

Update year 2019:

MERCURY MONITORING IN INDONESIA

8th APMMN Partners Meeting in Ritz Carlton Hotel Indonesia

INTRO DUCTION

- Research and Development Center for Environmental Quality and Laboratory, Ministry of Environment and Forestry of Indonesia
 - Rina Aprishanty
 - Fitri Yola Amandita
- Directorate for Toxic and Hazardous Waste Management, Ministry of Environment and Forestry
 - Aisyah Syafei
 - Aditya Febrian Masri

OUTLINE

- Existing Activities
- Progress Activities
- Review APMMN Project in Indonesia
- Next Step Mercury related Activities

EXISTING ACTIVITIES

MONITORING ACTIVITIES

1994-1996

Monitoring heavy metal in sea water and sediment also green muscle

1997-2000

Monitoring mercury in ASGM (Artisanal and Small-scale Gold Mining) in Rejang Lebong, Bengkulu; Sungai Rungan dan Sungai Kahayan, Kalimantan Tengah; Lampung dan Pongkor, Jawa Barat

2012-2014

EMC continuing Monitoring mercury in ASGM in Sulawesi Utara, Kalteng, Kalbar, Jambi, Sumbar
PB3 MOEF start monitoring in ASGM Hotspot for soil and surface water sample

2017

Monitoring mercury in Energy Sector for coal, fly ash and bottom ash and emission source

2018-
present

Monitoring of mercury pollution from ASGM and socio-economic study of the ASGM workers in Sukabumi, West Java

INDONESIAN GOVERNMENT ↑ COMMITMENT ↑

- Indonesia ratified Minamata Convention through Law No 11 year 2017;
- Indonesia established Ministry Decree No 340 year 2018 about Committee for Research and Monitoring on Mercury (KPPM);
- Indonesia established National Action Plan under President Regulation No 21 year 2019 for Eliminating and Phasing-out Mercury .

PENYEBARAN PERTAMBANGAN EMAS SKALA KECIL (PESK) DI INDONESIA



Sumber : YTS, 2015; +/- **1.000 hotspots - > 500,000 penambang**

- **Produksi emas (KK+IUP) Tahun 2012 ± 75 tons**, Tahun 2013 ± 59 tons (Pusdatin ESDM)
- **Produksi emas dari ASGM diperkirakan mencapai 65-130 ton/tahun** (Balifokus)

