</i>	10.2	7.2	
118	<i>Diplodiscus paniculatus</i>	12.2	9.4	
119	<i>Parashorea malaanonan</i>	117.0	30.0	
120	<i>Celtis luzonica</i>	8.0	2.2	
121	<i>Diplodiscus paniculatus</i>	14.7	11.5	
122	<i>Cinnamomum mercadoi</i>	10.0	6.1	
123	<i>Diplodiscus paniculatus</i>	26.0	12.0	
124	<i>Mimusops elengi</i>	17.5	11.7	
125	<i>Diospyros discolor</i>	5.6	7.9	
126	<i>Celtis luzonica</i>	4.5	6.3	
127	<i>Leea philippinensis</i>	22.4	12.0	
128	<i>Diplodiscus paniculatus</i>	17.5	12.5	
129	<i>Canarium asperum</i>	13.9	18.1	
130	<i>Diplodiscus paniculatus</i>	22.5	5.5	
131	<i>Diospyros discolor</i>	5.6	5.9	
132	<i>Chisocheton pentandrus</i> ssp. <i>pentandrus</i>	18.6	12.0	
133	<i>Pterocarpus indicus</i>	4.5	5.4	
134	<i>Pterocarpus indicus</i>	5.7	7.2	
135	<i>Diplodiscus paniculatus</i>	13.5	8.1	
136	<i>Magnolia candollei</i>	6.0	4.3	
137	<i>Diplodiscus paniculatus</i>	73.8	43.5	

Survey area 3: radius 17.85 m
(DBH > 18 cm)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
138	<i>Diospyros discolor</i>	35.0	13.6	
139	<i>Shorea contorta</i>	118.0	30.3	
140	<i>Dillenia philippinensis</i>	33.2	23.4	
141	<i>Neolitsea villosa</i>	29.7	22.6	
142	<i>Syzygium nitidum</i>	25.5	13.5	
143	<i>Mimusops elengi</i>	37.0	23.1	
144	<i>Parashorea malaanonan</i>	76.5	25.3	
145	<i>Pometia pinnata</i>	27.8	11.3	
146	<i>Shorea guiso</i>	34.2	19.5	
147	<i>Palaquium merrillii</i>	31.5	19.3	
148	<i>Cryptocarya ampla</i>	20.5	14.8	
149	<i>Strombosia philippinensis</i>	20.8	13.5	
150	<i>Syzygium nitidum</i>	52.0	21.0	
151	<i>Celtis luzonica</i>	18.0	11.7	
152	<i>Strombosia philippinensis</i>	19.0	9.0	
153	<i>Pisonia umbellifera</i>	25.8	12.6	
154	<i>Pterocymbium tinctorium</i>	38.2	15.0	
155	<i>Planchonella nitida</i>	19.0	10.5	
156	<i>Diospyros discolor</i>	21.5	18.4	
157	<i>Aglia argentea</i>	19.0	15.3	
158	<i>Mimusops elengi</i>	51.5	16.0	

Table 5.7.2 Description of trees: UP Quezon Land Grant (Area: Los Banos, Philippines) PHS102

Plot name: UP Quezon-Laguna Land Grant

Date: 10 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Survey area 1: radius 7.98 m

(Height > 1.3 m)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
1	<i>Kibatalia gitingensis</i>	0.4	1.9	
2	<i>Utania volubilis</i>	8.2	6.7	
3	<i>Kibatalia gitingensis</i>	15.5	9.2	
4	<i>Melastoma malabathricum</i>	1.1	2.3	
5	<i>Melastoma malabathricum</i>	0.9	2.2	
6	<i>Viticipremna philippinensis</i>	1.9	2.7	
7	<i>Melicope triphylla</i>	1.5	2.7	
8	<i>Diplodiscus paniculatus</i>	1.0	2.3	
9	<i>Syzygium calcicolum</i>	4.8	7.8	
10	<i>Palaquium philippense</i>	1.0	2.1	
11	<i>Dipterocarpus grandiflorus</i>	10.4	9.2	
12	<i>Wrightia pubescens</i>	0.8	1.7	
13	<i>Syzygium everettii</i>	4.0	1.9	
14	<i>Wrightia pubescens</i>	11.6	14.0	
15	<i>Kibatalia gitingensis</i>	14.0	14.2	
16	<i>Palaquium philippense</i>	13.7	13.0	
17	<i>Shorea negrosensis</i>	45.5	19.2	
18	<i>Anisoptera thurifera</i>	28.7	14.7	
19	<i>Dipterocarpus alatus</i>	5.1	10.2	
20	<i>Cubilia cubili</i>	9.2	14.3	
21	<i>Syzygium everettii</i>	6.2	8.3	
22	<i>Sterculia comosa</i>	1.5	3.7	
23	<i>Melicope triphylla</i>	1.1	4.4	
24	<i>Litsea garciae</i>	5.0	8.6	
25	<i>Melicope triphylla</i>	3.0	6.7	
26	<i>Macaranga grandifolia</i>	1.0	4.3	
27	<i>Syzygium everettii</i>	7.9	12.3	
28	<i>Nephelium rambutan</i>	14.6	15.2	
29	<i>Calophyllum blancoi</i>	12.1	15.8	
30	<i>Syzygium calubcob</i>	4.5	8.7	
31	<i>Syzygium calubcob</i>	4.1	12.7	
32	<i>Syzygium calubcob</i>	9.1	14.6	
33	<i>Calophyllum blancoi</i>	8.6	9.8	
34	<i>Syzygium polycephaloides</i>	0.9	2.2	
35	<i>Syzygium polycephaloides</i>	2.5	2.1	
36	<i>Syzygium polycephaloides</i>	2.8	3.9	
37	<i>Syzygium calubcob</i>	3.1	4.1	
38	<i>Syzygium calubcob</i>	8.0	8.7	
39	<i>Sterculia comosa</i>	1.0	1.7	
40	<i>Syzygium calubcob</i>	4.6	6.5	

Survey area 2: radius 11.28 m
(DBH > 4 cm)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
41	<i>Syzygium calubcob</i>	5.6	7.8	
42	<i>Nephelium rambutan</i>	23.6	14.7	
43	<i>Calophyllum blancoi</i>	15.7	9.7	
44	<i>Syzygium calubcob</i>	4.2	5.8	
45	<i>Calophyllum blancoi</i>	4.1	7.7	
46	<i>Cubilia cubili</i>	11.2	10.8	
47	<i>Albizia procera</i>	4.4	7.5	
48	<i>Calophyllum blancoi</i>	14.5	10.8	
49	<i>Litsea garciae</i>	22.5	13.1	
50	<i>Caesalpinia crista</i>	20.1	11.2	
51	<i>Litsea cordata</i>	15.7	14.8	
52	<i>Syzygium calubcob</i>	7.3	13.7	
53	<i>Syzygium calubcob</i>	7.1	7.8	
54	<i>Litsea garciae</i>	12.6	13.6	
55	<i>Artocarpus odoratissimus</i>	14.4	14.6	
56	<i>Artocarpus heterophyllus</i>	4.6	7.8	
57	<i>Kibatalia gitingensis</i>	36.2	16.2	
58	<i>Syzygium simile</i>	11.4	15.3	
59	<i>Syzygium calubcob</i>	11.7	12.2	
60	<i>Syzygium calubcob</i>	12.4	13.0	
61	<i>Syzygium calubcob</i>	11.6	14.8	
62	<i>Syzygium calubcob</i>	6.0	10.7	
63	<i>Sapindus saponaria</i>	9.9	8.7	

Survey area 3: radius 17.85 m
(DBH > 18 cm)

Tree No.	Scientific name	DBH (cm)	Tree Height (m)	Remarks
64	<i>Calophyllum blancoi</i>	18.1	14.0	
65	<i>Dipterocarpus alatus</i>	38.7	18.3	
66	<i>Calophyllum blancoi</i>	18.2	11.8	
67	<i>Shorea negrosensis</i>	47.8	17.6	
68	<i>Shorea negrosensis</i>	34.5	16.7	
69	<i>Mallotus philippensis</i>	27.2	13.0	
70	<i>Syzygium simile</i>	38.5	12.9	
71	<i>Syzygium nitidum</i>	32.0	14.8	
72	<i>Lithocarpus sulitii</i>	46.2	12.7	
73	<i>Macaranga grandifolia</i>	19.2	10.2	
74	<i>Shorea negrosensis</i>	33.2	14.2	
75	<i>Syzygium cumini</i>	40.0	13.2	
76	<i>Melicope triphylla</i>	23.5	10.1	
77	<i>Dipterocarpus grandiflorus</i>	24.7	19.3	
78	<i>Litsea garciae</i>	32.7	15.0	
79	Poas na pula	32.1	14.2	Scientific name not identified
80	<i>Melicope triphylla</i>	24.6	15.7	
81	<i>Wallaceodendron celebicum</i>	22.1	14.7	
82	<i>Caesalpinia crista</i>	21.2	17.0	

**Table 5.8.1 Understory vegetation survey: Mt. Makiling
(Area: Los Banos, Philippines) PHS002**

Plot name: Mt. Makiling Forest Reserve

Date: 9 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Number of Species: 3

Scientific name	Abundance
<i>Diplodiscus paniculatus</i>	1
<i>Celtis luzonica</i>	1
<i>Strombosia philippinensis</i>	+

**Table 5.8.2 Understory vegetation survey: UP Quezon, Land Grant
(Area: Los Banos, Philippines) PHS102**

Plot name: UP Quezon, Land Grant

Date: 10 October 2023

Surveyor: Dr. Wilfredo M. Carandang

Number of Species: 3

Scientific name	Abundance
<i>Syzygium calubcob</i>	1
<i>Calophyllum blancoi</i>	+
<i>Kibatalia gitingensis</i>	+

CHAPTER 6

Inland Aquatic Environment

Monitoring

6. Inland Aquatic Environment Monitoring

6.1 Method

There were evidences over Northern Europe and North America that the lake water pH levels decreased in the 1970's compared to the levels in the 1930's and the damages noted as results of this decrease, including decline of fish population. The cause of this pH decline is believed to be the deposition of acidic substances into lakes in excess amounts of their neutralization or buffering capacity. In general, inland bodies of water with low alkalinity and low electric conductivities are prone to be sensitive to acidification by acid deposition. Therefore, it is important to conduct continuous monitoring of water bodies and aquatic fauna and so on.

Items specified in the technical manual (2000) include water temperature, pH, electric conductivity (EC), alkalinity and concentration of SO_4^{2-} , NO_3^- , Cl^- , NH_4^+ , Na^+ , K^+ , Ca^{2+} , and Mg^{2+} of targeted lakes/rivers at least four times a year (seasonally), and transparency, water color, DOC (if impossible, COD), NO_2^- , and PO_4^{3-} more than once a year while some other optional items are specified to be monitored. In near future, it is expected that some additional items (*i.e.* Chlorophyll a, T-P, T-N, DO) will be adopted as mandatory parameters according to the new manual (2010) at each laboratory.

6.1.1 Selection of Sampling Sites

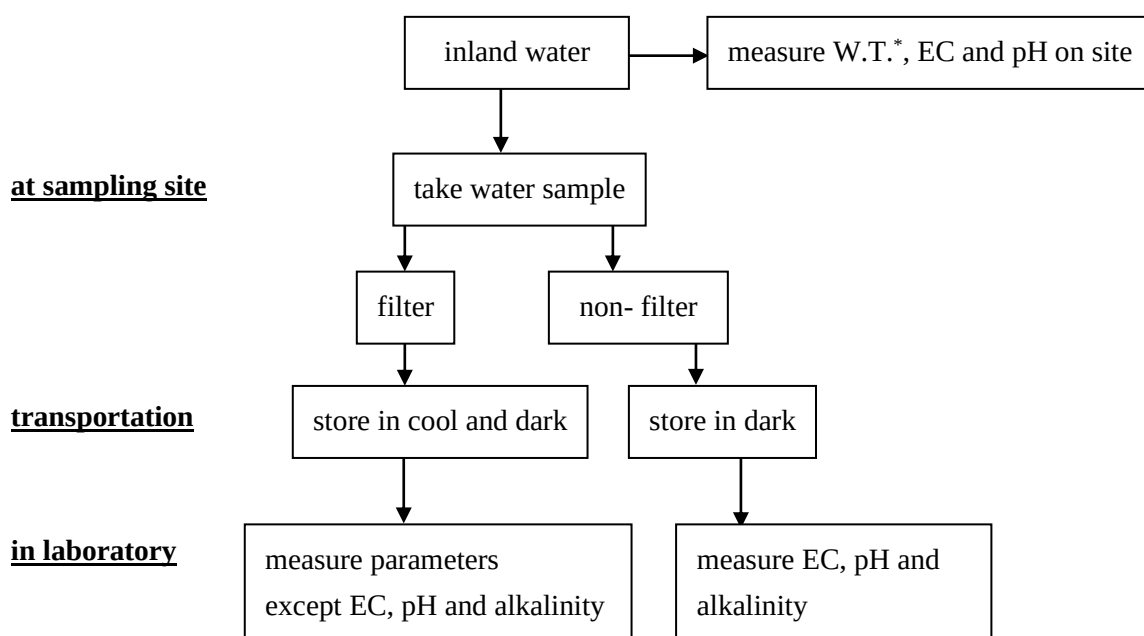
According to the technical manual (2010), the lakes chosen for monitoring should be harmonic type lakes, preferably with depths of approximately 10 m or less, a water residence time of 1 year or less, an area of 1 ha or more, with low alkalinity and electric conductivity, minimal anthropogenic water pollution and no coverage of the surface with aquatic organisms. If appropriate lakes are not available, rivers (streams) that are potentially susceptible to acidification and have little artificial influence should be selected.

For the monitoring sites, it is desirable to locate in nature protection areas, and human activities such as deforestation, and cultivation should be few and far between in the upstream area.

6.1.2 Field Operation

Surface water is sampled at one location at the center of the lake or river. In principle, measurements of pH and electric conductivity (EC) are conducted at the site before a more precise measurement is taken in the laboratory. Water samples for further analyses are kept

in a tightly stoppered polyethylene bottle and stored in a cool dark place. The samples are shipped to the laboratory for chemical analysis. The water samples for analysis of chemical components other than pH, EC and alkalinity are filtered at the sampling site with a glass fiber filter. An example of treatment procedure is described in Figure 6.1.



W.T.* : Water Temperature

Figure 6.1 Example of treatment procedure of inland water sample

6.1.3 Laboratory Operation

Collected samples are analyzed by analytical methods specified in Table 6.1 immediately, otherwise they are stored in a refrigerator. In addition, with regard to alkalinity, the Gran's plot titration method is adopted newly and recommended as a measurement parallel to the end-point pH 4.8 method in the latest version of the manual 2010.

Electric conductivity are measured at 25°C using a water bath. If it is measured at any other water temperature, its value is corrected to 25°C.

Table 6.1 Parameters and recommended analytical methods

Parameter	Analytical method
pH	pH meter (glass electrode)
Electric conductivity	Conductivity meter
Alkalinity	Titration by burette or digital burette with pH meter
NH_4^+ , NO_3^- , NO_2^- , PO_4^{3-}	Ion Chromatography or spectrometry
K^+ , Mg^{2+} , Ca^{2+} , Na^+	Ion Chromatography or atomic absorption spectrometry
SO_4^{2-}	Ion Chromatography or turbidimetry
DOC	Combustion-infrared method or wet-oxidation method

6.1.4 Monitoring Sites

As described in Table 6.2.1, the monitoring sites were established in 13 lakes/reservoirs and 6 rivers/streams. For 2023, 8 countries (China, Japan, Malaysia, Mongolia, Philippines, Russia, Thailand and Vietnam) carried out the monitoring. The data from the rest of countries have not been submitted yet. Properties of all the monitoring sites are shown on Table 6.3. However, more information should be appended to these tables in the future.

6.2 Results of Monitoring

The results of monitoring of each parameter are shown in Table 6.4.1 to Table 6.4.9. Data within or exceeded the criteria of R_1 and R_2 (details are shown below) are judged and marked as “O” or “×” in these tables respectively according to *QA/QC Program for Monitoring on Inland Aquatic Environment in East Asia*. The annual mean values of each monitoring sites are summarized in Table 6.4.10.

There were 4 sites (Terelj River in Mongolia, Pandin Lake and Ambulalakaw Lake in Philippines, Komarovka River in Russia) which have results exceeding allowable range of R_1 and/or R_2 . However, those main reasons could not be identified.

The annual mean values of each parameter from 2001 to 2023 are shown in Table 6.5.1 to Table 6.5.20.

Ion balance (R_1):

Calculated as:

$$R_1 = (C - A) / (C + A) \times 100 (\%)$$

where A: total anion equivalent concentration ($\mu\text{eq L}^{-1}$)

C: total cation equivalent concentration ($\mu\text{eq L}^{-1}$)

$$A = c(\text{SO}_4^{2-}) + c(\text{NO}_3^-) + c(\text{Cl}^-) + (\text{ALK})^*$$

* If PO_4^{3-} , NO_2^- etc were measured, add next formula, $\{+ c(\text{PO}_4^{3-}) + c(\text{NO}_2^-) + \dots\}$.

Alkalinity (ALK: $\mu\text{eq L}^{-1}$) considered to be corresponded to bicarbonate ions (HCO_3^-).

$$C = 10^{(6-\text{pH})} + c(\text{NH}_4^+) + c(\text{Na}^+) + c(\text{K}^+) + c(\text{Ca}^{2+}) + c(\text{Mg}^{2+})^*$$

* If Fe^{2+} , Mn^{2+} etc were measured, add next formula, $\{+ c(\text{Fe}^{2+}) + c(\text{Mn}^{2+}) + \dots\}$.

where $c(\)$: the ionic concentration ($\mu\text{eq L}^{-1}$).

When the concentration of ion is shown as (mg L^{-1}), it should be changed in equivalent concentration ($\mu\text{eq L}^{-1}$) as follows:

$$\mu\text{eq L}^{-1} = \text{mg L}^{-1} \times (1000/\text{equivalent weight})$$

Required criteria for R₁ :

The required ion balances of precipitation analyses are given in Table 6.2.2

Table 6.2.2 Required criteria for R₁

(C+A) (μeq L ⁻¹)	R ₁ (%)
<50	± 30
50 – 100	± 15
>100	± 8

Comparison between calculations and measurement in electrical conductivity (R₂):

Calculated as:

$$R_2 = (\Lambda_{\text{calc}} - \Lambda_{\text{meas}}) / (\Lambda_{\text{calc}} + \Lambda_{\text{meas}}) \times 100 (\%)$$

where Λ_{calc} : the calculated conductivity (mS m⁻¹)

Λ_{meas} : the measured conductivity (mS m⁻¹)

Λ_{calc} should be calculated as follows:

$$\begin{aligned} \Lambda_{\text{calc}} (\mu\text{S cm}^{-1}) = & 349.7 \times 10^{(3-\text{pH})} + \{80.0 \times c(\text{SO}_4^{2-}) + 71.4 \times c(\text{NO}_3^-) + 76.3 \times c(\text{Cl}^-) \\ & + 73.5 \times c(\text{NH}_4^+) + 50.1 \times c(\text{Na}^+) + 73.5 \times c(\text{K}^+) + 59.5 \times c(\text{Ca}^{2+}) \\ & + 53.0 \times c(\text{Mg}^{2+}) + 44.5 \times (\text{ALK})\} / 1000 \end{aligned}$$

c: equivalent concentration (μeq L⁻¹) of ions in the parenthesis, each constant value is ionic equivalent conductivity at 25 °C. Alkalinity considered to be corresponded to bicarbonate ions (HCO₃⁻).

For SI unit system, convert Λ_{calc} (μS cm⁻¹) into Λ_{calc} (mS m⁻¹) following

$$\Lambda_{\text{calc}} (\text{mS m}^{-1}) = \Lambda_{\text{calc}} (\mu\text{S cm}^{-1}) \times (1/10)$$

Required criteria for R₂:

The required conductivity comparison criteria are given in Table 6.2.3.

Table 6.2.3 Required criteria for R₂

Λ_{meas} (mS m ⁻¹)	R ₂ (%)
<0.5	± 20
0.5 – 3	± 13
>3	± 9

Table 6.2.1 Outline of Inland Aquatic Environment Monitoring of 2023

Country	Site	Distance from the site	Nearest deposition monitoring site	Start year	Interval
Cambodia	Sras Srang Lake (Kampong Speu province)	-	Remote	2012	-
China	Jinyunshan Lake (Chongqing)	-	Rural	2001	4 times/yr.
	Xiaoping Dam (Xiamen)	-	Remote	2001	4 times/yr.
	Jiwozi River (Xi'an)	-	Remote	2001	4 times/yr.
	Zhuxiandong Stream (Zhuhai)	-	Urban	2004	4 times/yr.
	Patengang Lake (Bandung)	47 km	Urban	2001	-
Indonesia	Gunung Lake (Sukabumi)	-	-	2008	-
Japan	Ijira Lake (Gifu Pref.)	1.1 km	Rural/Ecolog. (Ijira)	2001	4 times/yr.
	Futago-ike Lake (Nagano Pref.)	82 km	Remote (Happo)	2019	3 times/yr.
Lao PDR	Nam Houm Lake (Vientiane province)	-	Vientiane	2009	-
Malaysia	Baru River	-	Remote (Danum Valley)	2022	6 times/yr.
	Kuala Tahan*	-	-	-	-
Mongolia	Terelj River	-	Remote (Terelj)	2002	6 times/yr.
Philippines	Pandin Lake	30 km	Rural (Mt. Makiling)	2004	4 times/yr.
	Ambulalakaw Lake	-	Remote (Mt. Sto. Tomas)	2005	4 times/yr.
Russia	Pereemnaya River (Listvyanka)	48 km	Rural (Listvyanka)	2004	4 times/yr.
	Komarovka River (Primorskaya)	0.5 km	Rural (Primorskaya)	2005	5 times/yr.
Thailand	Vajiralongkorn Dam (Kanchanaburi Province)	-	Remote	2002	4 times/yr.
Vietnam	Hoa Binh Reservoir	-	Rural	2001	4 times/yr.

*Kuala Tahan is currently under preparation.

Table 6.3.1 Properties of lakes or streams

Lake Name: Sras Srang Lake

Country	Cambodia
Location	KIRIRUM national Park, Kampong Speu province
Latitude and longitude	11° 19' 69.29" N, 104° 2' 22.97" E
Altitude	800 m
Origin	-
Area and shape	10,403 m ²
Shore line length	-
Lake hydrologic type	-
Lake trophic type	-
Water depth	-
Water volume	-
Annual water level fluctuation	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	-
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

Table 6.3.2 Properties of lakes or streams

Lake Name: Jinyunshan Lake

Country	China
Location	Chongqing Prefecture
Latitude and longitude	-
Altitude	-
Origin	Artificial lake
Area and shape	9,990 m ²
Shore line length	About 2 km
Lake hydrologic type	Reservoir
Lake trophic type	Oligotrophic to Mesotrophic
Water depth	6-13 m
Water volume	60,000 m ³
Annual water level fluctuation	2-4 m
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	For drink, Irrigation water
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

Table 6.3.3 Properties of lakes or streams

Lake Name: Xiaoping Dam

Country	China
Location	Xiaoping, Xiamen
Latitude and longitude	-
Altitude	595 m
Origin	Artificial lake
Area and shape	264,000 m ²
Shore line length	100 m
Lake hydrologic type	Natural
Lake trophic type	Normal
Water depth	57.5 m
Water volume	4,080,000 m ³
Annual water level fluctuation	-
Annual air temperature	21.3 °C (mean) *1
Precipitation	1,084.5 mm/year *1
Sunshine duration	164.3 hrs/month (mean) *1
Solar radiation	-
Wind speed	2.4 m/s (mean) *1
Wind direction	E and ENE (dominant) *1
Residence time of water	15 days
Lake utilization	Water power
River (inflow)	Dingxi lake
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	18.1 km ²
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

*1 Xiamen, 2014.

Table 6.3.4 Properties of lakes or streams

Stream Name: Jiwozi River

Country	China
Location	Xi'an
Latitude and longitude	-
Altitude	-
Origin	Natural stream
Water depth	-
Water discharge	-
River length	-
Drainage area	-
The mean height of the river basin	-
Annual air temperature	15.4 °C (mean) *1
Precipitation	593.0 mm/year *1
Sunshine duration	146.0 hrs/month (mean) *1
Solar radiation	-
Wind speed	Mean 2.2 m/s *1
Wind direction	NE (dominant) *1
Lake (flows into)	-
River (meet in 10m from sampling point)	-

Watershed area	-
Surface geology	-
Soil type Mountain	-
Vegetation (dominant plants)	-
Population	-

- : No information.

*1 Xi'an, 2019.

Table 6.3.5 Properties of lakes or streams

Stream Name: Zhuxiandong Stream

Country	China
Location	Zhuhai
Latitude and longitude	-
Altitude	-
Origin	Natural stream
Water depth	-
Water discharge	-
River length	-
Drainage area	-
The mean height of the river basin	-
Annual air temperature	24.1 °C (mean) *1
Precipitation	1984.4 mm *1
Sunshine duration	143.6 hrs/month (mean) *1
Solar radiation	-
Wind speed	Mean 2.6 m/s *1
Wind direction	ESE (dominant) *1
Lake (flows into)	-
River (meet in 10m from sampling point)	-

Watershed area	-
Surface geology	-
Soil type Mountain	-
Vegetation (dominant plants)	-
Population	-

- : No information.

*1 Zhuhai, 2019.

The monitoring had conducted between 2001 and 2003 at Zhuxiandong reservoir, after that, Zhuxiandong Stream was selected as a new site for inland water monitoring in 2004. This site is located in the upper stream of Zhuxiandong Reservoir. Therefore continuous monitoring has been conducted since 2004 at Zhuxiandong Stream.

Table 6.3.6 Properties of lakes or streams

Lake Name: Patengang Lake

Country	Indonesia
Location	Bandung
Latitude and longitude	-
Altitude	1600-1700 m
Origin	Natural lake
Area and shape	4.5 km ²
Shore line length	-
Lake hydrologic type	-
Lake trophic type	Oligotrophic
Water depth	8 m (max)
Water volume	4.98 x 10 ⁶ m ³
Annual water level fluctuation	1.42 m-4.20 m
Annual air temperature	24.0 °C (mean) *1
Precipitation	6,728.8 mm *1
Sunshine duration	-
Solar radiation	408.1 MJ/m ² /month (mean) *1
Wind speed	Mean 1.7 m/s *1
Wind direction	W (dominant) *1
Residence time of water	-
Lake utilization	Tourism
River (inflow)	1
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	LAPAN Bandung

Watershed area	650 km ²
Surface geology	-
Vegetation (dominant plants)	Strawberry, tea
Land use	-

- : No information.

*1 Bandung, 2017.

Table 6.3.7 Properties of lakes or streams

Lake Name: Gunung Lake

Country	Indonesia
Location	Sukabumi, West Java
Latitude and longitude	-
Altitude	950-1036 m
Origin	Natural lake
Area and shape	95,000 m ²
Shore line length	-
Lake hydrologic type	Reservoir
Lake trophic type	Eutrophic
Water depth	Ave 2.75 m (< 10 m)
Water volume	-
Annual water level fluctuation	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	Irrigation
River (inflow)	1
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	Serpong

Watershed area	1.2 km ²
Surface geology	-
Vegetation (dominant plants)	Pine Tree, <i>Agathis Damara</i>
Land use	Agricultural area (5%), Residential area (1%, population < 500)

- : No information.

Table 6.3.8 Properties of lakes or streams

Lake Name: Ijira Lake

Country	Japan
Location	Gifu prefecture
Latitude and longitude	35° 33' 51" N, 136° 42' 12" E
Altitude	110 m
Origin	Artificial (dam-made lake)
Area and shape	0.1 km ²
Shore line length	1.8 km
Lake hydrologic type	Reservoir
Lake trophic type	Oligotrophic or mesotrophic
Water depth	Ave. 5.4 m (Max 10.9 m)
Water volume	0.00054 km ³
Annual water level fluctuation	0-0.74 m (Ave. 0.22 m)
Annual air temperature	17.4 °C (mean) *1
Precipitation	1986.5 mm/year *1
Sunshine duration	195.2 hrs/month (mean) *1
Solar radiation	-
Wind speed	Mean 2.5 m/s *1
Wind direction	WNW (dominant) *1
Residence time of water	23 days
Lake utilization	Irrigation and fishing
River (inflow)	Kamagatani River, Kobora River
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	Gifu Local Meteorological Observatory

Watershed area	5.4 km ²
Surface geology	Chert
Vegetation (dominant plants)	<i>Pinus densiflora</i> , <i>Chamaecyparis obtuse</i> , <i>Cryptomeria japonica</i>
Land use	-

- : No information.

*1 Gifu Local Meteorological Observatory, 2023.

Table 6.3.9 Properties of lakes or streams

Lake Name: Futago-ike Lake (Oike and Meike)

Site	Oike	Meike
Country	Japan	
Location	Nagano prefecture	
Latitude and longitude	36° 05' 42" N, 138° 20' 05" E	36° 05' 52" N, 138° 19' 57" E
Altitude	2050 m	2050 m
Origin	Dammed lake	Dammed lake
Area and shape	0.019 km ²	0.017 km ²
Shore line length	0.64 km	0.55 km
Lake hydrologic type	Dammed lake	Dammed lake
Lake trophic type	Extreme oligotrophic	Oligotrophic
Water depth	Ave. 3.82 m	Ave. 2.65 m
Water volume	73369 m ³	45002 m ³
Annual water level fluctuation	0-4 m	0-1 m
Annual air temperature	10.9 °C (mean) *1	
Precipitation	1168.5 mm/year *1	
Sunshine duration	205.9 hrs/month (mean) *1	
Solar radiation	-	
Wind speed	Mean 1.9 m/s *1	
Wind direction	WNW (dominant) *1	
Residence time of water	-	
Lake utilization	Sightseeing	
River (inflow)	None	None
Amount of inlet water	-	-
Amount of outlet water	-	-
Nearest meteorological station	Haramura AMeDAS of Japan Meteorological Agency	

Watershed area	0.488 km ²	0.338 km ²
Surface geology	Lava bed	
Vegetation (dominant plants)	<i>Abies veitchii</i> , <i>Larix kaempferi</i>	
Land use	-	

- : No information.

