



Nepal



MERCURY MONITORING ACTIVITIES IN NEPAL

**14th Annual Asia-Pacific
Mercury Monitoring Network
Partners Meeting, 2025
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- **Status of Mercury in Nepal**
- **Legal provision on controlling Mercury emission**
- **Mercury Monitoring Activities**
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- **Challenges**
- **Way Forward**

Organizational structure of DoEnv

Department of Environment (DoEnv)

DIRECTOR-GENERAL

DEPUTY DIRECTOR- GENERAL

**Pollution
Control &
Monitoring
Section**

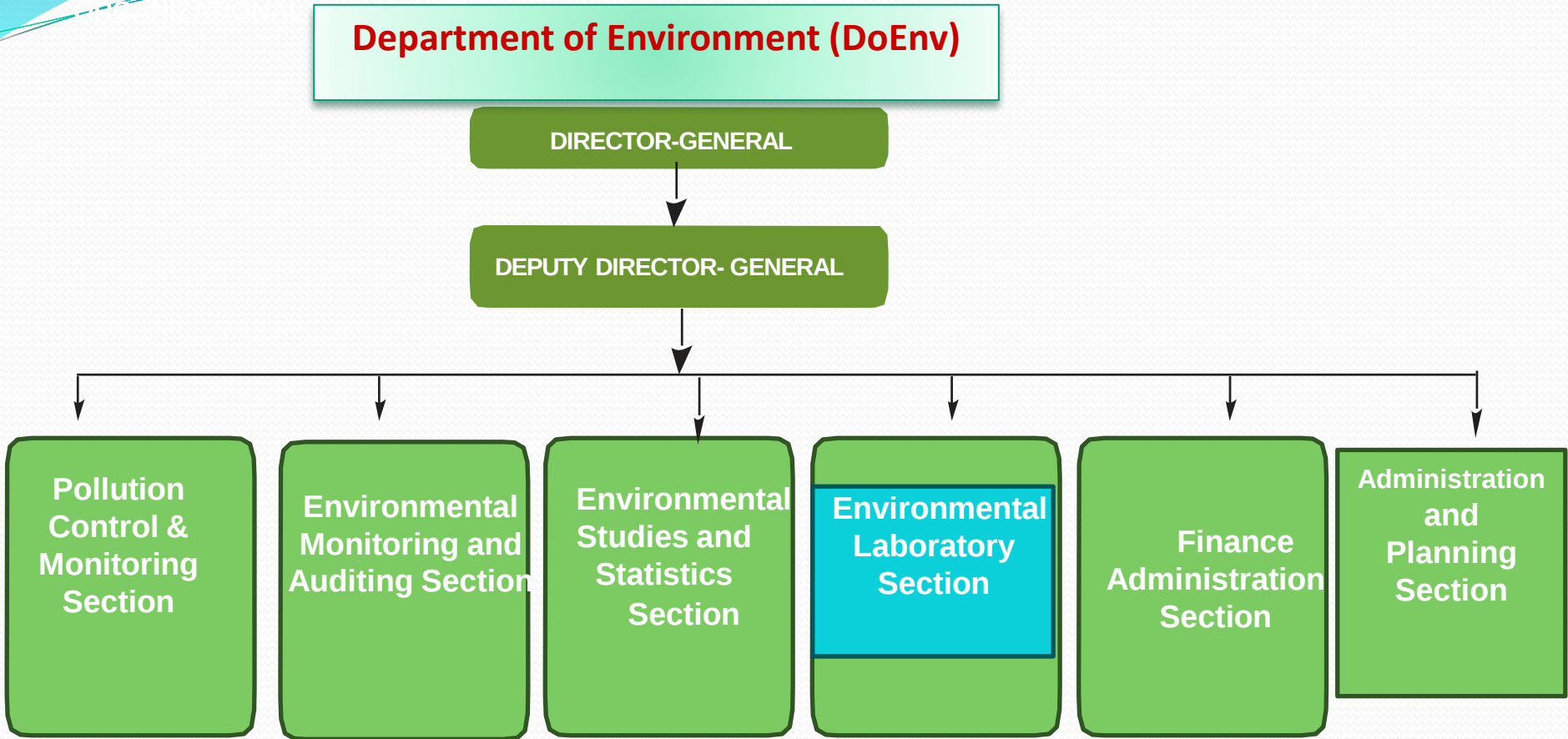
**Environmental
Monitoring and
Auditing Section**

