

# Mercury contaminated sites in ASGM sites of Indonesia

IPEN Side Event  
COP3 Minamata Convention on Mercury  
Geneva, 26 November 2019

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BALIFOKUS



# About us

BALIFOKUS

- URL: <https://www.nexus3foundation.org>
- Established in 14 June 2000.
- Re-branding as the Nexus for Environmental Health and Development Foundation (Nexus3 Foundation) as of 2019.
- Works to safeguard public, especially vulnerable populations, from environment, health and development problems, towards a toxic-free, just, and sustainable for future generations.



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# Indonesian government commitment

## Presidential Decree No. 21/2019 of National Action Plan On Reduction and Elimination of Mercury



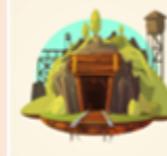
### NATIONAL ACTION PLAN ON REDUCTION AND ELIMINATION OF MERCURY

#### Objectives :

Guidance for Minister, Governors, and mayors to reduce and eliminate mercury in 4 priority sector.

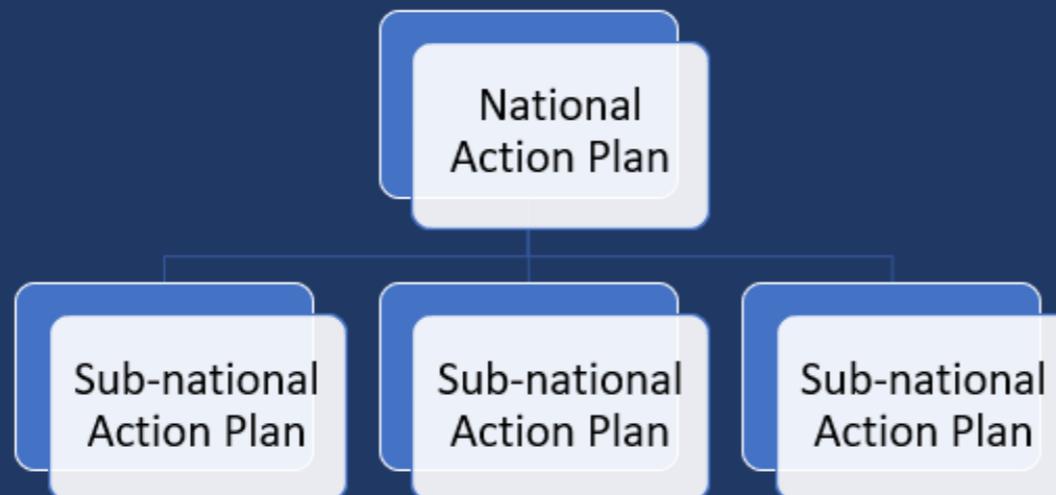
### 4 PRIORITY SECTOR

- ASGM
- Health
- Manufacture
- Energy



### TARGET

- Reducing on **Manufacture Sector** : 50 % by 2030
- Reducing on **Energy Sector** : 33,2 % by 2030
- **Eliminating on ASGM Sector** : 100 % by 2025
- **Eliminating on Health Sector** : 100 % by 2020



# Economic losses due to mercury

- Indonesia economic losses due to mercury pollution: approx. US \$961,000 - US\$1,630,000 per year in form of opportunity losses (Trasande, et.al. 2016)
- 18-23% Indonesian miners suffered Chronic Metallic Mercury Vapor Intoxication (CMMVI) (Steckling, et.al. 2016).



