



環境部化學物質管理署
Chemicals Administration
Ministry of Environment

The 14th Asia Pacific Mercury Monitoring Network (APMMN)

Mercury Management Strategies in Taiwan



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Content



The Minamata Convention on Mercury



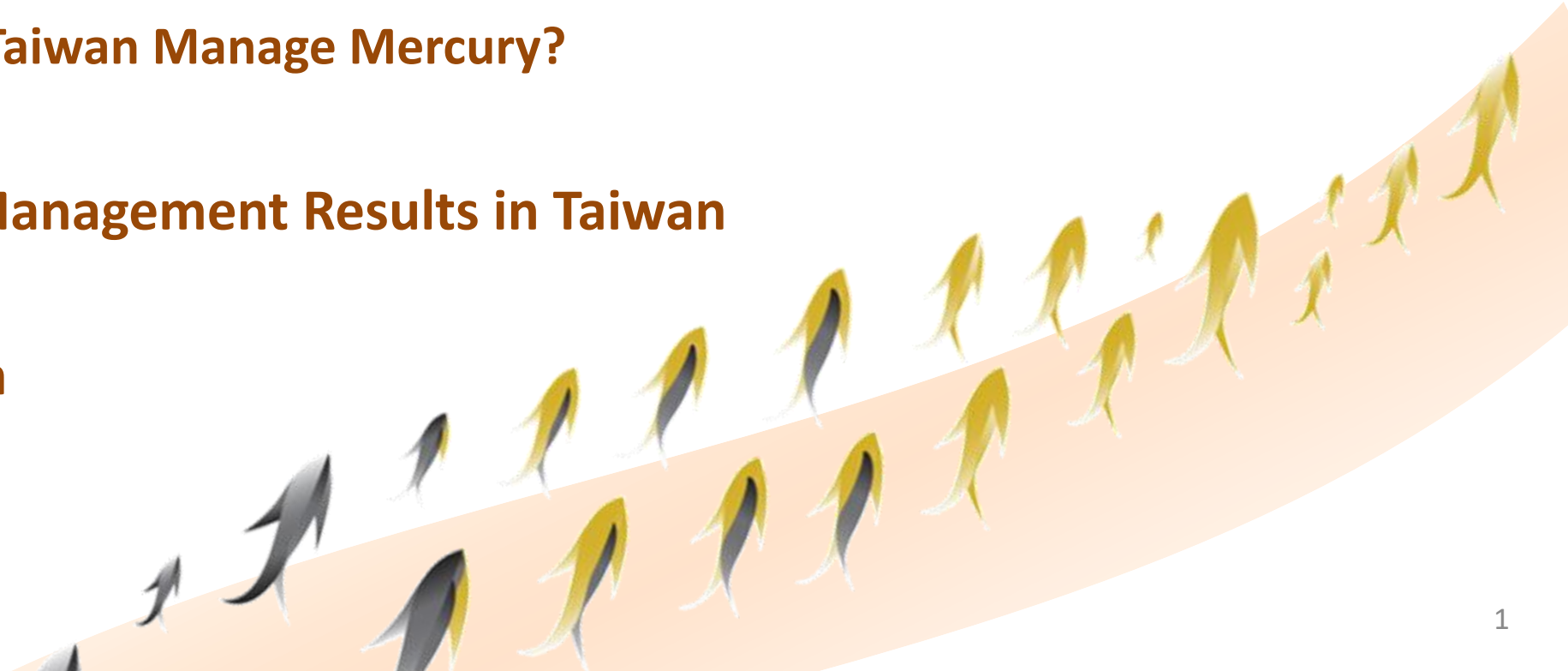
How Does Taiwan Manage Mercury?



Mercury Management Results in Taiwan



Conclusion



The Minamata Convention on Mercury

- Mercury poses global adverse effects to the environment and human health, as it has the properties:
 - ✓ Long-range transport
 - ✓ Environmental persistence
 - ✓ High bio-accumulation
- The United Nations Environment Programme (UNEP) established the Minamata Convention on Mercury to protect the environment and human health from the impacts of mercury and mercury compounds.



The Minamata Convention on Mercury came into effect on August 16, 2017.



The Convention's Content

- 35 Articles and 5 Annexes

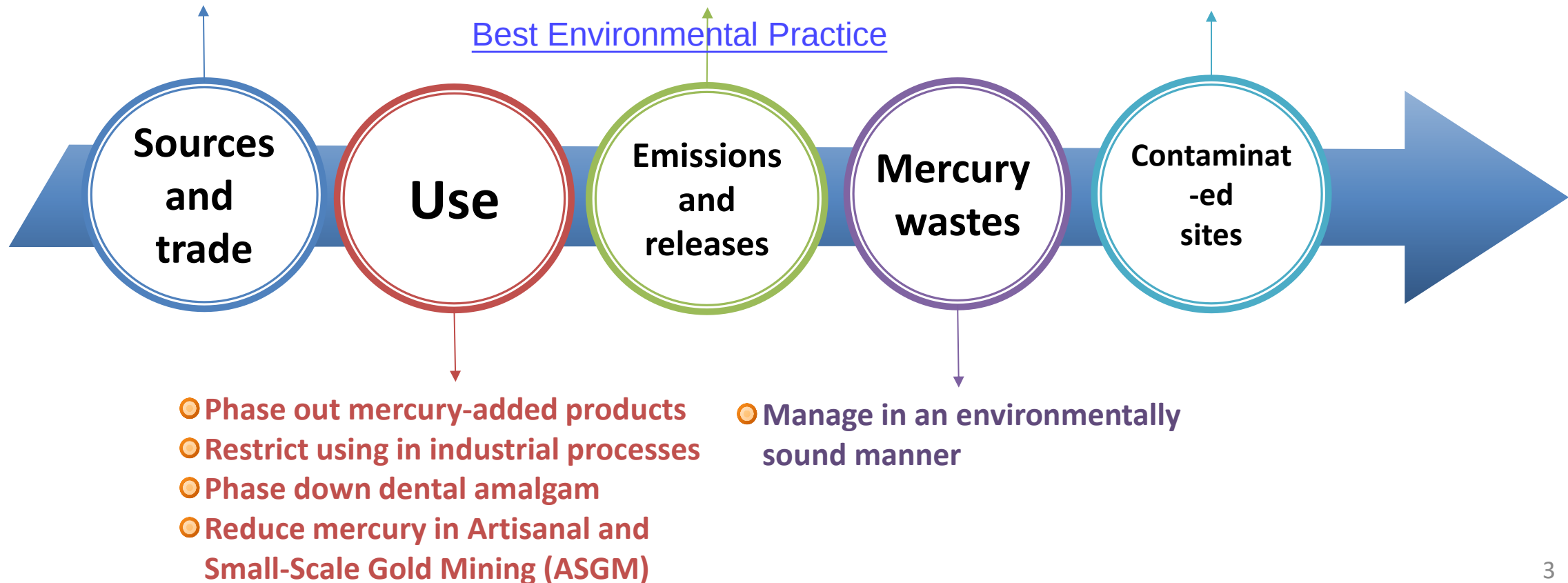
- Regulate primary mercury mining
- Prohibit the export of mercury