PROGRESS ACTIVITIES

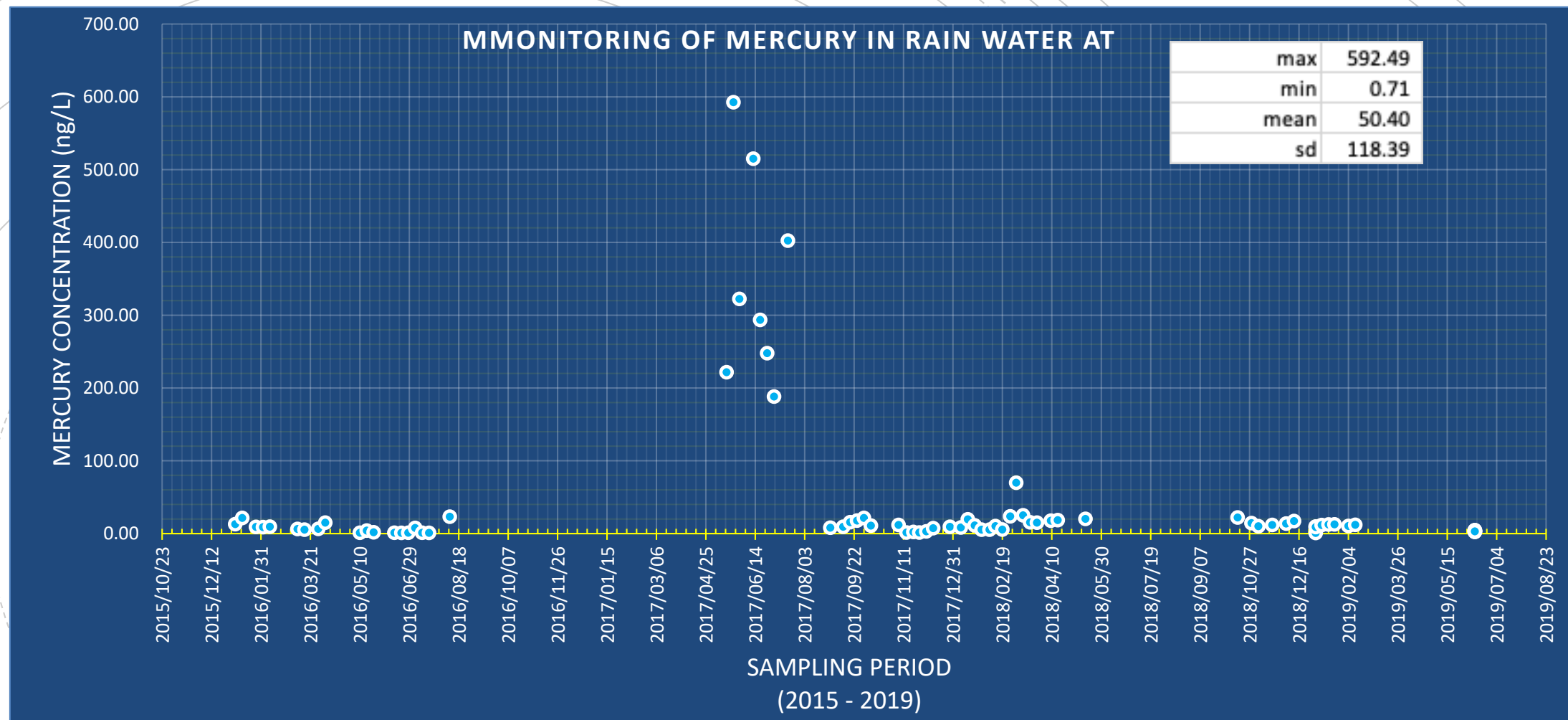
TIM MoEF and P3KLL

Wet Deposition Sampler for Mercury in Rain Water in East Jakarta Station

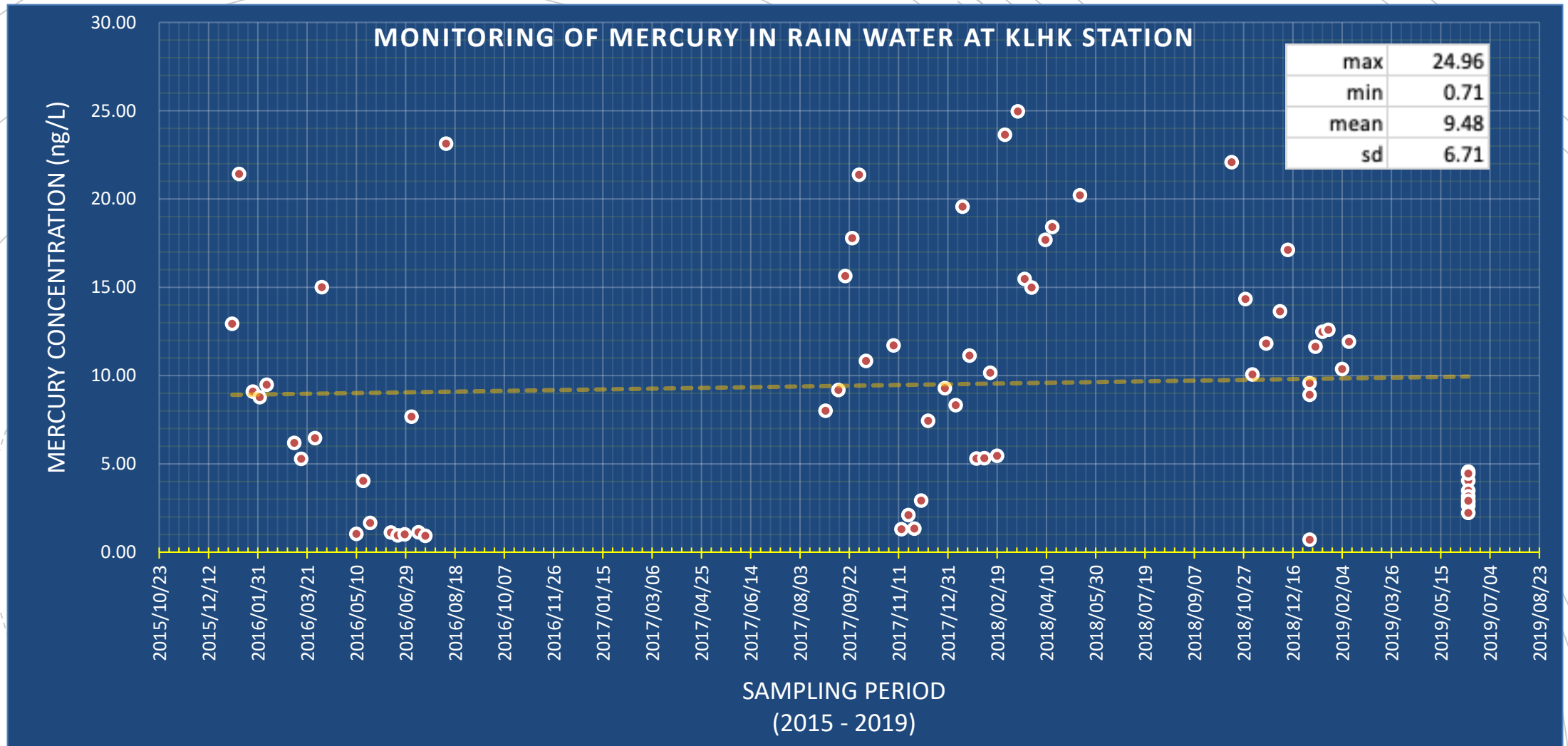


Regular sampling done by Hazardous and Toxic Substance Management Department MoEF (APMMN Rain Sampler)

DATA 2015 - 2019



DATA (edited) 2015 - 2019



Note: Slightly increasing from the start in year 2015 to year 2019 (1 ng/L)