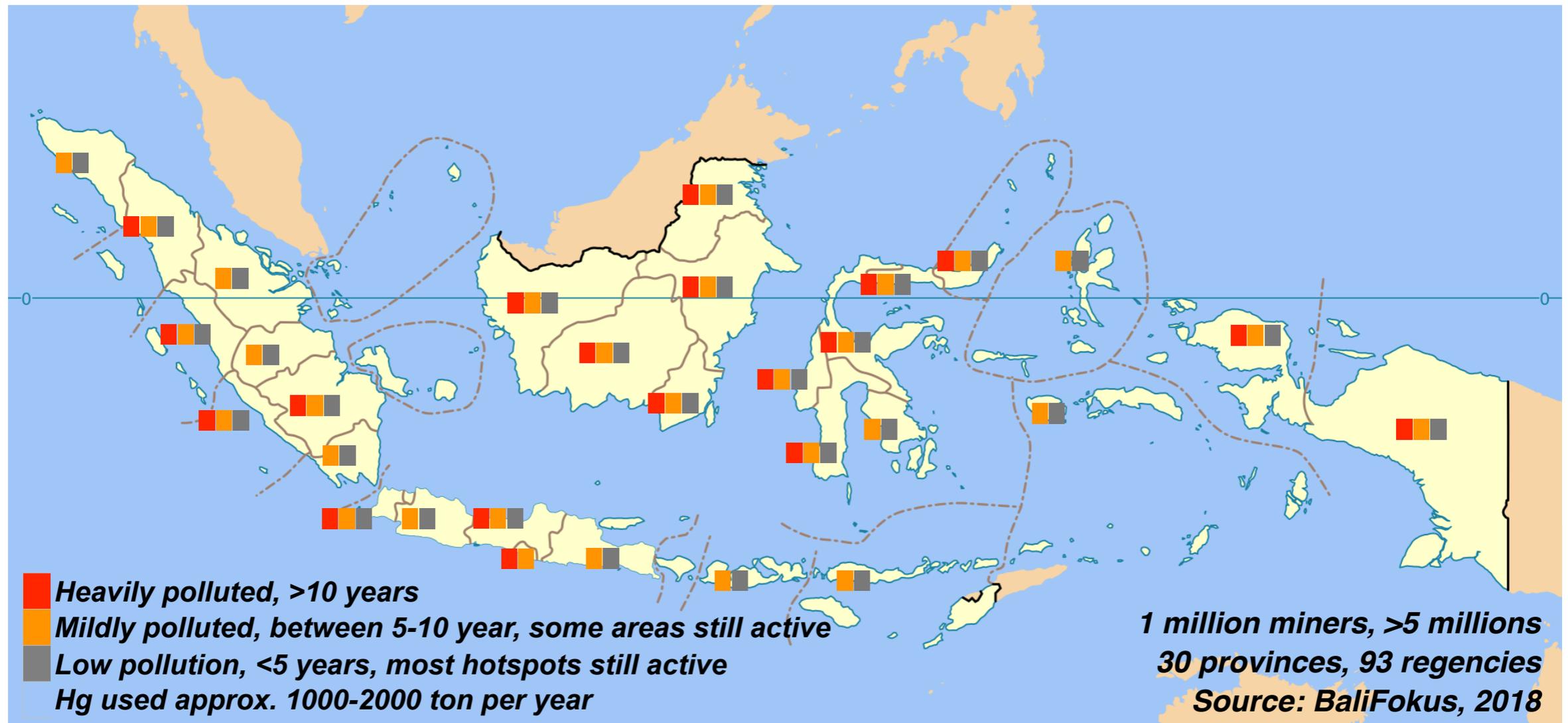
# Inventory of mercury emissions and releases in Indonesia 2019