Best Available Techniques

- Take measures, BAT, or BEP to control

Best Environmental Practice

- Take actions to reduce the risk



Phase-out Deadlines for Mercury-Added Products

2020



1. High Pressure Mercury Vapor Lamps



2. Pesticides, Biocides and Topical antiseptics



3. Non-electronic measuring devices
Thermometers Sphygmomanometers
Barometers Hygrometers Manometers

2025
~
2027



4. Batteries



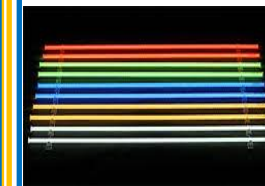
5. Switches and Relays



6. Compact Fluorescent Lamps



7. Linear Fluorescent Lamps

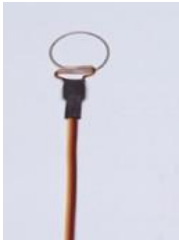


8. CCFL及EEFL for Electronic Display

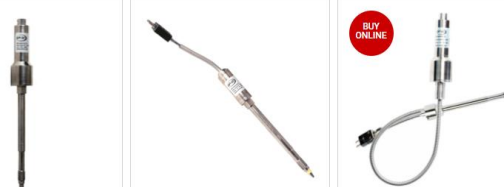


9. Cosmetics

2025



10. Strain gauges to be used in plethysmographs



11. Melt pressure transducers, melt pressure transmitters and melt pressure sensors



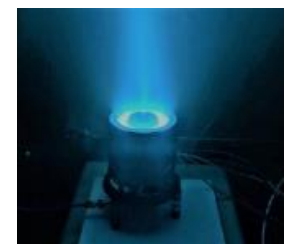
12. Mercury vacuum pumps



13. Tyre balancers and wheel weights



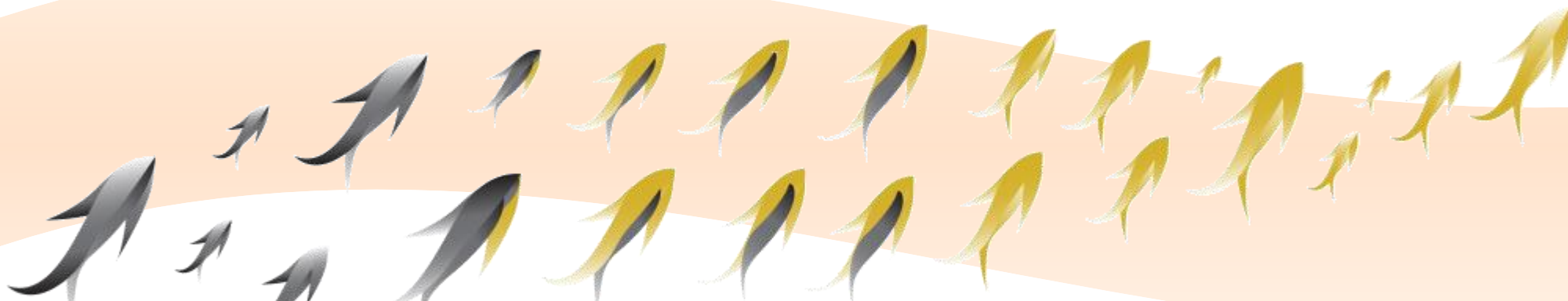
14. Photographic film and paper



15. Propellant for satellites and spacecraft



How Does Taiwan Manage Mercury?



Mercury Management Strategies in Taiwan



**Precise Measurement
and Monitoring**



Reduction



**Industrial Emission
Reduction**



**International
Collaboration and
Knowledge Sharing**

The National Implementation Plan (NIP) in Taiwan

4 Strategies

Establishing NIP on June 27, 2016



Intensify Cross-Ministerial Cooperation

- ✓ Set up an intergovernmental task team



Formulate and Amend Regulations

- ✓ Review international norms and draft or amend regulations



Strengthen Mercury Management

- ✓ Strengthen environmentally sound mercury management
- ✓ Encourage industry to use mercury-free products
- ✓ Eliminate the exposure risk