EMC STATION

In Serpong

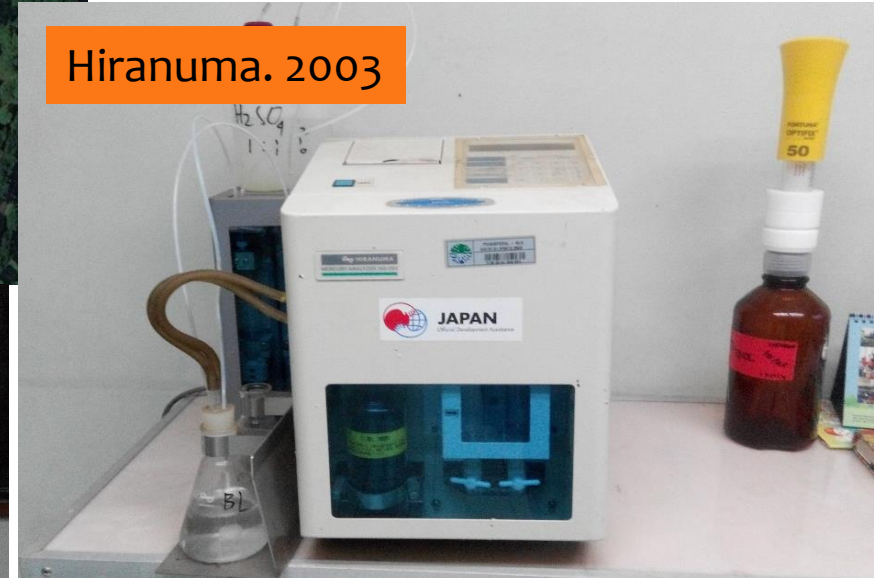


RESOURCES

Environmental Management Center



Hiranuma. 2003



Akagi Hg-500, 1993



NIC MA-3000, 2015



APPLICATION OF GOLD CARTRIDGE IN P3KLL



Column No.	Concentration 24 hour (ng/m ³)
IDN2	5.3
IDN3	4.8
IDN4	4.6
IDN5	6.1

NOTE: Gold Cartridge sampling equipment provided by MoE Japan
And analysis of Gold Cartridge was done by IDEA