## INVENTORY LEVEL 1 - EXECUTIVE SUMMARY

Source category	Estimated Hg input, Kg Hg/y	Estimated Hg releases, standard estimates, Kg Hg/y							Percent of total releases *3*4
		Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment / disposal	Total releases *3*4*5	
Coal combustion and other coal use	13,902.0	9,321.6	0.0	0.0	0.0	0.0	4,580.4	13,902	4%
Other fossil fuel and biomass combustion	8,621.8	8,537.5	0.0	0.0	0.0	0.0	84.3	8,622	2%
Oil and gas production	10,987.0	1,644.2	2,167.7	0.0	3,210.3	0.0	3,768.8	10,791	3%
Primary metal production (excl. gold production by amalgamation)	8,880.7	1,142.7	274.7	1.2	3,101.6	825.3	3,535.2	8,881	2%
Gold extraction with mercury amalgamation	<b>244,125.0</b>	77,538.8	3,545.0	83,041.3	0.0	0.0	0.0	<b>244,125</b>	<b>64%</b>
Other materials production*6	16,945.7	12,991.1	0.0	0.0	3,390.0	564.6	0.0	16,946	4%
Chlor-alkali production with mercury-cells	-	-	-	-	-	-	-	0	0%
Other production of chemicals and polymers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Production of products with mercury content*1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Application, use and disposal of dental amalgam fillings	<b>1,958.7</b>	39.2	861.8	156.7	117.5	391.7	391.7	<b>1,959</b>	<b>1%</b>
Use and disposal of other products	<b>16,237.7</b>	953.7	1,559.7	5.3	0.0	13,151.2	567.8	<b>16,238</b>	<b>4%</b>
Production of recycled metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Waste incineration and open waste burning*2	<b>30,966.2</b>	29,815.2	0.0	0.0	0.0	0.0	1,151.0	<b>30,966</b>	<b>8%</b>
Waste deposition*2	<b>146,250.0</b>	1,462.5	14.6	0.0	-	-	-	1,477	0%
Informal dumping of general waste *2*3	<b>110,500.0</b>	11,050.0	1,050.0	88,400.0	-	-	-	<b>22,100</b>	<b>6%</b>
Waste water system/treatment *4	<b>26,913.1</b>	0.0	3,549.0	1,345.7	0.0	1,009.2	1,009.2	3,364	1%
Crematoria and cemeteries	44.7	1.1	0.0	43.5	0.0	0.0	0.0	45	0%
<b>TOTALS (rounded) *1*2*3*4*5*6</b>	<b>350,280</b>	<b>154,500</b>	<b>99,470</b>	<b>84,590</b>	<b>9,820</b>	<b>15,940</b>	<b>15,090</b>	<b>379,410</b>	<b>100%</b>
		<b>44%</b>	<b>28%</b>	<b>24%</b>	<b>3%</b>	<b>5%</b>	<b>4%</b>		