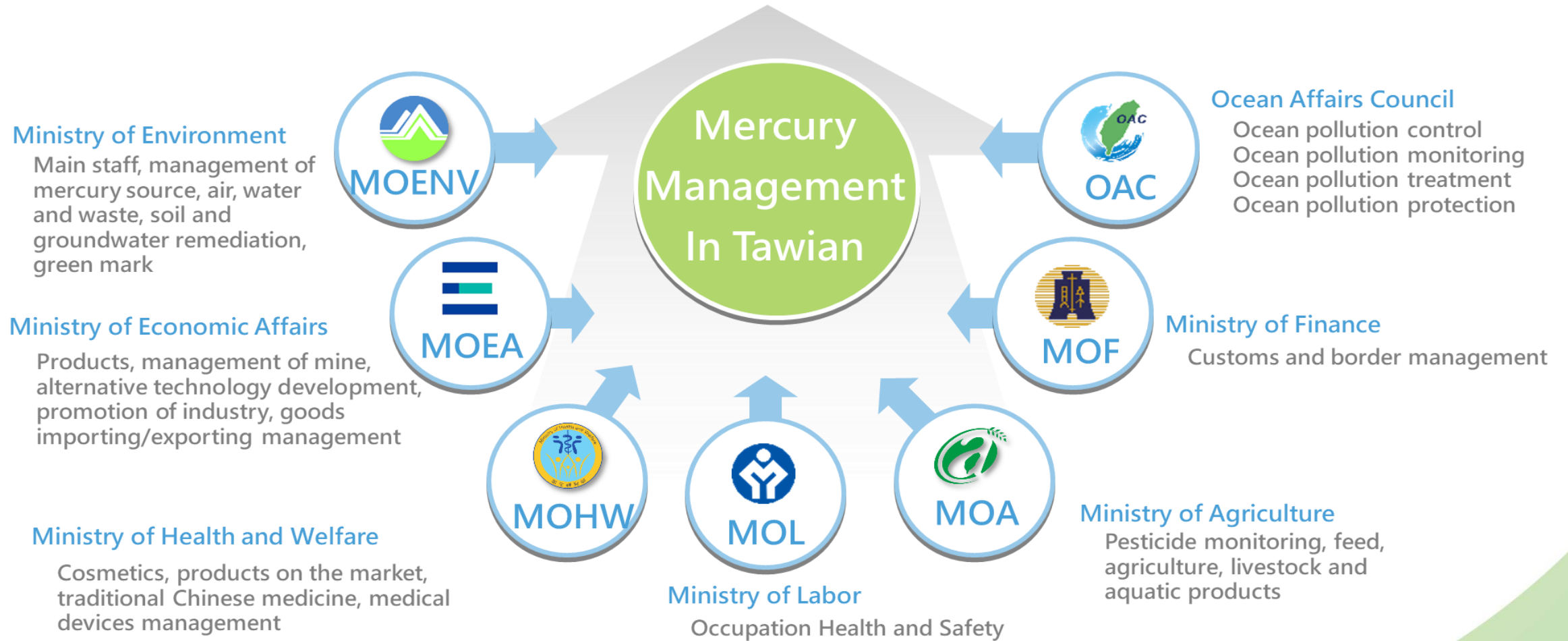


Strengthen Public Awareness and International Exchanges

- ✓ Raise public awareness by propaganda



Intergovernmental Task Team Members and Duties



Learn about Mercury Management Practices



- To deeply understand the Mercury Convention and learn about mercury management practices, Director General Hsieh of the CHA led a team to visit Japan on July 31, 2018, and attend an exchange meeting.

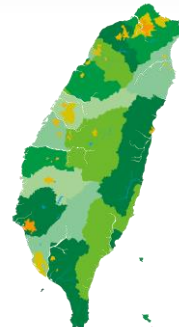
Japan

- ☑ Ministry of the Environment, Tokyo, Japan
- ☑ Ministry of Economy, Trade and Industry
- ☑ United Nations International Environmental Technology Center
- ☑ Minamata Environmental Research Institute
- ☑ Minamata Disease General Research Center



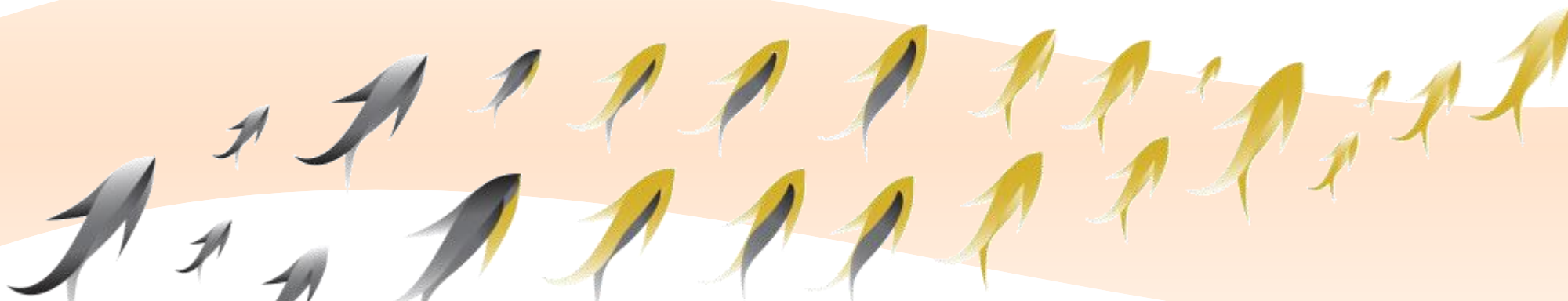
Taiwan

- ☑ Ministry of Environment (MOENV)
- ☑ Ministry of Health and Welfare (MOHW)
- ☑ Ministry of Economic Affairs (MOEA)
- ☑ Ministry of Agriculture (MOA)
- ☑ National Taipei University of Technology





Mercury Management Results in Taiwan





The manufacture and import/export of nine categories of mercury-containing products has been banned on December 31, 2020 in Taiwan.

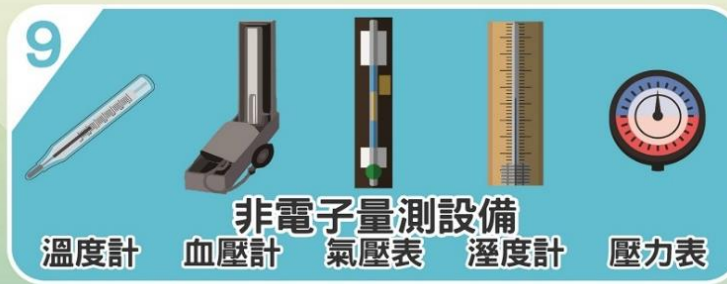


永水俣公約

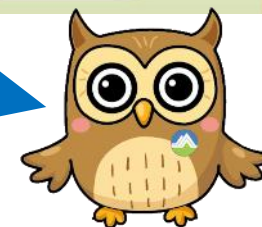
Minamata Convention on Mercury



Starting from 2021, the manufacture and import of mercury-containing products are prohibited.