METEOROLOGICAL DATA: T=29°C RH=78% WS=0.2m/s (CALM)

CAPACITY BUILDING

- Training in National Central University (NCU) Taiwan:
 - Aditya Masri in 2017 for mercury monitoring from rain water and analysis using CV-AFS
 - Rina Aprishanty in June 2019 for mercury monitoring using various instrument and analysis using CV-AFS

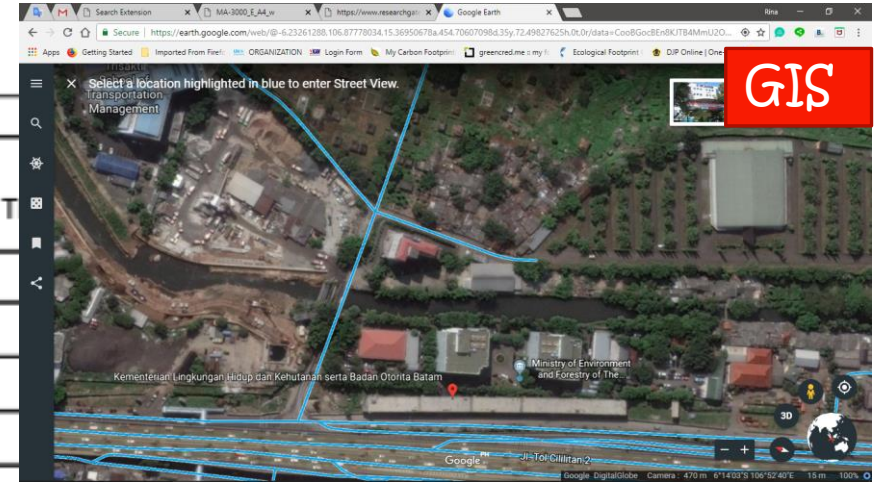
**REVIEW
MERCURY MONITORING
PROJECT
IN INDONESIA**