**Environmental
Studies and
Statistics
Section**

**Environmental
Laboratory
Section**

**Finance
Administration
Section**

**Administration
and
Planning
Section**



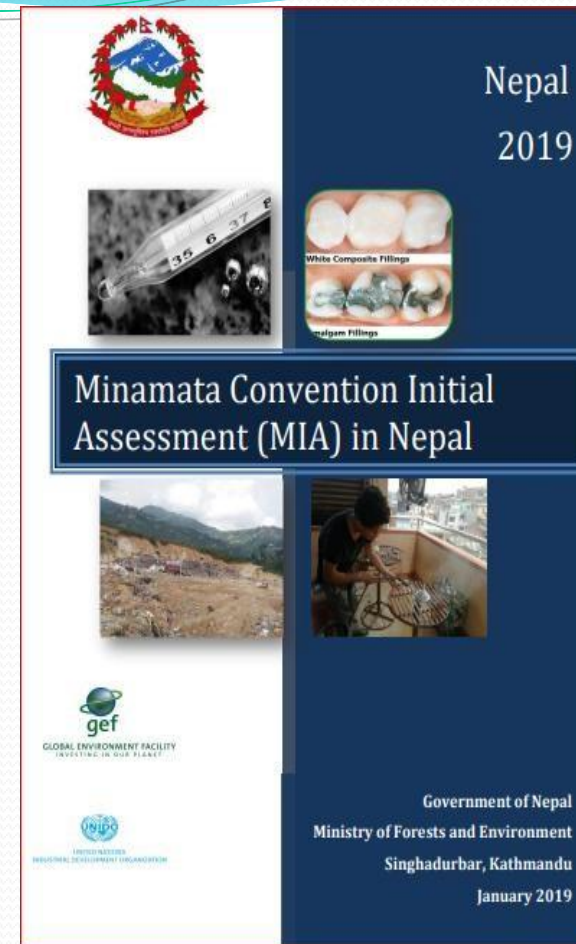
Status of Mercury in Nepal

- No mercury mining industry in the country
- Mercury is imported for use in various sectors
- Artisanal activities (e.g., gold plating) release high mercury
- Nepal's gold-plated idol industry contributes significantly
- Major atmospheric sources:
 - Gold plating
 - Disposal of mercury-containing products
 - Dental amalgam
 - Wastewater treatment
 - Crematoria & cemeteries

Status of Mercury (Contd..)

Mercury Management Strategy:

- Nepal signed the Minamata Convention in 2013; ratification is in progress.
- MoFE is the national focal ministry and lead agency for implementation.
- Government is implementing the project “Minamata Convention Initial Assessment (MIA).”
- MIA aims to build national capacity and support effective implementation of the Convention.