Information website:
<https://topic.moenv.gov.tw/hg/mp-3.html>



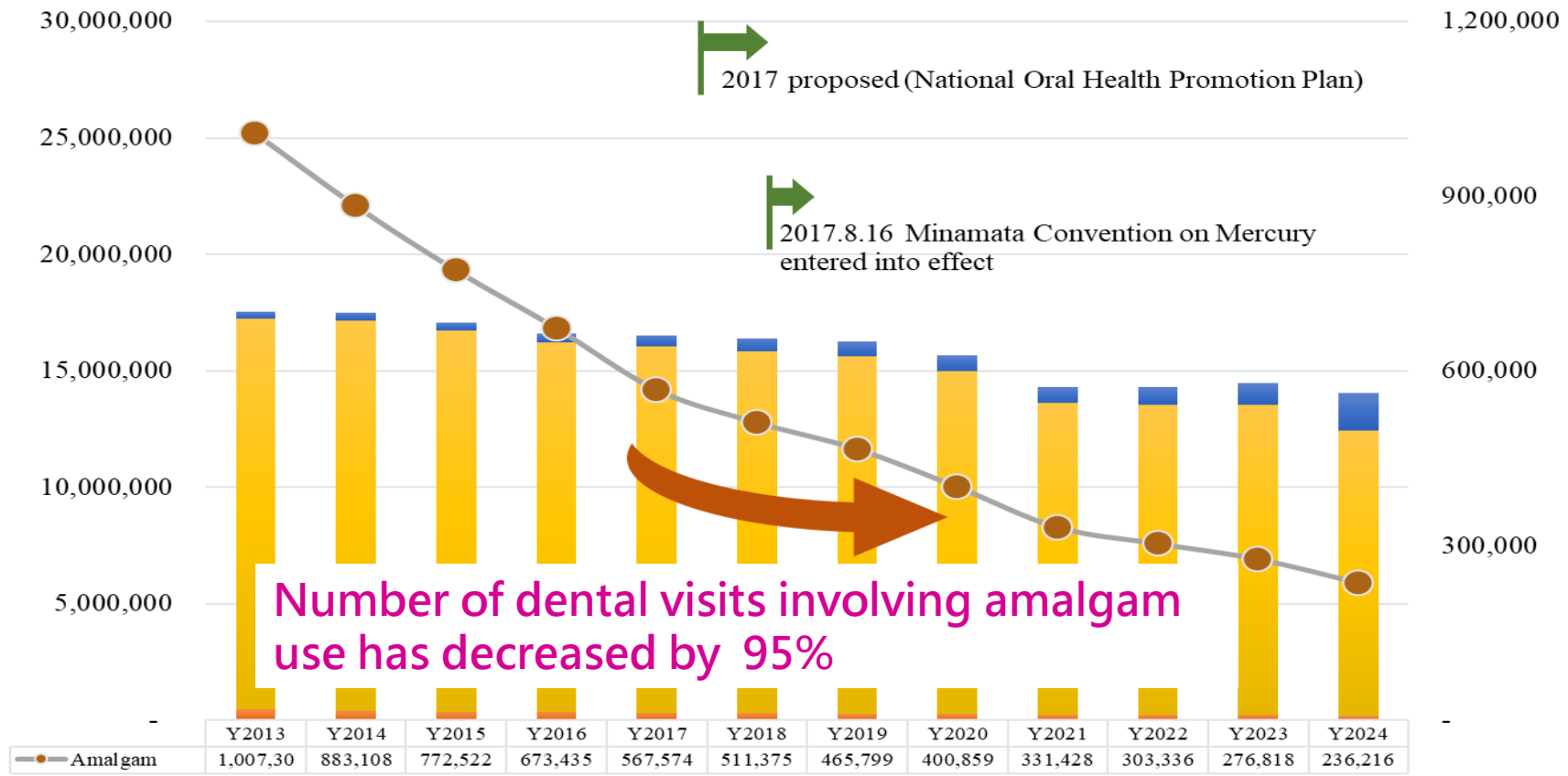
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Phase Down Dental Amalgam

The dental silver powder usage dropped significantly in Taiwan



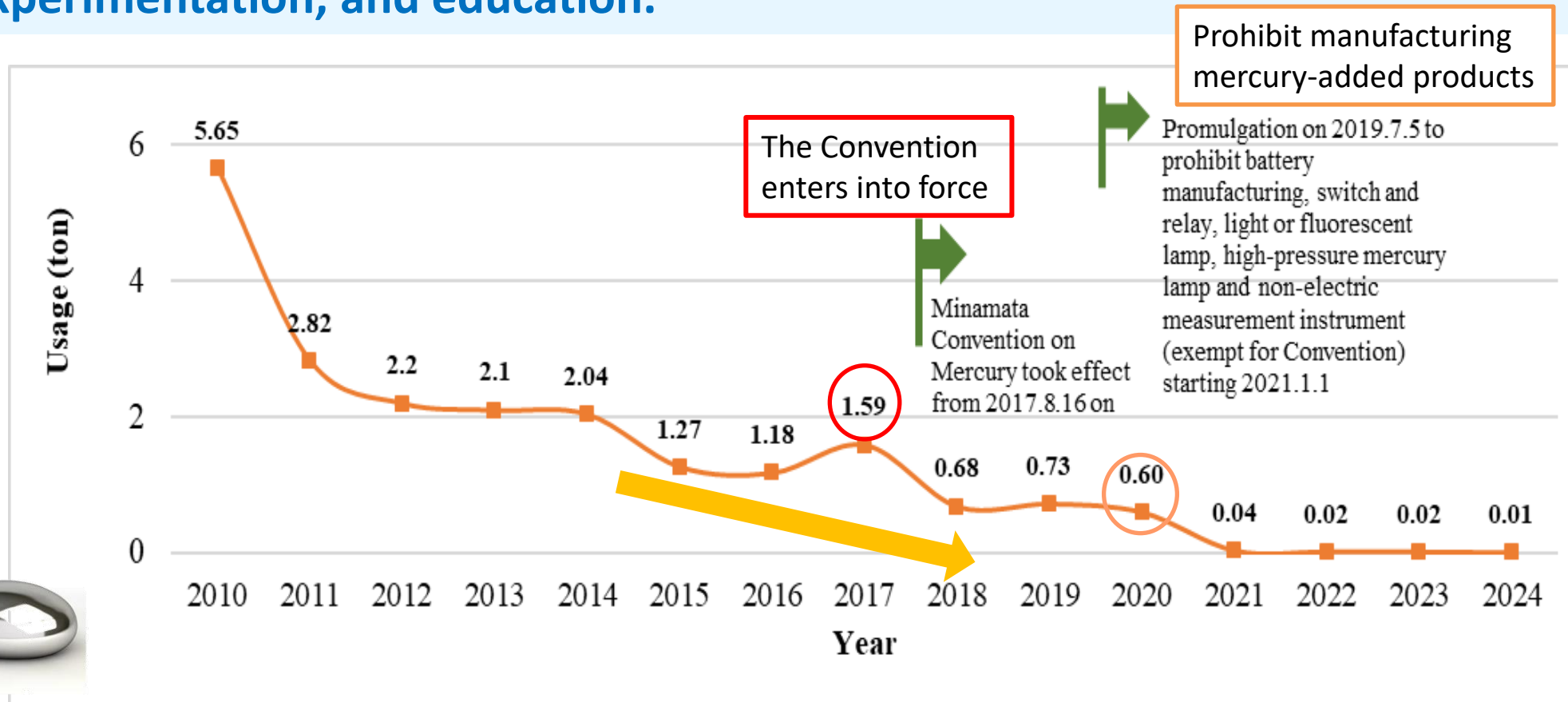
Use other dental filling user (people)



User of people using amalgam (people)