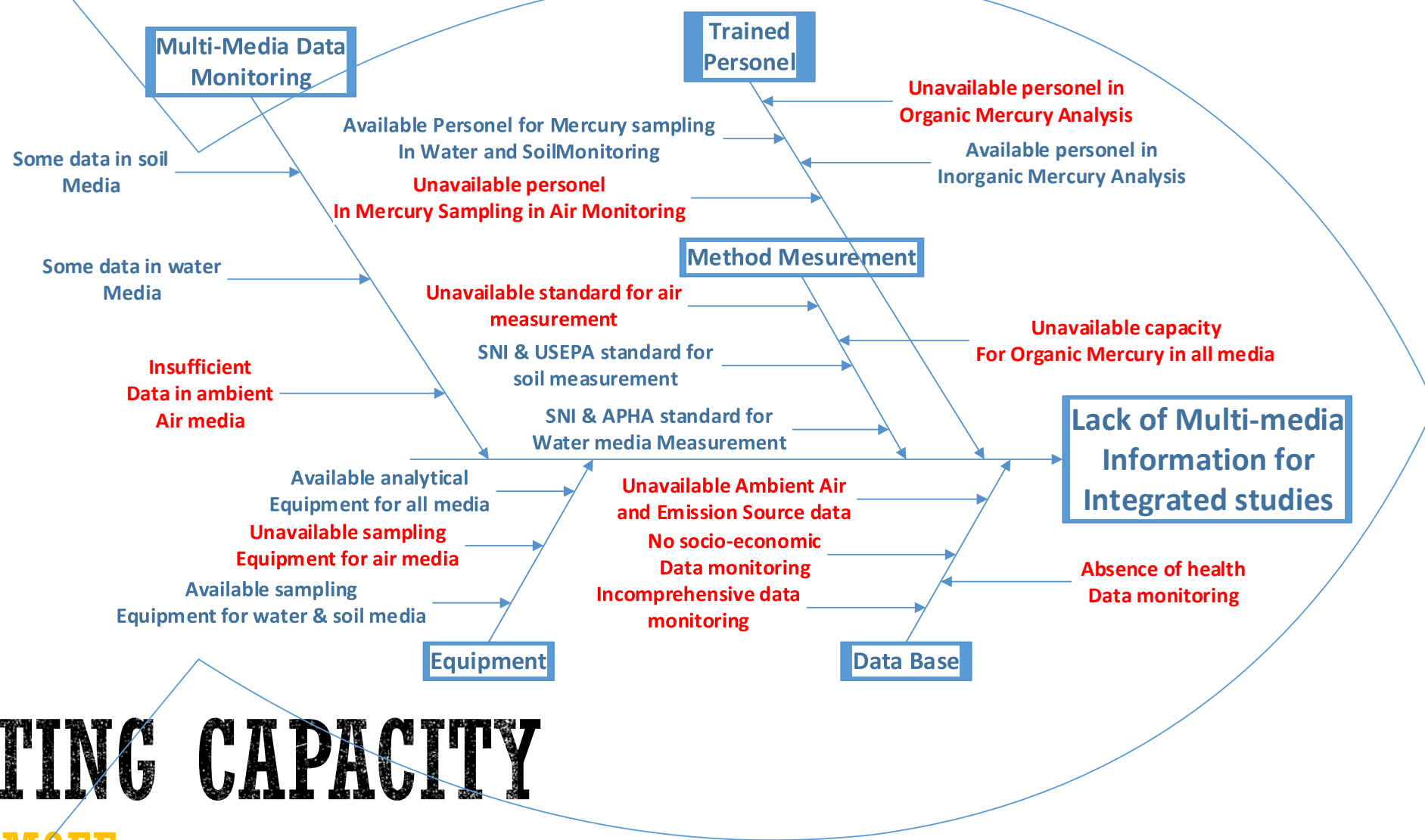
Bulan : Juli
Tahun : 2017

Tgl	TEKANAN UDARA (Dalam mb)	LEBAB NISBI DALAM %				KECEPATAN RATA ² (Km/Jam)	T
		07.00	13.00	18.00	RATA ²		
	10	11	12	13	14	15	
01	1009.6	91	61	71	78	1.1	
					74	1.2	
					77	1.9	
					74	1.4	
					73	0.8	
					72	1.1	
					73	0.9	
07	1010.7	81	62	68	72	1.0	
08	1010.9	84	59	64	70	1.0	
09	1010.8	74	61	73	76	1.2	
10	1010.6	83	64	72	79	1.1	
11	1011.1	88	67	73	71	1.1	
12	1011.3	84	67	75	78	0.8	
13	1010.2	89	62	70	75	1.3	
14	1010.0	85	62	68	71	1.0	
15	1010.4	82	54	64	72	1.0	
16	1009.7	83	57	66	62	0.7	
17	1010.2	72	53	54			

DATA EVALUATION

- QA/QC in sampling need to be strengthen;
- GIS for mapping surrounding source;
- Meteorological data need to be provided for mercury monitoring;
- Any other abnormalities must be recorded.





EXISTING CAPACITY

@EMC MOEF



NEXT STEP MERCURY ACTIVITIES in Indonesia

Technical Capacity

- Applying QA/QC in place for next mercury monitoring in rain water
- Reestablish the sampling point for both mercury wet deposition and dry deposition
- Developing the system for mercury sampling from ambient air by means of gold-amalgamation
- Mercury baseline upgrade for 3 location (World Bank project)
- Developing Method standardization so that the monitoring could be applied widely in local laboratory in Indonesia (i.e. mercury in ambient air)
- Strengthening Local Capacity in monitoring mercury in multimedia (UNDP project)

World Bank

- Upgrading Baseline of multimedia monitoring in:
 - Landak District in Central Kalimantan
 - North Minahasa District in North Sulawesi
 - Kulon Progo District in Yogyakarta

Institutional CapaCity

- Strengthening Local Action Plan for Eliminating and Phasing-out Mercury through KPPM
- Strengthening KPPM through coordination among sector involved:
 - Energy and mining
 - Manufacture
 - Health
 - Science and Technology
 - Academic