*1 Haramura AMeDAS of Japan Meteorological Agency, 2023.

Table 6.3.10 Properties of lakes or streams

Lake Name: Nam Houm Lake

Country	Lao PDR
Location	-
Latitude and longitude	-
Altitude	-
Origin	-
Area and shape	-
Shore line length	-
Lake hydrologic type	-
Lake trophic type	-
Water depth	Mean: 5 m, Maximum: 10 m
Water volume	-
Annual water level fluctuation	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	Irrigation
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

Table 6.3.11 Properties of lakes or streams

Lake Name: Baru River

Country	Malaysia
Location	Danum Valley, Sabah
Latitude and longitude	-
Altitude	-
Origin	-
Area and shape	-
Shore line length	-
Lake hydrologic type	-
Lake trophic type	-
Water depth	-
Water volume	-
Annual water level fluctuation	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	-
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

Table 6.3.12 Properties of lakes or streams

Stream Name: Kuala Tahan

Country	Malaysia
Location	-
Latitude and longitude	-
Altitude	-
Origin	-
Water depth	-
Water discharge	-
River length	-
Drainage area	-
The mean height of the river basin	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Lake (flows into)	-
River (meet in 10m from sampling point)	-

Watershed area	-
Surface geology	-
Soil type Mountain	-
Vegetation (dominant plants)	-
Population	-

- : No information.

Table 6.3.13 Properties of lakes or streams

Stream Name: Terelj River

Country	Mongolia
Location	Terelj
Latitude and longitude	48° 00' 06.12" N, 107° 27' 17.06 " E
Altitude	-
Origin	Natural stream
Water depth	-
Water discharge	Mean: 7.96 m ³ sec ⁻¹
River length	65 km
Drainage area	1220 km ²
The mean height of the river basin	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Lake (flows into)	-
River (meet in 10m from sampling point)	-

Watershed area	-
Surface geology	Main type of bed rocks is granite and drainage area is forest steppe
Soil type Mountain	Brown, marshy
Vegetation (dominant plants)	Grazing crop, Plantain
Population	3400

- : No information.

Table 6.3.14 Properties of lakes or streams

Lake Name: Pandin Lake

Country	Philippines
Location	San Pablo City
Latitude and longitude	-
Altitude	200m
Origin	Natural lake
Area and shape	0.24 km ²
Shore line length	-
Lake hydrologic type	-
Lake trophic type	oligatrophic
Water depth	61.75 m (mean), 63 m (max)
Water volume	6600 m ³
Annual water level fluctuation	-
Annual air temperature	27.6 °C (mean) *1
Precipitation	1859.7 mm *1
Sunshine duration	-
Solar radiation	-
Wind speed	2.0 m/s (mean) *1
Wind direction	ENE (dominat) *1
Residence time of water	-
Lake utilization	domestic, electric power and tourism
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

*1 UP Agrometeorological Station Los Baños College, 2023.

Table 6.3.15 Properties of lakes or streams

Lake Name: Ambulalakao Lake

Country	Philippines
Location	Kabayan, Benguet
Latitude and longitude	-
Altitude	2400 m
Origin	Natural lake
Area and shape	0.006087 km ²
Shore line length	-
Lake hydrologic type	-
Lake trophic type	-
Water depth	1.5 m (mean), 4.0 m (max), 0.2 m (min)
Water volume	11476 m ³
Annual water level fluctuation	-
Annual air temperature	-
Precipitation	-
Sunshine duration	-
Solar radiation	-
Wind speed	-
Wind direction	-
Residence time of water	-
Lake utilization	Tourism
River (inflow)	-
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	-
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

Table 6.3.16 Properties of lakes or streams

Stream Name: Pereemnaya River

Country	Russia
Location	Southern Baikal
Latitude and longitude	51°56'N, 105°17'E
Altitude	460 m-1500 m
Origin	Natural stream
Water depth	0.9 m (mean), 2 m (max)
Water discharge	-
River length	42 km
Drainage area	About 360 km ²
The mean height of the river basin	1,260 m
Annual air temperature	0.35 °C *1
Precipitation	32 mm/year *1
Sunshine duration	-
Solar radiation	-
Wind speed	Mean: 3.2 m/sec
Wind direction	N
Lake (flows into)	Lake Baikal
River (meet in 10m from sampling point)	-

Watershed area	About 360 km ²
Surface geology	Archaean rocks, presented mainly by gneisses, crystal schists, and pegmatites
Soil type Mountain	-
Vegetation (dominant plants)	The larger part of the basin belongs to the zone of mountain-taiga soils. The lower taiga border begins from the lake's shore, and the upper border rises up to 900-1800 m depending on the slopes exposition. Above, within loach zone, waste-mountain landscapes with undersized motley grass and lichens prevail. Coniferous forest
Population	-

- : No information.

*1 Listvyanka Meteorological station, 2022.

Table 6.3.17 Properties of lakes or streams

Stream Name: Komarovka River

Country	Russia
Location	Primorskli Kray, Ussuriyskii district, near Kamenushka settlement
Latitude and longitude	43°42' N, 132°07'E
Altitude	386 m
Origin	Natural stream
Water depth	Mean 0.8 m Maximum 2 m
Water discharge	Mean:1.55 m ³ /sec, Min:0.66, Max:3.79
River length	67 km
Drainage area	-
The mean height of the river basin	-
Annual air temperature	5.2 °C*1
Precipitation	1147.0 mm/year*1
Sunshine duration	-
Solar radiation	-
Wind speed	0.5-1.4 (mean 1.0) m/s*1
Wind direction	-
Lake (flows into)	River Razdolnaya, Amurskiy Bay
River (meet in 10m from sampling point)	-

Watershed area	About 1490 km ²
Surface geology	Rocks, sandstones, clayey schist
Soil type Mountain	Mountain- forest brown type of soil
Vegetation (dominant plants)	Komarovka valley is situated near Komarovskiy reserve surrounded by hills which protect the site from winds. The valley is covered by the mixed forest from broad-leaves to conifer.
Population	About 2000

- : No information.

*1 Primorskaya Meteorological station, 2023.

Table 6.3.18 Properties of lakes or streams

Lake Name: Vajiralongkorn Dam

Country	Thailand
Location	Tha Khanon sub-district, Thongpaphum District, Khanchanaburi Province 71180
Latitude and longitude	14°46' N, 98°35' E
Altitude	170 m
Origin	Artificial (Lake by Dam Reservoir area)
Area and shape	3,720 km ² , Multi-shape
Shore line length	-
Lake hydrologic type	Reservoir
Lake trophic type	-
Water depth	137.0-152.0 m (mean: 143.8 m) (2021)
Water volume	3.5134-7.7479 km ³ (mean: 5.2607 km ³) (2021)
Annual water level fluctuation	Depth: 4.2 m (2010)
Annual air temperature	27.0 °C (mean)*1
Precipitation	1690.1 mm*1
Sunshine duration	-
Solar radiation	-
Wind speed	0.17 m/s (mean) *1
Wind direction	-
Residence time of water	165 days
Lake utilization	Irrigation, Electric power generation, Fishery, Flooding protection and Sight seeing
River (inflow)	-
Amount of inlet water	Annual : 6140.5 × 10 ⁶ m ³ /year, daily : 16.8 × 10 ⁶ m ³ /day
Amount of outlet water	Annual : 2990.3 × 10 ⁶ m ³ /year, daily : 8.2 × 10 ⁶ m ³ /day
Nearest meteorological station	Vajiralongkorn Dam (0.3 km from the site)

Watershed area	3,720 km ²
Surface geology	Ferric Acrisols, USA Texonomy: Hapluf Talff / FAO : Luvisols
Vegetation (dominant plants)	banana, pine apple, pomelo, para rubber tree, tapioca, corn, rice , rambutan, longon, durien (2008)
Land use	Agriculture area 183,832 km ² (8.7 %) Residential area 21,941 km ² (1.0%) Forest area 1,788,561 km ² (84.6%) Others 118,807 km ² (5.6%) (2010)

- : No information.

*1 Thongpaphum Meteorological station, 2022.

Table 6.3.19 Properties of lakes or streams

Lake Name: Hoa Binh Reservoir

Country	Vietnam
Location	Hoa Binh Province
Latitude and longitude	-
Altitude	23 m
Origin	Artificial (dam-made lake)
Area and shape	208 km ² -25 km ² *1
Shore line length	208 km-16.7 km *1
Lake hydrologic type	Reservoir
Lake trophic type	Mesotrophic
Water depth	60 m (max: 120 m)
Water volume	9.45 km ³ -2.5 km ³ *1
Annual water level fluctuation	80 m-120 m (Ave.100 m)
Annual air temperature	24.6 °C (mean) *2
Precipitation	2477.8 mm *2
Sunshine duration	123.5 hrs/month (mean) *2
Solar radiation	-
Wind speed	Mean 1.1 m/s *2
Wind direction	NE, SE (dominant) *2
Residence time of water	365 days
Lake utilization	Electric power and flood control
River (inflow)	Da River
Amount of inlet water	-
Amount of outlet water	-
Nearest meteorological station	-

Watershed area	51,700 km ² -13,700 km ² *1
Surface geology	-
Vegetation (dominant plants)	-
Land use	-

- : No information.

*1 Second value is in affected area of reservoir.

*2 Hoa Binh, 2022.

Table 6.4.1 Result of Inland Aquatic Environment Monitoring

Duration: 2023.1-2023.12

Country: China

Lake/Stream: (See below)

Mandatory Parameters : 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Chongqing -Jinyunshan Lake	30-Mar-23*3	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-23	26.0	6.20	10.24	0.100	27.70	10.84	1.74	0.03	2.10	2.26	9.67	3.38
	19-Sep-23	28.0	6.31	8.76	0.084	18.88	11.58	1.50	0.01	1.61	2.52	8.71	3.12
	30-Dec-23*3	-	-	-	-	-	-	-	-	-	-	-	-
	mean*2	27.0	6.43	9.50	0.092	23.29	11.21	1.62	0.02	1.86	2.39	9.19	3.25
Xiamen -Xiaoping Dam	12-Jan-23	14.8	7.61	7.22	0.212	7.74	3.60	5.50	0.12	5.24	4.32	4.66	0.74
	07-Apr-23	17.4	7.23	5.46	0.136	4.31	3.23	3.65	0.07	4.06	2.24	3.13	0.50
	05-Jul-23	29.6	7.33	5.89	0.159	7.54	2.33	2.93	0.22	5.36	1.74	2.12	0.51
	12-Oct-23	23.6	7.62	6.18	0.136	2.33	3.92	7.15	0.11	5.39	2.44	2.59	0.82
	mean*2	21.4	7.41	6.19	0.161	5.48	3.27	4.81	0.13	5.01	2.69	3.13	0.64
Xi'an -Jiwozi River	13-Mar-23	3.0	7.22	3.07	0.130	4.01	1.93	1.27	0.49	0.53	0.26	4.62	0.30
	12-Apr-23	7.0	7.37	5.50	0.260	4.93	3.38	0.65	0.00	1.15	0.55	6.18	1.37
	31-Aug-23	19.0	6.98	4.58	0.100	7.47	2.18	2.22	0.50	0.46	0.23	4.94	0.28
	11-Nov-23	6.0	6.85	4.95	0.150	6.35	2.86	2.22	0.37	0.93	0.75	5.63	0.36
	mean*2	8.8	7.06	4.53	0.160	5.69	2.59	1.59	0.34	0.77	0.45	5.34	0.58
Zhuhai -Zhuxiandong Stream	04-Jan-23	18.0	7.57	7.60	0.450	1.78	2.12	5.55	0.00	8.25	1.29	4.29	1.56
	04-May-23	26.2	7.50	5.68	0.312	1.61	2.04	5.02	0.03	9.10	1.99	1.65	0.46
	03-Jul-23	28.2	6.85	4.71	0.198	2.39	4.64	4.07	0.00	6.62	2.08	1.48	0.46
	07-Oct-23	25.8	7.57	8.00	0.475	1.98	3.44	6.10	0.00	7.66	1.66	4.68	2.03
	mean*2	24.6	7.25	6.50	0.359	1.94	3.06	5.19	0.01	7.91	1.76	3.03	1.13

Mandatory Parameters : Once /year						
Site	Sampling Date	Transparency (m)	Water Color	PO ₄ ³⁻ (mg/l)	NO ₂ ⁻ (mg/l)	COD (mg/l)
Chongqing -Jinyunshan Lake	30-Mar-23*3	-	-	-	-	-
	26-Jun-23	1.2	-	-	-	-
	19-Sep-23	1.1	-	<0.05*1	*1	6.5
	30-Dec-23*3	-	-	-	-	-
	mean	1.2	-	<0.05*1	*1	6.5
Xiamen -Xiaoping Dam	12-Jan-23	0.7	-	-	0.018	13.0
	07-Apr-23	0.8	-	-	0.028	4.0
	05-Jul-23	0.9	-	-	0.008	5.0
	12-Oct-23	1.1	-	0.005	0.006	5.0
	mean	0.9	-	0.005	0.015	6.8
Xi'an -Jiwozi River	13-Mar-23	-	-	-	-	-
	12-Apr-23	-	-	-	-	-
	31-Aug-23	-	-	-	-	-
	11-Nov-23	-	-	<0.05*1	<0.02*1	<4*1
	mean	-	-	<0.05*1	<0.02*1	<4*1
Zhuhai -Zhuxiandong Stream	04-Jan-23	0.5	-	-	-	-
	04-May-23	0.4	-	0.01	0.004	3.0
	03-Jul-23	1.1	-	0.01	0.028	2.5
	07-Oct-23	-	-	0.01	0.005	2.4
	mean	0.7	-	0.01	0.012	2.6

note

- : No analysis or measurement.

*1: Less than determination limit.

*2: Mean of pH takes an average of hydrogen ion.

*3: No sample due to lake drought.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

		Anion	Cation	R1	Judge	Acalc	R2	Judge
Chongqing -Jinyunshan Lake	30-Mar-23*3	-	-	-	-	-	-	-
	26-Jun-23	901	912	0.6	O	12.0	7.8	O
	19-Sep-23	706	827	7.9	O	10.0	6.6	O
	30-Dec-23*3	-	-	-	-	-	-	-
	mean	-	-	-	-	-	-	-
Xiamen -Xiaoping	12-Jan-23	587	639	4.2	O	7.6	2.3	O
	7-Apr-23	381	435	6.6	O	5.0	-4.6	O
	5-Jul-23	436	437	0.1	O	5.3	-5.2	O
	12-Oct-23	450	500	5.3	O	5.8	-3.2	O
	mean	-	-	-	-	-	-	-
Xi'an -Jiwozi	13-Mar-23	280	312	5.4	O	3.6	8.2	O
	12-Apr-23	435	485	5.4	O	5.3	-1.8	O
	31-Aug-23	353	323	-4.4	O	4.4	-2.4	O
	11-Nov-23	391	390	-0.1	O	4.9	-0.9	O
	mean	-	-	-	-	-	-	-
Zhuhai -Zhuxiandong Stream	4-Jan-23	678	734	4.0	O	7.7	0.9	O
	4-May-23	520	569	4.4	O	6.0	3.1	O
	3-Jul-23	438	453	1.6	O	5.2	4.7	O
	7-Oct-23	744	776	2.1	O	8.4	2.6	O
	mean	-	-	-	-	-	-	-

Table 6.4.2 Result of Inland Aquatic Environment Monitoring

Duration: 2023.4-2024.1
Country: Japan
Lake/Stream: Ijira Lake

Mandatory Parameters : 4times/year														
	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meg/L)	Gran's ANC (meg/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Center (Surface)	13-Apr-23	14.6	7.18	3.53	0.146	0.132	4.68	0.93	1.94	<0.01*1	1.84	0.24	2.59	1.16
	12-Jul-23	24.4	7.11	3.07	0.143	0.095	3.69	0.51	1.55	0.01	1.75	0.25	2.05	1.06
	04-Oct-23	21.4	7.11	3.54	0.171	0.155	3.92	0.98	1.58	<0.01*1	1.82	0.28	2.63	1.20
	11-Jan-24	7.9	7.06	3.88	0.184	0.153	4.93	0.60	1.83	<0.01*1	1.95	0.24	3.22	1.22
	mean*2	17.1	7.11	3.50	0.161	0.134	4.30	0.75	1.73	<0.01*1	1.84	0.25	2.62	1.16
Center (near bottom)	13-Apr-23	12.8	6.91	3.61	0.144	0.131	4.75	1.10	1.93	<0.01*1	1.83	0.24	2.62	1.16
	12-Jul-23	18.7	7.21	3.54	0.182	0.147	3.59	0.62	1.60	0.15	1.73	0.27	2.55	1.19
	04-Oct-23	20.5	6.84	3.73	0.179	0.157	4.11	0.98	1.63	0.06	1.86	0.30	2.73	1.25
	11-Jan-24	7.6	7.10	3.96	0.186	0.154	4.93	0.60	1.83	<0.01*1	1.95	0.25	3.24	1.22
	mean*2	14.9	6.99	3.71	0.173	0.147	4.35	0.82	1.75	0.05	1.84	0.27	2.78	1.21
Kamagatani River (Input)	13-Apr-23	11.3	7.13	3.75	0.143	0.129	5.61	1.08	1.83	<0.01*1	1.92	0.24	2.56	1.31
	12-Jul-23	19.2	7.17	3.38	0.142	0.101	4.42	0.92	1.68	<0.01*1	1.78	0.25	2.27	1.18
	04-Oct-23	18.3	7.19	3.83	0.157	0.136	5.23	1.11	1.77	<0.01*1	1.96	0.28	2.67	1.35
	11-Jan-24	7.5	7.06	4.11	0.138	0.107	6.98	1.08	1.84	<0.01*1	2.03	0.21	2.84	1.44
	mean*2	14.1	7.14	3.76	0.145	0.118	5.56	1.05	1.78	<0.01*1	1.92	0.24	2.58	1.32
Kobora River (Input)	13-Apr-23	12.1	7.08	3.41	0.136	0.119	4.67	0.74	1.93	<0.01*1	2.17	0.24	1.83	1.26
	12-Jul-23	20.3	7.12	2.91	0.125	0.075	3.58	0.47	1.72	<0.01*1	1.97	0.24	1.54	1.06
	04-Oct-23	19.1	7.09	3.42	0.139	0.122	4.24	1.04	1.88	<0.01*1	2.26	0.27	1.82	1.25
	11-Jan-24	6.5	6.90	3.57	0.129	0.096	5.28	0.84	1.95	<0.01*1	2.25	0.19	1.91	1.34
	mean*2	14.5	7.04	3.32	0.132	0.103	4.44	0.77	1.87	<0.01*1	2.16	0.24	1.77	1.23

Mandatory Parameters : Once/year								Optional Parameters
Site	Sampling Date	Transparency (m)	Water Color (Forel-Ule Scale)	Water Color (sample)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	DOC (mg/L)	Chl-a (µg/L)
Center (Surface)	13-Apr-23	2.8	7	clear, colorless	<0.02*1	<0.01*1	0.5	6.6
	12-Jul-23	3.2	17	clear, colorless	-	<0.01*1	-	4.6
	04-Oct-23	3.0	15	clear, colorless	-	<0.01*1	-	6.0
	11-Jan-24	-	15	clear, colorless	-	<0.01*1	-	12.5
	mean	3.0	-	-	<0.02*1	<0.01*1	0.5	7.4
Center (near bottom)	13-Apr-23	-	-	clear, colorless	<0.02*1	<0.01*1	0.6	4.1
	12-Jul-23	-	-	clear, colorless	-	<0.01*1	-	4.5
	04-Oct-23	-	-	clear, colorless	-	<0.01*1	-	4.5
	11-Jan-24	-	-	clear, colorless	-	<0.01*1	-	12.6
	mean	-	-	-	<0.02*1	<0.01*1	0.6	6.4
Kamagatani River (Input)	13-Apr-23	-	-	clear, colorless	0.03	<0.01*1	0.3	-
	12-Jul-23	-	-	clear, colorless	-	<0.01*1	-	-
	04-Oct-23	-	-	clear, colorless	-	<0.01*1	-	-
	11-Jan-24	-	-	clear, colorless	-	<0.01*1	-	-
	mean	-	-	-	0.03	<0.01*1	0.3	-
Kobora River (Input)	13-Apr-23	-	-	clear, colorless	<0.02*1	<0.01*1	0.3	-
	12-Jul-23	-	-	clear, colorless	-	<0.01*1	-	-
	04-Oct-23	-	-	clear, colorless	-	<0.01*1	-	-
	11-Jan-24	-	-	clear, colorless	-	<0.01*1	-	-
	mean	-	-	-	<0.02*1	<0.01*1	0.3	-

note

- : No analysis or measurement.

*1: Less than detection limit.

*2: Mean of pH takes an average of hydrogen ion.

*3: No sample because of no river flow.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

Annual precipitation is 1986.5 mm/year in 2023 (Gifu pref. Meteorological observatory).

		Anion	Cation	R1	Judge	Acale	R2	Judge
Center (Surface)	13-Apr-23	313	311	-0.4	O	3.7	2.1	O
	12-Jul-23	271	272	0.1	O	3.1	1.3	O
	04-Oct-23	313	316	0.5	O	3.6	1.2	O
	11-Jan-24	348	352	0.6	O	4.1	2.4	O
Center (near bottom)	13-Apr-23	314	312	-0.4	O	3.7	1.4	O
	12-Jul-23	312	316	0.6	O	3.6	0.9	O
	04-Oct-23	326	331	0.8	O	3.8	0.9	O
	11-Jan-24	350	353	0.5	O	4.1	1.6	O
Kamagatani River (Input)	13-Apr-23	330	325	-0.7	O	3.9	2.0	O
	12-Jul-23	296	294	-0.2	O	3.5	1.3	O
	04-Oct-23	334	336	0.4	O	3.9	1.5	O
	11-Jan-24	352	353	0.2	O	4.3	1.8	O
Kobora River (Input)	13-Apr-23	299	295	-0.6	O	3.5	1.4	O
	12-Jul-23	255	255	0.0	O	3.0	1.1	O
	04-Oct-23	297	299	0.4	O	3.5	1.0	O
	11-Jan-24	307	308	0.2	O	3.7	1.2	O

Table 6.4.3 Result of Inland Aquatic Environment Monitoring

Duration: 2023.7-2023.10
 Country: Japan
 Lake/Stream: Futago-ike Lake (Oike and Meike)

Mandatory Parameters : 3 times/year														
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	Gran's ANC (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Oike (center) surface	11-Jul-23	14.6	6.96	1.88	0.129	0.117	0.97	0.99	0.36	<0.02*1	1.19	0.26	2.19	0.20
	29-Aug-23	17.4	7.03	1.92	0.136	0.125	1.08	0.96	0.38	<0.02*1	1.26	0.27	2.33	0.20
	04-Oct-23	12.7	7.05	1.87	0.130	0.117	1.00	0.75	0.37	<0.02*1	1.23	0.26	2.25	0.19
	mean*2	14.9	7.01	1.89	0.131	0.119	1.02	0.90	0.37	<0.02*1	1.22	0.26	2.26	0.20
Oike (center) near bottom	11-Jul-23	6.7	6.90	2.15	0.146	0.131	1.03	1.19	0.42	<0.02*1	1.36	0.29	2.49	0.22
	29-Aug-23	7.0	6.94	2.16	0.150	0.138	1.15	1.20	0.41	<0.02*1	1.43	0.29	2.60	0.23
	04-Oct-23	7.4	6.97	2.17	0.148	0.135	1.05	1.05	0.41	<0.02*1	1.43	0.29	2.59	0.23
	mean*2	7.0	6.93	2.16	0.148	0.135	1.08	1.14	0.41	<0.02*1	1.41	0.29	2.56	0.23
Meike (center) surface	11-Jul-23	18.7	5.90	0.53	0.030	0.013	0.64	<0.1*1	0.32	<0.02*1	0.35	0.15	0.36	0.06
	29-Aug-23	20.9	5.94	0.47	0.027	0.008	0.61	<0.1*1	0.29	<0.02*1	0.27	0.15	0.30	0.06
	04-Oct-23	14.3	5.72	0.48	0.022	0.003	0.55	<0.1*1	0.28	<0.02*1	0.26	0.14	0.28	0.05
	mean*2	18.0	5.84	0.49	0.026	0.008	0.60	<0.1*1	0.30	<0.02*1	0.29	0.15	0.31	0.06
Meike (center) near bottom	11-Jul-23	17.9	5.84	0.54	0.031	0.013	0.65	<0.1*1	0.33	<0.02*1	0.37	0.15	0.36	0.06
	29-Aug-23	20.3	5.95	0.48	0.029	0.011	0.61	<0.1*1	0.31	<0.02*1	0.27	0.16	0.33	0.06
	04-Oct-23	14.2	5.72	0.47	0.023	0.004	0.54	<0.1*1	0.30	<0.02*1	0.26	0.14	0.28	0.05
	mean*2	17.5	5.83	0.49	0.027	0.009	0.60	<0.1*1	0.31	<0.02*1	0.30	0.15	0.32	0.06

Mandatory Parameters : Once/year										Optional Parameters	
Site	Sampling Date	Transparency (m)	Water Color (Lake)	Water Color (Sample)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	DOC (mg/L)	COD (mg/L)	D-Al (mg/L)	Chl-a (µg/L)	
Oike (center) surface	11-Jul-23	9.3	bluish green	clear, colorless	<0.01*1	<0.01*1	1.1	1.9	0.020	0.6	
	29-Aug-23	8.3	bluish green	clear, colorless	<0.01*1	<0.01*1	1.4	1.9	0.023	0.3	
	04-Oct-23	8.0	bluish green	clear, colorless	<0.01*1	<0.01*1	0.9	1.7	0.023	0.5	
	mean	8.5	-	-	<0.01*1	<0.01*1	1.1	1.8	0.022	0.4	
Oike (center) near bottom	11-Jul-23	-	-	clear, colorless	<0.01*1	<0.01*1	1.2	1.9	0.019	0.6	
	29-Aug-23	-	-	clear, colorless	<0.01*1	<0.01*1	1.6	1.9	0.017	0.9	
	04-Oct-23	-	-	clear, colorless	<0.01*1	<0.01*1	1.0	1.9	0.017	1.4	
	mean	-	-	-	<0.01*1	<0.01*1	1.2	1.9	0.018	0.9	
Meike (center) surface	11-Jul-23	2.9	bluish green	clear, colorless	<0.01*1	<0.01*1	2.1	3.9	0.068	1.4	
	29-Aug-23	1.8	green	clear, colorless	<0.01*1	<0.01*1	3.8	4.4	0.015	6.4	
	04-Oct-23	1.2	green	clear, colorless	<0.01*1	<0.01*1	4.5	6.8	0.015	9.2	
	mean	2.0	-	-	<0.01*1	<0.01*1	3.5	5.0	0.032	5.7	
Meike (center) near bottom	11-Jul-23	-	-	clear, colorless	<0.01*1	<0.01*1	2.2	4.1	0.065	1.3	
	29-Aug-23	-	-	clear, colorless	<0.01*1	<0.01*1	2.4	4.5	0.016	8.9	
	04-Oct-23	-	-	clear, colorless	<0.01*1	<0.01*1	4.7	6.9	0.016	7.9	
	mean	-	-	-	<0.01*1	<0.01*1	3.1	5.2	0.032	6.0	

- : No analysis or measurement.

*1: Less than determination limit.

*2: Mean of pH takes an average of hydrogen ion.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

Annual precipitation is 1168.5 mm/year in 2023 (Hara village Meteorological observatory).

		Anion	Cation	R1	Judge			Acale	R2	Judge
Oike (center) surface	11-Jul-23	175	184	2.5	O			2.0	2.6	O
	29-Aug-23	184	194	2.7	O			2.1	4.2	O
	04-Oct-23	173	188	4.0	O			2.0	2.9	O
Oike (center) near bottom	11-Jul-23	198	209	2.7	O			2.2	2.0	O
	29-Aug-23	205	218	3.1	O			2.3	3.9	O
	04-Oct-23	198	218	4.7	O			2.3	2.6	O
Meike (center) surface	11-Jul-23	52	43	-9.4	O			0.6	5.1	O
	29-Aug-23	48	36	-13.6	O			0.5	5.6	O
	04-Oct-23	41	35	-8.5	O			0.5	3.1	O
Meike (center) near bottom	11-Jul-23	53	44	-9.3	O			0.6	6.1	O
	29-Aug-23	50	38	-14.0	O			0.5	6.5	O
	04-Oct-23	42	35	-9.3	O			0.5	4.5	O

Table 6.4.4 Result of Inland Aquatic Environment Monitoring

Duration: 2023.2.-2023.12.

Country: Malaysia

Lake/Stream: (See below)

Mandatory Parameters: 6 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Baru River	7-Feb-23	25.9	7.41	5.69	0.500	2.17	1.44	0.36	<0.003*1	4.33	0.45	5.2	2.08
	4-Apr-23	24.9	7.55	5.97	0.477	2.21	1.91	0.44	0.009	5.24	0.46	4.7	1.90
	6-Jun-23	25.8	7.46	6.04	0.483	2.01	1.18	0.28	0.019	4.29	0.60	4.9	2.01
	1-Aug-23	26.2	7.94	9.08	0.890	1.48	2.27	0.37	0.005	6.40	0.59	7.7	2.96
	3-Oct-23	25.4	6.75	4.61	0.415	1.61	1.32	0.22	0.020	4.38	0.39	3.2	1.65
	5-Dec-23	24.8	7.74	5.18	0.467	1.70	1.61	0.58	0.015	4.67	0.45	3.1	1.94
	mean*2	25.5	7.29	6.09	0.538	1.86	1.62	0.37	0.011	4.89	0.49	4.8	2.09

Mandatory Parameters: 6times/year					
Site	Sampling Date	PO ₄ ³⁻ (mg/L)	TOC (mg/L)	T-P (mg/L)	COD (mg/L)
Baru River	7-Feb-23	<0.10*1	1.4	<0.2*1	4.6
	4-Apr-23	<0.10*1	2.1	0.3	3.6
	6-Jun-23	<0.10*1	1.0	0.3	4.9
	1-Aug-23	<0.10*1	1.4	0.3	3.8
	3-Oct-23	<0.10*1	1.3	0.4	3.0
	5-Dec-23	<0.10*1	2.3	0.8	4.3
	mean	<0.10*1	1.6	0.3	4.0

- : No analysis or measurement.

