



**MINISTRY OF ENVIRONMENT AND FORESTRY
AGENCY OF RESEARCH, DEVELOPMENT AND INOVATION
RESEARCH AND DEVELOPMENTAL CENTER OF ENVIRONMENTAL QUALITY AND LABORATORY (P3KLL)**

Mercury Laboratory and Its Potential Role in Mercury Waste Treatment



**INDONESIA – JAPAN ENVIRONMENTAL WEEK
15 JANUARY 2021**

CONTENTS

Mercury Laboratory

01

02

**Mercury-related
Projects**


**Mercury Waste
Treatment**

03



MERCURY LABORATORY





Mercury Analyzer
for methyl mercury

Mercury Analyzer
with florescence
detector

Mercury Analyzer
for water sample

Mercury Analyzer
for solid sample



Lab
Analyst
(8 person)

- Sample collection
- Sample preparation
- Sample analysis

Environ-
mental
Analyst
(14 person)

- Environmental monitoring
- Environmental risk analysis
- Environmental case study

Researcher
(11 person)

- Research design
- Research conduct
- Research publication

Minamata
Convention on
Mercury



Law No. 11 Year 2017
Ratification of Minamata Convention
on Mercury



Presidential Decree No. 21 Year 2019
National Action Plan of Mercury Reduce
and Phase out



1. MOEF Regulation No. 81 Year 2019
2. MOEF Decree No 107 Year 2020



Mercury Laboratory

Why do we need mercury laboratory?