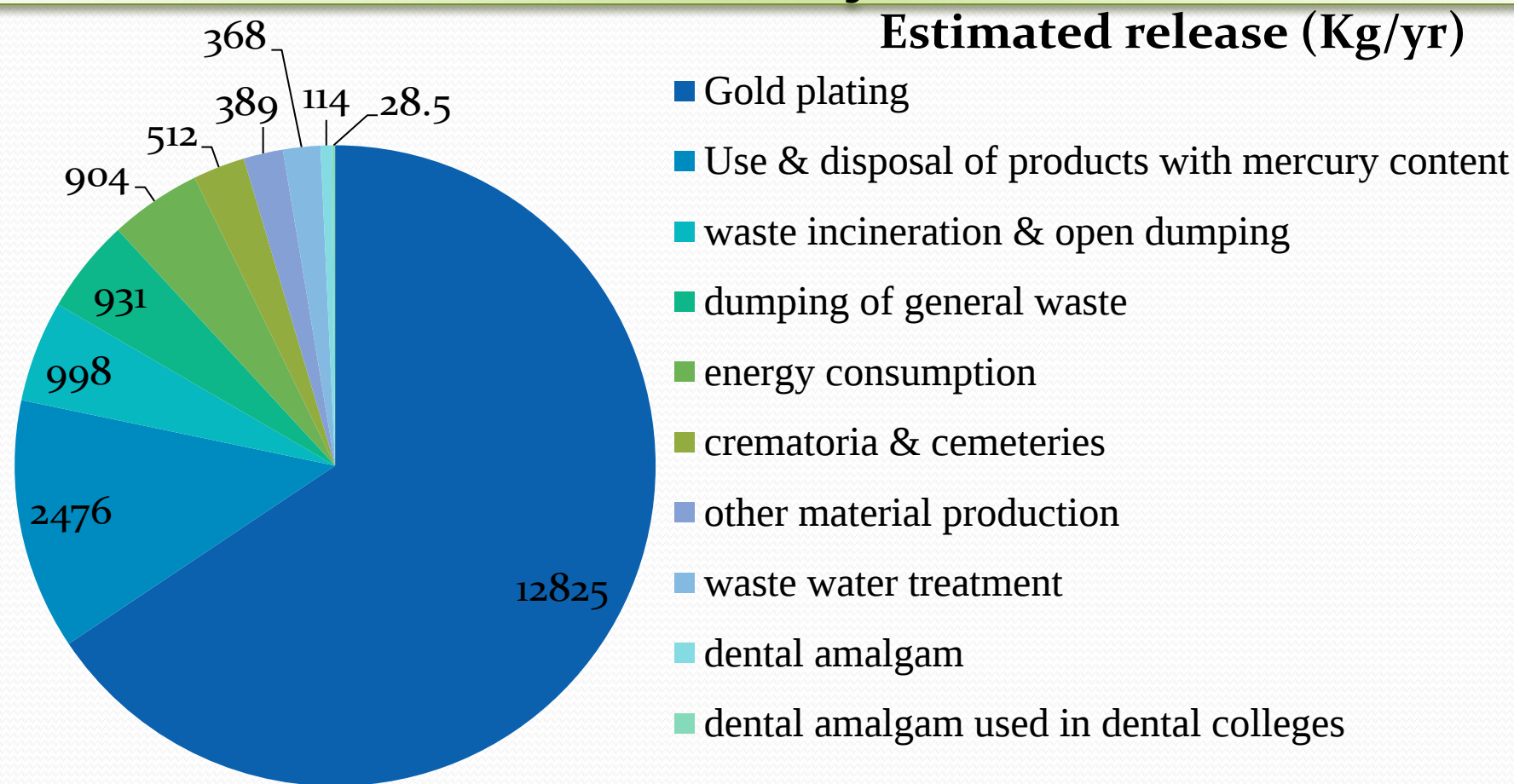


Site Operation and Sampling Progress:

Current Status at Dept. of Environment:

- Ongoing ambient air sampling for mercury in urban areas, dumping sites, crematoria, and gold-plating areas
- Passive air samplers deployed; quarterly data collection
- Regular monitoring of mercury in rainwater and ambient air
- Analysis of Environmental pollutants (wastewater & air)
- Analysis of Heavy metals: Cu, Fe, Cd, Zn, Ni, Co, Pb, Cr using Atomic absorption Spectrometer
- Hg analysis not yet conducted

Common sources and their estimated contribution in total mercury emission



- Total release of Mercury in Nepal for the baseline 2016/17 is 19615 Kg Hg/Yr
- The main source of emission comes from the gold plating sector practiced by an ethnic community in Nepal which accounts for 65.4% of total emission (12825Kg Hg/yr)

LEGAL PROVISION ON CONTROLLING MERCURY EMISSION

- Environment Protection Act 2019 & Regulation 2020
- Solid Waste Management Act 2011 & Regulation 2013
- MoHP: Ban on import, purchase & use of mercury and mercury-based instruments in the health sector
- Standards:
 - Effluent discharge limit for Hg: 0.01 mg/L
 - Drinking water standard (2022): 0.001 mg/L
 - Incinerator emission limit: 0.05 mg/Nm³
- Voluntary cosmetic standards (2019) include mercury parameters

Mercury Monitoring Instruments available at DoEnv.