*1: Less than determination limit.

*2: Mean of pH takes an average of hydrogen ion.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

		Anion	Cation	R1	Judge			
Baru River	7-Feb-23	578	633	4.5	O	Acalc	R2	Judge
	4-Apr-23	566	633	5.6	O	6.3	5.4	O
	6-Jun-23	551	612	5.3	O	6.3	2.6	O
	1-Aug-23	967	921	-2.4	O	6.1	0.3	O
	3-Oct-23	476	499	2.4	O	9.6	3.0	O
	5-Dec-23	545	529	-1.5	O	5.0	4.5	O
						5.6	3.5	O

Table 6.4.5 Result of Inland Aquatic Environment Monitoring

Duration: 2023.5-2023.10

Country: Mongolia

Lake/Stream: Terelj River

Mandatory Parameters: 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Terelj River*2	10-May-23	-	6.39	3.20	0.204	2.71	1.35	0.54	0.01	1.21	1.25	4.95	0.74
	7-Jun-23	-	6.54	3.75	0.275	3.60	0.88	0.61	0.01	2.43	0.74	6.95	0.94
	19-Jul-23	11.5	6.38	3.64	0.194	3.28	0.52	0.25	0.01	2.88	0.61	6.00	0.79
	9-Aug-23	13.4	6.44	3.88	0.275	2.63	0.76	0.30	0.04	1.56	0.64	6.34	0.84
	6-Sep-23	14.7	6.30	4.41	0.326	2.99	0.56	0.34	0.07	1.78	0.74	7.08	0.95
	6-Oct-23	4.5	6.04	3.83	0.306	4.04	1.07	0.47	0.01	1.78	0.53	7.41	1.03
	mean*1	11.0	6.32	3.79	0.263	3.21	0.86	0.42	0.03	1.94	0.75	6.46	0.88

Mandatory Parameters : Once/year			
Site	Sampling Date	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)
Terelj River	10-May-23	-	-
	7-Jun-23	-	-
	19-Jul-23	-	-
	9-Aug-23	-	-
	6-Sep-23	-	-
	6-Oct-23	-	-
	mean	-	-

note

- : No analysis or measurement.

*1: Mean of pH takes an average of hydrogen ion.

*2: No data for anions and cations due to IC measuring instrument failure.

		Anion	Cation	R1	Judge			
Terelj River*2	10-May-23	297	393	13.9	×	Acate	R2	Judge
	7-Jun-23	381	550	18.1	×	3.9	10.5	×
	19-Jul-23	278	506	29.1	×	5.2	16.4	×
	9-Aug-23	350	472	14.8	×	4.4	9.7	×
	6-Sep-23	407	532	13.3	×	4.6	8.1	O
	6-Oct-23	421	547	13.1	×	5.2	8.1	O
						5.4	17.4	×

Table 6.4.6 Result of Inland Aquatic Environment Monitoring

Duration: 2023.2-2023.12

Country: Philippines

Lake/Stream: (See below)

Mandatory Parameters: 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Pandin Lake	23-Feb-23	25.1	7.68	19.42	1.133	1.17	*1	3.39	0.03	8.63	4.29	9.55	9.26
	18-May-23	25.1	9.38	19.28	1.769	1.33	0.13	3.36	0.10	8.77	4.49	14.88	8.34
	17-Aug-23	30.4	8.34	19.24	1.690	2.08	0.01	3.27	*1	8.42	4.30	10.29	8.69
	19-Oct-23	28.8	8.20	19.02	1.768	2.11	*1	3.29	*1	8.35	4.15	16.03	8.41
	mean*2	26.3	8.09	19.24	1.590	1.67	0.04	3.33	0.03	8.54	4.31	12.69	8.67
Ambulalakaw Lake	20-Mar-23	-	6.65	0.69	0.040	0.18	0.18	0.23	*1	0.30	0.14	0.50	0.09
	20-Jun-23*3	-	-	-	-	-	-	-	-	-	-	-	-
	26-Sep-23	-	6.58	2.31	0.020	1.66	0.57	2.18	0.50	1.60	0.82	1.31	0.12
	12-Dec-23*3	-	-	-	-	-	-	-	-	-	-	-	-
	mean	-	6.61	1.50	0.03	0.92	0.37	1.20	0.25	0.95	0.48	0.90	0.11

Mandatory Parameters: Once/year					Optional Parameters		
Site	Sampling Date	Transparency (m)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	DOC (mg/L)	Chl-a (µg/L)	COD (mg/L)
Pandin Lake	23-Feb-23	-	0.18	0.01	3.20	15.96	4.36
	18-May-23	-	0.15	0.03	3.38	1.06	3.06
	17-Aug-23	-	*1	*1	2.80	2.46	5.99
	19-Oct-23	-	*1	*1	-	2.67	26.25
	mean	-	0.08	0.01	3.13	5.54	9.92
Ambulalakaw Lake	20-Mar-23	-	*1	-	-	-	-
	20-Jun-23*3	-	-	-	-	-	-
	26-Sep-23	-	0.08	-	-	-	-
	12-Dec-23*3	-	-	-	-	-	-
	mean	-	0.04	-	-	-	-

note

- : No analysis or measurement.

*1: Less than determination limit.

*2: Mean of pH takes an average of hydrogen ion.

*3: Data for Jun.and Dec.2023 were excluded from the aggregation due to the high probability of contamination.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

		Anion	Cation	R1	Judge	Δcalc	R2	Judge
Pandin Lake	23-Feb-23	1259	1725	15.6	×	15.6	-10.9	×
	18-May-23	1899	1930	0.8	O	19.8	1.2	O
	17-Aug-23	1826	1705	-3.4	O	18.1	-3.1	O
	19-Oct-23	1905	1961	1.4	O	20.0	2.5	O
	mean							
Ambulalakaw Lake	20-Mar-23	53.1	49.5	-3.5	O	0.6	-9.7	O
	20-Jun-23*3	-	-	-	-	-	-	-
	26-Sep-23	127.8	193.6	20.5	×	2.1	-5.3	O
	12-Dec-23*3	-	-	-	-	-	-	-
	mean							

Table 6.4.7 Result of Inland Aquatic Environment Monitoring

Duration: 2023.2-2023.11

Country: Russia

Lake/Stream: (See below)

Mandatory Parameters: 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Pereemnaya River	28-Feb-23	0.4	6.77	5.46	0.163	14.25	0.97	0.10	0.003	1.30	0.74	6.79	0.62
	11-May-23	4.0	6.57	3.33	0.116	7.07	1.07	0.08	0.002	0.81	0.43	3.79	0.39
	17-Jul-23	11.9	6.43	4.66	0.102	13.67	0.51	0.05	0.001	0.98	0.65	5.61	0.64
	12-Oct-23	6.2	6.72	5.76	0.129	15.41	0.51	0.10	0.002	1.12	0.86	5.68	1.07
	mean*1	5.6	6.60	4.80	0.127	12.60	0.77	0.08	0.002	1.05	0.67	5.47	0.68
Komarovka River	13-Feb-23	0.1	7.29	8.05	0.678	9.68	0.67	3.68	0.05	6.17	3.33	9.07	2.48
	10-Apr-23	6.2	7.18	8.61	0.688	7.93	0.97	4.50	0.42	10.17	3.58	9.17	1.15
	16-Jun-23	15.0	7.49	7.79	0.578	8.67	0.07	4.43	0.05	5.65	1.95	9.10	2.08
	12-Sep-23	18.8	6.78	8.83	0.745	7.38	0.06	2.63	0.37	5.05	2.10	9.18	2.78
	13-Nov-23	0.1	6.58	7.29	0.484	6.97	0.08	1.65	0.10	3.80	1.00	7.40	1.40
	mean*1	8.0	6.93	8.11	0.635	8.13	0.37	3.38	0.20	6.17	2.39	8.78	1.98

Mandatory Parameters: Once/year						Optional Parameters				
Site	Sampling Date	Transparency (m)	Water color	COD (mg/L)	NO ₂ ⁻ (mg/L)	PO ₄ ³⁻ (mg/L)	Si (mg/L)	O ₂ (mg/L)	TP (mg/L)	Fe (mg/L)
Pereemnaya River	28-Feb-23	-	colorless	0.4	0.003	0.002	0.96	13.14	0.004	-
	11-May-23	-	colorless	2.1	0.002	0.004	2.28	12.34	0.008	-
	17-Jul-23	-	colorless	0.8	0.001	0.001	2.19	10.00	0.006	-
	12-Oct-23	-	colorless	1.1	0.001	0.001	3.08	10.54	0.005	-
	mean	-	-	1.1	0.002	0.002	2.13	11.50	0.006	-
Komarovka River	13-Feb-23	-	colorless	1.9	0.049	0.010	17.13	9.11	-	0.22
	10-Apr-23	-	colorless	4.9	0.023	0.033	4.93	9.70	-	0.48
	16-Jun-23	-	colorless	4.2	0.007	0.027	6.59	8.03	-	0.34
	12-Sep-23	-	colorless	7.2	0.006	0.033	5.85	9.14	-	0.37
	13-Nov-23	-	colorless	5.9	0.013	0.044	6.71	11.13	-	1.11
	mean	-	-	4.8	0.020	0.029	8.24	9.42	-	0.50

note

- : No analysis or measurement.

*1: Mean of pH takes an average of hydrogen ion.

#Construction of a new bridge has started in 2021 at the water sampling site on the Pereemnaya River.

Water samples were taken upstream from the construction place, but in winter there was a flooding of a large area around.

Deviations from natural values may be observed in 2021-2022, especially in winter.

		Anion	Cation	R1	Judge			
Pereemnaya River	28-Feb-23	478	465	-1.3	O	5.96	4.3	O
	11-May-23	283	268	-2.7	O	3.40	1.0	O
	17-Jul-23	396	392	-0.5	O	5.10	4.6	O
	12-Oct-23	461	442	-2.1	O	5.80	0.4	O
Komarovka River	13-Feb-23	996	1013	0.8	O	11.3	16.8	×
	10-Apr-23	998	1109	5.3	O	11.8	15.5	×
	16-Jun-23	886	924	2.1	O	10.2	13.6	×
	12-Sep-23	975	981	0.3	O	10.7	9.7	×
	13-Nov-23	679	681	0.2	O	7.6	1.9	O

Table 6.4.8 Result of Inland Aquatic Environment Monitoring

Duration: 2023.2-2023.12
 Country: Thailand
 Lake/Stream: Vajiralongkorn Dam&Resovior

Mandatory Parameters : 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Station1 (Ban Pong Chang)	23-Feb-23	28.0	8.00	12.08	1.205	1.12	0.14	1.06	0.01	1.91	0.90	18.70	3.69
	25-May-23	32.0	7.30	13.77	1.230	1.26	0.11	1.02	0.01	1.59	0.92	18.55	3.48
	20-Jul-23	30.4	7.90	13.32	1.215	1.44	0.12	0.99	0.02	1.55	0.98	18.55	3.57
	19-Dec-23	30.0	7.60	11.00	1.135	0.97	0.05	1.12	-	-	-	-	-
	mean*1	30.1	7.61	12.54	1.196	1.20	0.11	1.05	0.01	1.68	0.93	18.60	3.58
Station2 (Ban Pang Pueng)	23-Feb-23	27.7	7.60	12.10	1.220	1.36	0.10	1.09	0.01	1.71	0.98	19.75	3.22
	25-May-23	30.8	7.10	13.53	1.235	1.47	0.10	0.99	0.01	1.48	0.90	19.10	3.16
	20-Jul-23	29.8	8.50	13.12	1.220	1.34	0.10	1.08	0.00	1.63	0.98	19.15	3.22
	19-Dec-23	29.5	7.80	11.70	1.060	1.32	0.05	1.00	-	-	-	-	-
	mean*1	29.5	7.51	12.61	1.184	1.37	0.09	1.04	0.00	1.61	0.95	19.33	3.20

Mandatory Parameters : Once/year						
Site	Sampling Date	Transparency (m)	Water color	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	COD (mg/L)
Station1 (Ban Pong Chang)	23-Feb-23	3.5	light green	0.01	-	-
	25-May-23	3.5	light green	0.01	-	-
	20-Jul-23	1.8	light green	0.01	-	-
	19-Dec-23	5.2	light green	0.01	-	-
	mean	3.5	-	0.01	-	-
Station2 (Ban Pang Pueng)	23-Feb-23	4.5	light green	0.01	-	-
	25-May-23	4.0	light green	0.01	-	-
	20-Jul-23	2.4	light green	0.01	-	-
	19-Dec-23	6.5	light green	0.01	-	-
	mean	4.4	-	0.01	-	-

note
 - : No analysis or measurement.
 *1: Mean of pH takes an average of hydrogen ion.

	Date	Anion	Cation	R1	Judge
Station1 (Ban Pong Chang)	23-Feb-23	1261	1343	3.2	O
	25-May-23	1287	1304	0.7	O
	20-Jul-23	1275	1312	1.5	O
	19-Dec-23	1188	-	-	-
Station2 (Ban Pang Pueng)	23-Feb-23	1281	1350	2.6	O
	25-May-23	1295	1301	0.2	O
	20-Jul-23	1280	1316	1.4	O
	19-Dec-23	1117	-	-	-

	Acalc	R2	Judge
Station1 (Ban Pong Chang)	13.6	5.9	O
	13.5	-1.0	O
	13.5	0.7	O
	-	-	-
Station2 (Ban Pang Pueng)	13.8	6.4	O
	13.5	0.1	O
	13.6	1.7	O
	-	-	-

Table 6.4.9 Result of Inland Aquatic Environment Monitoring

Duration: 2023.3-2023.12
 Country: Vietnam
 Lake/Stream: Hoa Binh Reservoir

Mandatory Parameters: 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Hoa Binh Reservoir	15-Mar-23	23.1	7.39	16.66	1.314	4.39	2.98	1.49	0.10	3.56	1.32	23.22	2.64
	15-Jun-23	31.7	7.47	16.45	1.328	3.79	1.03	1.55	0.11	2.76	1.87	22.89	2.43
	15-Sep-23	27.7	7.58	17.45	1.513	4.64	1.29	0.90	0.12	3.89	1.74	23.39	2.77
	15-Dec-23	22.5	7.82	19.55	1.732	4.59	2.77	1.87	0.11	5.27	2.32	26.97	3.54
	mean*1	26.3	7.54	17.53	1.472	4.35	2.02	1.45	0.11	3.87	1.81	24.12	2.85

Mandatory Parameters: Once/year							
Site	Sampling Date	Transparency (m)	Water Color (PtCo unit)	F ⁻ (mg/L)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	COD (mg/L)
Hoa Binh Reservoir	15-Mar-23	1.2	-	0.076	-	0.036	4.6
	15-Jun-23	1.2	-	0.089	-	0.040	5.2
	15-Sep-23	1.2	-	0.092	-	0.039	5.0
	15-Dec-23	1.2	-	0.143	0.016	0.032	5.5
	mean	1.2	-	0.100	0.016	0.037	5.1

note

- : No analysis or measurement.

*1 : Mean of pH takes an average of hydrogen ion.

		Anion	Cation	R1	Judge			
Hoa Binh Reservoir	15-Mar-23	1496	1570	2.4	O	Acalc	R2	Judge
	15-Jun-23	1468	1516	1.6	O	16.4	-0.8	O
	15-Sep-23	1657	1615	-1.3	O	15.9	-1.7	O
	15-Dec-23	1926	1932	0.1	O	17.3	-0.5	O
						20.4	2.2	O

Table 6.4.10 Summary of Inland Aquatic Environment Monitoring

Mandatory Parameters : 4 times/year														
Country	Location	Site	pH	EC (mS/m)	Alkalinity (meq/L)	Gran's ANC (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Cambodia	Kampong Speu province	Sras Srang Lake	-	-	-	-	-	-	-	-	-	-	-	-
China	Chongqing	Jinyunshan Lake*2	6.43	9.50	0.092	-	23.29	11.21	1.62	0.02	1.86	2.39	9.19	3.25
	Xiamen	Xiaoping Dam	7.41	6.19	0.161	-	5.48	3.27	4.81	0.13	5.01	2.69	3.13	0.64
	Xi'an	Jiwozi River	7.06	4.53	0.160	-	5.69	2.59	1.59	0.34	0.77	0.45	5.34	0.58
	Zhuhai	Zhuxiandong Stream	7.25	6.50	0.359	-	1.94	3.06	5.19	0.01	7.91	1.76	3.03	1.13
Indonesia	Bandung	Patengang Lake	-	-	-	-	-	-	-	-	-	-	-	-
	Sukabumi, West Java	Gunung Lake	-	-	-	-	-	-	-	-	-	-	-	-
Japan	Gifu pref.	Ijira Lake (Center, surface)	7.11	3.50	0.161	0.134	4.30	0.75	1.73	<0.01*1	1.84	0.25	2.62	1.16
	Nagano pref.	Futago-ike Lake(Oike)*3 (Center, surface)	7.01	1.89	0.131	0.119	1.02	0.90	0.37	<0.02*1	1.22	0.26	2.26	0.20
		Futago-ike Lake(Meike)*3 (Center, surface)	5.84	0.49	0.026	0.008	0.60	<0.1*1	0.30	<0.02*1	0.29	0.15	0.31	0.06
Lao PDR	Vientiane province	Nam Houm Lake	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	-	Baru River*6	7.29	6.09	0.538	-	1.86	1.62	0.37	0.01	4.89	0.49	4.82	2.09
	-	Kuala Tahan	-	-	-	-	-	-	-	-	-	-	-	-
Mongolia	Terelj	Terelj River*6	6.32	3.79	0.263	-	3.21	0.86	0.42	0.03	1.94	0.75	6.46	0.88
Philippines	San Pablo City	Pandin Lake	8.09	19.24	1.590	-	1.67	0.04	3.33	0.03	8.54	4.31	12.69	8.67
	Benguet	Ambulalakaw Lake	6.61	1.50	0.030	-	0.92	0.37	1.20	0.25	0.95	0.48	0.90	0.11
Russia	Southern Baikal	Pereemnya River	6.60	4.80	0.127	-	12.60	0.77	0.08	0.002	1.05	0.67	5.47	0.68
	Primorskaya	Komarovka River*5	6.93	8.11	0.635	-	8.13	0.37	3.38	0.20	6.17	2.39	8.78	1.98
Thailand	Kanchanaburi Province	Vajiralongkorn Dam (Ban Pong Chang)	7.61	12.54	1.196	-	1.20	0.11	1.05	0.01	1.68	0.93	18.60	3.58
		Vajiralongkorn Dam (Ban Pang Pueng)	7.51	12.61	1.184	-	1.37	0.09	1.04	0.00	1.61	0.95	19.33	3.20
Vietnam	Hoa Binh Province	Hoa Binh Reservoir	7.54	17.53	1.472	-	4.35	2.02	1.45	0.11	3.87	1.81	24.12	2.85

Country	Location	Site	Mandatory Parameters : Once/year				
			Transparency (m)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	DOC (mg/L)	COD (mg/L)
Cambodia	Kampong Speu province	Sras Srang Lake	-	-	-	-	-
China	Chongqing	Jinyunshan Lake*2	1.2	<0.05*1	*1	-	6.5
	Xiamen	Xiaoping Dam*7	0.9	0.005	0.015	-	6.8
	Xi'an	Jiwozi River	-	<0.05*1	<0.02*1	-	<4*1
	Zhuhai	Zhuxiandong Stream	0.3	0.01	0.012	-	2.6
Indonesia	Bandung	Patengang Lake	-	-	-	-	-
	Sukabumi, West Java	Gunung Lake	-	-	-	-	-
Japan	Gifu pref.	Ijira Lake*7 (Center, surface)	3.0*3	<0.02*1	<0.01*1	0.5	-
	Nagano pref.	Futago Lake(Oike)*3 (Center, surface)	8.5	<0.01*1	<0.01*1	1.1	1.8
		Futago Lake(Meike)*3 (Center, surface)	2.0	<0.01*1	<0.01*1	3.5	5.0
Lao PDR	Vientiane province	Nam Houm Lake	-	-	-	-	-
Malaysia	-	Baru River*6	-	<0.10*1	-	-	4.0
	-	Kuala Tahan	-	-	-	-	-
Mongolia	Terelj	Terelj River	-	-	-	-	-
Philippines	San Pablo City	Pandin Lake*5	-	0.08	0.01	3.1	9.9
	Benguet	Ambulalakaw Lake	-	0.04	-	-	-
Russia	Southern Baikal	Pereemnya River*4	-	0.002	0.002	-	1.1
	Primorskaya	Komarovka River*5	-	0.029	0.020	-	4.8
Thailand	Kanchanaburi Province	Vajiralongkorn Dam*2 (Ban Pong Chang)	3.5	0.010	-	-	-
		Vajiralongkorn Dam*2 (Ban Pang Pueng)	4.4	0.010	-	-	-
Vietnam	Hoa Binh Province	Hoa Binh Reservoir*4	1.2	0.016	0.037	-	5.1

note

- : No analysis or measurement.

*1: Less than determination/detection limit.

*2: Surveyed twice a year.

*3: Surveyed 3 times a year.

*4: Surveyed 4 times a year.

*5: Surveyed 5 times a year.

*6: Surveyed 6 times a year.

*7: NO₂⁻ was surveyed 4 times a year.

Table 6.5.1 Annual mean values of each parameters from 2012 to 2017 at Sras Srang Lake (Cambodia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparenc m	PO ₄ ³⁻ mg/L	NO ₂ mg/L	DOC mg/L	COD mg/L
2012	6.46	0.88	0.037	-	0.08	0.06	1.65	0.04	0.94	0.13	0.27	0.16	0.7	-	-	-	-
2013	5.74	0.93	0.034	-	0.05	0.28	1.39	0.02	0.94	0.12	0.29	0.13	0.7	-	-	-	-
2014	5.84	0.96	0.035	-	0.06	0.60	1.38	0.12	1.03	0.31	0.26	0.12	0.7	-	-	-	-
2015	5.81	0.98	0.040	-	0.09	0.22	1.17	0.07	0.80	0.19	0.37	0.22	0.8	-	-	-	-
2016	5.95	0.92	0.028	-	0.10	0.30	1.10	0.09	0.91	0.14	0.27	0.13	0.7	-	-	-	-
2017	6.04	0.97	0.034	-	0.07	0.06	1.12	0.01	0.67	0.08	0.17	0.09	0.8	-	-	-	-

Table 6.5.2 Annual mean values of each parameters from 2001 to 2023 at Jinyunshan Lake (China)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ mg/L	DOC mg/L	COD mg/L
2001	7.50	9.05	-	-	26.05	7.68	2.58	0.65	1.78	1.58	6.63	2.63	-	-	-	-	-
2002	6.12	9.52	-	-	26.36	7.99	2.53	0.09	2.50	1.79	9.08	3.28	-	-	-	-	-
2003	6.55	9.79	0.210	-	23.21	5.16	2.68	0.21	2.60	1.72	9.03	3.30	0.9	-	-	-	-
2004	6.34	9.61	0.075	-	25.72	7.94	1.74	0.30	1.98	1.65	9.66	2.71	2.6	-	-	-	7.6
2005	6.04	10.21	0.073	-	28.12	8.16	2.63	0.04	2.70	1.82	9.36	3.22	3.7	*1	*1	-	2.9
2006	6.36	11.92	0.113	-	32.65	9.53	3.05	0.11	2.96	2.27	11.05	3.82	5.0	*1	*1	-	3.2
2007	6.24	12.35	0.086	-	37.19	10.21	3.12	0.12	2.81	2.18	11.24	3.81	3.0	*1	*1	-	4.4
2008	5.42	12.20	0.066	-	33.26	12.78	2.77	0.16	2.65	1.98	11.34	3.77	3.7	*1	*1	-	2.9
2009	5.84	11.18	0.048	-	29.27	8.29	2.95	0.23	2.59	1.96	10.15	3.63	2.3	*1	*1	-	<10*1
2010	5.76	12.79	0.157	-	34.55	10.62	3.00	0.14	2.90	2.07	11.72	3.98	3.4	*1	*1	-	<10*1
2011	5.25	14.17	0.064	-	39.63	15.15	3.76	0.12	2.71	2.27	12.77	3.90	4.5	*1	*1	-	<10*1
2012	5.47	13.54	0.052	-	40.79	9.88	3.71	0.14	3.08	2.38	12.79	3.98	3.1	*1	*1	-	<10*1
2013	6.03	7.12	0.082	-	20.74	3.93	0.68	0.12	0.75	0.77	8.75	0.98	3.5	*1	*1	-	<10*1
2014	5.41	12.39	0.040	-	34.94	14.30	2.65	0.09	2.54	2.14	11.84	3.77	6.3	*1	*1	-	-
2015	6.48	11.35	0.145	-	29.41	10.09	2.24	0.25	2.25	2.01	11.62	3.46	0.9	*1	*1	-	<10*1
2016	6.49	12.17	0.266	-	28.60	11.72	2.97	*1	2.91	2.30	12.66	3.59	2.5	*1	*1	-	<10*1
2017	6.48	11.16	0.122	-	27.27	11.84	2.70	0.02	2.63	1.98	11.32	3.24	2.0	*1	*1	-	<10*1
2018	6.74	10.99	0.223	-	26.04	7.25	2.28	0.62	2.48	1.81	9.96	3.00	2.2	*1	*1	-	<10*1
2019	6.44	10.63	0.147	-	26.54	10.76	2.10	0.03	2.48	1.84	9.96	3.41	2.3	*1	*1	-	<10*1
2020	6.61	9.98	0.147	-	24.03	10.00	1.75	0.01	2.12	2.01	9.30	3.26	2.4	*1	*1	-	4.0
2021	6.27	9.52	0.129	-	23.36	8.47	1.58	0.06	1.96	1.61	8.49	2.70	1.9	<0.05*1	*1	-	4.0
2022	6.63	9.27	0.186	-	22.44	6.01	1.52	0.09	2.10	1.85	8.99	3.13	1.0	<0.05*1	*1	-	4.5
2023	6.43	9.50	0.092	-	23.29	11.21	1.62	0.02	1.86	2.39	9.19	3.25	1.2	<0.05*1	*1	-	6.5

Table 6.5.3 Annual mean values of each parameters from 2001 to 2023 at Xiaoping Dam (China)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	7.21	-	-	-	1.43	1.30	2.18	-	-	-	-	-	-	-	-	-	-
2002	7.39	7.00	-	-	4.67	6.66	2.82	0.20	7.29	2.14	2.29	0.82	-	-	-	-	-
2003	6.73	7.19	0.193	-	2.68	5.02	5.91	0.17	6.53	2.06	2.35	0.86	-	-	-	-	1.8
2004	7.34	5.57	0.242	-	2.68	7.83	4.35	0.18	6.70	2.18	2.92	0.64	-	0.020	0.008	-	2.1
2005	6.73	4.62	0.232	-	2.07	2.83	3.94	0.05	4.77	2.37	2.95	0.61	0.9	0.020	0.008	-	1.3
2006	6.81	5.27	0.190	-	2.46	2.52	5.13	0.19	6.02	2.33	3.19	0.66	0.9	0.020	0.008	-	0.7
2007	7.07	7.32	0.110	-	2.67	2.67	5.13	0.15	3.64	1.63	2.82	0.54	-	-	0.006	-	1.8
2008	6.73	5.66	0.124	-	4.49	2.67	12.95	0.14	4.97	2.46	3.90	0.56	-	0.010	0.007	-	1.9
2009	6.72	7.53	0.193	-	3.14	2.67	7.44	0.10	6.91	3.52	2.43	0.82	-	0.010	0.008	-	3.5
2010	6.63	6.19	0.190	-	2.70	3.70	5.54	0.11	5.80	2.53	2.51	0.69	1.1	0.020	0.015	-	1.9
2011	6.78	4.85	0.168	-	2.60	2.89	3.14	0.09	3.50	2.10	2.57	0.52	0.7	0.050	0.022	-	1.8
2012	6.94	5.08	0.155	-	2.92	3.46	3.10	0.06	3.78	2.50	2.51	0.68	1.2	0.030	0.031	-	2.5
2013	6.80	5.52	0.220	-	2.71	3.42	2.77	0.05	3.80	2.83	3.20	0.76	0.9	0.024	0.029	-	1.7
2014	7.18	5.79	0.219	-	3.71	3.53	2.64	0.05	3.09	2.61	3.70	0.84	0.9	0.041	0.020	-	1.5
2015	7.01	6.01	0.179	-	3.99	3.17	3.43	0.05	3.65	2.64	3.61	0.66	0.7	0.045	0.014	-	1.2
2016	6.65	5.98	0.280	-	2.39	2.61	2.87	0.11	4.43	2.36	3.52	0.66	1.2	0.042	0.017	-	0.9
2017	7.08	5.76	0.259	-	3.17	3.33	2.85	0.08	4.56	2.47	3.96	0.62	1.5	0.032	0.025	-	1.1
2018	7.31	5.68	0.287	-	2.17	2.53	2.32	0.29	3.99	2.19	3.54	0.57	0.8	0.032	0.049	-	1.9
2019	7.23	5.61	0.269	-	2.42	2.56	2.76	0.07	3.40	2.41	3.96	0.64	0.9	0.032	0.156	-	2.0
2020	7.36	5.91	0.282	-	2.21	2.46	2.48	0.03	4.22	2.66	3.62	0.66	1.1	0.021	0.052	-	2.0
2021	7.43	5.81	0.294	-	2.08	2.43	2.47	0.08	4.22	2.71	3.79	0.65	0.9	0.018	0.026	-	1.7
2022	7.35	6.38	0.235	-	2.00	2.56	2.48	0.04	4.65	2.85	4.38	0.71	1.2	0.015	0.049	-	10.0
2023	7.41	6.19	0.161	-	5.48	3.27	4.81	0.13	5.01	2.69	3.13	0.64	0.9	0.005	0.015	-	6.8