MERCURY-RELATED PROJECTS

1994-1996 Heavy metal monitoring in sea water

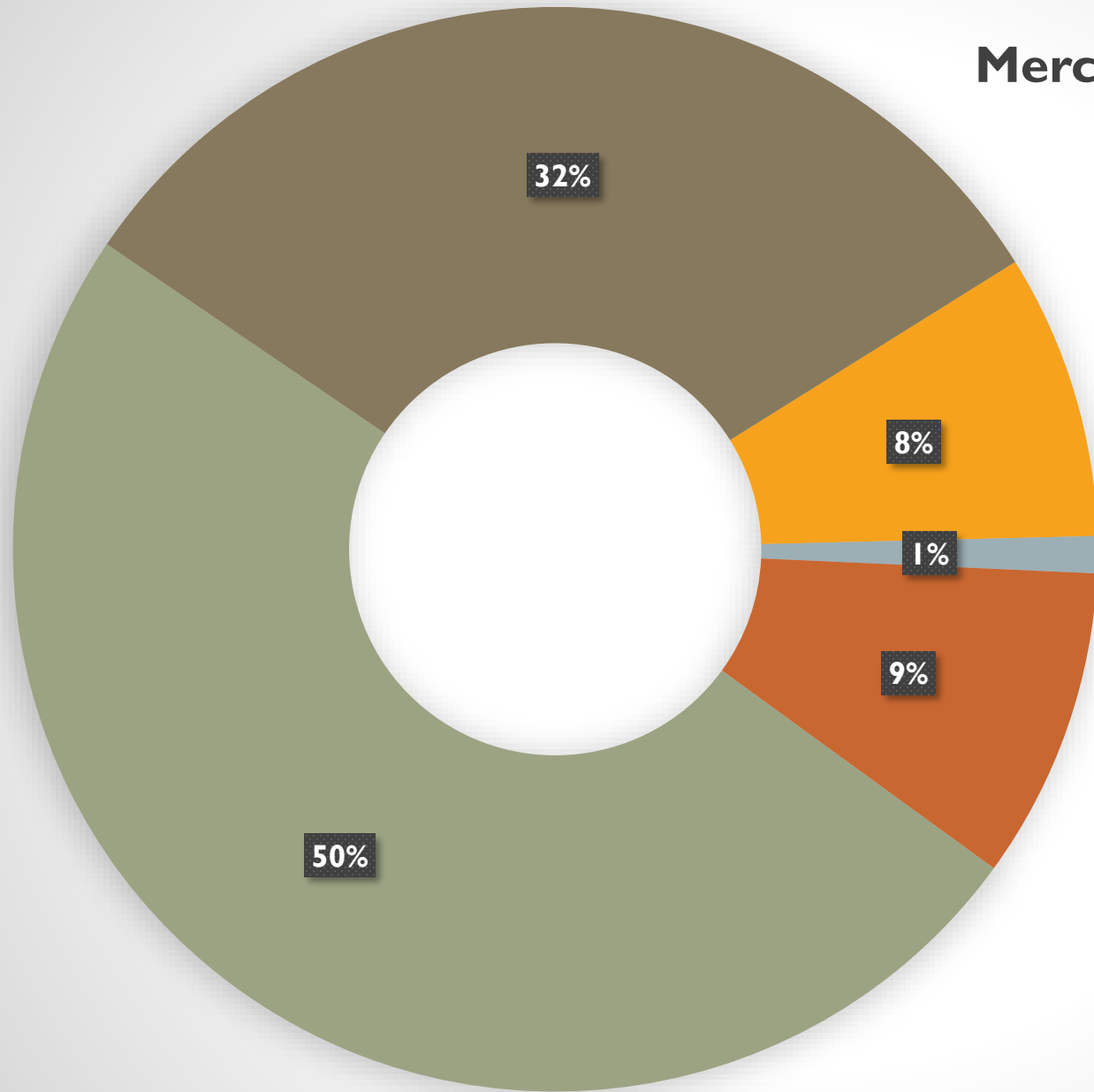
1997-2014 Mercury monitoring in ASGM

2017 Mercury in energy sector

2018-2020 Mercury exposure and socio-economic study of the ASGM

2020 Mercury baseline estimation

Mercury emission from main sources



Coal combustion

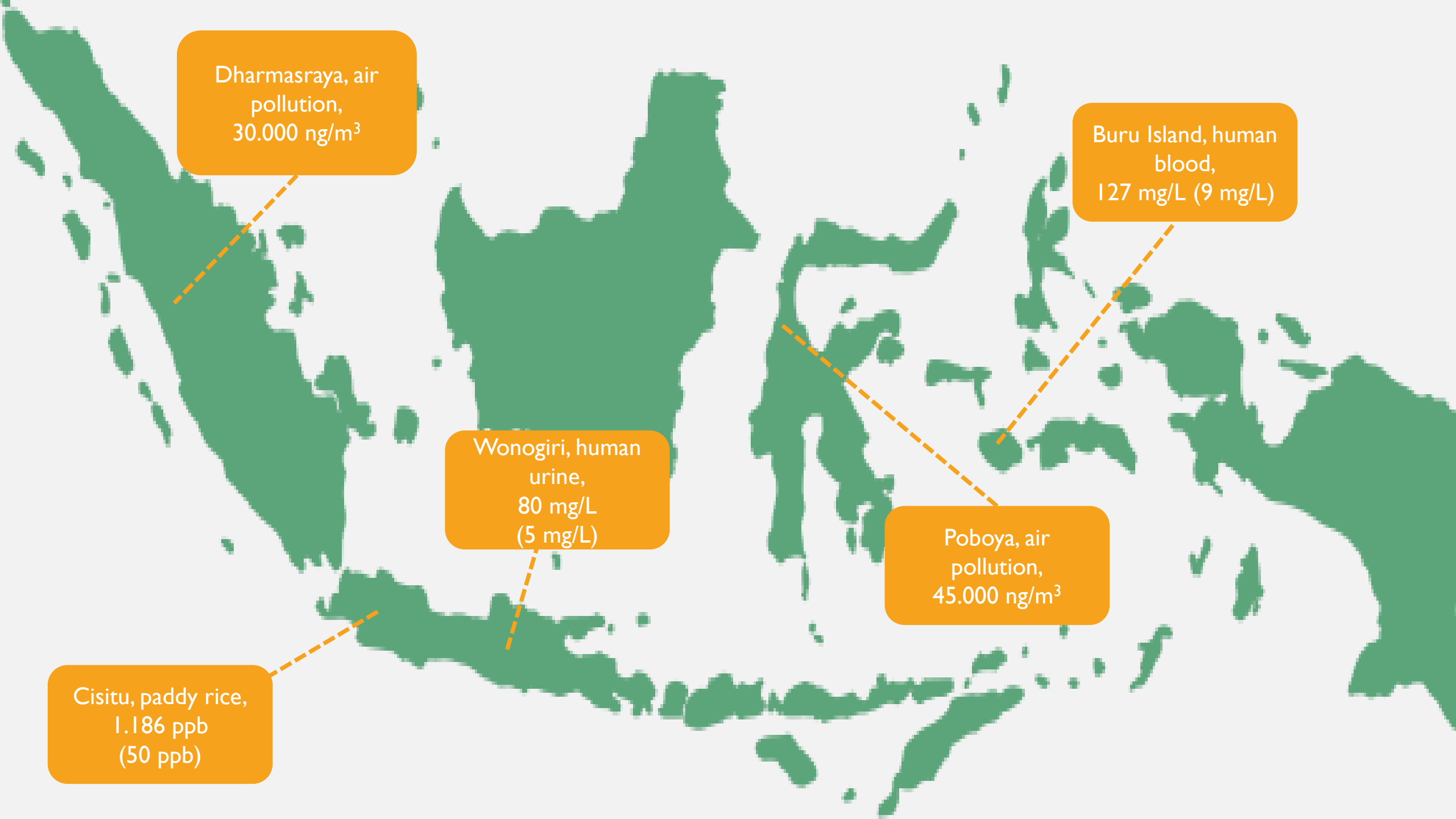
Other fuel combustion

Oil and gas production

ASGM

Others

Total 339.250 kg/year



Dharmasraya, air pollution,
30.000 ng/m³

Buru Island, human blood,
127 mg/L (9 mg/L)

Wonogiri, human urine,
80 mg/L (5 mg/L)

Poboaya, air pollution,
45.000 ng/m³

Cisitu, paddy rice,
1.186 ppb (50 ppb)



Wet deposition sampler for mercury in rain water



Mercury exposure and socio-economic study



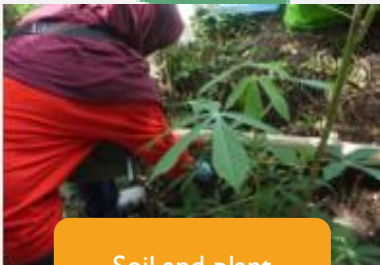
Sample collection in landfill for mercury measurement