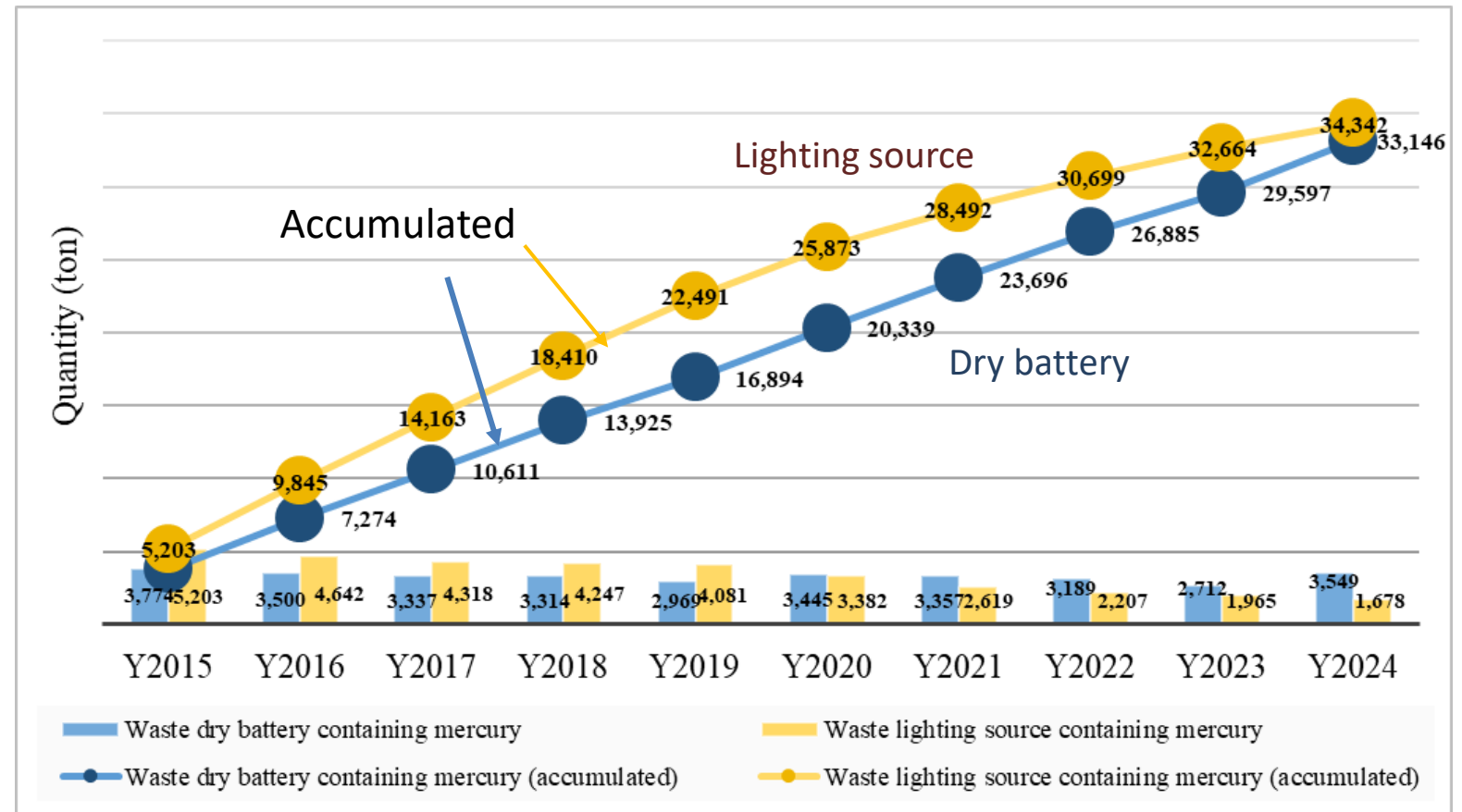
The Use of Mercury in Taiwan

- Without mercury mining in Taiwan
- Toxic and Concerned Chemical Substances Control Act: lists Mercury as a Class 1 toxic chemical substance and prohibits its use in manufacturing, industrial catalyst, etc.
- The use of mercury dropped significantly, and it is mainly used in research, experimentation, and education.



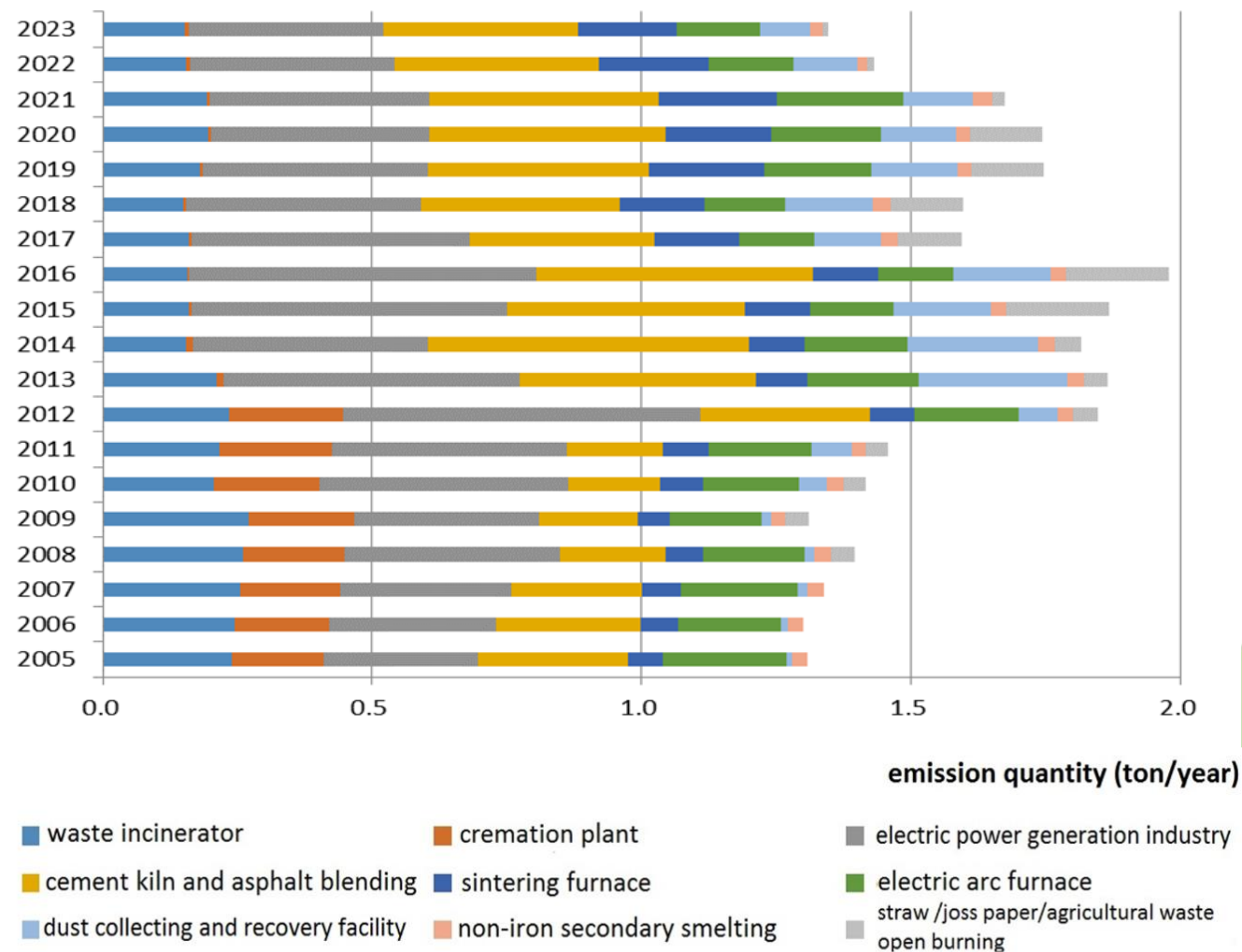
Recycling Dry Batteries and Lighting Sources