Table 6.5.4 Annual mean values of each parameters from 2001 to 2023 at Jiwozi River (China)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	7.11	4.50	0.225	-	10.03	1.47	1.06	0.04	1.90	0.70	8.83	1.38	-	-	-	-	-
2002	7.60	8.47	0.110	-	12.16	1.70	1.80	*1	2.80	1.20	12.73	1.72	-	-	-	-	-
2003	7.54	7.83	0.140	-	11.44	2.01	1.63	*1	2.08	0.95	12.03	1.59	-	-	-	-	-
2004	7.20	6.63	0.243	-	11.68	2.30	1.06	*1	1.79	0.68	9.04	1.35	-	*1	*1	-	3.2
2005	6.99	7.99	0.208	-	15.31	0.81	1.74	0.06	1.77	0.72	7.44	1.35	-	*1	0.090	-	1.6
2006	6.80	7.59	0.238	-	11.80	1.87	1.21	0.07	1.93	0.65	7.64	1.11	-	0.030	0.003	-	2.8
2007	7.32	8.86	0.250	-	16.68	3.46	1.31	0.13	2.09	0.96	11.00	0.96	-	*1	*1	-	2.2
2008	7.05	8.42	0.248	-	13.92	1.89	1.51	0.30	1.43	1.05	9.38	1.20	-	<0.01*1	<0.003*1	-	2.5
2009	6.98	8.28	0.278	-	15.51	2.07	1.34	0.14	1.88	1.04	9.85	1.38	-	<0.01*1	<0.003*1	-	2.5
2010	7.33	8.11	0.280	-	13.92	2.83	1.27	*1	1.22	0.81	10.49	1.35	-	<0.01*1	<0.003*1	-	3.0
2011	6.85	6.83	0.275	-	12.89	0.87	0.51	*1	0.74	0.84	8.09	2.01	-	<0.01*1	<0.003*1	-	3.0
2012	6.83	6.95	0.275	-	12.97	0.96	0.57	*1	0.70	0.83	7.80	2.01	-	<0.01*1	<0.003*1	-	4.0
2013	6.86	8.92	0.333	-	15.01	2.39	3.16	*1	3.50	1.37	11.07	1.69	-	<0.01*1	<0.003*1	-	5.0
2014	7.05	8.24	0.273	-	15.85	1.28	1.32	0.27	1.93	1.06	9.15	1.61	-	<0.01*1	<0.003*1	-	4.0
2015	7.09	7.27	0.263	-	11.32	6.45	1.55	*1	4.12	0.95	9.19	1.28	-	<0.01*1	<0.003*1	-	3.0
2016	7.10	7.60	0.295	-	11.70	2.86	0.82	*1	2.29	0.65	10.07	1.11	-	<0.01*1	<0.003*1	-	*1
2017	6.99	6.87	0.335	-	9.02	2.09	1.02	0.03	2.02	0.82	8.60	1.41	-	<0.01*1	<0.003*1	-	*1
2018	6.95	6.33	0.330	-	8.59	0.77	1.20	0.02	1.81	0.85	7.62	1.48	-	<0.01*1	<0.003*1	-	*1
2019	7.65	6.22	0.295	-	6.80	5.10	1.22	0.28	1.89	0.99	7.48	1.06	-	<0.01*1	<0.003*1	-	<0.5*1
2020	7.13	5.40	0.353	-	5.52	0.75	0.74	0.00	1.69	0.73	7.47	1.13	-	<0.01*1	<0.003*1	-	<5*1
2021	6.74	5.50	0.295	-	5.86	3.71	0.70	0.10	1.41	0.65	7.93	0.76	-	<0.051*1	<0.016*1	-	<5*1
2022	7.43	5.62	0.323	-	4.82	2.25	0.77	0.00	1.41	0.84	7.64	0.84	-	<0.05*1	<0.02*1	-	<4*1
2023	7.06	4.53	0.160	-	5.69	2.59	1.59	0.34	0.77	0.45	5.34	0.58	-	<0.051*1	<0.016*1	-	<4*1

Table 6.5.5 Annual mean values of each parameters from 2004 to 2023 at Zhuxiandong stream and from 2001 to 2003 at Zhuxiandong reservoir(China)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	ran's AN (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	7.62	-	-	-	17.70	0.63	43.13	0.20	-	-	-	-	-	-	-	-	-
2002	7.93	6.70	0.963	-	19.89	0.83	23.80	0.23	7.27	1.57	17.00	2.50	-	-	-	-	-
2003	7.82	7.54	1.603	-	17.50	0.29	19.59	0.17	7.34	1.96	16.80	2.36	-	-	0.029	-	1.7
2004	7.12	8.49	0.645	-	5.47	1.90	6.03	*1	8.95	1.88	5.41	2.84	-	-	*1	-	1.1
2005	6.97	9.53	0.133	-	5.83	1.70	6.73	*1	8.90	1.60	4.63	2.65	1.3	*1	*1	-	0.9
2006	7.18	7.35	0.225	-	2.60	1.15	4.50	1.10	5.40	1.13	4.38	1.58	1.3	*1	*1	-	1.0
2007	7.28	7.80	0.240	-	3.61	1.77	5.09	0.10	6.01	1.22	3.65	1.38	1.3	*1	*1	-	1.1
2008	7.18	7.58	0.165	-	2.95	2.36	4.90	0.05	6.83	1.31	4.40	1.76	1.3	*1	*1	-	1.1
2009	7.16	7.74	0.367	-	2.97	4.20	6.30	0.06	7.86	1.57	2.77	1.96	1.1	*1	*1	-	1.3
2010	7.22	6.86	0.393	-	2.49	2.50	5.15	0.08	6.98	1.23	4.30	1.72	1.1	*1	*1	-	1.4
2011	7.16	7.42	0.467	-	1.95	1.00	4.33	0.09	7.70	1.15	4.68	1.69	1.1	*1	*1	-	1.3
2012	7.26	7.62	0.499	-	2.98	2.00	5.38	0.09	7.50	1.69	4.81	1.88	1.1	*1	*1	-	1.2
2013	7.20	7.87	0.500	-	3.81	4.11	4.66	0.07	6.95	1.77	4.91	1.91	1.2	*1	*1	-	1.1
2014	7.19	8.27	0.502	-	4.64	4.80	3.75	0.02	6.42	1.69	5.22	2.53	-	-	-	-	-
2015	6.38	6.73	0.496	-	2.47	1.31	2.50	0.44	7.48	1.84	2.84	1.14	-	-	-	-	-
2016	6.99	7.45	0.496	-	1.85	2.01	3.69	0.03	6.70	1.53	4.35	1.64	-	-	-	-	-
2017	7.29	15.17	0.492	-	8.15	3.33	14.38	0.15	11.32	1.76	14.03	2.87	-	-	-	-	-
2018	7.19	8.63	0.630	-	2.11	2.11	5.80	0.03	7.58	1.38	6.05	2.25	-	*1	-	-	8.5
2019	7.11	8.05	0.524	-	2.40	2.62	5.63	0.00	7.32	1.36	5.11	1.99	-	0.020	0.003	-	2.1
2020	7.23	7.34	0.448	-	1.85	1.83	5.39	0.00	7.79	1.26	4.47	1.65	-	0.020	0.004	-	1.7
2021	6.97	7.25	0.400	-	2.39	3.45	5.86	0.01	7.91	1.42	3.75	1.47	1.0	0.020	0.004	-	1.7
2022	7.11	6.36	0.340	-	1.92	2.83	5.09	0.01	7.91	1.60	2.54	0.99	0.3	0.010	*1	-	6.0
2023	7.25	6.50	0.359	-	1.94	3.06	5.19	0.01	7.91	1.76	3.03	1.13	0.3	0.010	0.012	-	2.6

Table 6.5.6 Annual mean values of each parameters from 2001 to 2019 at Patenggang Lake (Indonesia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	ran's AN (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	7.90	7.28	0.488	-	4.33	0.07	8.19	0.13	4.90	0.54	6.32	2.18	-	-	-	-	-
2002	8.46	5.83	0.255	-	7.33	0.06	6.30	0.17	4.60	0.71	4.03	1.93	-	-	-	-	-
2003	7.34	6.58	0.460	-	7.76	0.19	7.50	0.53	4.30	0.49	5.17	2.53	0.6	0.207	*1	12.4	-
2004	7.29	5.89	0.340	-	2.65	0.03	3.85	0.02	2.10	0.85	5.75	2.20	0.6	0.014	*1	7.3	-
2005	7.19	6.71	0.459	-	8.83	0.23	2.30	0.43	4.04	1.87	5.70	2.70	0.1	0.010	*1	10.9	-
2006	7.49	5.74	0.414	-	3.80	0.47	2.58	0.39	2.87	1.70	5.70	1.43	0.1	0.085	0.016	8.1	-
2007	7.17	6.75	0.420	-	7.45	0.32	2.59	0.41	3.40	1.53	5.75	1.47	0.1	0.038	0.012	3.8	-
2008	6.76	6.43	0.448	-	7.89	0.07	2.18	0.05	2.84	1.29	6.18	2.39	0.9	0.202	0.019	10.2	-
2009	6.99	6.96	0.490	-	5.16	0.58	2.24	0.19	3.68	2.33	6.66	1.09	1.1	0.011	0.007	8.6	-
2010	6.66	6.75	0.512	-	4.93	0.01	2.33	0.17	3.43	1.52	6.87	2.12	1.1	0.031	0.006	7.5	-
2011	7.84	7.40	0.522	-	8.08	0.02	2.48	0.34	3.18	1.38	6.46	2.61	0.7	0.292	0.006	6.9	-
2012	7.72	6.09	0.403	-	7.40	*1	1.80	0.43	3.50	1.47	5.26	2.06	0.8	0.133	*1	7.6	-
2013	7.41	6.64	0.442	-	8.23	0.06	1.50	0.09	4.83	2.03	4.60	1.97	0.9	*1	0.009	12.1	-
2014	7.48	6.19	0.357	-	7.15	0.12	2.44	0.47	3.00	1.15	4.90	2.06	1.6	0.010	0.007	6.8	-
2015	7.75	7.03	0.375	-	9.96	0.12	2.06	0.06	3.12	1.50	5.74	2.22	-	-	-	-	-
2016	8.09	9.51	0.426	-	6.40	0.82	3.62	0.09	4.68	1.14	5.32	1.84	-	-	-	-	-
2017	7.88	6.56	0.493	-	6.65	0.48	2.24	0.07	3.07	1.53	6.58	1.80	1.4	-	-	-	-
2018	7.81	6.39	0.459	-	6.11	0.79	2.22	0.02	3.57	1.32	6.57	1.82	-	-	-	-	-
2019	7.94	6.07	0.432	-	6.05	0.97	1.51	0.93	3.93	1.44	5.83	1.82	-	-	-	-	-

Table 6.5.7 Annual mean values of each parameters from 2008 to 2019 at Gunung Lake (Indonesia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's AN (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparenc m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2008	6.73	5.90	0.438	-	5.59	0.03	2.01	0.57	2.24	0.71	5.09	1.87	1.1	0.040	0.007	6.7	-
2009	6.69	5.54	0.460	-	3.48	0.06	1.30	0.16	3.14	1.02	4.62	2.20	1.0	0.014	0.005	10.8	-
2010	6.24	5.14	0.442	-	1.70	0.00	1.15	0.11	2.01	0.87	5.35	1.66	1.1	0.125	0.002	5.0	-
2011	7.38	5.15	0.414	-	4.04	0.07	1.00	0.12	2.36	0.84	5.04	2.02	0.7	0.037	0.004	10.2	-
2012	6.56	5.86	0.450	-	4.04	*1	1.10	*1	1.74	0.88	5.30	2.54	0.5	0.710	*1	9.5	-
2013	7.38	4.15	0.321	-	3.05	0.04	0.75	0.08	2.75	0.76	2.92	1.18	1.0	*1	0.002	5.3	-
2014	6.97	3.96	0.248	-	4.05	0.04	1.68	0.13	2.74	0.87	2.65	0.92	1.0	0.020	0.004	8.8	4.8
2015	7.33	4.91	0.274	-	6.74	0.05	1.96	0.03	1.74	0.49	4.46	2.00	-	-	-	-	-
2016	7.41	3.92	0.412	-	1.27	0.15	0.81	0.09	4.10	0.51	5.53	1.36	-	-	-	-	-
2017	7.88	4.47	0.318	-	1.59	0.13	0.82	0.09	1.87	0.92	5.07	1.17	0.8	-	-	-	-
2018	6.99	4.87	0.487	-	0.84	0.15	1.12	0.03	2.35	0.65	6.31	1.61	-	-	-	-	-
2019	7.76	5.58	0.436	-	2.50	0.14	1.09	0.56	1.68	0.98	6.39	1.64	-	-	-	-	-

Table 6.5.8 Annual mean values of each parameters from 2001 to 2023 at Ijira Lake (Japan)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	ran's AN (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	6.85	4.33	0.138	-	4.66	2.31	2.19	0.07	2.37	0.40	3.51	1.61	-	<0.01*1	-	-	-
2002	6.72	4.52	0.173	-	5.63	2.01	2.27	0.09	2.23	0.38	3.39	1.37	2.2	<0.066*1	<0.01*1	3.2	-
2003	6.75	4.10	0.146	-	5.14	2.07	2.40	0.08	1.86	0.30	2.94	1.36	3.0	<0.01*1	<0.03*1	1.4	-
2004	7.17	4.05	0.145	-	4.79	1.88	2.34	0.12	2.15	0.23	2.71	1.23	2.8	<0.03*1	<0.02*1	1.1	-
2005	6.94	4.47	0.153	-	5.73	2.37	2.32	0.08	2.29	0.39	3.27	1.42	3.0	<0.03*1	0.068	0.7	-
2006	6.81	3.94	0.164	-	4.53	2.11	2.09	0.03	2.00	0.33	2.80	1.23	2.4	<0.1*1	<0.02*1	0.6	-
2007	7.09	4.58	0.206	-	5.77	1.22	2.27	0.03	2.24	0.30	3.57	1.46	2.7	<0.1*1	<0.02*1	1.0	-
2008	7.19	4.36	0.183	-	5.37	1.78	2.16	0.04	2.10	0.28	3.24	1.45	2.7	<0.1*1	<0.01*1	0.8	-
2009	7.04	4.26	0.176	-	5.18	1.47	2.13	0.01	2.08	0.26	3.03	1.35	2.7	<0.1*1	<0.01*1	0.7	-
2010	7.01	3.74	0.158	-	4.58	1.10	1.96	<0.01*1	1.88	0.25	2.61	1.18	2.3	<0.1*1	<0.01*1	0.5	-
2011	7.11	3.85	0.159	-	4.77	1.34	1.86	<0.01*1	1.89	0.23	3.05	1.22	1.8	<0.1*1	<0.01*1	0.8	-
2012	7.11	3.76	0.154	-	4.66	1.31	1.89	<0.01*1	1.85	0.23	2.78	1.23	2.3	<0.1*1	<0.01*1	0.5	-
2013	7.17	3.94	0.165	-	5.02	1.06	1.97	<0.01*1	1.97	0.24	2.73	1.25	2.4	<0.1*1	<0.01*1	0.5	-
2014	7.06	3.73	0.140	-	4.67	1.21	1.86	<0.01*1	1.82	0.27	2.34	1.12	1.9	<0.1*1	<0.01*1	0.5	-
2015	7.16	3.57	0.149	-	4.38	1.06	1.87	<0.01*1	1.79	0.27	2.12	1.05	2.2	<0.1*1	<0.01*1	0.6	-
2016	7.11	3.73	0.141	-	5.37	1.39	1.78	<0.01*1	1.89	0.27	2.39	1.20	4.8	<0.1*1	<0.01*1	0.6	-
2017	7.02	3.89	0.165	-	5.33	0.97	1.84	<0.01*1	1.96	0.26	2.82	1.31	3.3	<0.1*1	<0.01*1	0.6	-
2018	6.95	3.59	0.162	0.143	4.54	0.74	1.87	<0.01*1	1.82	0.26	2.75	1.16	2.6	<0.1*1	<0.01*1	2.4	-
2019	7.16	3.84	0.176	0.160	4.81	0.74	1.88	<0.01*1	1.95	0.24	3.08	1.20	3.3	<0.02*1	<0.01*1	3.0	-
2020	6.99	3.64	0.163	0.151	4.56	0.85	1.73	<0.01*1	1.90	0.24	2.72	1.13	2.2	0.030	<0.01*1	0.9	-
2021	7.18	3.51	0.160	0.149	4.32	0.60	1.70	<0.01	1.83	0.24	2.52	1.12	2.4	<0.02*1	<0.01*1	0.5	-
2022	7.01	3.61	0.163	0.153	4.43	0.81	1.74	<0.01*1	1.85	0.25	2.64	1.17	2.3	<0.02*1	<0.01*1	0.6	-
2023	7.11	3.50	0.161	0.134	4.30	0.75	1.73	<0.01*1	1.84	0.25	2.62	1.16	3.0	<0.02*1	<0.01*1	0.5	-

Table 6.5.9 Annual mean values of each parameters from 2019 to 2023 at Futago-ike Lake (Oike) (Japan)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC	Alkalinity	Iron's ANI	SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	NH ₄ ⁺	Na ⁺	K ⁺	Ca ²⁺	Mg ²⁺	Transparen	PO ₄ ³⁻	NO ₂ ⁻	DOC	COD
		mS/m	meq/L	(meq/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	m	mg/L	mg/L	mg/L
2019	7.01	1.86	0.129	0.112	1.19	0.80	0.33	<0.02*1	1.13	0.25	2.10	0.19	8.2	<0.01*1	<0.01*1	0.9	1.5
2020	6.98	1.77	0.121	0.106	1.09	0.74	0.32	<0.02*1	1.07	0.27	1.93	0.19	9.0	<0.01*1	<0.01*1	1.0	1.5
2021	6.94	1.72	0.122	0.107	1.00	0.80	0.33	<0.02*1	1.02	0.27	1.88	0.18	9.1	<0.01*1	<0.01*1	1.2	2.0
2022	7.11	1.83	0.135	0.121	0.98	0.77	0.33	<0.02*1	1.12	0.27	2.10	0.19	8.6	<0.01*1	<0.01*1	0.9	1.5
2023	7.01	1.89	0.131	0.119	1.02	0.90	0.37	<0.02*1	1.22	0.26	2.26	0.20	8.5	<0.01*1	<0.01*1	1.1	1.8

Table 6.5.10 Annual mean values of each parameters from 2019 to 2023 at Futago-ike Lake (Meike) (Japan)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2019	6.93	2.04	0.141	0.125	1.27	0.96	0.36	<0.02*1	1.25	0.27	2.34	0.21	4.8	<0.01*1	<0.01*1	1.1	1.5
2020	6.11	0.62	0.033	0.017	0.82	0.08	0.31	<0.02*1	0.40	0.23	0.43	0.09	3.6	<0.01*1	<0.01*1	1.6	2.7
2021	5.94	0.59	0.030	0.015	0.76	0.10	0.28	<0.02*1	0.33	0.19	0.37	0.08	4.2	<0.01*1	<0.01*1	1.8	3.1
2022	5.86	0.52	0.027	0.013	0.69	0.06	0.29	<0.02*1	0.28	0.17	0.31	0.06	4.3	<0.01*1	<0.01*1	1.1	1.8
2023	5.84	0.49	0.026	0.008	0.60	<0.1	0.30	<0.02*1	0.29	0.15	0.31	0.06	2.0	<0.01*1	<0.01*1	3.5	5.0

Table 6.5.11 Annual mean values of each parameters from 2009 to 2019 at Nam Houm Lake (Lao PDR)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2009	7.55	3.90	0.411	-	1.83	0.65	1.45	0.15	0.94	1.75	4.43	0.86	-	0.001	-	-	10.2
2014	7.18	4.12	0.438	-	-	-	-	-	-	-	-	-	0.8	0.013	-	-	23.1
2016	7.20	2.34	0.340	-	2.61	0.02	1.83	0.01	1.07	0.40	1.14	1.72	0.6	0.010	-	-	11.2
2017	7.54	3.39	0.303	-	3.76	0.01	0.48	-	-	-	-	-	0.6	0.010	-	-	3.7
2018	7.43	4.11	0.390	-	2.26	0.41	0.40	-	-	-	-	-	0.6	0.010	-	-	7.5
2019	8.05	3.37	0.338	-	3.65	0.01	0.40	-	-	-	-	-	0.6	0.010	-	-	19.4

Table 6.5.12 Annual mean values of each parameters from 2022 to 2023 at Baru River (Malaysia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2022	7.62	8.02	0.747	-	2.58	0.42	1.58	<0.003*1	5.27	0.71	9.07	2.63	-	<0.10*1	-	-	5.2
2023	7.29	6.09	0.538	-	1.86	1.62	0.37	0.01	4.89	0.49	4.82	2.09	-	<0.10*1	-	-	4.0

Table 6.5.13 Annual mean values of each parameters from 2002 to 2023 at Terelj River (Mongolia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2002	7.23	4.84	0.098	-	3.47	1.11	0.43	0.04	1.87	0.52	7.17	0.87	-	-	-	-	-
2003	6.75	4.60	0.266	-	3.16	0.74	0.36	0.04	1.65	0.48	5.88	0.83	-	-	-	-	-
2004	6.80	4.44	0.296	-	2.76	0.70	0.54	0.06	1.60	0.72	5.93	0.89	-	-	-	-	-
2005	6.90	4.84	0.367	-	3.18	0.82	0.56	0.05	1.95	0.68	8.90	1.04	-	-	0.003	-	-
2006	6.99	5.07	0.327	-	3.60	0.79	0.46	0.11	2.07	0.62	9.04	1.07	-	-	0.003	-	-
2007	6.89	5.06	0.339	-	3.18	0.79	0.57	0.07	2.22	0.55	8.63	1.03	-	<0.005*1	0.003	-	-
2008	6.36	6.59	0.282	-	3.82	1.33	0.73	<0.01*1	1.93	0.60	13.70	1.00	-	0.007	<0.005*1	-	-
2009	7.13	4.70	0.331	-	3.47	0.49	0.41	<0.01*1	1.66	0.58	5.41	0.76	-	-	<0.005*1	-	-
2010	6.67	5.57	0.380	-	4.47	0.86	0.78	0.13	2.17	1.19	7.52	1.15	-	0.011	<0.005*1	-	-
2011	6.28	5.33	0.327	-	3.73	0.76	0.79	0.06	1.57	0.68	5.80	0.87	-	0.008	0.002	-	-
2012	7.24	4.55	0.318	-	-	-	-	-	-	-	-	-	-	0.008	0.006	-	-
2013	6.84	4.32	0.294	-	2.81	0.46	0.37	*1	1.46	1.01	6.13	0.83	-	-	-	-	-
2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	7.23	5.37	0.350	-	4.43	0.82	0.38	-	-	-	-	-	-	-	-	-	-
2016	6.59	4.39	0.277	-	3.42	0.34	0.35	*1	1.45	0.57	6.55	0.82	-	-	-	-	-
2017	6.73	5.09	0.346	-	4.72	0.85	0.48	0.01	1.89	0.52	6.90	0.88	-	-	-	-	-
2018	6.79	4.38	0.279	-	3.52	0.83	0.30	0.00	1.90	0.43	5.72	0.70	-	-	-	-	-
2019	6.48	4.77	0.316	-	4.36	0.36	0.34	0.00	1.78	0.52	6.40	0.82	-	-	-	-	-
2020	6.27	5.02	0.335	-	4.21	0.66	0.33	0.00	2.18	0.49	7.29	0.82	-	-	-	-	-
2021	6.37	4.12	0.320	-	1.24	0.29	1.90	0.02	1.53	0.51	6.23	0.76	-	-	-	-	-
2022	6.48	4.59	0.379	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2023	6.32	3.79	0.263	-	3.21	0.86	0.42	0.03	1.94	0.75	6.46	0.88	-	-	-	-	-

- : No analysis or measurement.

*1: Less than determination/detection limit.

Table 6.5.14 Annual mean values of each parameters from 2004 to 2023 at Pandin Lake (Philippines)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2004	8.08	18.23	1.808	-	0.33	0.08	3.16	0.02	8.91	5.81	12.05	6.91	-	0.014	0.072	-	-
2005	7.96	18.14	1.723	-	1.11	0.58	3.76	0.69	8.18	4.89	14.33	7.84	-	0.005	0.295	-	-
2006	7.72	17.34	1.758	-	0.43	0.19	2.40	0.22	8.08	5.08	15.13	7.30	2.2	0.004	0.012	-	-
2007	7.76	17.57	1.708	-	0.52	0.10	3.37	0.26	7.28	6.29	12.10	9.03	-	0.002	0.013	-	-
2008	7.48	17.95	1.627	-	0.76	5.23	3.70	0.02	7.33	4.92	12.65	7.97	-	0.013	-	-	-
2009	7.68	18.70	1.813	-	0.66	5.72	3.78	1.02	8.61	4.35	14.10	7.32	1.8	0.087	-	-	-
2010	8.25	18.35	1.837	-	0.34	3.36	3.28	*1	8.79	5.59	13.07	8.49	-	0.060	-	-	-
2011	7.67	20.46	1.738	-	0.49	2.08	3.29	0.17	7.99	4.14	14.90	7.58	-	0.086	-	-	-
2012	7.95	17.56	1.683	-	1.53	0.48	3.45	0.06	8.19	4.43	14.15	7.59	-	*1	-	-	-
2013	7.29	17.71	1.725	-	0.56	0.16	3.19	0.10	8.17	4.24	15.55	7.89	-	0.004	*1	-	-
2014	7.64	20.51	2.145	-	0.22	0.14	2.54	0.04	7.00	3.70	19.13	9.09	-	-	*1	-	-
2015	7.65	19.48	2.104	-	0.85	0.67	3.26	0.12	10.77	8.46	21.04	3.91	-	0.470	*1	-	-
2016	7.18	18.74	1.744	-	0.84	0.32	3.48	0.32	8.58	4.41	15.77	8.29	-	0.110	*1	-	-
2017	8.02	17.38	1.729	-	0.86	0.15	3.44	0.41	8.68	4.07	16.36	7.91	-	0.274	0.000	-	-
2018	8.20	18.18	1.740	-	0.54	0.20	3.52	0.02	8.41	3.81	15.54	7.09	-	0.000	0.000	-	-
2019	8.65	18.03	1.700	-	0.85	0.03	3.92	0.00	8.05	4.02	16.98	6.96	-	0.244	0.000	-	-
2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	7.97	17.39	1.821	-	1.07	0.20	2.84	0.07	5.25	4.10	15.73	8.02	-	0.049	0.047	-	5.1
2022	8.32	18.05	1.601	-	1.51	0.04	3.83	0.07	8.91	4.50	14.33	8.65	-	*1	*1	-	4.1
2023	8.09	19.24	1.590	-	1.67	0.04	3.33	0.03	8.54	4.31	12.69	8.67	-	0.083	0.010	3.1	9.9

Table 6.5.15 Annual mean values of each parameters from 2005 to 2023 at Ambulakao Lake (Philippines)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transpare m	PO ₄ ³⁻ mg/L	NO ₂ mg/L	DOC mg/L	COD mg/L
2005	5.82	0.44	0.020	-	0.15	0.11	0.06	-	0.22	0.15	0.15	0.04	-	-	0.100	-	-
2007	5.49	0.53	0.031	-	0.46	0.12	0.25	0.02	0.37	0.13	0.40	0.10	-	*1	*1	-	-
2008	5.74	0.38	0.081	-	0.27	0.12	0.17	0.10	0.19	0.07	0.26	0.15	-	0.001	-	-	-
2009*	5.42	0.17	0.290	-	0.21	0.08	0.13	0.17	0.27	0.06	0.17	0.07	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	5.75	0.52	0.060	-	*1	*1	0.39	*1	0.56	0.13	0.49	0.11	-	-	-	-	-
2014	5.69	0.52	0.023	-	0.11	*1	0.20	0.21	0.46	0.35	0.59	0.12	-	-	-	-	-
2015	5.86	0.50	0.031	-	0.21	0.36	0.22	0.05	0.48	0.14	0.37	0.31	-	-	-	-	-
2016	5.81	0.51	0.026	-	0.11	0.02	0.18	0.00	0.46	0.12	0.26	0.10	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2022	5.65	0.87	0.035	-	0.22	0.20	0.34	*1	0.20	0.05	0.74	0.08	-	-	-	-	-
2023*	6.61	1.50	0.030	-	0.92	0.37	1.20	0.25	0.95	0.48	0.90	0.11	-	0.041	-	-	-

* Data for Dec. of 2009, Jun.and Dec. of 2023 were excluded from the aggregation due to the high probability of contamination.