**Mercury Deposition
Sampler**

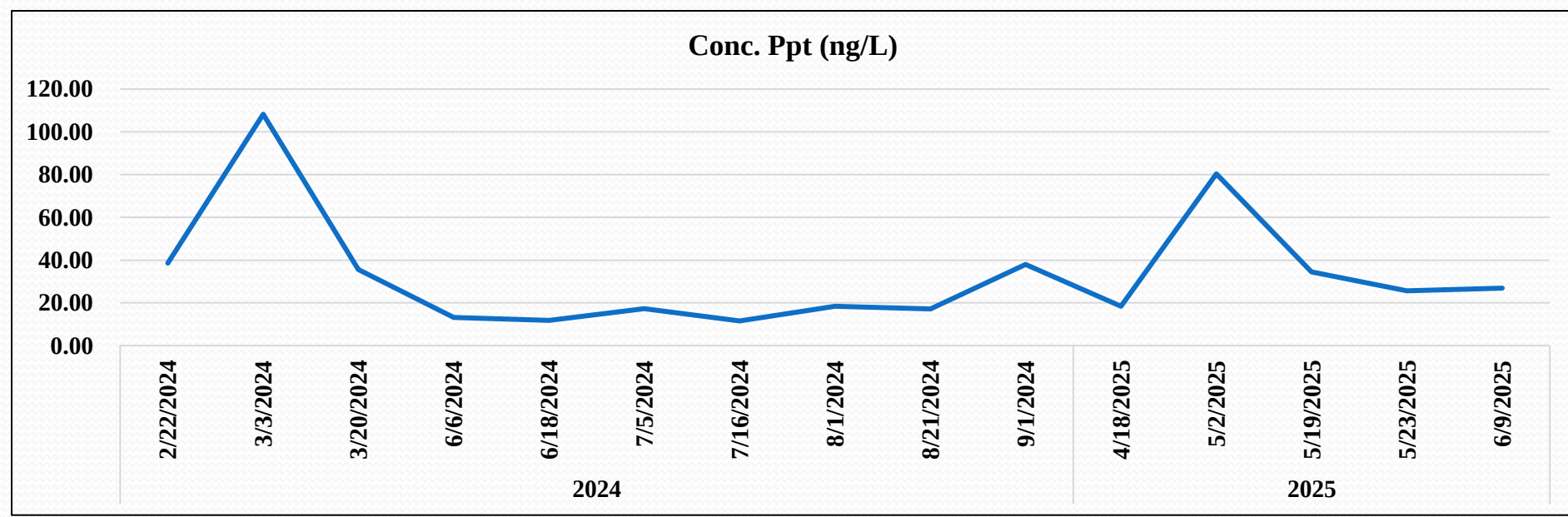
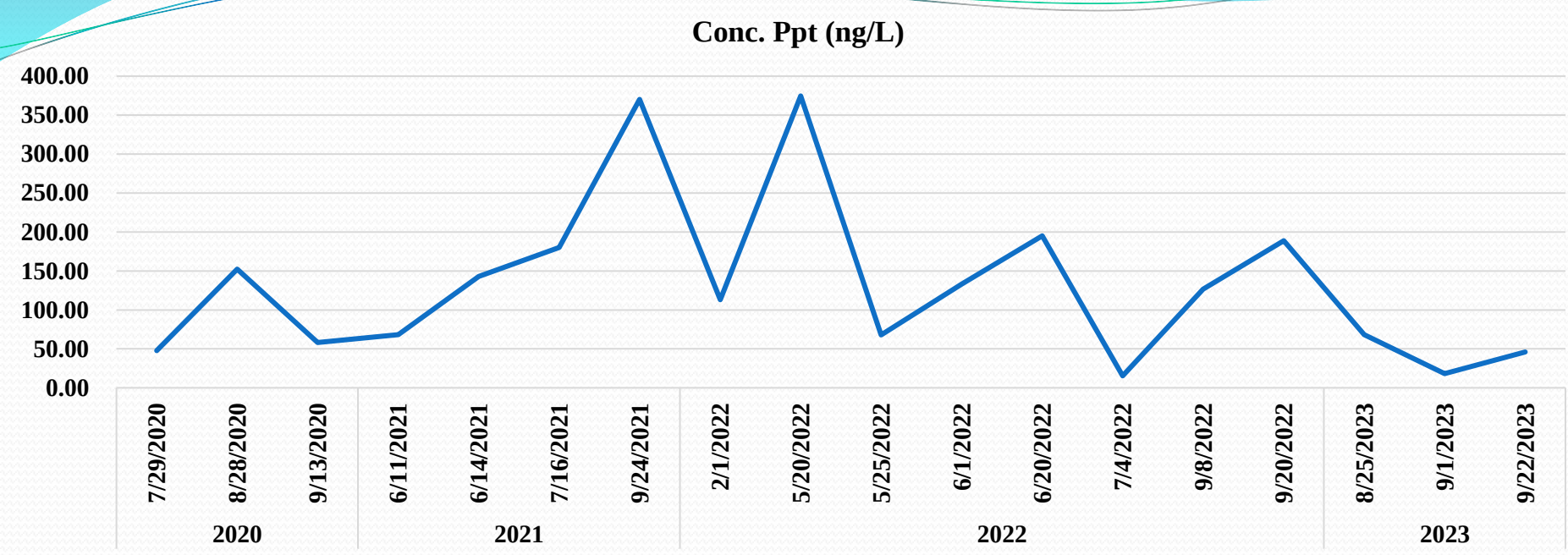