- Ban the import of mercury-added waste
- Promote the recycling of mercury-added dry batteries and lighting sources
- Recycle dry batteries of **3,549** tons and lighting sources of **1,678** tons in **2024**

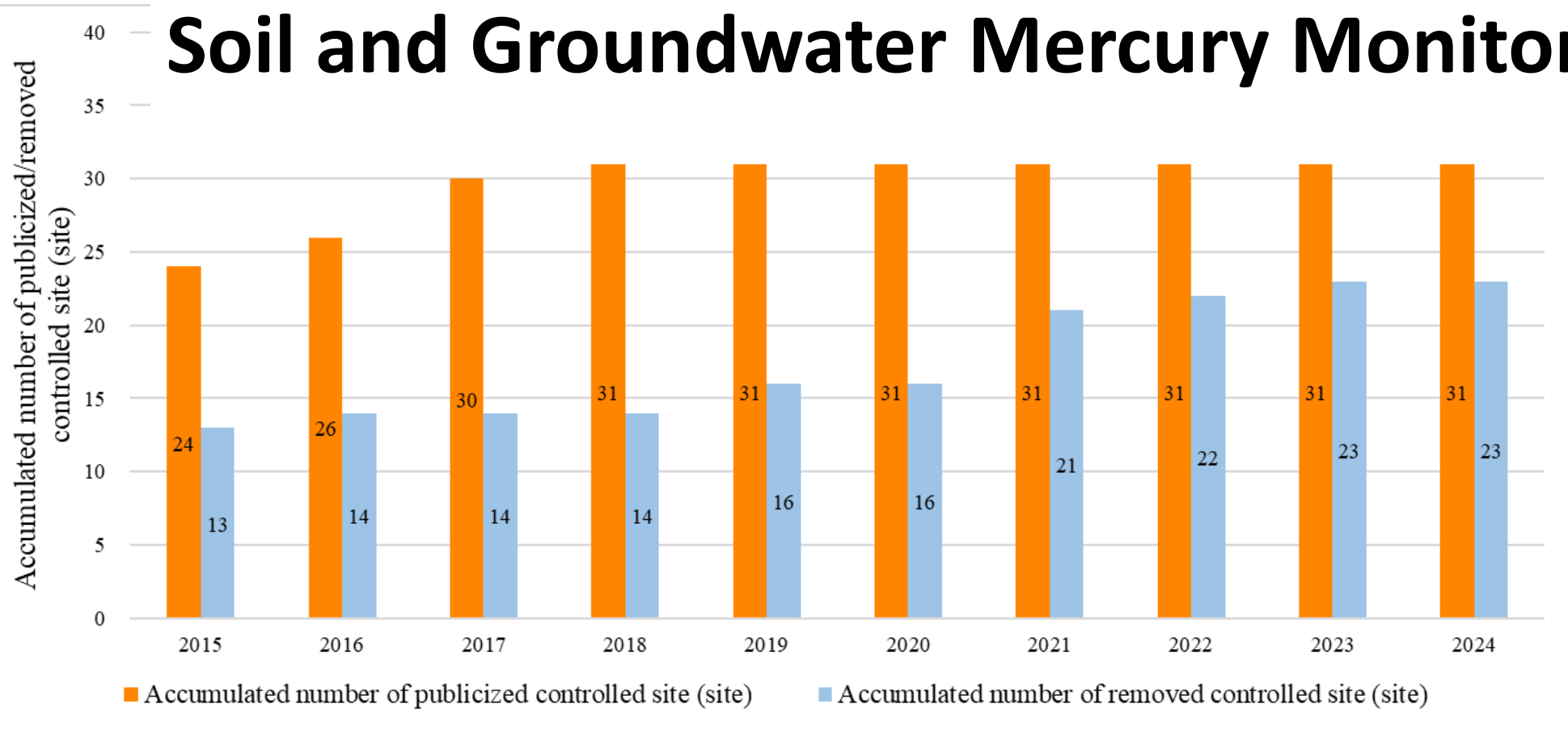


Emissions Mercury Monitoring

- Mercury released into atmosphere in **2023** was about **1.357 tons**.
- The **main sources** were from **cement kilns** and **power generation industries**.
 - ✓ Formulate the standards for waste incinerators and power generation facilities
 - ✓ Draft amendments to air pollutant standards for the cement industry



Soil and Groundwater Mercury Monitoring



Mercury-contaminated sites:
23 sites were delisted after
remediation during **2015-2024**.



Water Bodies Mercury Monitoring

River sediment 2018-2024

- 30 rivers; avg. conc.: ND – 0.647 mg/kg dw
- Methylmercury was not detected

River fish 2018-2024

- 30 rivers; avg. conc.: ND -0.134 mg/kg ww
- Lower than the domestic food safety standard (0.5 mg/kg ww)

Drinking Water 2015-2024

6,948 samples: all meet the drinking water quality standard (0.001mg/L)