Table 6.5.16 Annual mean values of each parameters from 2004 to 2023 at Pereemnyaya River (Russia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparenc m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2004	6.55	3.93	0.135	-	7.18	0.76	0.23	0.03	1.10	0.77	3.23	0.94	2.0	0.008	0.002	-	-
2005	6.80	4.03	0.135	-	7.84	0.66	0.20	0.03	0.96	0.71	3.29	1.04	-	0.002	0.005	-	0.8
2006	6.74	3.95	0.140	-	7.49	0.81	0.20	0.04	1.07	0.75	3.36	1.02	-	0.004	0.002	1.5	1.1
2007	6.59	4.21	0.135	-	8.98	0.91	0.18	0.11	1.06	0.76	3.92	0.85	-	0.004	0.003	1.6	1.0
2008	6.68	4.87	0.155	-	9.77	1.03	0.13	0.03	0.93	0.60	4.78	1.05	-	0.007	0.002	1.0	0.8
2009	6.66	4.87	0.128	-	11.69	0.85	0.14	0.02	1.00	0.60	4.94	0.97	-	0.005	0.002	-	0.6
2010	6.88	5.14	0.127	-	12.87	0.79	0.20	0.03	0.99	0.66	5.18	1.05	-	0.007	0.002	-	1.1
2011	6.85	4.79	0.138	-	11.39	0.67	0.16	0.02	1.02	0.68	4.97	0.83	-	0.004	0.003	-	0.9
2012	6.61	4.21	0.139	-	9.49	0.38	0.17	0.09	0.95	0.63	4.42	0.67	-	0.005	0.002	-	1.2
2013	6.76	4.61	0.134	-	11.14	0.57	0.13	0.02	1.00	0.65	4.92	0.82	1.9	0.008	0.002	-	1.0
2014	6.69	4.66	0.142	-	11.19	0.58	0.19	0.01	1.30	0.78	4.87	0.78	1.9	0.009	0.002	-	1.2
2015	6.63	4.29	0.124	-	10.47	0.48	0.20	0.01	1.01	0.66	4.57	0.76	1.9	0.006	0.003	-	0.8
2016	6.78	4.53	0.142	-	11.14	0.70	0.14	0.01	1.06	0.66	4.90	0.85	1.9	0.004	0.002	-	0.9
2017	6.76	4.64	0.128	-	11.87	0.87	0.09	0.01	1.03	0.66	4.89	0.97	-	0.003	0.003	-	0.8
2018	6.68	4.30	0.109	-	11.20	0.74	0.25	0.01	1.06	0.59	4.43	0.80	-	0.007	0.004	-	1.1
2019	6.71	4.72	0.124	-	11.75	0.68	0.17	0.01	1.07	0.70	4.85	0.94	-	0.003	0.004	-	0.9
2020	6.80	4.83	0.118	-	12.00	0.57	0.13	0.00	1.01	0.70	4.70	0.94	-	0.005	0.002	-	1.0
2021	6.79	4.46	0.124	-	10.83	0.67	0.16	0.01	1.00	0.66	4.84	0.84	-	0.002	0.002	-	1.4
2022	6.85	5.15	0.136	-	12.68	0.93	0.17	0.01	1.16	0.72	5.10	1.02	-	0.006	0.002	-	1.0
2023	6.60	4.80	0.127	-	12.60	0.77	0.08	0.00	1.05	0.67	5.47	0.68	-	0.002	0.002	-	1.1

Table 6.5.17 Annual mean values of each parameters from 2005 to 2023 at Komarovka River (Russia)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2005	7.24	8.75	0.495	-	11.18	0.33	3.09	0.15	3.34	0.60	9.07	2.25	-	*1	*1	-	-
2006	7.08	8.37	0.428	-	9.02	0.26	3.12	0.08	3.10	0.57	8.51	2.27	-	0.014	0.003	-	-
2007	7.15	8.68	0.395	-	10.51	0.26	4.03	0.09	3.39	0.65	8.04	2.34	-	0.010	0.025	-	4.3
2008	7.22	8.68	0.391	-	12.08	0.52	3.06	0.09	3.80	0.62	8.14	2.08	-	0.030	0.053	-	3.6
2009	7.02	8.64	0.351	-	12.59	1.11	3.69	0.22	3.57	0.60	8.21	2.07	-	0.041	0.067	-	4.4
2010	6.99	8.32	0.445	-	8.62	0.99	3.33	0.19	3.21	0.46	8.29	2.12	-	0.013	0.036	-	4.0
2011	7.09	8.86	0.405	-	12.67	1.63	3.11	0.27	3.88	0.74	8.58	2.22	-	0.010	0.018	-	4.4
2012	6.99	8.54	0.384	-	9.61	1.33	3.88	0.45	3.53	0.79	7.88	2.37	-	0.015	0.038	-	5.1
2013	6.84	8.45	0.372	-	11.87	1.27	3.61	0.16	3.44	0.64	7.71	2.66	-	0.006	0.027	-	4.1
2014	6.91	8.45	0.368	-	11.76	2.81	3.16	0.14	3.52	0.72	8.29	2.27	-	0.005	0.033	-	4.6
2015	6.98	8.75	0.404	-	13.46	1.27	3.06	0.12	3.45	0.58	8.73	2.20	-	0.005	0.026	-	4.4
2016	6.71	9.09	0.375	-	14.25	3.68	3.57	0.24	3.82	0.75	8.85	2.02	-	0.005	0.017	-	5.6
2017	6.93	8.93	0.425	-	11.48	3.97	4.36	0.19	4.39	0.87	10.00	1.91	-	0.005	0.016	-	3.3
2018	6.98	8.50	0.383	-	12.78	3.72	2.25	0.08	4.06	1.02	9.20	2.54	-	0.003	0.011	-	4.6
2019	6.64	8.09	0.303	-	12.97	2.45	3.20	0.11	3.95	1.07	8.42	1.42	-	0.007	0.011	-	3.7
2020	6.77	8.59	0.426	-	11.03	2.02	2.87	0.24	4.37	1.52	9.62	2.25	-	0.006	0.027	-	4.2
2021	7.91	11.31	0.554	-	15.12	1.05	6.24	0.11	6.14	1.49	12.82	3.33	-	0.037	0.006	-	3.8
2022	7.27	8.88	0.611	-	8.37	0.44	3.53	0.08	6.32	1.96	9.50	1.97	-	0.013	0.026	-	4.2
2023	6.93	8.11	0.635	-	8.13	0.37	3.38	0.20	6.17	2.39	8.78	1.98	-	0.029	0.020	-	4.8

Table 6.5.18 Annual mean values of each parameters from 2002 to 2023 at Vajiralongkorn Dam (Ban Pong Chang) (Thailand)

	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	Mandatory Parameters : 4 times/year							Mandatory Parameters : Once/year					
					SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2002	7.52	12.13	0.625	-	1.15	0.04	0.89	*1	1.14	1.01	13.27	2.98	5.3	0.024	*1	-	4.0
2003	7.45	10.75	0.625	-	1.29	0.01	0.84	*1	1.14	0.97	16.24	3.52	5.0	*1	*1	-	5.8
2004	7.77	11.53	1.050	-	1.27	0.20	0.98	0.05	1.18	0.97	15.68	3.26	5.6	0.023	0.010	-	7.5
2005	7.33	11.18	1.276	-	1.47	0.11	1.05	0.01	1.26	1.02	15.83	3.12	3.6	0.010	0.010	-	<4.0*1
2006	7.21	10.41	1.125	-	1.31	0.20	0.85	0.06	1.14	1.03	16.24	3.17	4.6	<0.01*1	<0.01*1	-	10.0
2007	7.80	10.41	1.090	-	1.17	0.20	0.75	0.01	1.21	0.96	16.50	3.26	5.1	0.010	0.010	-	5.2
2008	7.71	10.55	1.178	-	1.11	0.05	0.75	<0.01*1	1.16	0.97	16.25	3.23	4.4	<0.01*1	0.010	-	6.8
2009	7.79	10.83	1.111	-	1.33	0.06	0.74	-	1.16	0.95	16.09	3.39	4.4	0.010	<0.01*1	-	-
2010	7.70	11.80	1.176	-	1.55	0.06	0.83	0.01	1.24	1.01	16.59	3.62	3.6	0.010	0.010	-	4.7
2011	7.38	12.76	1.178	-	1.43	0.07	0.82	0.01	1.22	1.04	17.93	3.70	3.0	0.012	<0.01*1	-	5.7
2012	7.32	11.81	1.150	-	1.22	0.19	0.94	0.03	1.21	1.12	16.79	3.53	3.2	0.010	-	-	8.5
2013	7.67	13.53	1.186	-	1.10	0.10	0.87	0.01	1.21	1.02	16.99	3.81	2.8	0.010	-	-	-
2014	7.55	5.62	1.138	-	1.64	0.09	0.88	0.04	1.20	0.95	16.69	3.29	3.8	0.010	-	-	-
2015	7.50	5.33	1.066	-	1.44	0.11	0.93	0.04	1.18	0.86	15.78	3.10	3.0	0.010	-	-	-
2016	7.06	12.16	1.121	-	1.28	0.10	1.06	0.01	1.47	0.96	17.18	3.61	2.7	0.020	-	-	40.0
2017	7.07	11.94	1.193	-	1.57	0.09	1.15	0.01	1.44	1.06	17.91	3.45	2.9	0.018	-	-	-
2018	7.88	12.35	1.130	-	1.11	0.10	0.95	0.01	1.23	1.04	17.21	3.16	3.0	0.010	-	-	-
2019	8.35	12.42	1.072	-	1.53	0.10	1.16	0.02	1.32	1.07	15.10	3.44	3.8	0.010	-	-	-
2020	8.42	12.04	1.070	-	1.24	0.10	1.13	0.01	1.25	0.99	16.38	3.30	4.0	0.010	-	-	-
2021	7.89	10.53	1.168	-	1.39	0.10	1.28	0.01	1.31	1.11	18.73	3.72	3.4	0.010	-	-	-
2022	7.27	12.85	1.168	-	1.95	0.10	1.18	0.01	1.31	1.06	17.66	3.29	3.6	0.010	-	-	-
2023	7.61	12.54	1.196	-	1.20	0.11	1.05	0.01	1.68	0.93	18.60	3.58	3.5	0.010	-	-	-

Table 6.5.19 Annual mean values of each parameters from 2002 to 2023 at Vajiralongkorn Dam (Ban Pang Pueng) (Thailand)

	Mandatory Parameters : 4 times/year											Mandatory Parameters : Once/year					
	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparenc m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2002	7.31	11.98	0.633	-	1.24	0.06	0.90	*1	1.19	0.99	13.28	2.90	5.5	0.034	*1	-	3.0
2003	7.87	10.50	0.590	-	1.41	0.01	0.84	*1	1.17	0.98	16.24	2.94	5.8	*1	*1	-	7.3
2004	7.24	11.12	1.005	-	1.54	0.20	0.95	0.05	1.21	1.03	16.01	2.83	8.1	0.020	0.010	-	5.0
2005	6.98	11.20	1.015	-	1.29	0.11	1.15	0.03	1.52	1.02	16.16	2.98	4.4	0.135	0.010	-	*1
2006	7.12	10.03	1.046	-	1.44	0.20	0.83	0.03	1.14	1.04	16.19	2.64	5.0	<0.01*1	<0.01*1	-	11.0
2007	7.84	10.21	1.050	-	1.25	0.20	0.70	0.01	1.13	0.98	16.75	2.98	5.3	0.010	0.010	-	4.0
2008	7.78	9.88	1.104	-	1.49	<0.06*1	0.75	<0.01*1	1.17	1.00	15.65	2.49	4.4	<0.01*1	0.010	-	4.7
2009	7.93	10.30	1.065	-	1.42	0.06	0.73	-	1.14	2.04	15.88	2.79	4.6	0.010	<0.01*1	-	-
2010	7.79	11.16	1.113	-	1.61	0.06	0.76	0.01	1.16	0.99	16.38	2.86	4.1	0.010	0.010	-	7.1
2011	7.41	11.79	1.098	-	1.51	0.07	0.79	0.02	1.18	0.98	16.93	2.92	3.5	0.010	<0.01*1	-	8.4
2012	7.30	9.41	1.048	-	1.85	0.08	0.86	0.03	1.17	1.08	16.25	2.80	3.8	0.010	-	-	6.9
2013	7.90	11.10	1.093	-	1.26	0.10	0.83	0.01	1.14	1.01	16.84	2.88	4.0	0.010	-	-	-
2014	7.75	5.46	1.091	-	1.46	0.07	0.89	0.03	1.22	0.96	16.49	2.70	4.0	0.011	-	-	-
2015	7.87	6.86	1.076	-	1.41	0.10	1.01	0.01	1.40	0.87	16.31	2.72	3.4	0.010	-	-	-
2016	7.28	11.83	1.119	-	1.55	0.11	1.09	0.01	1.51	0.92	17.78	3.15	2.9	0.020	-	-	40.0
2017	7.17	11.85	1.195	-	1.61	0.10	0.98	0.02	1.37	1.04	18.70	2.98	3.6	0.018	-	-	-
2018	7.99	11.42	1.109	-	1.29	0.10	0.89	0.01	1.21	1.03	16.94	2.69	3.8	0.010	-	-	-
2019	8.53	11.85	1.038	-	1.83	0.10	1.22	0.02	1.37	1.11	15.83	3.02	5.0	0.010	-	-	-
2020	8.69	11.86	1.045	-	1.25	0.10	0.97	0.01	1.20	0.99	16.85	2.86	4.3	0.010	-	-	-
2021	8.11	12.52	1.118	-	1.96	0.10	2.02	0.01	1.49	1.11	18.68	3.20	3.3	0.010	-	-	-
2022	7.19	12.55	1.159	-	1.91	0.14	1.13	0.02	1.26	1.06	18.01	2.98	3.6	0.010	-	-	-
2023	7.51	12.61	1.184	-	1.37	0.09	1.04	0.00	1.61	0.95	19.33	3.20	4.4	0.010	-	-	-

Table 6.5.20 Annual mean values of each parameters from 2001 to 2023 at Hoa Binh Reservoir (Vietnam)

	pH	EC mS/m	Alkalinity meq/L	Iron's ANI (meq/L)	Mandatory Parameters : 4 times/year								Mandatory Parameters : Once/year				
					SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2001	7.59	17.40	1.575	-	5.44	0.59	1.16	0.15	1.97	1.22	21.85	6.12	-	-	-	-	-
2002	7.88	17.14	1.613	-	3.90	0.46	1.35	0.21	1.70	1.16	22.53	5.49	-	-	-	-	-
2003	7.29	18.41	1.595	-	6.13	0.63	1.33	0.08	2.14	1.36	24.50	4.78	-	-	-	-	-
2004	6.55	19.27	1.675	-	4.51	1.16	1.38	0.17	2.45	1.11	27.22	4.11	-	-	-	-	-
2005	7.58	19.01	1.605	-	5.62	1.04	1.62	0.16	4.40	1.31	23.12	4.77	-	-	-	-	-
2006	7.22	19.08	1.605	-	7.71	0.87	1.41	0.12	3.62	1.46	25.22	4.87	0.7	0.005	0.006	-	2.2
2007	7.62	19.09	1.613	-	8.14	1.44	1.54	0.11	3.53	1.48	24.90	4.64	0.9	0.015	0.016	-	1.9
2008	7.73	18.26	1.533	-	7.36	1.04	1.65	0.04	2.33	0.91	22.90	5.01	1.5	0.021	0.025	-	2.2
2009	7.98	16.65	1.390	-	6.55	0.67	2.05	0.02	3.10	0.84	20.82	4.49	1.1	0.019	0.010	-	1.4
2010	7.80	17.66	1.420	-	7.26	1.66	2.07	0.11	4.20	1.56	23.30	2.94	1.0	0.013	0.014	-	0.9
2011	7.43	18.46	1.540	-	7.36	1.59	2.26	0.07	3.51	1.26	23.17	4.55	1.1	0.010	0.012	-	3.4
2012	7.10	17.71	1.518	-	4.67	1.52	2.13	0.12	3.59	1.39	23.08	4.25	1.0	0.010	0.016	-	4.3
2013	7.54	17.19	1.435	-	6.92	1.04	2.41	0.14	4.96	1.58	20.02	5.31	1.1	0.008	0.006	-	3.7
2014	7.65	17.22	1.500	-	5.13	0.80	1.64	0.02	3.05	1.31	22.29	4.50	1.1	0.019	0.012	-	3.5
2015	7.60	17.94	1.430	-	7.01	1.47	0.95	0.02	2.93	1.06	24.42	3.65	1.2	0.045	0.009	-	3.5
2016	7.39	18.75	1.545	-	6.70	1.61	1.24	0.00	3.01	1.24	21.84	6.28	1.2	0.038	0.056	-	4.0
2017	7.29	15.85	1.330	-	5.09	1.43	1.04	0.01	2.15	1.09	20.47	4.21	1.0	0.043	0.007	-	4.2
2018	7.81	16.25	1.320	-	4.54	2.13	4.15	0.16	5.82	1.60	18.26	4.56	1.0	0.082	0.006	-	3.9
2019	7.67	18.63	1.505	-	5.42	1.33	4.42	0.08	3.75	1.98	24.28	4.38	1.1	0.108	0.019	-	4.1
2020	7.71	16.70	1.355	-	4.65	1.52	3.00	0.04	3.21	1.84	22.99	2.71	1.2	0.090	0.018	-	4.2
2021	7.69	17.35	1.405	-	4.19	1.35	2.75	0.28	3.28	1.82	23.41	2.66	1.2	0.076	0.022	-	4.4
2022	7.62	17.49	1.506	-	4.33	2.59	1.10	0.10	3.63	1.78	23.55	2.87	1.2	0.064	0.051	-	4.9
2023	7.54	17.53	1.472	-	4.35	2.02	1.45	0.11	3.87	1.81	24.12	2.85	1.2	0.016	0.037	-	5.1

CHAPTER 7

Catchment-scale Monitoring

7. Catchment-scale Monitoring

7.1 Method

The Guideline for Catchment-scale Monitoring in East Asia (2010) recommends measuring input from atmosphere (total deposition), output from the catchment (discharge from the stream), and some biogeochemical processes in selected small forest catchments to discuss relationship between seasonal or annual changes in stream water chemistry and those in atmospheric deposition. Material/elemental input-output budget in the catchment can be calculated based on the atmospheric deposition chemistry, stream water chemistry, and water balance. Based on the catchment-scale dataset, the simulation model on biogeochemical cycles is expected to be developed.

7.1.1 Field Operation

Recommended methods and proposed frequency of major monitoring items in the field are summarized in Table 7.1. The existing EANET technical documents can be referred in the field operation for the items. Moreover, the existing EANET data on wet and dry deposition collected at the nearest monitoring sites can be used to calculate total deposition. Similarly, the existing EANET data on soil and vegetation can be referred as the relevant information on biogeochemical processes.

Table 7.1 Methods and frequency of major monitoring items

Items		Recommended methods	Proposed frequency
Input (total deposition)	Precipitation amount	Rain gauge	Continuously or daily
	Wet deposition ^{*1}	Wet-only sampling	Daily or weekly
		Bulk sampling (when electricity is not available)	Weekly or biweekly
	Dry deposition ^{*1}	Inferential method: based on Filter pack data and Meteorological data	Weekly (for filter pack method)
		Automatic monitors (alternative for air concentration)	Continuously
	Total deposition	Wet + Dry	Biweekly or monthly
		Throughfall–Stemflow method (when electricity is not available)	Biweekly
Output (discharge from the stream)	Water discharge	Weir	Continuously or biweekly
		H-Q curve method (when a weir is not available)	
	Stream water chemistry	Periodical collection of stream water	Weekly or biweekly
		Intensive sampling	During heavy-rain or snow-melting events
	Chemical discharge	Calculation based on the water flux and the chemical concentration	Biweekly, monthly or annual
Soil	Soil chemistry ^{*1}	Collection from the permanent plots	Once for several years
Vegetation	Plant growth ^{*1}	Measurement of tree size (diameter at breast height, height of tree and name of species)	Once for several years

Note. ^{*1}, The relevant EANET data can be referred.

7.1.2 Laboratory Operation

Table 7.2 Chemical parameters for the respective items

Items	Parameters
Rainwater samples	<u>Mandatory:</u> SO_4^{2-}, NO_3^-, Cl^-, NH_4^+, Ca^{2+}, Mg^{2+}, Na^+, K^+, Electric conductivity (EC), and pH <u>Optional:</u> Total organic nitrogen (TON), Total organic carbon (TOC)
Stream water samples	<u>Mandatory:</u> SO_4^{2-}, NO_3^-, Cl^-, NH_4^+, Ca^{2+}, Mg^{2+}, Na^+, K^+, Electric conductivity (EC), pH, and Alkalinity (Gran's ANC and/or pH 4.8 endpoint) <u>Optional:</u> SiO_2, TON, TOC, Total dissolved Al
Air concentrations (by filter pack method)	Cations: NH_4^+, Ca^{2+}, Mg^{2+}, Na^+, and K^+, Anions: SO_4^{2-}, NO_3^-, and Cl^-, Gasses: SO_2, HNO_3, HCl, and NH_3
Soil chemistry	pH(H_2O), pH(KCl), Exchangeable Base Cations (Ca^{2+} , Mg^{2+} , K^+ , and Na^+), Exchangeable Acidity, Al and H, Effective Cation Exchangeable Capacity

Chemical parameters for the respective monitoring items are shown in Table 7.2. Basically, the parameters are same as those for other EANET monitoring items. The existing EANET technical documents can also be referred in the laboratory operation.

7.1.3 Data Management

Data quality was controlled and assured according to the EANET QA/QC program. In particular, for rainwater and stream water samples, ion balance (R_1) and conductivity check (R_2) can be applied to check the analytical results as same as monitoring on wet deposition and inland aquatic environment.

The data should be evaluated on a catchment scale. The input-output budget should be calculated based on the atmospheric deposition chemistry, stream water chemistry, and water balance to outline the material/elemental cycles in the catchment. The standard units should be used for the input and output. Recommended basic units for evaluation is as follows:

- Water flux (precipitation amount and stream water discharge): mm
- Chemical concentration: $\text{mol}_c \text{L}^{-1}$ (ex. $\mu\text{mol}_c \text{L}^{-1}$ or $\text{mmol}_c \text{L}^{-1}$)
- Ion flux (deposition, discharge or soil/vegetation flux): $\text{mol}_c \text{ha}^{-1}$ or $\text{mol}_c \text{m}^{-2}$
- Elemental flux for N and S: $\text{kg ha}^{-1} \text{y}^{-1}$ or $\text{g m}^{-2} \text{y}^{-1}$

Based on the compiled data with the standard units on a water-year basis, initial evaluations should be done for the following items:

- Water balance on a catchment-scale: input, output and possible evapotranspiration
- Material/elemental balance on a catchment-scale: input-output budget

Dataset should be submitted to the Network Center after an initial evaluation is done by the national center. Since the catchment-scale data should be evaluated based on the water year, the dataset should be compiled on a water-year basis of the respective catchment sites.

7.1.4 Monitoring sites

Several EANET countries have the experience on catchment-scale analysis as research activities and/or national monitoring activities. Many research projects were conducted by universities and institutes in China and Japan. The case studies have been conducted in Japan, Malaysia and Thailand as the EANET joint research projects. Some countries may have an intention to start the regular catchment-scale monitoring as a part of the EANET activities.

Japan submitted the data of the Lake Ijira Catchment, which was started in 2007. Moreover, the Philippines has just started the regular monitoring in 2019. Site characteristics and the survey outline are shown in Table 7.3 and 7.4, respectively. The maps of the Lake Ijira catchment site and the La Mesa Watershed site are shown in Figure 7.1 and 7.2, respectively.

Table 7.3 Site for the catchment-scale monitoring

Country	Site name (and name of river/stream)	Catchment area (km ²)	Geology and soil type	Coverage of forest (%)	Start year
Japan	Lake Ijira Catchment (IJR) , (Kamagatani River)	2.98 at Kamagata ni River	Chert, Cambisols (brown forest soils)	99.6%,	November 2007 (the water year here: from November to the next October)
Philippines	La Mesa Watershed (LMW), (Stream at Tower 1 Station)	0.186 at Tower 1 (La Mesa Watershed (LMW) total area: 26.59)	Clastic and volcanic rocks, Loamy-sand soil at Tower 1	For the whole LMW, 81.5%;	January 2019
Site	Major tree species				
IJR	Japanese cedar (<i>Cryptomeria japonica</i>), Japanese cypress (<i>Chamaecyparis obtusa</i>), and Japanese red pine (<i>Pinus densiflora</i>)				
LMW	Yemane (<i>Gmelina arborea</i> Roxb.), Auriculiformis (<i>Acacia auriculiformis</i> A. Cunn. Ex Berth.) , Mangium (<i>A. mangium</i> Willd.), Narra (<i>Pterpcarpus indicus</i> Willd. forma <i>indicus</i>), Mahogany (<i>Swietenia macrophylla</i> King), Teak (<i>Tectona grandis</i> L.f.), Ipil-ipil (<i>Leucaena leucocephala</i> De Wit), Kaatoan bangkal (<i>Anthocephalus chinensis</i> (Lam.) A. Rich. Ex Walp. And Alibangbang (<i>Bauhinia malabarica</i> Roxb.)				

Table 7.4 Survey outline for the catchment-scale monitoring

Site	Items	Detailed items
Lake Ijira Catchment	Input (total deposition)	1. Precipitation amount (at 3 different slope positions) 2. Wet deposition: Ijira ^{*1} 3. Dry deposition (Air concentration measurement for Inferential method): Ijira ^{*1} 4. Total deposition (calculated as wet+dry)
	Output (chemical discharge)	1. Water discharge (by H-Q curve method) 2. Stream water chemistry: biweekly 3. Chemical discharge
	Soil ^{*2}	Soil chemical properties: Lake Ijira
	Vegetation ^{*2}	1. Plant growth: Lake Ijira 2. Species composition: Lake Ijira
La Mesa Watershed	Input (total deposition)	1. Precipitation amount (PAGASA-Science Garden Station) 2. Wet deposition: Metro Manila (MM) site located at the top of Ionosphere Office, MO, AdMU ^{*1} 3. Dry deposition (Air concentration measurement for Inferential method): Metro Manila (MM) site (same location) ^{*1} 4. Total deposition (calculated as wet+dry)
	Output (chemical discharge)	1. Water discharge: (using the Float Method) 2. Stream water chemistry: monthly 3. Chemical discharge: not determined yet
	Soil ^{*2}	Soil chemical properties: La Mesa Watershed
	Vegetation ^{*2}	3. Plant growth: La Mesa Watershed 4. Species composition: La Mesa Watershed

Note. ^{*1}, The data from the EANET deposition monitoring site will be used; ^{*2}, The data from the EANET soil and vegetation monitoring plots will be referred.

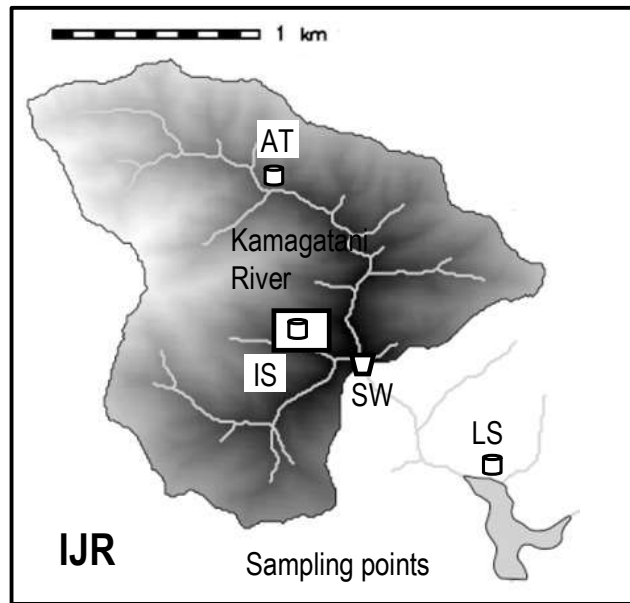


Figure 7.1 Catchment area and sampling design at the Lake Ijira catchment site

Precipitation amount is monitored at three points, namely, Akatani (AT), the Ijira site for wet/dry deposition monitoring (IS), and Lakeside (LS). SW indicates the point for stream water sampling and discharge. Darker colors indicate lower altitudes.

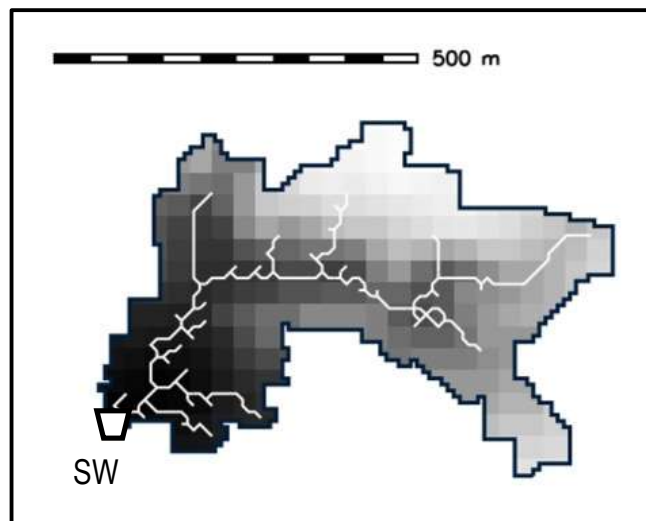


Figure 7.2 Catchment area and sampling design at the La Mesa Watershed site (Stream at Tower 1 Station)

SW indicates the stream water sampling point. Precipitation amount and wet/dry deposition are monitored at the PAGASA- Science Garden Station and the Metro Manila EANET site. Darker colors indicate lower altitudes.

7.2 Results of Monitoring

The list of the dataset submitted to the NC is shown in Table 7.5.

Table 7.5 List of the dataset submitted for Data Report 2023

Site	Items	Detailed items	Water year
Lake Ijira Catchment	Input ^{*1}	1. Precipitation amount (at 3 different slope positions)	2022-2023 ^{*2}
	Output	1. Water discharge 2. Stream water chemistry: biweekly 3. Chemical discharge	2022-2023 ^{*2}
La Mesa Watershed	Input ^{*1}	1. Precipitation amount (observed at PAGASA-Science Garden Station)	2023
	Output	1. Stream water chemistry: monthly	2023

Note. ^{*1}, The data of wet deposition and dry deposition (air concentration) in the EANET deposition monitoring site for the same period can be found in Data Reports 2022 and/or 2023; ^{*2}, The water year was defined as the period from November to October in the following year at Lake Ijira Catchment. Soil chemical properties, plant growth and understory-species composition were surveyed as a part of soil and vegetation monitoring in 2016 and 2010 at Lake Ijira Catchment and La Mesa Watershed, respectively.

The submitted data above are summarized in the following tables.