Socio-economic study



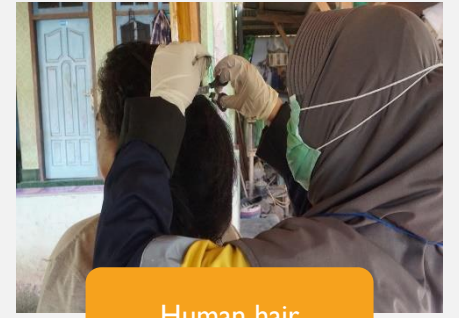
Sludge, tailing and well water



Soil and plant

Landak

North Minahasa



Human hair



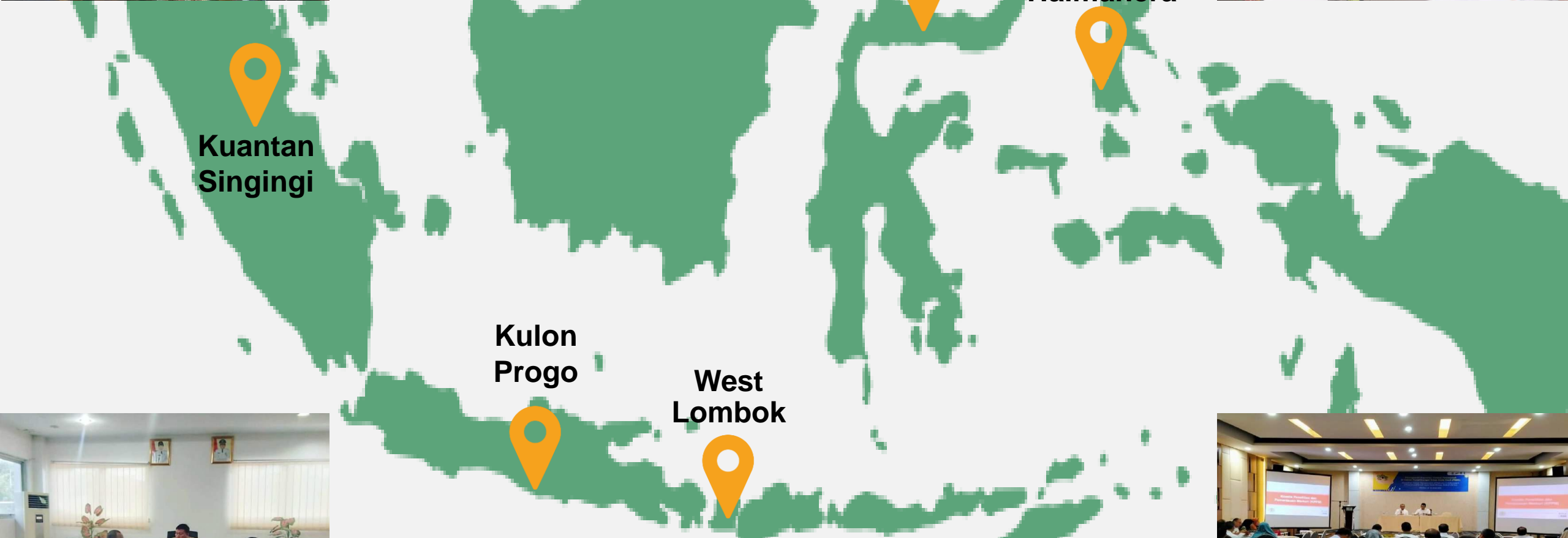
Sediment, river water, and fish

West Lombok

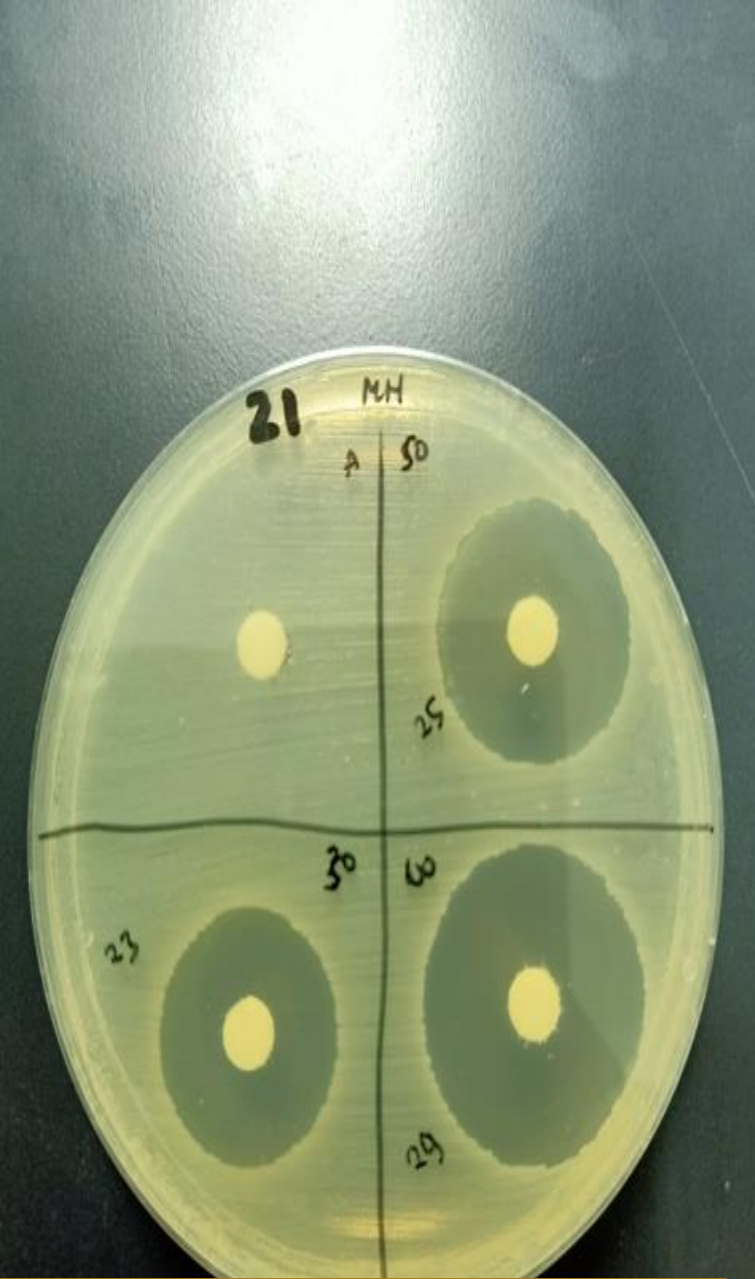
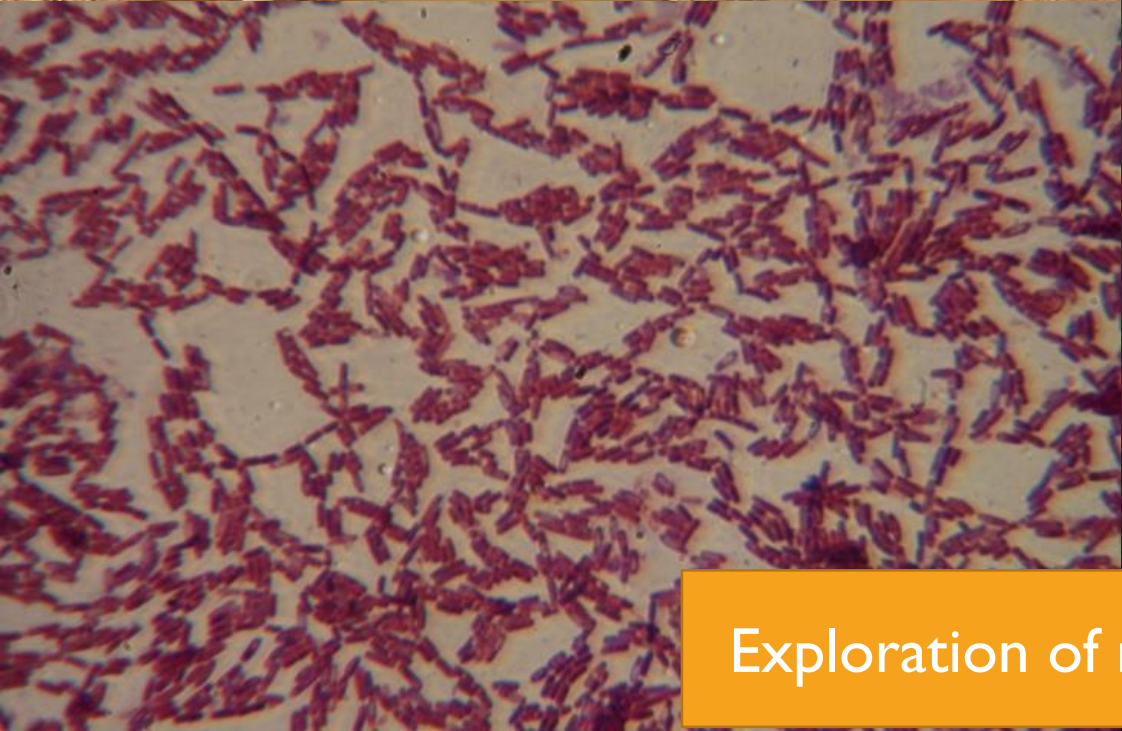


Ambient air

Sample collection for mercury baseline estimation



Local government capacity building



Exploration of mercury-resistant bacteria

MERCURY WASTE TREATMENT

PP 101
2014

Hazardous and poisonous waste (B3) management

Permen LHK
No. 63
2016

Criteria and procedure of B3 waste piling in landfill

Permen LHK
No. 27
2020

Management of health devices containing mercury

Permen
LHK No.
4/12/18
2020

B3 waste transportation, storage, and utilization

Strategies for mercury waste treatment



1. Coordinating with other stakeholders to compile data of mercury emission and waste;
2. Collaborating with others Ministries / Agencies to develop Indonesia's National Standar (SNI) methods related to mercury testing and waste treatment.
3. Cooperating with International Agencies for capacity building and knowledge/technology transfer in term of mercury waste treatment and mercury waste storage.

Thank you!