River and Sea 2011-2024

- All samples meet the relevant domestic water quality standards

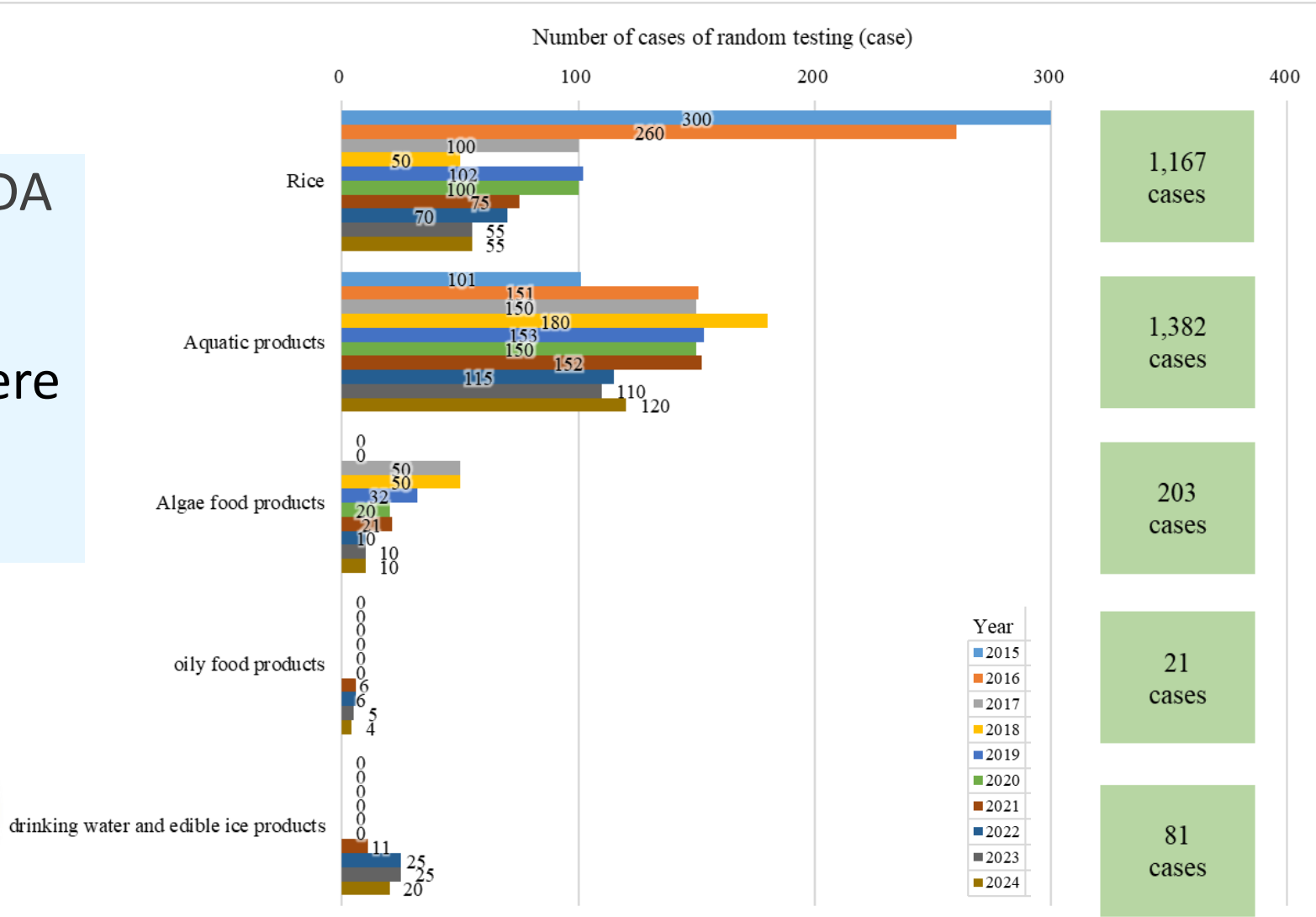
Year	Rivers		Seas
	Number of rivers	N	N
2011~2012	91	316	104
2013~2017	88	296	105
2018~2021	85	303	105
2022~2023	85	304	125
2024	85	303	125

Number of Sampling points (N)



Food Mercury Monitoring

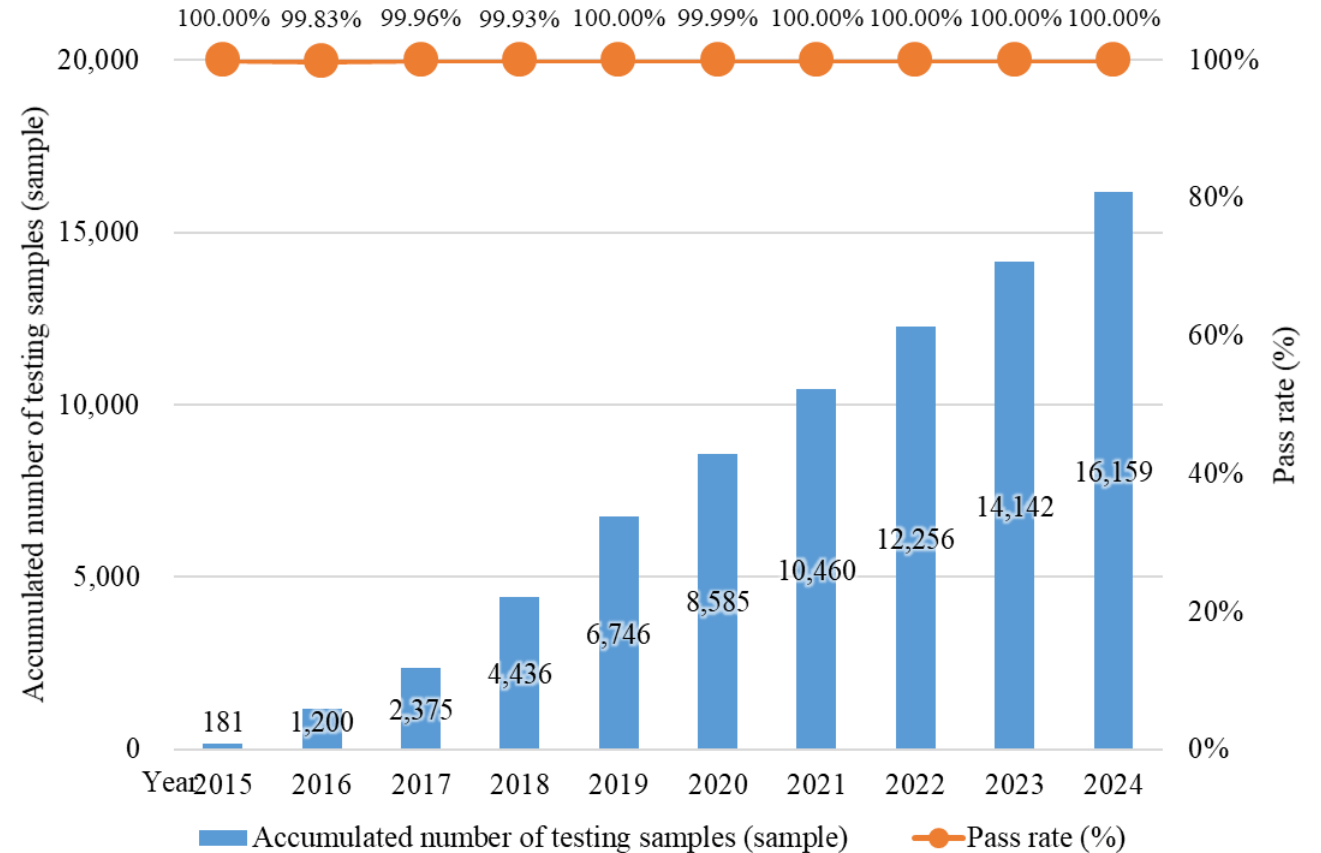
- During 2015-2024, Taiwan FDA randomly tested 3,043 food samples.
- Those exceeding the limit were dealt with according to the regulations.