Table 7.6: Water balance in the catchment

Table 7.7: Stream water chemistry

Table 7.8: Periodic chemical discharges from the stream

Table 7.9: Annual chemical discharges from the stream

Table 7.6a Water balance in the catchment: Lake Ijira Catchment

Fluxes ^{*1}	Points	Water year ^{*2}
		2022-2023
Input by precipitation, mm y ⁻¹	Akatani (260 m)	3403
	Ijira monitoring site (140 m)	4502
	Lakeside (110 m)	3129
	Mean	3678
Output by the stream, mm y ⁻¹	Outlet of Kamagatani River	2661
Runoff rate, %		72

Note. ^{*1}, Fluxes were calculated based on the catchment area, 2.98 km², at the outlet of Kamagatani River; ^{*2}, The water year: from November to the next October.

Table 7.6b Water balance in the catchment: La Mesa Watershed

Fluxes ^{*1}	Points	Year
		2023
Input by precipitation, mm y ⁻¹	Science Garden	3187
Output by the stream, mm y ⁻¹	Outlet of Tower 1 Stream	
Runoff rate, %		

Note. ^{*1}, Fluxes were calculated based on the catchment area, at the outlet of Tower 1 Stream. ^{*2}, Average of flow measured during the monitoring activities in April and in December 2019 in the dry season: 0.0231 m³ s⁻¹

Table 7.7a Stream water chemistry: Lake Ijira Catchment (Water year 2022-2023)

Collection date	pH	EC	alkalinity		SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	Na ⁺	Ca ²⁺	Mg ²⁺	K ⁺	NH ₄ ⁺⁺¹	H ⁺	Al	TOC	SiO ₂	Water level
			pH4.8	Gran's ANC													
			μmol L ⁻¹	μmol L ⁻¹													
2022/11/15	6.85	4.25	158	140	149	19.3	55.7	98	123	110	6.3	<3.0	0.14	<0.02	0.7	8.4	0.30
2022/11/30	6.93	3.47	120	117	97	38.0	54.8	77	96	88	6.8	<3.0	0.12	<0.02	0.8	7.1	0.42
2022/12/15	6.97	4.01	144	132	137	18.6	58.4	90	113	106	5.7	<3.0	0.11	<0.02	0.5	7.8	0.28
2022/12/26	6.86	3.87	132	128	132	23.0	57.1	86	114	103	5.6	<3.0	0.14	<0.02	0.4	7.4	0.32
2023/01/16	6.96	4.13	148	133	146	18.9	55.2	92	120	107	5.3	<3.0	0.11	<0.02	0.3	8.0	0.29
2023/01/31	7.00	4.19	146	134	156	16.6	54.5	93	117	112	4.8	<3.0	0.10	<0.02	0.4	7.6	0.29
2023/02/15	7.04	4.29	150	139	157	20.6	55.3	94	127	114	5.1	<3.0	0.09	<0.02	0.3	7.6	0.29
2023/02/28	6.94	4.15	150	139	155	19.6	54.8	93	121	111	4.0	<3.0	0.11	<0.02	0.3	7.5	0.30
2023/03/15	7.01	4.47	160	154	164	18.1	57.2	100	128	118	5.8	<3.0	0.10	<0.02	0.8	8.1	0.29
2023/03/28	7.05	4.26	158	146	146	25.5	54.1	93	121	115	5.0	<3.0	0.09	<0.02	0.8	8.1	0.32
2023/04/13	6.97	3.77	144	134	121	18.2	54.9	88	106	97	5.8	<3.0	0.11	<0.02	0.4	8.7	0.32
2023/04/28	6.93	3.79	144	133	120	20.8	53.3	87	108	97	6.1	<3.0	0.12	<0.02	0.3	8.5	0.34
2023/05/15	7.01	3.32	130	127	101	19.0	51.7	78	95	85	6.2	<3.0	0.10	<0.02	0.6	8.3	0.42
2023/05/31	7.05	3.71	148	136	116	18.0	51.5	84	103	98	6.8	<3.0	0.09	<0.02	0.4	8.7	0.34
2023/06/15	7.02	3.52	142	136	106	10.4	52.6	82	98	91	6.4	<3.0	0.10	<0.02	0.8	8.9	0.36
2023/06/30	6.95	3.28	126	104	97	24.6	44.0	75	91	85	5.8	<3.0	0.11	<0.02	0.7	8.0	0.45
2023/07/14	6.99	3.36	138	129	98	18.9	48.8	78	96	86	6.6	<3.0	0.10	<0.02	0.4	8.5	0.43
2023/07/31	7.01	3.97	160	151	122	18.7	53.5	92	115	103	7.5	<3.0	0.10	<0.02	0.5	9.5	0.28
2023/08/14	7.00	4.65	173	160	137	48.6	54.6	100	140	123	8.8	<3.0	0.10	<0.02	0.5	9.6	0.28
2023/08/31	6.93	3.80	156	147	112	24.7	51.0	86	108	100	7.2	<3.0	0.12	<0.02	0.5	9.1	0.32
2023/09/14	7.13	3.99	175	165	116	22.9	50.6	90	121	105	7.9	<3.0	0.07	<0.02	0.5	9.1	0.27
2023/09/29	6.92	3.74	156	146	110	18.8	52.6	87	111	100	6.7	<3.0	0.12	<0.02	0.5	9.3	0.30
2023/10/16	7.03	4.09	156	153	132	24.3	53.6	93	116	107	7.0	<3.0	0.09	<0.02	0.4	8.9	0.26
2023/10/30	6.94	4.26	156	146	151	20.7	53.4	97	119	110	6.6	<3.0	0.12	<0.02	0.3	8.8	0.25

Note. The water year was defined as the period from November to October in the following year. *1, The data were processed according to the determination limit decided by the data quality objectives (DQO) of EANET.

Table 7.7b Stream water chemistry: La Mesa Watershed (Year 2023)

Collection date	pH	EC	alkalinity pH4.8	PO ₄ ³⁻	NO ₂ ⁻	SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	Na ⁺	Ca ²⁺	Mg ²⁺	K ⁺	NH ₄ ⁺	H ⁺
		mS m ⁻¹												
2023/01/30	7.81	27.6	2970	7.0	0.3	39.4	7.5	47.9	488	1234	837	43.5	0.0	0.02
2023/02/28	7.93	28.3	3107	9.6	0.0	43.9	8.5	50.1	691	1442	898	45.2	0.0	0.01
2023/03/22	8.07	29.6	3304	9.6	0.0	44.3	8.1	51.8	684	1482	982	43.6	0.0	0.01
2023/04/18	8.28	26.1	2672	10.8	0.7	68.1	15.9	64.0	729	1094	1318	65.6	0.0	0.01
2023/05/16	8.26	32.3	2480	13.6	0.4	32.4	6.8	55.5	654	1515	1019	73.4	0.0	0.01
2023/06/21	8.08	26.2	2746	12.2	0.5	45.8	16.4	45.3	665	1832	1019	53.1	0.0	0.01
2023/07/25	7.58	22.4	2138	4.6	0.0	57.9	19.0	20.7	434	1094	713	58.4	7.8	0.03
2023/08/15	7.80	22.2	2409	11.4	0.0	40.0	0.0	48.2	590	1089	735	47.3	0.0	0.02
2023/09/19	7.92	20.4	2317	0.0	0.0	47.7	13.0	48.3	367	1096	694	40.7	7.8	0.01
2023/10/17	8.13	21.8	2502	0.0	0.0	38.3	10.0	45.8	562	1091	530	27.4	0.0	0.01
2023/11/29	8.05	25.3	2546	15.0	0.0	44.9	17.2	60.9	422	1143	766	70.6	0.9	0.01
2023/12/28	7.66	27.1	2532	15.3	0.0	42.5	16.8	51.1	710	1205	843	45.3	0.0	0.02

Table 7.8 Periodic chemical discharges from the stream: Lake Ijira Catchment (Water year 2022-2023)

Start date	End date	alkalinity		SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	Na ⁺	Ca ²⁺	Mg ²⁺	K ⁺	NH ₄ ⁺	H ⁺	Al	TOC	SiO ₂	Periodic discharge
		pH4.8	Gran's ANC													
		kmol _c ha ⁻¹														
2022/10/31	2022/11/15	0.05	0.05	0.05	0.01	0.02	0.03	0.04	0.03	0.002	ND	3.98E-05	ND	0.19	2.8	51
2022/11/15	2022/11/30	0.13	0.12	0.12	0.03	0.05	0.08	0.11	0.10	0.006	ND	1.25E-04	ND	0.75	7.5	45
2022/11/30	2022/12/15	0.06	0.06	0.06	0.01	0.03	0.04	0.05	0.05	0.003	ND	5.63E-05	ND	0.33	3.6	45
2022/12/15	2022/12/26	0.04	0.04	0.04	0.01	0.02	0.03	0.04	0.03	0.002	ND	3.90E-05	ND	0.15	2.4	29
2022/12/26	2023/01/16	0.05	0.04	0.05	0.01	0.02	0.03	0.04	0.03	0.002	ND	4.13E-05	ND	0.12	2.5	52
2023/01/16	2023/01/31	0.03	0.03	0.04	0.00	0.01	0.02	0.03	0.03	0.001	ND	2.49E-05	ND	0.08	1.8	68
2023/01/31	2023/02/15	0.04	0.04	0.04	0.01	0.02	0.03	0.03	0.03	0.001	ND	2.61E-05	ND	0.09	2.1	58
2023/02/15	2023/02/28	0.05	0.05	0.05	0.01	0.02	0.03	0.04	0.04	0.002	ND	3.30E-05	ND	0.10	2.5	54
2023/02/28	2023/03/15	0.04	0.03	0.04	0.00	0.01	0.02	0.03	0.03	0.001	ND	2.51E-05	ND	0.13	1.9	61
2023/03/15	2023/03/28	0.05	0.04	0.04	0.01	0.02	0.03	0.04	0.03	0.002	ND	2.69E-05	ND	0.22	2.3	81
2023/03/28	2023/04/13	0.26	0.24	0.23	0.04	0.09	0.16	0.20	0.18	0.009	ND	1.72E-04	ND	1.02	14.5	73
2023/04/13	2023/04/28	0.12	0.12	0.10	0.02	0.05	0.08	0.09	0.08	0.005	ND	9.98E-05	ND	0.33	7.5	37
2023/04/28	2023/05/15	0.56	0.53	0.45	0.08	0.21	0.34	0.41	0.37	0.025	ND	4.49E-04	ND	1.86	34.2	100
2023/05/15	2023/05/31	0.21	0.19	0.16	0.03	0.08	0.12	0.15	0.14	0.010	ND	1.41E-04	ND	0.74	12.5	85
2023/05/31	2023/06/15	0.52	0.48	0.39	0.05	0.19	0.29	0.36	0.33	0.023	ND	3.38E-04	ND	2.22	31.2	60
2023/06/15	2023/06/30	0.18	0.16	0.13	0.02	0.06	0.10	0.12	0.11	0.008	ND	1.37E-04	ND	1.01	11.0	57
2023/06/30	2023/07/14	0.49	0.43	0.36	0.08	0.17	0.28	0.34	0.31	0.023	ND	3.86E-04	ND	2.08	30.3	101
2023/07/14	2023/07/31	0.11	0.10	0.08	0.01	0.04	0.06	0.07	0.07	0.005	ND	7.06E-05	ND	0.30	6.4	157
2023/07/31	2023/08/14	0.04	0.04	0.03	0.01	0.01	0.02	0.03	0.03	0.002	ND	2.34E-05	ND	0.11	2.2	131
2023/08/14	2023/08/31	0.40	0.37	0.30	0.09	0.13	0.22	0.30	0.27	0.019	ND	2.64E-04	ND	1.21	22.4	152
2023/08/31	2023/09/14	0.08	0.07	0.05	0.01	0.02	0.04	0.05	0.05	0.004	ND	4.55E-05	ND	0.23	4.4	99
2023/09/14	2023/09/29	0.33	0.31	0.22	0.04	0.10	0.17	0.23	0.20	0.014	ND	1.88E-04	ND	0.97	18.2	111
2023/09/29	2023/10/16	0.03	0.03	0.03	0.00	0.01	0.02	0.02	0.02	0.001	ND	2.28E-05	ND	0.10	2.0	69
2023/10/16	2023/10/30	0.02	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.001	ND	1.11E-05	ND	0.03	0.9	70

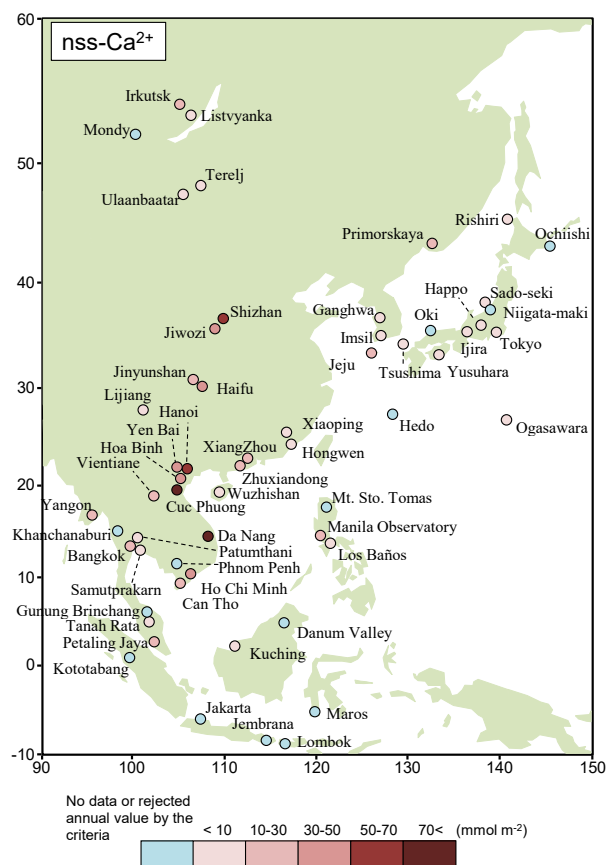
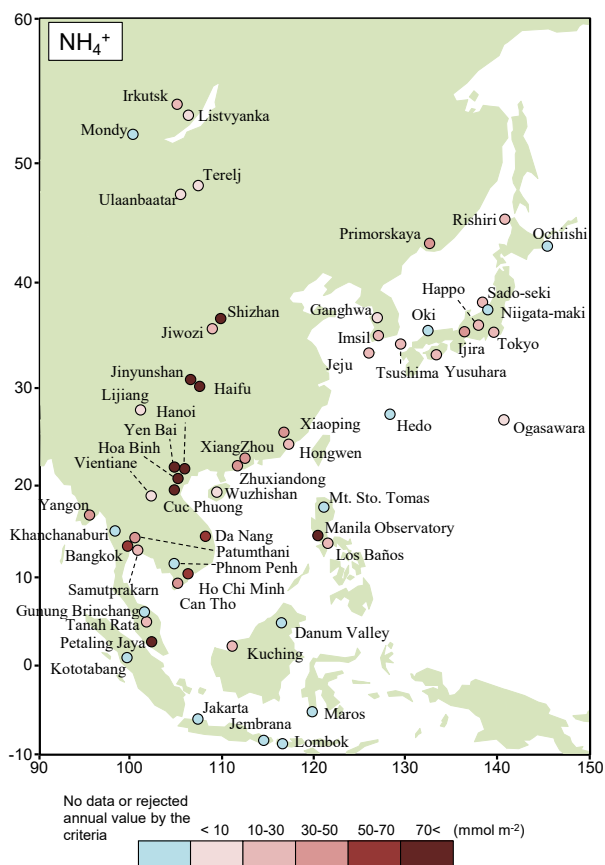
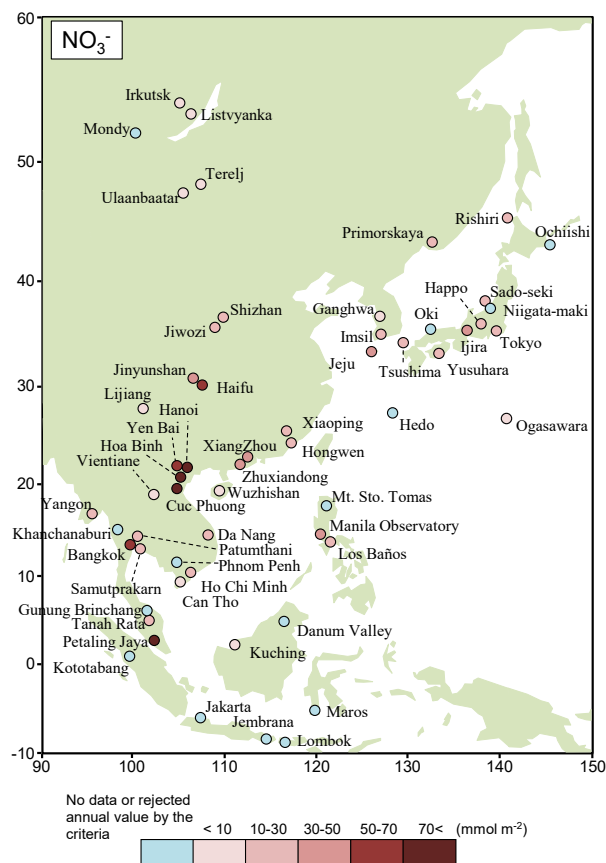
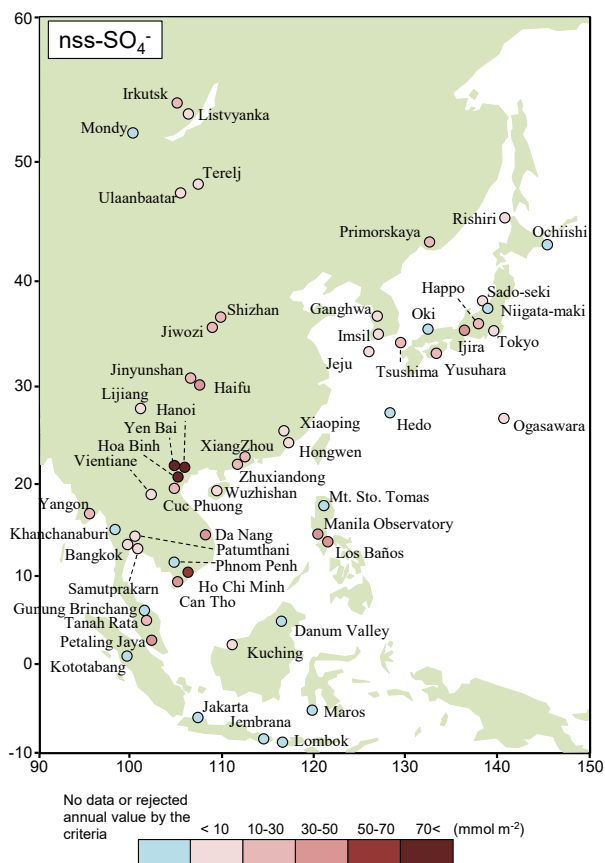
Note. Periodic chemical discharges were calculated based on the mean concentrations and the water discharge for the respective sampling intervals.

Table 7.9 Annual chemical discharges from the stream: Lake Ijira Catchment (Water year 2022-2023)

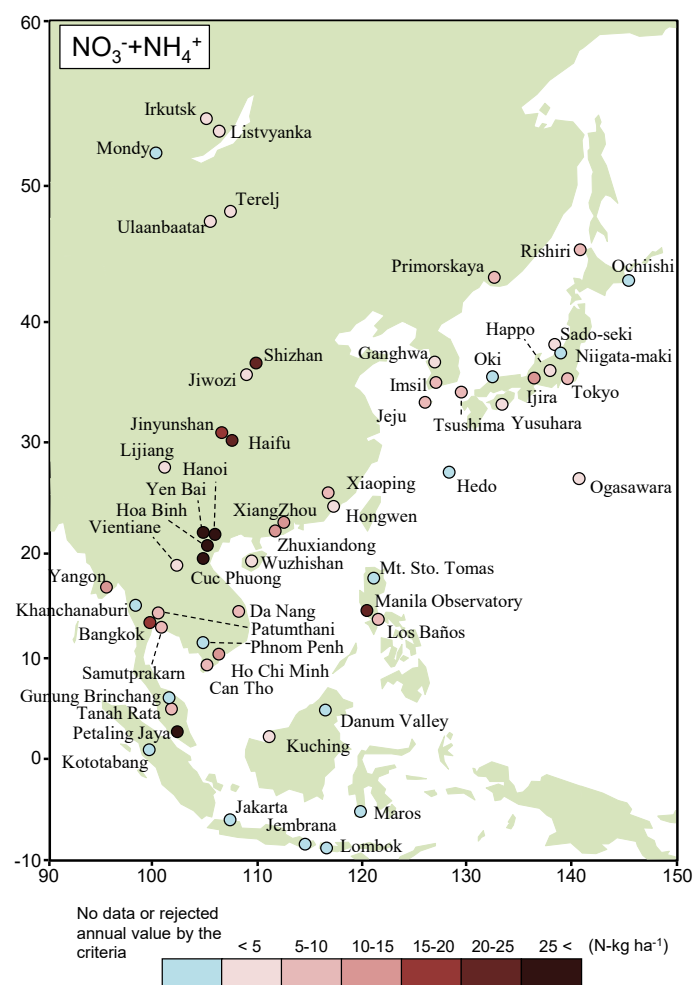
Water year	alkalinity											Al	TOC	SiO ₂
	pH4.8	Gran's ANC	SO ₄ ²⁻	NO ₃ ⁻	Cl ⁻	Na ⁺	Ca ²⁺	Mg ²⁺	K ⁺	NH ₄ ⁺	H ⁺			
	kmol _c ha ⁻¹											mg L ⁻¹	kg-C ha ⁻¹	kg-SiO ₂ ha ⁻¹
2022 - 2023	3.9	3.6	3.1	0.6	1.4	2.3	2.8	2.6	0.2	ND	0.0	ND	14.4	227

Appendix 1

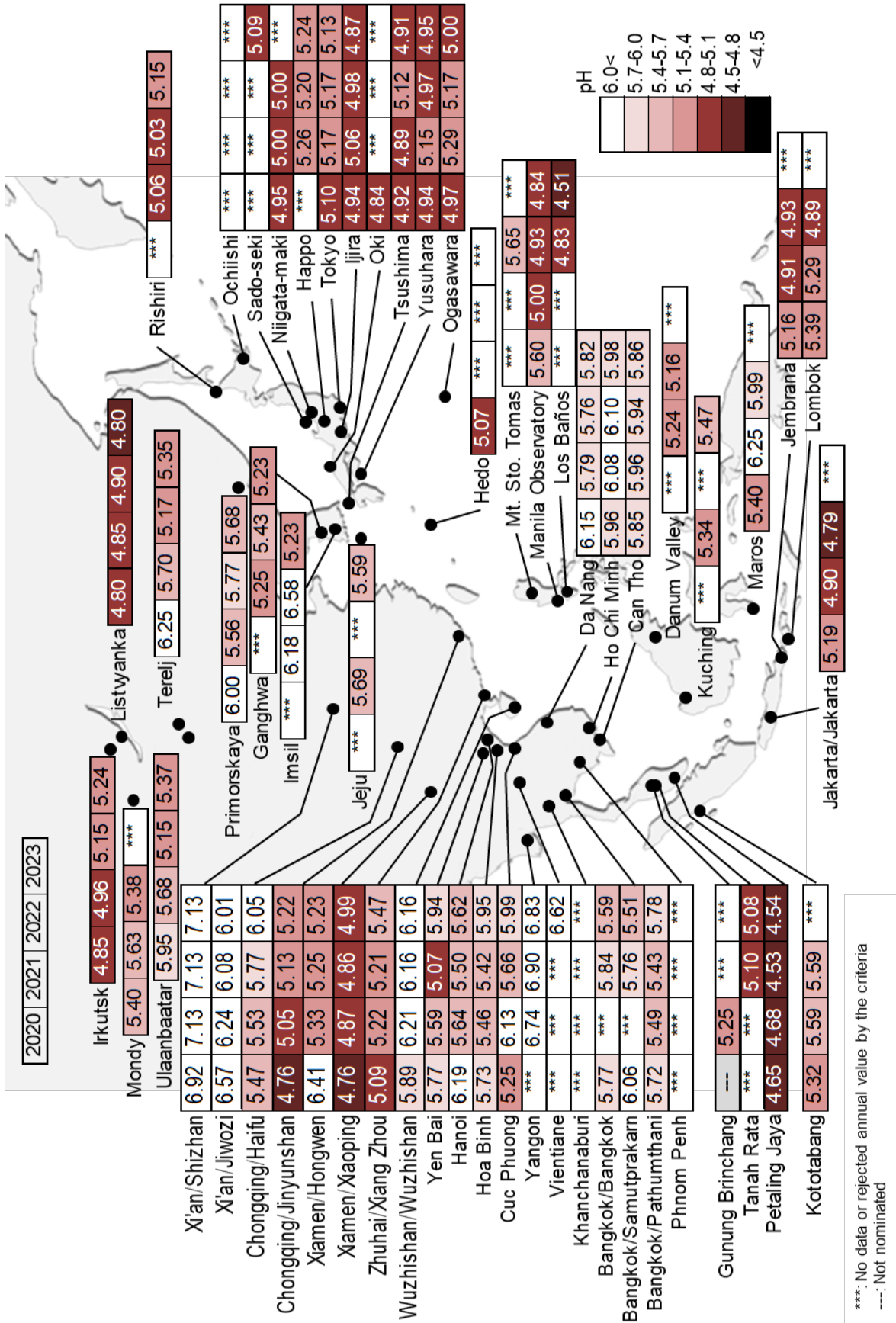
Overview of Data Report 2023



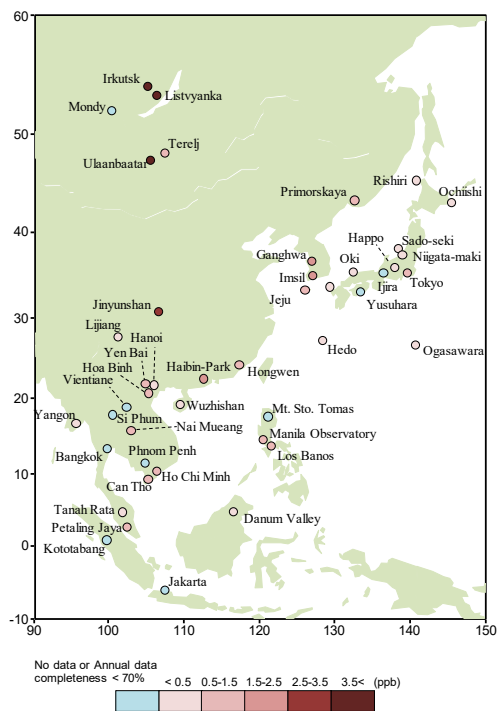
Appendix Fig. 1-1-1 Annual wet deposition levels of nss-SO₄²⁻, NO₃⁻, NH₄⁺ and nss-Ca²⁺ in 2023



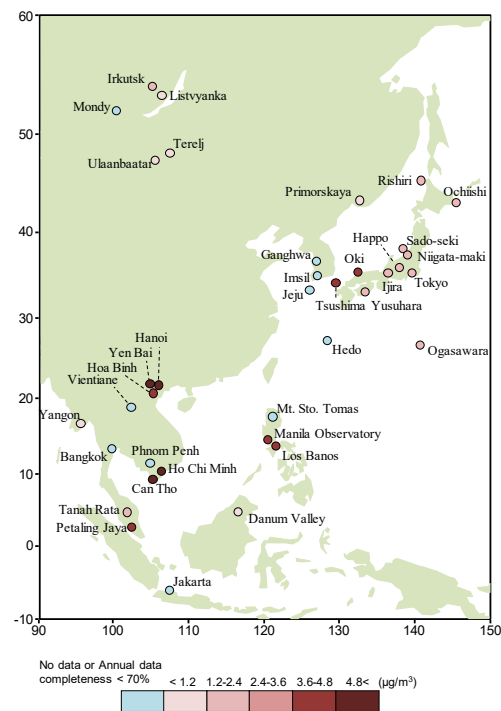
Appendix Fig. 1-1-2 Annual wet deposition levels of total nitrogen (NO₃⁻+ NH₄⁺) in 2023



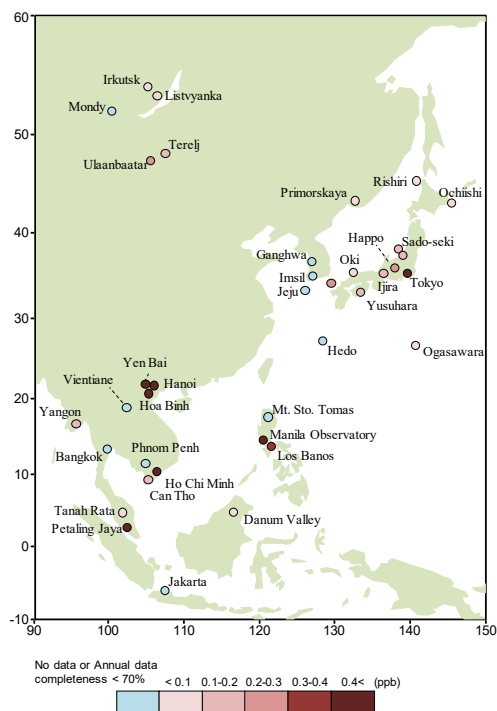
Appendix Fig. 1-2 Trends of pH in each EANET site from 2020 to 2023



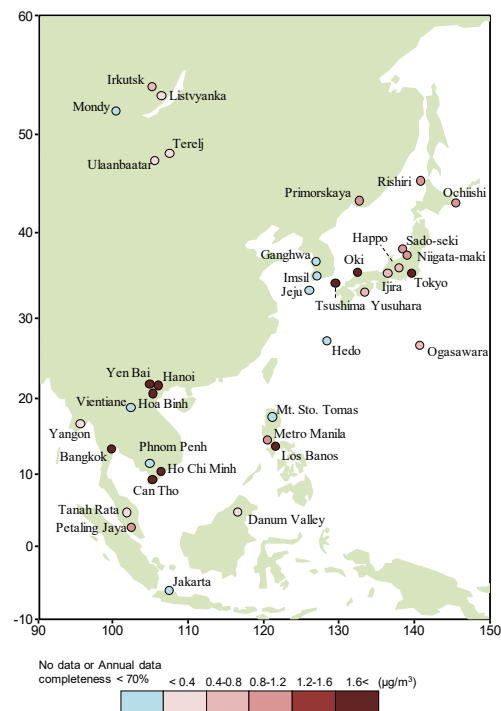
Appendix Fig. 1-3-1 Levels of annual SO_2 concentrations at EANET monitoring sites in 2023.