TIMELINE KPPM

10 October 2017
Indonesia ratified
Minamata Convention

28 March 2018
FGD on the Urgency of
Mercury Research Center In
Indonesia

20 April 2018
Expert Meeting to establish
Mercury Research Center In
Indonesia



3 May 2018
Workshop "Mercury
Monitoring and Research
as Policy Basis"



23 May 2018
FGD on the
establishment of KPPM

3 August 2018
KPPM was established
through the Ministry
Decree No. 340/2018

7 August 2018
The launching of KPPM



30 August 2018
KPPM' first meeting to
socialize KPPM action
plan

3 September 2018
Formulation of Decree on
the KPPM Secretariat

5 December 2018
FGD on the formulation of KPPM
Grand Design

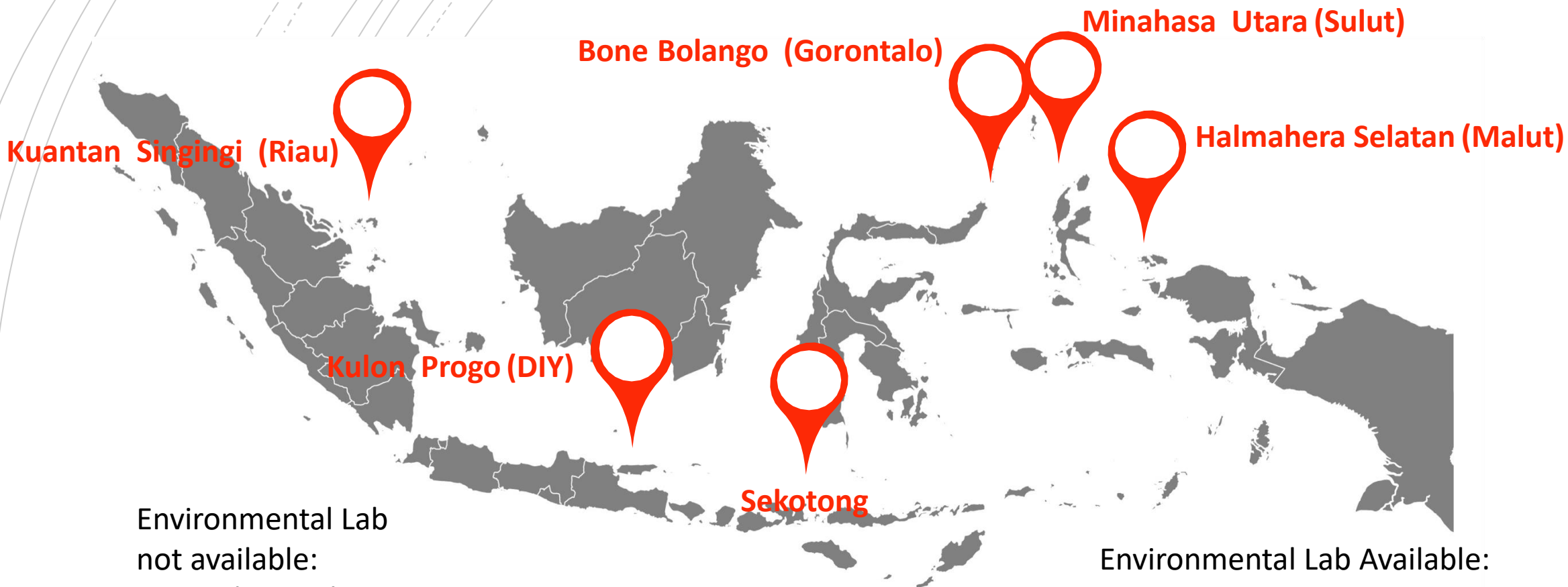
7 May 2019
Meeting to discuss
collaboration between
KPPM with ISMIA project

14 May 2019
FGD on the formulation of
KPPM Roadmap



MAPPING LOCAL INSTITUTION

for environmental laboratory capacity



Environmental Lab
not available:

1. Kab.Minahasa Utara
 2. Kab. Bone Bolango
 3. Kab.Kuantan Singingi
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Environmental Lab Available:

1. Kab. Sekotong
 2. Kab. Halmahera Selatan
 3. Kab. Kulonprogo
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TERIMA KASIH