**Mercury Passive Air
Sampler (MerPAS)**

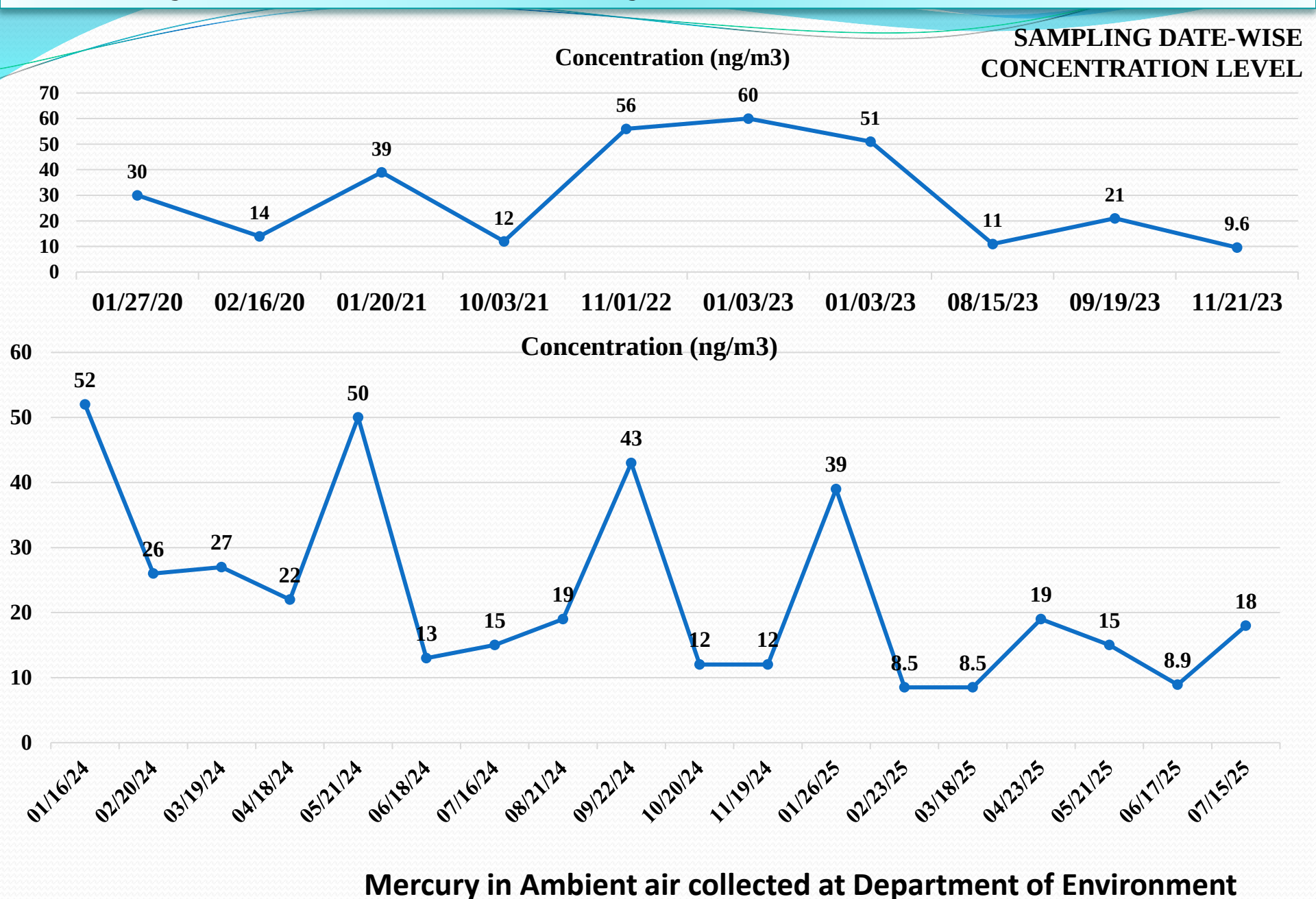


**Mercury Monitoring
Tool Kit**

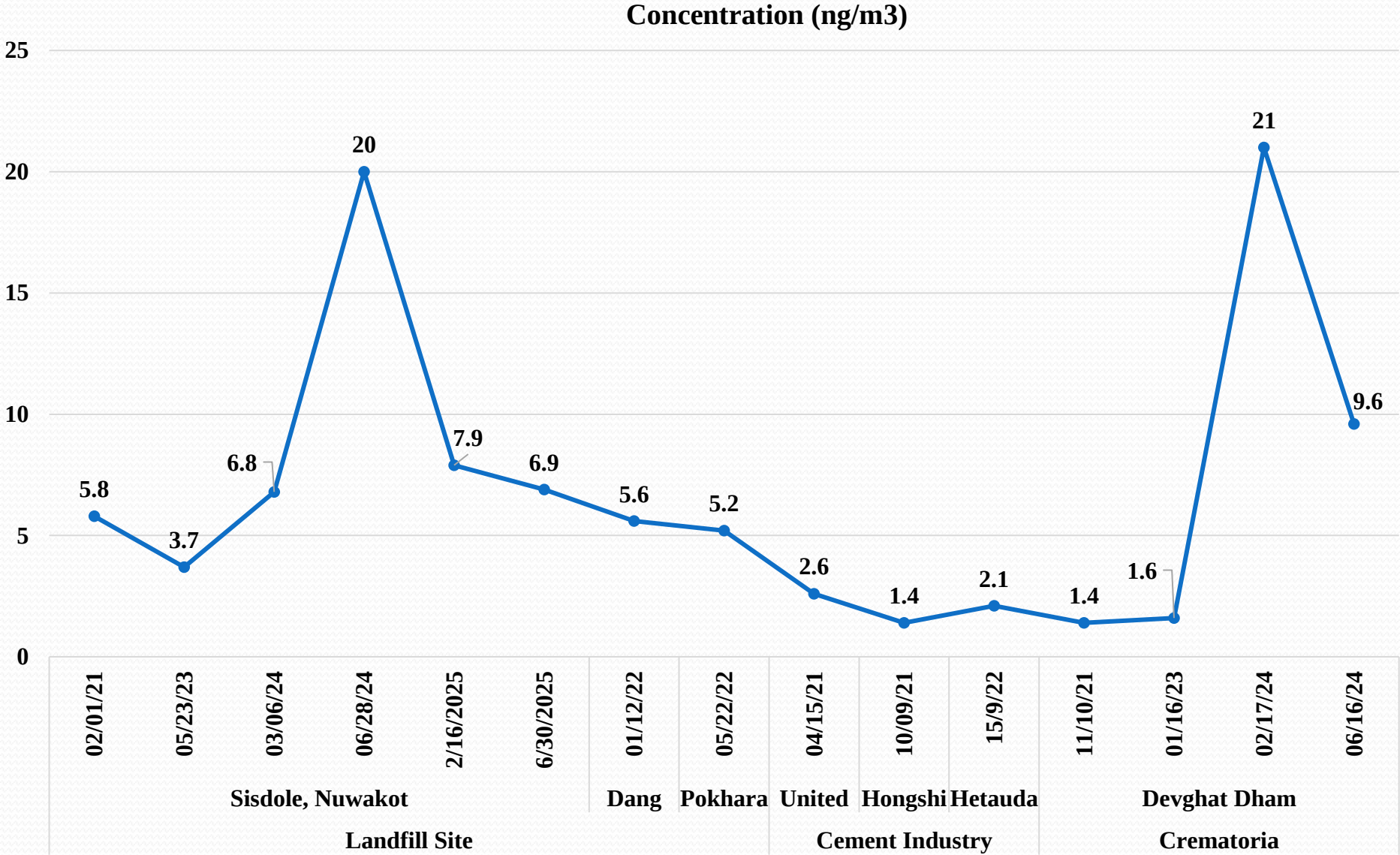
Mercury in rain water: Analyzed by NCU