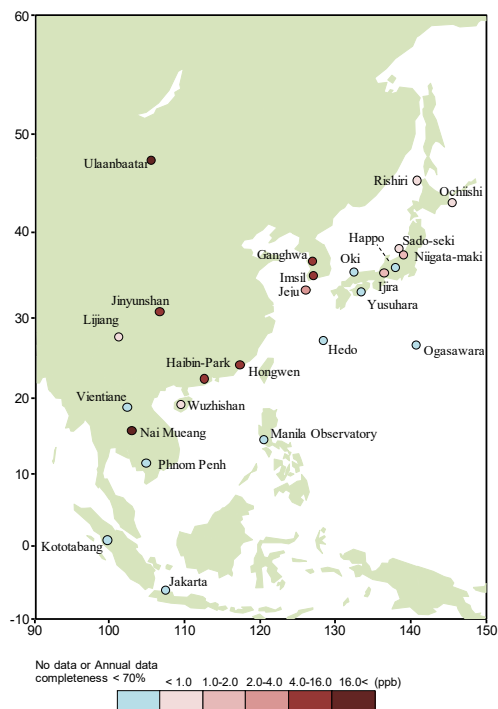
Appendix Fig. 1-3-2 Levels of annual particulate SO_4^{2-} concentrations at EANET monitoring sites in 2023.



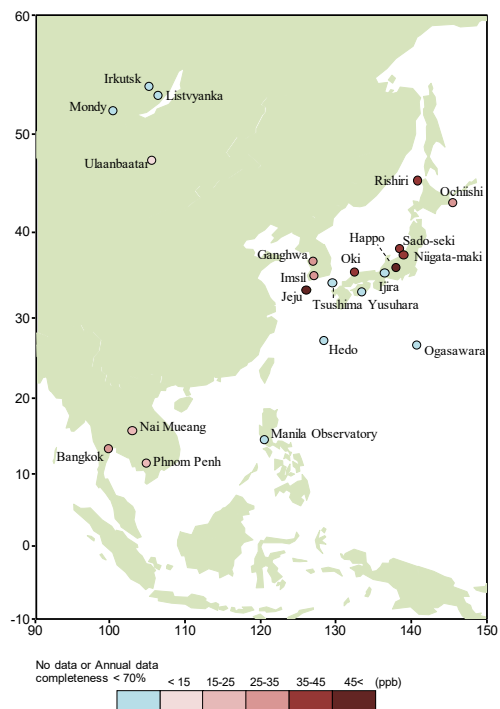
Appendix Fig. 1-3-3 Levels of annual HNO_3 concentrations at EANET monitoring sites in 2023.



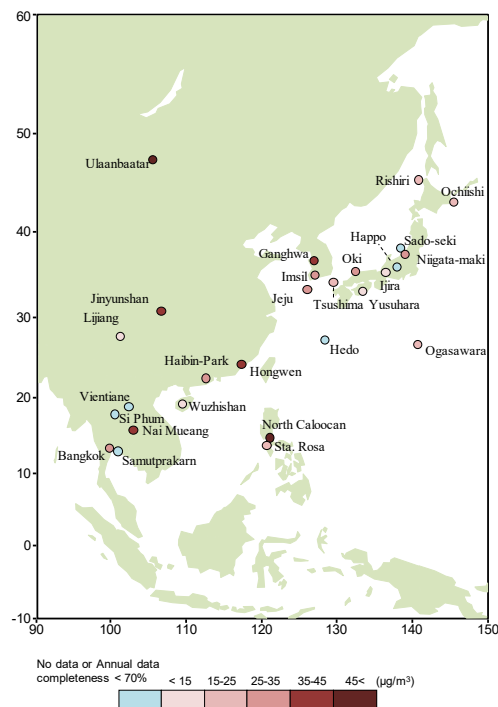
Appendix Fig. 1-3-4 Levels of annual particulate NO_3^- concentrations at EANET monitoring sites in 2023.



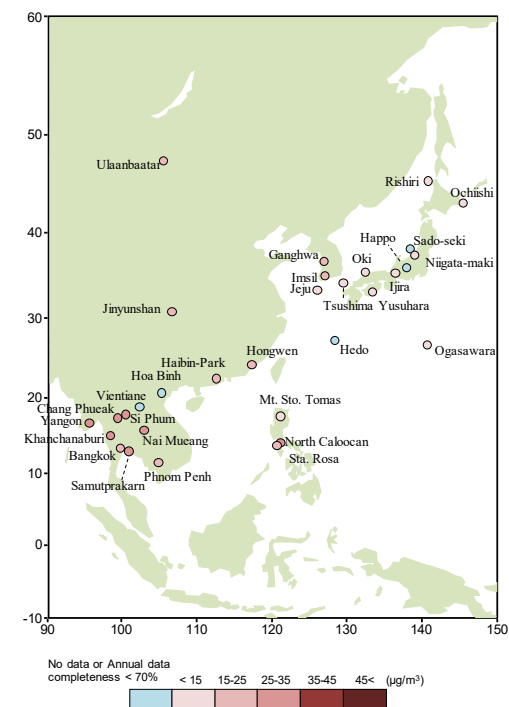
Appendix Fig. 1-3-5 Levels of annual NO_x or NO_2 concentrations at EANET monitoring sites in 2023.



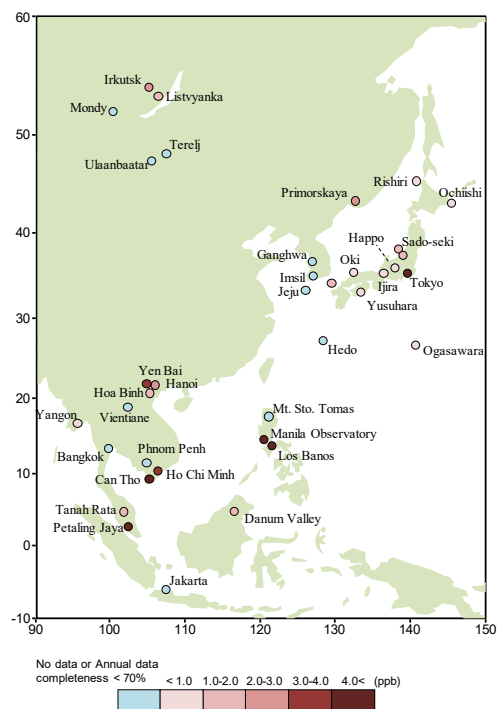
Appendix Fig. 1-3-6 Levels of annual O_3 concentrations at EANET monitoring sites in 2023.



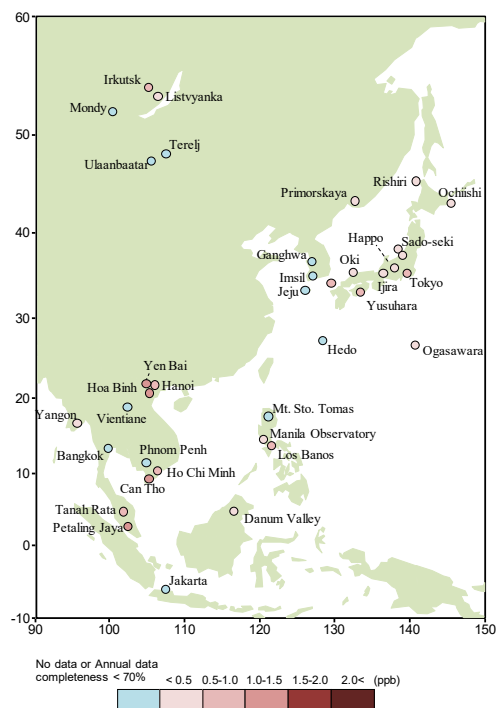
Appendix Fig. 1-3-7 Levels of annual PM_{10} concentrations at EANET monitoring sites in 2023.



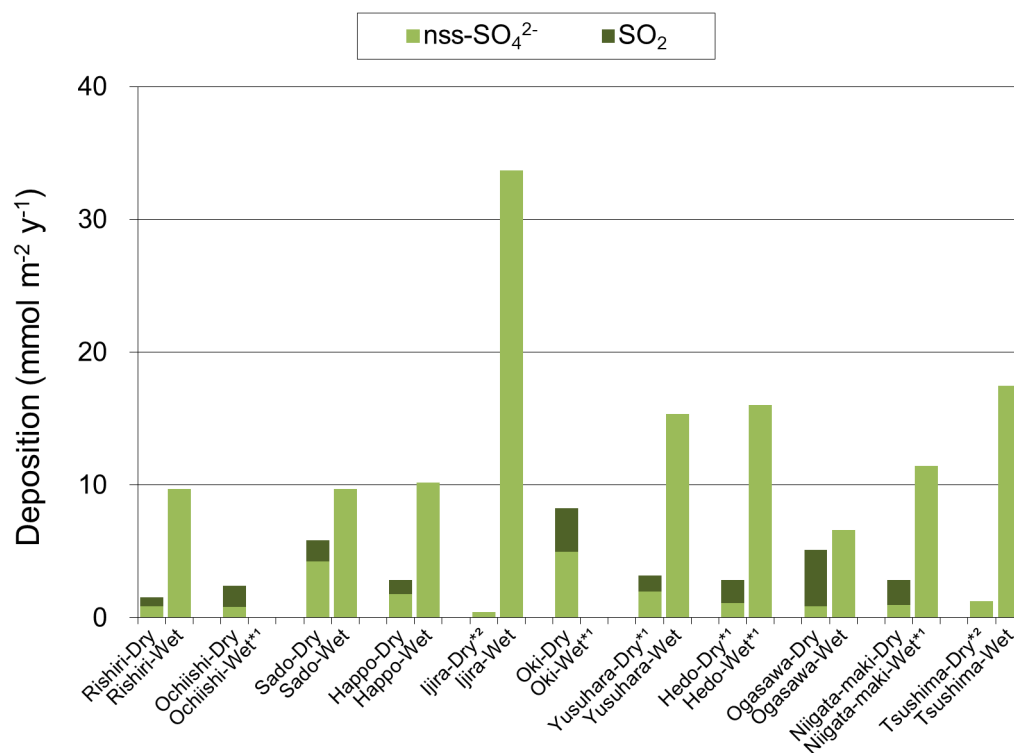
Appendix Fig. 1-3-8 Levels of annual $\text{PM}_{2.5}$ concentrations at EANET monitoring sites in 2023.



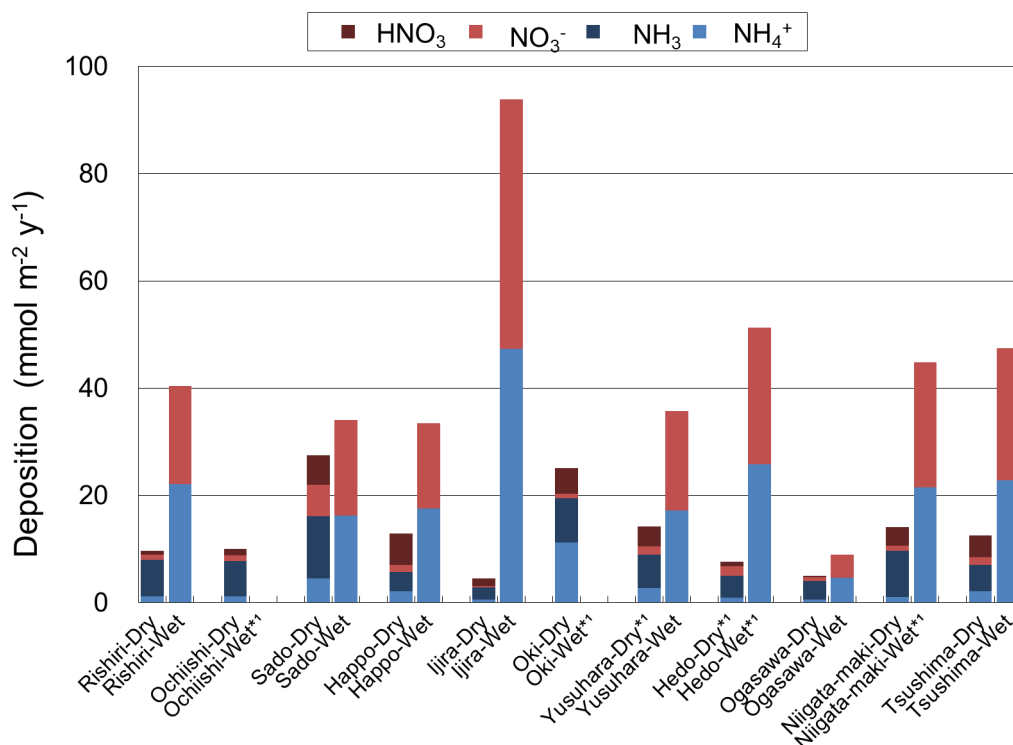
Appendix Fig. 1-3-9 Levels of annual NH_3 concentrations at EANET monitoring sites in 2023.



Appendix Fig. 1-3-10 Levels of annual NH_4^+ concentrations at EANET monitoring sites in 2023.



Appendix Fig. 1-4-1 Annual dry and wet deposition amount of sulfur compounds at EANET sites in 2023.



Appendix Fig. 1-4-2 Annual dry and wet deposition amount of nitrogen compounds at EANET sites in 2023.

*1 The data did not meet the EANET criteria for completeness of wet/dry deposition monitoring.

*2 SO₂ deposition amounts were excluded since SO₂ monitoring by AT was not carried out.

Appendix 2

Meteorological Statistics at the Monitoring Sites

Appendix Table 2-1 Meteorological statistics at the monitoring site
Site : Rishiri, Japan

													2023
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-6.4	-5.3	2.4	5.1	9.3	15.5	19.7	21.9	18.6	11.9	4.2	-2.8
	max.daily mean	5.0	3.2	7.3	10.0	13.9	19.7	22.9	25.5	22.1	16.3	12.8	7.2
	min.daily mean	-13.3	-9.6	-3.3	0.8	4.0	8.1	15.4	15.9	14.1	6.1	-6.3	-8.9
Relative humidity (%)	monthly mean	69	69	74	82	83	90	93	91	84	78	79	70
	max.daily mean	80	87	91	96	97	98	99	99	98	97	97	87
	min.daily mean	60	57	56	63	61	71	81	65	66	56	58	54
Mean wind speed (m/s)		3.0	2.5	2.4	2.5	1.8	1.5	1.5	2.0	1.9	2.5	3.3	3.3
Most frequent wind direction (bearings)		NW	N	W	WNW	WNW	NW	W	E	NE	WNW	NW	NW
Precipitation amount (mm/month)		60	37	38	81	29	86	150	320	164	168	187	103
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		124	206	353	400	532	430	361	397	413	275	119	85

Appendix Table 2-2 Meteorological statistics at the monitoring site
Site : Ochiishi, Japan

												2023	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-5.8	-5.6	0.0	3.3	6.2	11.2	15.6	18.5	17.9	11.9	6.4	-1.3
	max.daily mean	1.2	-0.3	2.8	6.8	10.2	14.8	20.8	22.4	20.6	16.3	12.9	7.1
	min.daily mean	-11.2	-11.0	-4.1	-0.1	1.3	7.9	11.8	13.0	15.0	8.1	-3.1	-6.5
Relative humidity (%)	monthly mean	62	71	83	81	87	94	99	100	95	81	67	54
	max.daily mean	87	97	100	100	100	100	100	100	100	100	100	100
	min.daily mean	47	55	66	56	62	73	90	91	68	50	35	32
Mean wind speed (m/s)		7.7	6.8	7.4	7.7	6.5	4.9	4.4	5.2	4.6	7.0	9.0	7.7
Most frequent wind direction (bearings)		NW	NW	WSW	WSW	WSW	SW	SW	WSW	SSW	WSW	WNW	WNW
Precipitation amount (mm/month)		6	8	68	90	44	51	88	52	131	76	48	24
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		244	293	450	458	632	540	561	461	392	335	210	193

Appendix Table 2-3 Meteorological statistics at the monitoring site
Site : Sado-seki, Japan

												2023	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	2.8	3.2	9.3	12.0	15.9	20.6	24.8	29.2	24.6	16.6	12.1	6.2
	max.daily mean	11.9	9.3	18.0	17.7	21.2	24.5	28.3	32.5	28.4	21.0	23.6	14.8
	min.daily mean	-5.0	-1.8	3.4	7.7	9.6	16.3	20.8	27.3	20.5	10.3	3.4	-1.0
Relative humidity (%)	monthly mean	77	74	64	70	76	87	89	79	86	78	79	81
	max.daily mean	96	94	94	99	99	99	99	91	99	95	94	97
	min.daily mean	59	60	33	48	42	59	58	56	64	61	51	61
Mean wind speed (m/s)		--	--	--	--	--	--	--	--	--	--	--	--
Most frequent wind direction (bearings)		--	--	--	--	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		63	57	100	88	202	112	210	14	171	87	157	164
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-4 Meteorological statistics at the monitoring site
Site : Happo, Japan

												2023	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-7.6	-6.3	1.4	4.0	8.5	12.6	17.5	18.2	15.4	5.7	2.6	-3.0
	max.daily mean	4.4	2.3	8.1	12.5	16.0	18.2	19.8	19.6	18.3	11.7	12.5	6.3
	min.daily mean	-18.2	-14.4	-6.4	-3.4	2.1	8.8	14.6	15.8	10.1	-0.1	-6.3	-12.0
Relative humidity (%)	monthly mean	95	81	72	69	80	93	92	97	--	--	--	--
	max.daily mean	96	97	97	97	97	97	97	97	--	--	--	--
	min.daily mean	91	28	29	30	40	77	69	96	--	--	--	--
Mean wind speed (m/s)		5.1	4.6	3.1	3.7	2.2	2.2	2.2	2.6	2.1	2.4	3.2	4.1
Most frequent wind direction (bearings)		NW	NW	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE
Precipitation amount (mm/month)		123	121	87	224	275	310	405	161	213	263	227	265
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		278	357	574	617	603	419	455	386	319	358	280	261

Appendix Table 2-5 Meteorological statistics at the monitoring site
Site : Ijira, Japan

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	2.3	3.5	9.5	12.6	16.8	20.3	24.7	25.7	23.4	14.6	10.0	4.9
	max.daily mean	9.7	9.0	15.8	18.0	21.3	24.3	27.7	27.8	26.3	19.7	18.3	11.8
	min.daily mean	-4.2	-0.3	4.4	7.8	13.4	16.7	21.8	23.9	20.3	10.4	4.6	-0.6
Relative humidity (%)	monthly mean	--	--	--	--	--	--	--	--	--	--	--	--
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
Mean wind speed (m/s)		0.4	0.4	0.5	0.6	0.5	0.3	0.4	0.4	0.3	0.4	0.3	0.3
Most frequent wind direction (bearings)		Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm
Precipitation amount (mm/month)		103	127	202	581	594	823	366	641	460	78	197	224
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		231	323	522	609	788	586	776	667	488	284	195	211

Appendix Table 2-6 Meteorological statistics at the monitoring site
Site : Yusuhara, Japan

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	1.6	3.3	8.9	11.4	15.3	18.7	22.6	22.5	21.1	13.9	9.5	4.3
	max.daily mean	13.2	8.7	14.6	16.5	20.9	23.4	24.6	24.5	24.5	18.4	17.3	13.9
	min.daily mean	-7.3	-1.8	1.7	6.0	11.0	13.0	19.8	21.0	17.9	9.5	1.7	-5.6
Relative humidity (%)	monthly mean	83	78	81	83	84	91	96	98	97	86	88	92
	max.daily mean	99	99	99	99	99	99	99	99	99	99	99	99
	min.daily mean	62	53	49	41	51	56	81	92	83	64	56	72
Mean wind speed (m/s)		2.1	2.0	1.3	1.3	1.2	1.2	0.9	0.9	0.9	1.7	1.8	1.9
Most frequent wind direction (bearings)		N	N	NNW	SSE	SSE	NNW	SSE	SSE	NNW	NNW	NNW	NNW
Precipitation amount (mm/month)		70	53	141	311	240	379	157	933	143	28	90	76
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		284	344	455	491	582	445	548	408	453	461	323	264

Appendix Table 2-7 Meteorological statistics at the monitoring site
Site : Ogasawara, Japan

2023												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	15.7	16.3	18.3	19.8	21.5	25.0	26.2	26.2	23.4	21.3	18.4
	max.daily mean	20.5	19.8	22.2	23.7	24.9	26.7	27.3	27.2	26.3	23.1	22.8
	min.daily mean	11.8	13.2	15.2	15.6	18.8	23.1	24.3	25.0	19.3	16.6	15.0
Relative humidity (%)	monthly mean	79	85	86	90	91	96	--	--	--	--	--
	max.daily mean	97	98	98	98	98	100	--	--	--	--	--
	min.daily mean	60	69	66	66	70	92	--	--	--	--	--
Mean wind speed (m/s)	1.3	1.7	1.6	1.9	2.0	1.8	1.2	1.9	1.3	1.5	1.4	1.4
Most frequent wind direction (bearings)	WSW	SSW	SSW	SSW	SSW	SSW	NE	NE	NE	SSW	NE	SSW
Precipitation amount (mm/month)	19	101	40	233	250	87	39	266	63	261	100	57
Sunshine duration (hours/month)	--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)	374	326	453	480	512	586	688	510	549	373	328	269

Appendix Table 2-8 Meteorological statistics at the monitoring site
Site : Niigata-maki, Japan

2023												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	2.5	3.3	8.8	12.3	16.6	21.7	26.3	25.5	16.4	11.5	5.8
	max.daily mean	8.1	7.3	17.3	16.9	22.0	25.3	29.9	29.5	21.0	20.3	13.6
	min.daily mean	-4.5	-0.6	4.5	7.8	10.2	18.5	22.5	20.9	10.9	5.2	0.2
Relative humidity (%)	monthly mean	76	72	65	65	72	76	76	64	74	72	79
	max.daily mean	92	88	89	88	94	90	91	76	91	89	93
	min.daily mean	57	55	52	39	52	54	67	50	58	54	64
Mean wind speed (m/s)	6.1	5.2	3.7	4.1	3.2	3.3	3.1	3.2	3.2	4.2	6.0	5.3
Most frequent wind direction (bearings)	WNW	WNW	SE	W	SE	WSW	WSW	SE	SE	SSE	SE	SSE
Precipitation amount (mm/month)	138	86	87	74	176	191	126	8	172	177	266	259
Sunshine duration (hours/month)	--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)	154	239	459	532	607	577	605	720	406	333	205	126

Appendix Table 2-9 Meteorological statistics at the monitoring site
Site : Tsushima, Japan

2023												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	--	--	--	--	--	--	--	--	--	--	--
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	--	--	--	--	--	--	--	--	--	--	--
Relative humidity (%)	monthly mean	--	--	--	--	--	--	--	--	--	--	--
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	--	--	--	--	--	--	--	--	--	--	--
Mean wind speed (m/s)	3.4	2.4	2.5	3.3	2.7	2.3	2.8	2.2	2.1	2.4	3.3	3.3
Most frequent wind direction (bearings)	NNW	ENE	ENE	ENE	ENE	WSW	SSW	ENE	ENE	ENE	W,W	WNW
Precipitation amount (mm/month)	93	101	73	227	306	169	317	305	181	10	80	69
Sunshine duration (hours/month)	--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)	--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-10 Meteorological statistics at the monitoring site
Site : Ulaanbaatar, Mongolia

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-19.6	-12.8	-1.6	2.0	9.4	17.8	18.6	17.6	11.9	4.9	-9.8	-18.4
	max.daily mean	-11.6	-14.0	9.0	12.3	15.7	24.4	27.2	25.7	24.0	9.1	1.9	-5.8
	min.daily mean	-28.3	-17.6	-14.0	-5.2	1.7	12.7	12.1	11.2	4.9	-1.7	-18.7	-28.2
Relative humidity (%)	monthly mean	58	55	39	37	43	44	60	60	59	48	59	62
	max.daily mean	64	63	53	62	70	63	79	70	83	69	71	69
	min.daily mean	48	49	25	22	19	26	35	44	32	33	51	54
Mean wind speed (m/s)		1	1	1	1	1	1	1	1	1	1	1	1
Most frequent wind direction (bearings)		NW	NNE	SE	SE	SE	NW	NNW	NW	SE	SE	N	WNW
Precipitation amount (mm/month)		42	101	26	65	30	27	171	106	52	22	34	13
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-11 Meteorological statistics at the monitoring site
Site : Metro Manila*, Philippines

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	26.3	27.0	27.1	29.1	30.0	29.1	28.6	28.9	28.4	27.9	27.9	27.6
	max.daily mean	28.0	29.0	30.2	31.4	31.6	30.6	31.2	30.3	30.5	29.1	29.6	29.3
	min.daily mean	24.0	24.9	24.4	25.5	29.0	26.4	24.8	26.1	26.0	24.7	25.8	25.9
Relative humidity (%)	monthly mean	74	69	63	67	71	79	82	80	83	81	77	78
	max.daily mean	94	88	75	91	83	92	97	95	95	97	88	86
	min.daily mean	62	58	55	57	59	62	65	73	70	64	65	68
Mean wind speed (m/s)		1	1	1	1	1	1	1	1	1	1	1	1
Most frequent wind direction (bearings)		--	--	--	--	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		159	10	6	70	170	419	846	549	585	259	64	53
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

* location of the meteorological monitoring : the PAGASA Science Garden Station

(Latitude: 14°38'41"N Longitude: 121°02'40"E Altitude: 43 m)

Data Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Department of Science and Technology (DOST)

Appendix Table 2-12 Meteorological statistics at the monitoring site
Site : Laguna*, Philippines

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	25.5	26.1	26.6	28.2	--	28.9	28.5	28.8	28.5	27.8	27.4	26.9
	max.daily mean	27.5	28.3	29.8	30.1	--	30.1	30.0	30.6	29.8	29.2	29.1	28.1
	min.daily mean	24.1	23.8	24.3	25.3	--	27.0	26.5	26.8	26.7	25.3	25.4	25.4
Relative humidity (%)	monthly mean	--	--	--	--	--	--	--	--	--	--	--	--
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
Mean wind speed (m/s)		2	2	2	2	2	2	2	2	2	2	--	--
Most frequent wind direction (bearings)		--	--	--	--	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		246	61	3	62	107	190	257	207	115	183	302	155
Sunshine duration (hours/month)		73	157	253	229	194	177	154	182	129	119	142	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

* location of the meteorological monitoring : the PAGASA Agromet Station in UP Los Baños College

(Latitude: 14°10'20"N Longitude: 121°14'29"E Altitude: 21.7 m)

Data Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)-Department of Science and Technology (DOST)

Appendix Table 2-13 Meteorological statistics at the monitoring site
Site : Benguet, Philippines

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	18.6	19.0	19.2	21.1	21.0	20.7	20.19	19.6	20.5	20.5	20.7	20.6
	max.daily mean	20.8	20.5	22.2	22.6	22.5	21.9	22.7	21.1	21.8	22.4	22.2	21.9
	min.daily mean	16.4	16.1	16.3	19.5	18.0	18.4	16.9	17.7	18.3	18.6	18.1	17.9
Relative humidity (%)	monthly mean	84	81	87	90	93	93	94	95	95	92	86	79
	max.daily mean	97	96	93	95	98	97	98	98	98	98	95	89
	min.daily mean	74	51	79	85	88	83	86	90	89	83	73	64
Mean wind speed (m/s)		1	1	1	1	1	2	2	2	1	1	1	1
Most frequent wind direction (bearings)		--	--	--	--	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		28	54	4	101	592	495	1092	1037	679	83	19	2
Sunshine duration (hours/month)		188	221	257	197	174	130	100	114	121	158	230	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-14 Meteorological statistics at the monitoring site
Site : Mondy, Russia

2023												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	-18.9	-15.5	-6.5	--	--	--	--	--	--	--	--
	max.daily mean	-11.0	-4.5	2.5	--	--	--	--	--	--	--	--
	min.daily mean	-25.5	-23.8	-15.6	--	--	--	--	--	--	--	--
Relative humidity (%)	monthly mean	60	64	52	--	--	--	--	--	--	--	--
	max.daily mean	74	81	80	--	--	--	--	--	--	--	--
	min.daily mean	44	36	27	--	--	--	--	--	--	--	--
Mean wind speed (m/s)		2.4	1.5	2.7	--	--	--	--	--	--	--	--
Most frequent wind direction (bearings)		W	W	W	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		3.4	1.5	9.7	--	--	--	--	--	--	--	--
Sunshine duration (hours/month)		143	209	234	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		114	202	361	--	--	--	--	--	--	--	--

Appendix Table 2-15 Meteorological statistics at the monitoring site
Site : Listvyanka, Russia

													2023
<u>Month</u>		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
<u>Items</u>													
Temperature (°C)	monthly mean	-16.2	-12.1	-5.0	-2.5	4.9	11.1	15.3	16.2	11.1	5.3	-6.6	-14.7
	max.daily mean	-11.9	-7.7	1.6	2.2	10.6	17.3	20.1	21.1	15.8	10.2	-2.9	-10.8
	min.daily mean	-19.9	-15.9	-9.6	-6.3	0.8	6.2	11.1	12.1	7.6	1.2	-9.7	-17.5
Relative humidity (%)	monthly mean	77	80	67	66	68	74	84	84	82	72	75	78
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	69	68	47	47	46	55	70	68	65	56	62	71
Mean wind speed (m/s)		3.4	3.4	3.6	3.9	2.9	2.2	2.3	2.4	3.3	3.2	4.4	4.9
Most frequent wind direction (bearings)		N	N	N,	NNW	N	N	N	N	N	N	N	N
Precipitation amount (mm/month)		14	8	11	50	52	107	108	55	60	16	12	19
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-16 Meteorological statistics at the monitoring site
Site : Irkutsk, Russia