Number of samples for mercury in foods during 2015-2024

Aquatic Products Mercury Monitoring

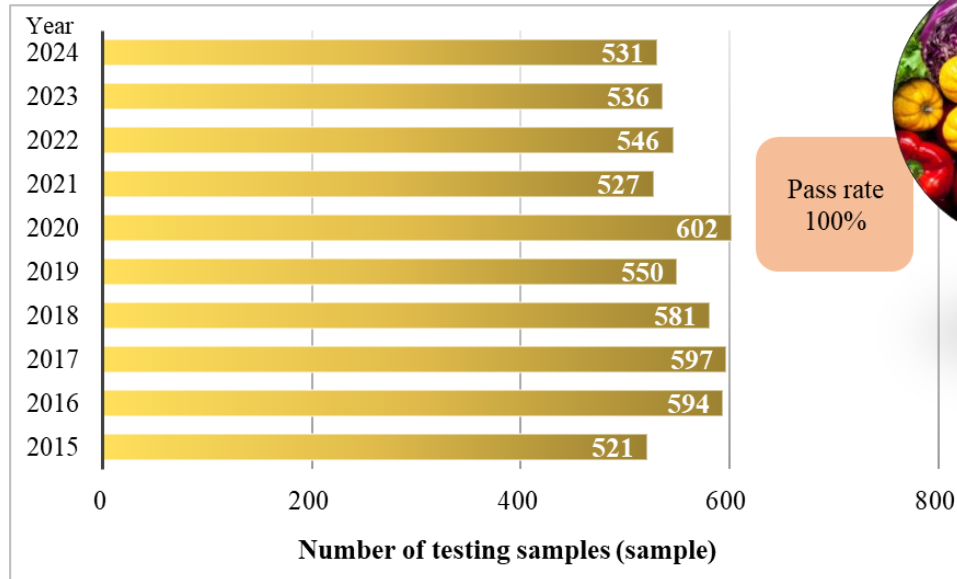
- **16,159** aquatic products samples were tested for mercury during 2015-**2024**.
- Aquatic products include:
 - ✓ Cultured
 - ✓ Caught in offshores waters
 - ✓ Oysters farmed on the west coast
- 7 samples beyond the standard: enhancing further management



Agricultural Products and Poultry Feeds Mercury Monitoring

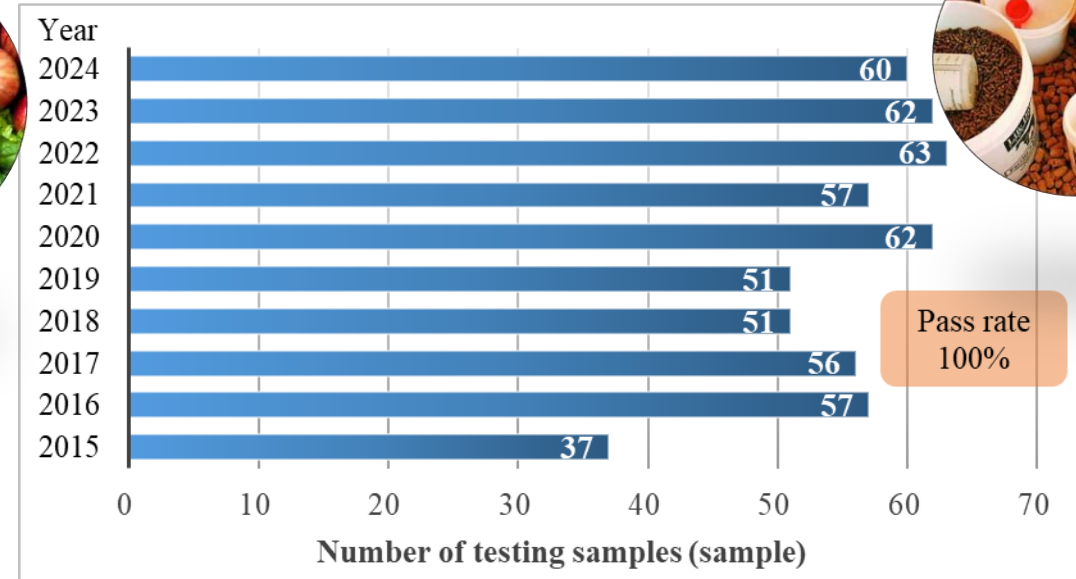
Agricultural products

- The agriculture department randomly tested **5,585** samples during 2015-2024
- Average conc.: ND-0.023 mg/kg
- All complied with the standard (0.05 mg/kg)



Poultry feeds

- The agriculture department randomly tested **556** samples during 2015-2024
- All the results met the standard 0.5 mg/kg



Risk Communication

- Strengthen risk communication with stakeholders to avoid mercury exposure
 - ✓ Set up the mercury information **website** with public outreach materials (videos, audios, leaflets, posters, etc.)
 - ✓ Provide **handbooks** and **fish-intake guidance** for sensitive groups (infants, pregnant or breastfeeding women and children)



(<https://topic.moenv.gov.tw/hg/mp-3.html>)

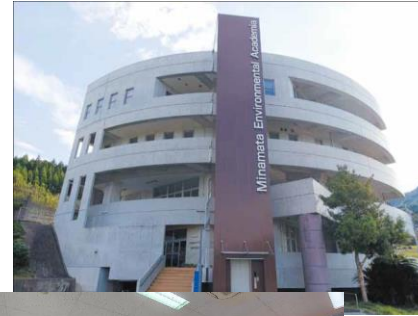


Taiwan Youth Overseas Dream Fund Project in Minamata City, Japan

- ✓ 8 participants
- ✓ Agency :Minamata Environmental Research Institute
- ✓ Duration :Oct. 28 – Nov. 19, 2025

Purpose

- Participants engaged in expert discussions, case studies, and simulation exercises to learn best practices in pollution governance and international cooperation.
- The goal is to enhance their capabilities in promoting related policies and environmental sustainability domestically and internationally



Study Topics

- History of the Minamata mercury pollution incident
- Public health issues related to Minamata disease
- Environmental, biological, and human monitoring
- Post-disaster pollution dispute resolution strategies
- The process and strategies behind drafting the United Nations Minamata Convention
- Strategies and challenges in Japan's domestic implementation of the Minamata Convention
- Strategies and execution plans for risk communication



Division Chief Dung of the CHA led a team to visit Mayor Takaoka and his team of Minamata City to discuss future cooperation mechanisms

Conclusion

Aim to reduce the mercury exposure and ensure a healthy environment



**Strengthen
cross-ministerial
cooperation**

- Strengthen cooperation among departments



**Keep following
the Convention's
development**

- Keep following the latest development of the Convention



**Enhance
management and
propaganda**

- Monitor environmental media, biological matrices, and commodities; raise public awareness via propaganda



**Reinforce
international
cooperation and
exchanges**

- Actively participate in international affairs and share experiences with the international communities



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Thank you