Mercury in ambient Air: Analyzed result received from MOEJ

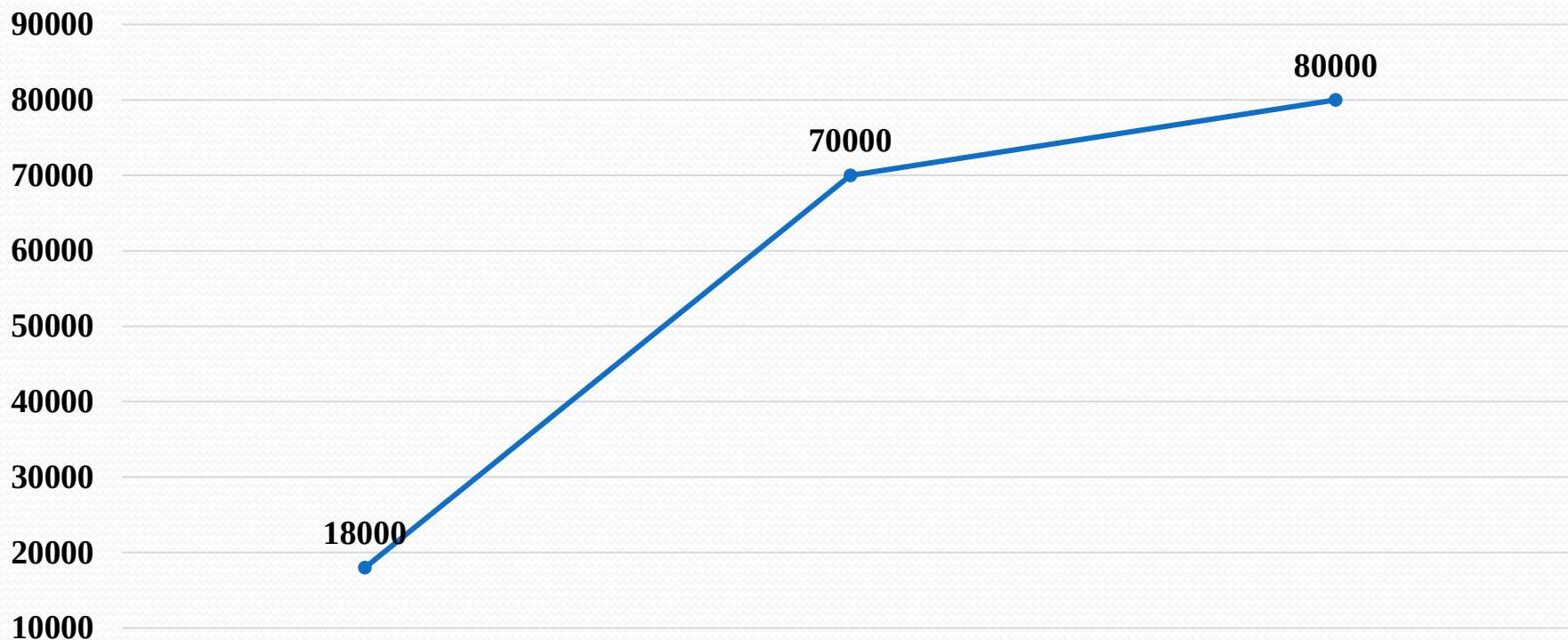


Mercury in Ambient air collected from different places



Mercury in Ambient air collected from Gold Plating workshop

Concentration (ng/m³)