Source: Kania Dewi and Y. Ismawati, 2019

# ASGM distribution in Indonesia

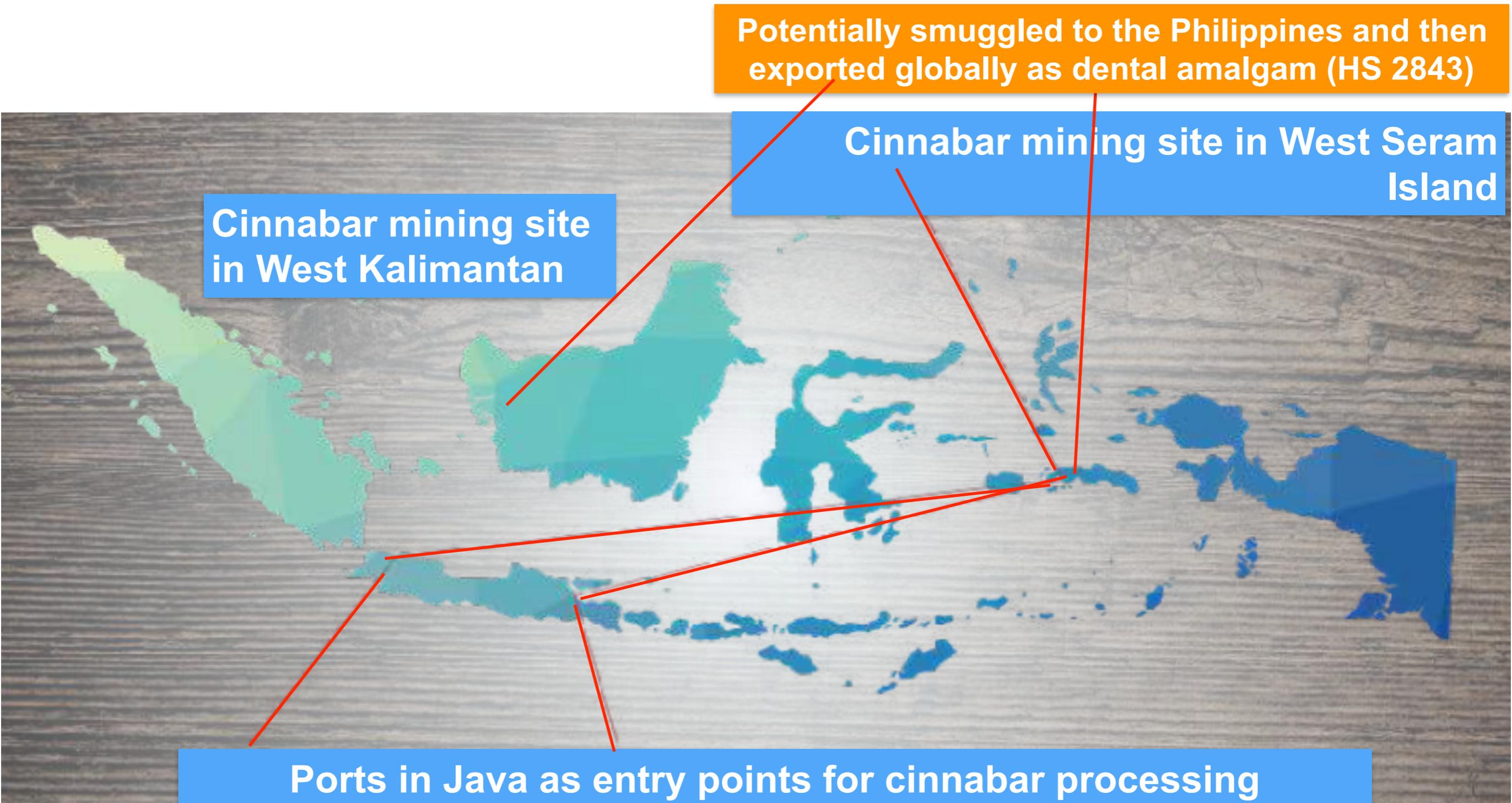


# Sources of mercury in Indonesia (1/2)

- Sources of Hg in Indonesia:
  - Cinnabar mining
  - Impurities from oil and gas
- Refineries and smelters
- Trade flow: import and export



# Sources of mercury in Indonesia (2/2)



# Mercury sold in Indonesia

**DIJUAL MURAH**  
**MERCURY / AIR RAKSA**  
Hub : Ir Eko Setiawan  
0816-1823-953  
087-887-5668-51  
ALAMAT : PERUM. BULEVAR HIJAU  
JL. PALEM HIJAU IV BLOK G 10 NO. 15 A  
HARAPAN INDAH, BEKASI BARAT  
( DEKAT PABRIK AQUA BEKASI BARAT )



# Mercury use in ASGM hotspots



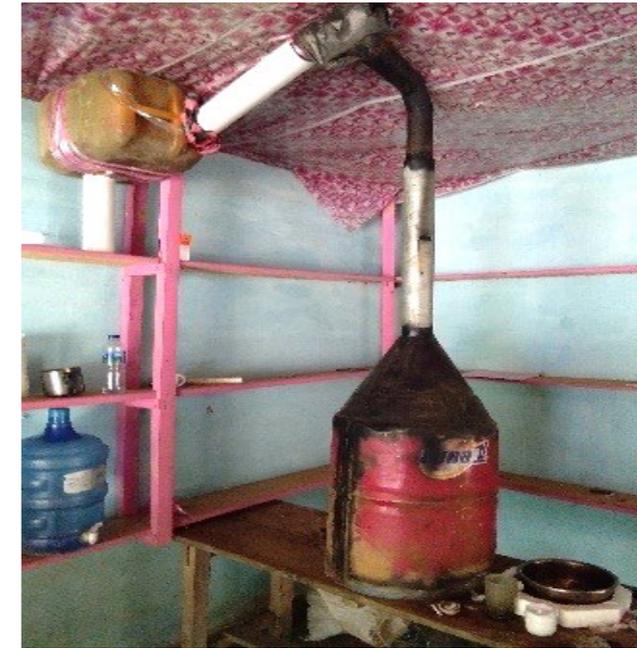
# Mercury vapour in an ASGM village



# Mercury contaminated sites: upstream level



# Mercury contaminated sites: middle stream 1/2



# The way forward

- Identification of contaminated sites
  - On-site or off-site
- Characterisation
- Technology options
- Prioritisation

# Thank you for listening

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