												2023	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-17.7	-12.6	-2.5	0.3	9.1	16.8	19.8	18.3	11.5	5.5	-8.4	-17.9
	max.daily mean	-12.8	-5.9	4.8	7.4	15.9	24.1	26.0	24.8	17.8	12.0	-4.1	-14.0
	min.daily mean	-21.8	-17.5	-8.1	-5.1	2.8	10.4	14.6	13.4	6.7	0.7	-12.0	-21.3
Relative humidity (%)	monthly mean	69	67	49	48	50	59	68	73	75	64	70	72
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	59	51	29	26	29	38	48	49	51	42	58	67
Mean wind speed (m/s)		1.7	1.4	2.2	2.3	2.0	1.6	1.4	1.2	1.3	1.7	1.7	1.4
Most frequent wind direction (bearings)		SE	SE	SE	SE	SE. WNW	SE	SE.	SE	WNW	SE	NW	ENE
Precipitation amount (mm/month)		19	14	15	78	46	85	84	113	88	13	18	23
Sunshine duration (hours/month)		101	164	213	275	259	302	246	260	189	199	97	79
Solar radiation (MJ/m ² /month)		124	225	394	547	586	640	606	513	331	273	139	87

Appendix Table 2-17 Meteorological statistics at the monitoring site
Site : Primorskaya, Russia

													2023
	Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	Items												
Temperature (°C)	monthly mean	-17.8	-10.3	0.9	6.1	13.0	18.1	21.9	22.1	17.1	8.0	-3.7	-13.6
	max.daily mean	-8.2	-1.9	8.3	13.8	21.9	24.1	27.7	27.0	24.0	16.9	1.8	-6.5
	min.daily mean	-23.2	-17.1	-5.4	-0.6	6.1	13.4	17.8	19.2	11.9	1.6	-8.3	-19.0
Relative humidity (%)	monthly mean	66	68	69	64	69	83	86	91	83	74	80	71
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
Mean wind speed (m/s)		0.9	1.1	1.1	1.4	1.2	0.8	0.7	0.5	0.8	1.1	1.1	1.0
Most frequent wind direction (bearings)		--	--	--	--	--	--	--	--	--	--	--	--
Precipitation amount (mm/month)		1	6	41	73	35	215	200	407	29	11	120	11
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-18 Meteorological statistics at the monitoring site
Site : Bangkok, Thailand
PRD

												2023	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	26.4	28.0	29.4	31.2	31.3	30.1	29.3	29.2	28.2	28.1	27.8	28.0
	max.daily mean	28.2	29.6	30.8	32.7	34.0	31.8	31.3	31.4	30.6	30.1	29.4	30.2
	min.daily mean	22.5	25.1	27.5	27.5	27.7	28.2	26.7	26.9	26.5	26.3	25.3	23.4
Relative humidity (%)	monthly mean	55	64	70	72	67	71	74	76	83	86	70	61
	max.daily mean	80	99	84	86	90	85	99	90	95	98	93	82
	min.daily mean	43	43	42	56	52	55	56	58	65	73	47	45
Mean wind speed (m/s)		0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.4
Most frequent wind direction (bearings)		NE	WSW	WSW	WSW	WNW	WNW	WNW	WNW	WNW	NNE	NNE	NNE
Precipitation amount (mm/month)		0	101	10	31	158	67	307	209	353	269	108	7
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-19 Meteorological statistics at the monitoring site**Site : Samutprakarn, Thailand**

Thai Met

2023

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	26.3	27.7	28.9	30.7	31.3	30.5	29.9	29.7	--	--	--
	max.daily mean	28.3	29.2	30.0	32.4	33.7	32.2	31.8	31.7	--	--	--
	min.daily mean	23.0	25.1	27.5	26.5	28.3	28.6	27.5	28.2	--	--	--
Relative humidity (%)	monthly mean	58	69	76	80	71	75	--	--	--	--	--
	max.daily mean	92	100	91	99	90	84	--	--	--	--	--
	min.daily mean	43	46	44	64	56	64	--	--	--	--	--
Mean wind speed (m/s)		1.3	1.5	1.8	1.9	1.7	1.8	1.7	1.6	1.3	0.9	1.2
Most frequent wind direction (bearings)		ENE	S	S	S	S	SSW	WNW	SSW	SSW, WNW	ENE	ENE
Precipitation amount (mm/month)		--	--	--	--	--	--	--	--	--	--	--
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-20 Meteorological statistics at the monitoring site**Site : Khanchanaburi, Thailand****2023**

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items												
Temperature (°C)	monthly mean	25.3	27.3	29.1	31.7	31.4	29.9	29.1	29.0	28.4	28.0	27.1
	max.daily mean	28.3	29.6	31.8	33.4	34.4	32.3	30.6	31.3	30.5	29.8	29.2
	min.daily mean	21.4	24.5	26.2	27.8	28.5	26.8	27.3	27.3	26.7	24.8	23.2
Relative humidity (%)	monthly mean	57	62	59	55	62	66	72	73	78	84	75
	max.daily mean	80	93	71	77	83	90	87	88	90	96	91
	min.daily mean	40	47	49	42	47	53	58	56	61	71	52
Mean wind speed (m/s)		0.7	0.8	1.1	1.3	1.2	1.3	1.1	1.2	1.1	0.7	0.7
Most frequent wind direction (bearings)		N	SW	SE	SW	W	SW	W	SW	SW	WSW	N
Precipitation amount (mm/month)		--	--	--	--	--	--	--	--	--	--	--
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-21 Meteorological statistics at the monitoring site**Site : Chang Phueak, Thailand** Chiang Mai City Hall**2023**

2023													
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	21.1	23.8	26.3	30.0	28.9	28.1	28.2	26.9	26.7	26.1	25.3	23.8
	max.daily mean	23.0	26.1	28.4	31.9	32.7	30.5	30.4	28.8	29.4	28.3	27.5	26.4
	min.daily mean	19.1	20.0	22.4	27.9	25.5	26.0	25.5	23.9	23.8	23.6	23.1	19.7
Relative humidity (%)	monthly mean	64	55	55	47	65	72	73	81	83	83	72	71
	max.daily mean	70	80	80	54	90	92	90	99	98	97	80	83
	min.daily mean	52	45	40	40	48	58	63	69	69	72	61	59
Mean wind speed (m/s)		0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.4
Most frequent wind direction (bearings)		NNW	NW,N	NNW	NW	NW	S	S	S	NNW	NNW	NNW	NNW
Precipitation amount (mm/month)		0	10	17	5	163	95	100	121	307	140	5	2
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-22 Meteorological statistics at the monitoring site**Site : Si Phum, Thailand****2023**

	Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	Items												
Temperature (°C)	monthly mean	25.0	27.7	30.1	34.0	32.5	31.4	31.1	30.0	29.5	29.1	28.9	27.4
	max.daily mean	26.5	30.2	32.4	36.2	37.1	34.1	33.2	32.1	32.3	31.6	30.9	29.6
	min.daily mean	22.6	23.4	24.9	31.9	28.4	28.5	28.1	26.1	26.1	26.3	26.7	23.4
Relative humidity (%)	monthly mean	--	--	58	49	72	79	84	84	93	--	--	--
	max.daily mean	--	--	92	60	96	95	100	100	100	--	--	--
	min.daily mean	--	--	41	43	49	67	62	55	81	--	--	--
Mean wind speed (m/s)		0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Most frequent wind direction (bearings)		NE	NE	NE	NE	NNE	SW	SE	SE	NNE	NNE	NNE	NE
Precipitation amount (mm/month)		--	--	--	--	--	--	--	--	--	--	--	--
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 2-23 Meteorological statistics at the monitoring site
Site : Nai Mueang, Thailand

													2023
	Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	Items												
Temperature (°C)	monthly mean	22.4	26.1	28.1	31.2	30.0	29.5	28.8	29.3	27.0	27.1	--	--
	max.daily mean	26.9	29.8	32.2	33.4	33.6	31.9	31.1	30.7	29.1	28.8	--	--
	min.daily mean	18.2	21.7	23.9	25.8	26.4	26.7	26.0	26.3	24.7	24.6	--	--
Relative humidity (%)	monthly mean	59.78	56.21	52.5	52.97	62.26	64.55	66.55	64.06	79.87	68.84	47.21	53.17
	max.daily mean	93.54	74.54	67.96	80	81.58	80.13	83.63	87.17	90.79	92.08	70.13	63
	min.daily mean	40.25	46.58	45.08	41.42	46.33	50.67	54.17	54.17	68.92	30.46	34.33	37
Mean wind speed (m/s)		1.4	1.1	1.1	0.9	0.9	--	--	--	--	--	--	--
Most frequent wind direction (bearings)		ENE	E	E	SW	SW	N,NN	N,NN	N,NN	N,NN	N,NN	ENE	ENE
Precipitation amount (mm/month)		9	11	4	21	131	157	126	211	342	509	20	2
Sunshine duration (hours/month)		--	--	--	--	--	--	--	--	--	--	--	--
Solar radiation (MJ/m ² /month)		--	--	--	--	--	--	--	--	--	--	--	--

Appendix 3

Corrigenda of Air Concentration and Dry Deposition Monitoring

Appendix 3 Corrigenda of Air Concentration and Dry Deposition Monitoring

Appendix 3-1 Corrigenda of Data Report 2022

Refer to page 174 of Data Report 2022.

Table 4.12 PM_{2.5} - Measured by AT(continued)

Unit : $\mu\text{g}/\text{m}^3$

Country	Site		2022												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Mt. Sto. Tomas	Mean	4	3	5	3	4	3	2	2	3	<1	***	***	3
		%	97	93	99	50	97	88	96	89	88	7	***	***	67
		Max-d	9	5	11	7	9	9	5	4	12	3	***	***	12
		Min-d	1	<1	1	<1	<1	<1	<1	<1	<1	<1	***	***	<1

Updated version

Country	Site		2022												Annual
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Mt. Sto. Tomas	Mean	4	3	5	4	4	3	2	2	3	2	3	5	3
		%	98	98	99	29	98	92	96	94	88	92	90	93	89
		Max-d	7	6	11	7	8	11	5	4	13	5	7	38	38
		Min-d	<1	1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Some additional 2022 PM_{2.5} monitoring data at Mt. Sto. Tomas site were submitted after publication of Data Report 2022.

Appendix 3-2-1 Corrigenda of Data Report 2019

Refer to page 164 of Data Report 2019.

Table 4.7 NO

Unit : ppb			2019												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	6.5	***	***	5.3	***	***	***	***	***	2.8	***	3.6	4.1
		%	10	***	***	18	***	***	***	***	***	10	***	73	9
		Max-d	<0.1	***	***	11.4	***	***	***	***	***	2.8	***	9.8	11.4
		Min-d	<0.1	***	***	2.6	***	***	***	***	***	2.7	***	1.5	<0.1

The NO monitoring data were submitted in 2024.

Appendix 3-2-2 Corrigenda of Data Report 2019

Refer to page 166 of Data Report 2019.

Table 4.8 NO₂

Unit : ppb			2019												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	11.5	***	***	1.1	***	***	***	***	***	12.0	***	11.5	10.0
		%	10	***	***	18	***	***	***	***	***	10	***	73	9
		Max-d	<0.1	***	***	1.5	***	***	***	***	***	12.7	***	20.7	20.7
		Min-d	<0.1	***	***	0.7	***	***	***	***	***	10.1	***	5.2	<0.1

The NO₂ monitoring data were submitted in 2024.

Appendix 3-2-3 Corrigenda of Data Report 2019

Refer to page 167 of Data Report 2019.

Table 4.9 NO_x

Unit : ppb			2019												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	18.0	***	***	6.4	***	***	***	***	***	14.8	***	15.2	14.0
		%	10	***	***	18	***	***	***	***	***	10	***	73	9
		Max-d	<0.1	***	***	12.4	***	***	***	***	***	15.3	***	27.4	27.4
		Min-d	<0.1	***	***	3.5	***	***	***	***	***	12.9	***	7.1	<0.1

The NO_x monitoring data were submitted in 2024.

Appendix 3-3-1 Corrigenda of Data Report 2020

Refer to page 162 of Data Report 2020.

Table 4.7 NO

Unit : ppb			2020												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	3.0	2.6	3.1	1.5	4.4	3.4	3.3	2.2	3.1	4.1	3.4	2.1	3.0
		%	53	80	60	50	24	73	60	8	95	17	85	43	54
		Max-d	7.3	4.8	7.3	3.0	6.2	5.8	5.3	2.7	5.3	5.5	6.6	4.6	7.3
		Min-d	1.5	0.9	1.6	1.0	1.5	2.2	1.8	1.8	1.2	2.9	0.9	1.1	0.9

The NO monitoring data were submitted in 2024.

Appendix 3-3-2 Corrigenda of Data Report 2020

Refer to page 164 of Data Report 2020.

Table 4.8 NO₂

Unit : ppb			2020												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	11.4	9.4	8.5	5.9	10.2	8.1	7.6	4.0	6.5	6.9	6.5	5.5	7.7
		%	53	80	60	50	24	73	60	8	95	17	85	43	54
		Max-d	17.9	13.8	16.7	10.5	13.2	11.2	12.4	4.9	9.7	8.2	12.2	9.0	17.9
		Min-d	6.4	6.1	5.6	2.9	5.7	5.4	4.2	3.4	2.2	5.8	3.3	3.6	2.2

The NO₂ monitoring data were submitted in 2024.

Appendix 3-3-3 Corrigenda of Data Report 2020

Refer to page 165 of Data Report 2020.

Table 4.9 NO_x

Unit : ppb			2020												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	14.4	12.0	11.6	7.5	14.5	11.5	10.9	6.2	9.6	11.0	9.9	7.6	10.7
		%	53	80	60	50	24	73	60	8	95	17	85	43	54
		Max-d	22.5	17.5	23.2	12.2	19.4	17.0	16.7	7.5	13.3	13.7	17.3	11.4	23.2
		Min-d	7.9	7.8	8.0	3.9	8.1	7.7	6.0	5.2	3.5	9.0	4.3	5.0	3.5

The NO_x monitoring data were submitted in 2024.

Appendix 3-4-1 Corrigenda of Data Report 2021

Refer to page 162 of Data Report 2021.

Table 4.7 NO

Unit : ppb			2021												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	1.6	1.1	0.8	***	1.6	2.2	2.2	1.5	1.5	0.6	1.6
		%	***	***	17	100	21	***	37	97	80	67	100	40	47
		Max-d	***	***	2.1	2.9	0.9	***	1.8	3.4	4.2	2.5	8.3	1.3	8.3
		Min-d	***	***	1.2	0.3	0.6	***	1.4	1.4	0.8	0.5	0.2	0.3	0.2

The NO monitoring data were submitted in 2024.

Appendix 3-4-2 Corrigenda of Data Report 2021

Refer to page 164 of Data Report 2021.

Table 4.8 NO₂

Unit : ppb			2021												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	5.3	4.9	3.9	***	2.3	4.1	1.0	0.5	0.7	1.8	2.5
		%	***	***	17	100	21	***	37	97	80	67	100	40	47
		Max-d	***	***	8.6	13.1	5.0	***	2.7	14.7	7.5	0.7	1.3	5.3	14.7
		Min-d	***	***	4.6	2.3	2.8	***	1.8	1.4	0.2	0.2	0.3	0.6	0.2

The NO₂ monitoring data were submitted in 2024.

Appendix 3-4-3 Corrigenda of Data Report 2021

Refer to page 165 of Data Report 2021.

Table 4.9 NO_x

Unit : ppb			2021												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	***	***	6.9	5.9	3.3	***	3.9	6.4	2.8	1.3	1.9	2.4	3.8
		%	***	***	17	100	21	***	37	97	80	67	100	40	47
		Max-d	***	***	9.9	15.1	4.5	***	4.3	17.4	9.6	2.8	8.7	6.6	17.4
		Min-d	***	***	6.0	2.1	2.2	***	3.2	2.9	1.2	0.5	0.5	1.0	0.5

The NO_x monitoring data were submitted in 2024.

Appendix 3-5-1 Corrigenda of Data Report 2022

Refer to page 164 of Data Report 2022.

Table 4.7 NO

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	1.4	1.2	1.8	***	2.7	5.0	7.2	8.6	***	4.1	4.1	***	3.9
		%	100	75	88	***	46	91	77	57	***	59	78	***	56
		Max-d	4.4	1.9	3.5	***	3.9	9.5	11.6	13.6	***	9.4	12.0	***	13.6
		Min-d	0.7	0.8	0.9	***	1.1	1.6	2.9	3.1	***	1.2	0.9	***	0.7

The NO monitoring data were submitted in 2024.

Appendix 3-5-2 Corrigenda of Data Report 2022

Refer to page 166 of Data Report 2022.

Table 4.8 NO₂

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	7.8	5.1	6.8	***	6.2	8.0	7.9	8.2	***	7.8	6.7	***	7.2
		%	100	75	88	***	46	91	77	57	***	59	78	***	56
		Max-d	13.9	8.9	9.9	***	12.0	11.5	11.2	10.8	***	13.7	15.1	***	15.1
		Min-d	3.7	2.9	4.2	***	3.2	4.9	4.6	5.0	***	3.1	1.7	***	1.7

The NO₂ monitoring data were submitted in 2024.**Appendix 3-5-3 Corrigenda of Data Report 2022**

Refer to page 167 of Data Report 2022.

Table 4.9 NO_x

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cambodia	Phnom Penh	Mean	9.2	6.3	8.6	***	8.9	13.0	15.1	16.8	***	11.9	10.8	***	11.1
		%	100	75	88	***	46	91	77	57	***	59	78	***	56
		Max-d	15.5	10.8	11.5	***	14.6	20.3	21.7	23.6	***	21.3	27.1	***	27.1
		Min-d	4.7	3.8	5.7	***	4.3	6.6	7.6	8.2	***	6.0	2.6	***	2.6

The NO_x monitoring data were submitted in 2024.**Appendix 3-6-1 Corrigenda of Data Report 2022**

Refer to page 172 of Data Report 2022.

Table 4.11 PM₁₀ - Measured by AT (continued)

Unit : µg/m ³			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	North Caloocan	Mean	41	56	64	62	69	73	37	36	35	42	46	48	51
		%	94	100	100	100	100	93	100	100	100	100	100	77	97
		Max-d	75	81	123	107	115	142	54	59	53	75	62	95	142
		Min-d	16	21	24	39	47	33	19	23	22	12	29	25	12

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-6-2 Corrigenda of Data Report 2022

Refer to page 174 of Data Report 2022.

Table 4.12 PM_{2.5} - Measured by AT (continued)

Unit : µg/m ³			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	North Caloocan	Mean	***	***	***	***	***	16	18	19	18	20	22	22	20
		%	***	***	***	***	***	20	100	100	100	100	100	77	50
		Max-d	***	***	***	***	***	23	29	34	28	40	36	55	55
		Min-d	***	***	***	***	***	14	8	11	10	5	12	10	5

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-7-1 Corrigenda of Data Report 2022

Refer to page 152 of Data Report 2022.

Table 4.3.1 SO₂ - Measured by AT (continued)

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Sta. Rosa	Mean	4.8	3.5	3.3	***	9.4	15.1	25.3	40.1	18.2	12.2	1.4	3.7	11.2
		%	97	100	54	***	52	53	93	14	100	93	46	55	63
		Max-d	20.1	4.4	5.3	***	20.5	54.8	277.9	119.1	57.2	89.1	4.1	6.1	277.9
		Min-d	3.0	3.1	2.4	***	2.4	4.8	3.8	6.2	3.9	3.7	0.7	2.4	0.7

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-7-2 Corrigenda of Data Report 2022

Refer to page 166 of Data Report 2022.

Table 4.8.1 NO₂ - Measured by AT

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Sta. Rosa	Mean	39.1	40.9	34.6	***	45.4	40.3	40.2	49.6	42.1	41.3	42.9	148.0	48.7
		%	97	100	54	***	52	59	93	14	100	93	47	55	63
		Max-d	59.6	61.4	47.1	***	62.1	59.2	61.1	52.5	66.1	77.0	55.2	201.9	201.9
		Min-d	23.1	24.9	22.5	***	25.5	21.7	21.5	41.1	20.4	15.5	33.8	101.0	15.5

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-7-3 Corrigenda of Data Report 2022

Refer to page 169 of Data Report 2022.

Table 4.10.1 O₃ - Measured by AT

Unit : ppb			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Sta. Rosa	Mean	39	36	36	***	30	22	20	26	27	29	26	195	42
		%	97	100	54	***	52	59	94	14	99	100	47	55	64
		Max-d	49	47	55	***	35	43	37	30	47	47	39	263	263
		Min-d	28	32	28	***	24	7	11	23	19	18	19	129	7

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-7-4 Corrigenda of Data Report 2022

Refer to page 172 of Data Report 2022.

Table 4.11 PM₁₀ - Measured by AT (continued)

Unit : µg/m ₃			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Sta. Rosa	Mean	28	30	***	28	22	31	31	51	59	35	19	22	32
		%	91	41	***	90	86	73	30	69	72	92	89	65	67
		Max-d	44	34	***	48	75	68	42	78	118	58	40	46	118
		Min-d	18	27	***	12	12	12	24	25	27	22	9	5	5

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 3-7-5 Corrigenda of Data Report 2022

Refer to page 174 of Data Report 2022.

Table 4.12 PM_{2.5} - Measured by AT (continued)

Unit : µg/m ₃			2022												Annual
Country	Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Philippines	Sta. Rosa	Mean	29	30	***	14	14	21	22	39	26	18	11	11	21
		%	91	41	***	86	66	68	30	68	99	90	79	71	66
		Max-d	45	34	***	26	65	51	33	62	43	37	28	26	65
		Min-d	18	27	***	5	13	9	16	17	15	10	4	5	4

This site was officially registered in 2023, and the data above is from before the registration but has been verified in 2024.

Appendix 4

Corrigenda of Inland Aquatic Environment Monitoring

Appendix 4 Corrigenda of Inland Aquatic Environment Monitoring

IAE monitoring data for Ambulalakaw Lake in the Philippines were not reflected in Data Report 2022, so they were corrected as follows.

Appendix 4-1

P.267 Table 6.4.6 Result of Inland Aquatic Environment Monitoring

Duration: 2022.2-2022.12
Country: Philippines
Lake/Stream: (See below)

Mandatory Parameters: 4 times/year													
Site	Sampling Date	Temp. (°C)	pH	EC (mS/m)	Alkalinity (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Pandin Lake	23-Feb-22	26.1	9.04	18.29	1.790	1.14	0.03	3.50	0.01	8.30	4.05	18.00	9.57
	12-May-22	30.8	8.81	18.35	1.850	1.29	0.085	3.71	*1	8.48	4.29	13.70	10.76
	26-Aug-22	-	8.10	18.16	1.740	1.29	0.008	3.37	*1	8.04	4.07	13.80	9.06
	15-Dec-22	27.4	8.06	17.39	1.025	2.30	0.018	4.73	0.038	10.82	5.60	11.80	5.20
	mean*2	28.1	8.32	18.05	1.601	1.51	0.04	3.83	0.067	8.91	4.50	14.33	8.65
Ambulalakaw Lake	14-Mar-22	-	6.31	0.91	0.040	0.13	0.05	0.50	*1	*1	*1	1.33	0.01
	09-Jun-22	-	5.10	0.59	0.050	0.38	0.74	0.56	*1	0.54	0.10	1.08	0.16
	27-Sep-22	-	6.86	1.01	0.020	0.19	*1	0.13	*1	0.11	0.03	0.24	0.06
	06-Dec-22	-	6.38	0.98	0.030	0.21	*1	0.15	*1	0.14	0.09	0.29	0.07
	mean	-	5.65	0.87	0.035	0.22	0.20	0.34	*1	0.20	0.05	0.74	0.08

Mandatory Parameters: Once/year				Optional Parameters			
Site	Sampling Date	Transparency (m)	PO ₄ ³⁻ (mg/L)	NO ₂ ⁻ (mg/L)	DO (mg/L)	Chl-a (µg/L)	COD (mg/L)
Pandin Lake	23-Feb-22	-	*1	*1	-	6.87	7.48
	12-May-22	-	*1	*1	-	-	-
	26-Aug-22	-	*1	*1	-	2.40	0.72
	15-Dec-22	-	*1	*1	-	-	-
	mean	-	-	-	-	4.64	4.10
Ambulalakaw Lake	14-Mar-22	-	-	-	-	-	-
	9-Jun-22	-	-	-	-	-	-
	27-Sep-22	-	-	-	-	-	-
	6-Dec-22	-	-	-	-	-	-
	mean	-	-	-	-	-	-

note

- : No analysis or measurement.

*1: Less than determination limit.

*2: Mean of pH takes an average of hydrogen ion.

When the value is under detection limit, it is considered as "0". Then the average and R1R2 were calculated by using it.

	Anion	Cation	R1	Judge	Acalc	R2	Judge	
Pandin Lake	23-Feb-22	1913	2151	5.9	O	21.1	7.0	O
	12-May-22	1983	2047	1.6	O	20.7	6.1	O
	26-Aug-22	1862	1888	0.7	O	19.3	3.0	O
	15-Dec-22	1207	1633	15.0	×	15.2	-6.7	O
Ambulalakaw Lake	14-Mar-22	57.5	67.9	8.3	×	0.7	-11.0	O
	09-Jun-22	85.7	101.2	8.3	×	1.3	37.5	×
	27-Sep-22	27.5	22.7	-9.5	O	0.3	-56.4	×
	06-Dec-22	38.5	29.6	-13.1	O	0.4	-43.9	×

Appendix 4-2

P.271 Table 6.4.10 Summary of Inland Aquatic Environment Monitoring

Mandatory Parameters : 4 times/year														
Country	Location	Site	pH	EC (mS/m)	Alkalinity (meq/L)	iran's AN ^o (meq/L)	SO ₄ ²⁻ (mg/L)	NO ₃ ⁻ (mg/L)	Cl ⁻ (mg/L)	NH ₄ ⁺ (mg/L)	Na ⁺ (mg/L)	K ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
Philippines	San Pablo City	Pandin Lake	8.32	18.05	1.601	-	1.51	0.04	3.83	0.07	8.91	4.50	14.33	8.65
	Benguet	Ambulalakaw Lake	5.65	0.87	0.035	-	0.22	0.20	0.34	*1	0.20	0.05	0.74	0.08

Appendix 4-3

P.275 Table 6.5.15 Annual mean values of each parameters from 2005 to 2022 at Ambulalakaw Lake (Philippines)

	Mandatory Parameters : 4 times/year												Mandatory Parameters : Once/year				
	pH	EC mS/m	Alkalinity meq/L	iran's AN ^o (meq/L)	SO ₄ ²⁻ mg/L	NO ₃ ⁻ mg/L	Cl ⁻ mg/L	NH ₄ ⁺ mg/L	Na ⁺ mg/L	K ⁺ mg/L	Ca ²⁺ mg/L	Mg ²⁺ mg/L	Transparen m	PO ₄ ³⁻ mg/L	NO ₂ ⁻ mg/L	DOC mg/L	COD mg/L
2005	5.82	0.44	0.020	-	0.15	0.11	0.06	-	0.22	0.15	0.15	0.04	-	-	0.100	-	-
2007	5.49	0.53	0.031	-	0.46	0.12	0.25	0.02	0.37	0.13	0.40	0.10	-	*1	*1	-	-
2008	5.74	0.38	0.081	-	0.27	0.12	0.17	0.10	0.19	0.07	0.26	0.15	-	0.001	-	-	-
2009*	5.42	0.17	0.290	-	0.21	0.08	0.13	0.17	0.27	0.06	0.17	0.07	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	5.75	0.52	0.060	-	*1	*1	0.39	*1	0.56	0.13	0.49	0.11	-	-	-	-	-
2014	5.69	0.52	0.023	-	0.11	*1	0.20	0.21	0.46	0.35	0.59	0.12	-	-	-	-	-
2015	5.86	0.50	0.031	-	0.21	0.36	0.22	0.05	0.48	0.14	0.37	0.31	-	-	-	-	-
2016	5.81	0.51	0.026	-	0.11	0.02	0.18	0.00	0.46	0.12	0.26	0.10	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2022	5.65	0.87	0.035	-	0.22	0.20	0.34	*1	0.20	0.05	0.74	0.08	-	-	-	-	-

* Data for Dec. 2009 were excluded from the aggregation due to the high probability of contamination from agricultural activities.

Appendix 5

Corrigenda of Meteorological Statistics at the Monitoring Sites

Appendix 5 Corrigenda of Meteorological Statistics at the Monitoring Sites

Refer to page 308 of Data Report 2022.

Appendix Table 2-16 Meteorological statistics at the monitoring site

Site : Irkutsk, Russia

												2022	
Month		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Items													
Temperature (°C)	monthly mean	-14.3	-14.6	-5.6	4.5	13.3	17.4	17.7	15.3	10.0	2.1	-7.7	-15.4
	max.daily mean	-9.8	-8.4	0.2	11.6	21.5	24.2	24.2	21.7	16.8	7.3	-2.6	-11.4
	min.daily mean	-17.8	-19.5	-11.0	-1.6	5.6	11.2	12.5	10.0	4.7	-2.2	-11.4	-19.0
Relative humidity (%)	monthly mean	79	70	55	51	45	68	75	74	69	71	74	72
	max.daily mean	--	--	--	--	--	--	--	--	--	--	--	--
	min.daily mean	70	54	37	30	25	46	54	49	46	51	61	62
Mean wind speed (m/s)		1.3	1.4	1.8	1.8	1.9	1.4	1.4	1.3	1.7	1.8	1.5	1.3
Most frequent wind direction (bearings)		SE	SE	SE	NW	NW	SE	WNW	WNW	SE	SE	ENE	NW
Precipitation amount (mm/month)		16	11	7	12	8	79	109	36	25	25	23	26
Sunshine duration (hours/month)		258	277	368	418	487	501	503	454	380	330	264	241
Solar radiation*1 (MJ/m ² /month)		127	233	426	486	665	646	564	523	354	252	134	95

*1 The solar radiation monthly values were additionally added.