03/27/23

2023

06/30/24

2024

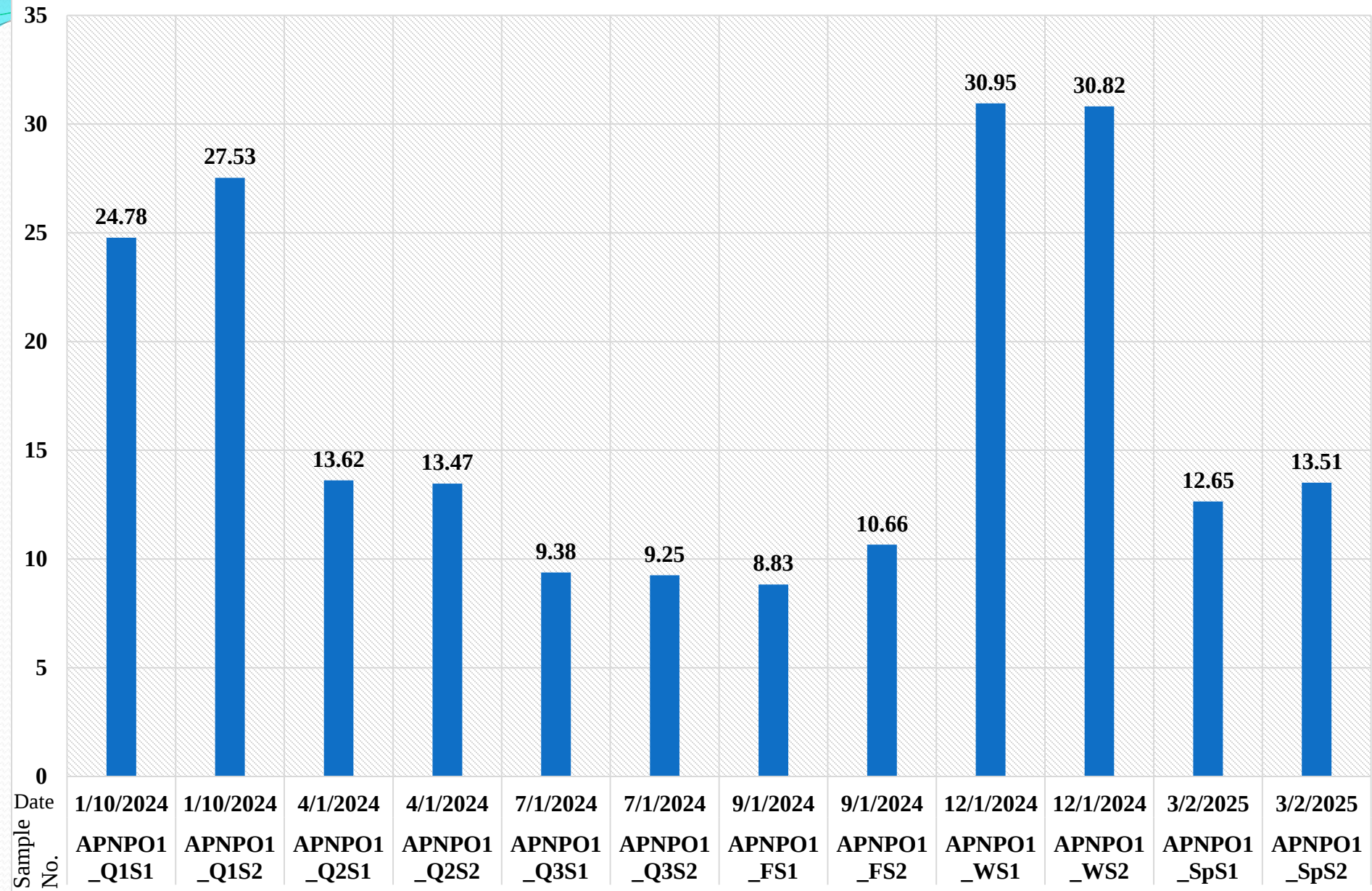
06/30/24

Patan, Lalitpur

Gold Plating

Mercury in Ambient air (MERPAS) at DoEnv

Concentration (ng/m3)



Issues

- Ratification of Minamata Convention and implementation of its provisions.
- Reduction of the use, emission and release of mercury from mercury-added products, manufacturing processes, point and releases sources.
- Improvement of the interim storage of mercury, management of mercury wastes and contaminated sites.
- Protection of public health, and health of exposed populations.
- Promotion of information exchange and awareness raising.
- Development of infrastructure and human resources for Mercury (Hg) analysis.
- Sound management of mercury waste etc.

Challenges

- Lack of sufficient equipment for mercury monitoring
- Mercury monitoring activities at a national level is still beyond our approach
- Significant gaps of mercury monitoring data.
- Lack of skilled manpower for mercury analysis
- Limited technical resources and infrastructure for mercury analysis

Way Forward

- Introduce best available technology / best environment practices to control the mercury emissions & releases.
- Implement safety for capture & releases of mercury emissions during the process of gold plating activities.
- Assist & participate in APMMN activities as much as possible.
- Training on mercury sampler, sampling & laboratory analysis.
- Need to study of mercury and its associated impacts on human health and environment on regular basis

Photographs



Collection of ambient air using Mercury Monitoring Tool Kit



Collection of rain water sample through Mercury Deposition Sampler

Participation in the APMMN Meetings

8th APMMN at Indonesia (2019)



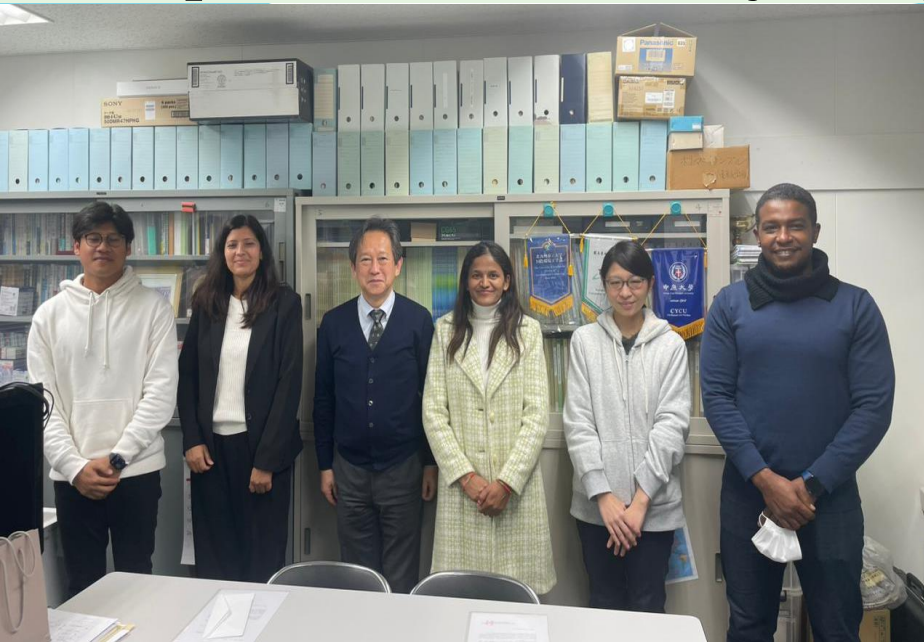
12th APMMN at Taiwan (2023)



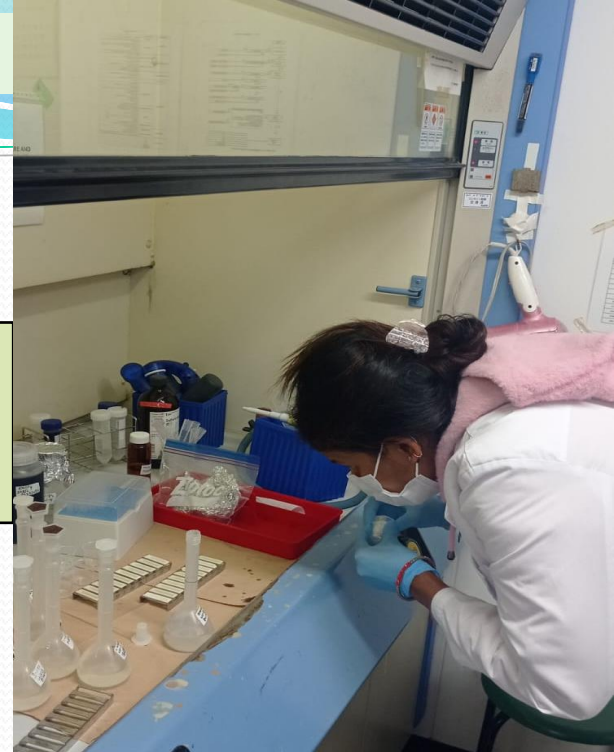
13th APMMN at Taiwan (2024)



Participation in the Mercury Analysis Training



**At Prefectural
University of
Kumamoto (PUK),
Japan (2025)**



**At National Institute
of Minamata Disease,
Japan (2025)**

**Collection of Dust
samples from gold
plating workshop
in Nepal, with
PUK, Japan**





Thank you for your
Kind attention