Consultation Report

Towards a coordinated, multi-sectoral lead management approach in low- and middle-income countries: Consultations in Asia-Pacific region

Thursday, 10 July 2025

12:00 – 13:30 CET

1. Introduction

The United Nations Environment Programme (UNEP), with the support of the European Union and Ministry of Environment of Japan, facilitated a consultation on lead sources and management in Asia-Pacific countries.

This consultation complements similar efforts conducted recently in the Africa region. This initiative comes at a crucial juncture, as previous international efforts around lead exposure reduction primarily targeted single sources of lead contamination, such as leaded petrol and paint. However, a growing body of research highlights the wide variety of sources impacting lead exposure, particularly in low- and middle-income countries (LMICs), encompassing various industries and consumer products.

Recognizing that policy and regulatory approaches to addressing sources of lead exposure may vary, adopting a comprehensive look at lead management policies in LMICs across sectors holds immense promise. By embracing a holistic perspective, it becomes feasible to discern the primary drivers of lead exposure with greater clarity, increase awareness of policymakers, and pave the way for the development of cohesive, enduring mitigation strategies, action plans, and other relevant instruments Moreover, addressing lead management on a multi-sectoral basis empowers stakeholders to forge vital connections between lead mitigation efforts and broader development objectives or societal priorities, thereby enhancing the mobilization of resources towards this critical cause. Through promoting collaborative action and a multifaceted approach, the consultation aimed to catalyze impactful change in safeguarding public health and environmental well-being across the Asia-Pacific region.

Objectives

The consultation aimed to elicit feedback on current efforts to manage sources of lead exposure and to explore the feasibility of a coordinated, multi-sectoral approach by LMIC national governments.

The objectives of the consultation included to:

- facilitate the exchange of information among Asia-Pacific countries on existing lead management activities and needs;
- understand sources of lead exposure and applicable regulations identified at the country or regional level;
- present examples of coordinated multi-sectoral lead management approaches, including country-level efforts;
- discuss current barriers and opportunities for lead exposure reduction action, including a coordinated and multi-sectoral lead management approach.

The following discussion questions were provided ahead of the consultation to the panelists and were shared with the audience during the event:

1. What strategies have been successful in identifying and addressing sources of lead exposure in Asia-Pacific countries? This could be either high concentration sources (such as industrial hotspots), or more diffuse sources of exposure (that may be lower concentration, but more ubiquitous). What sort of monitoring mechanisms are required and what are the current challenges?

2. How can Asia-Pacific countries leverage existing lead management activities to enhance collaboration and knowledge sharing nationally and across the region?

3. What practical steps can be taken to overcome barriers to implementing a coordinated, multi-sectoral approach to lead management, and how can stakeholders collaborate to address these challenges effectively? What are the roles of various stakeholder groups (government, NGOs, academia, industry, local communities)?

4. How can stakeholders in Asia-Pacific countries align their efforts in lead management with broader development goals and societal priorities, and what strategies can be implemented to improve the mobilization of resources for this purpose?

5. How can the international community support Asia-Pacific countries in developing and implementing comprehensive and multi-sectoral lead management strategies that align with broader development objectives and priorities?

The webinar was moderated by Ms. Mihaela Claudia Paun, Programme Management Officer within the Knowledge and Risk Unit of UNEP's Chemicals and Health Branch.

2. Welcome Session

A welcome message was delivered by Mr. Ludovic Bernaudat, Head of the Knowledge and Risk Unit of UNEP's Chemicals and Health Branch. Mr. Bernaudat welcomed panelists and participants and expressed his gratitude for their contribution to this initiative. He also thanked the European Union and the Ministry of Environment of Japan for their support in holding this consultation webinar.

He noted that past international cooperation efforts have dealt with specific sources of lead exposure in LMICs and significant progress has been made. There was a successful global phase out of lead in fuel in 2021, and there has been progress by the Global Alliance to Eliminate Lead Paint to promote elimination of lead paint through laws.

There is evidence of a wide variety of sources of lead exposure, particularly in LMICs, including from industry and consumer products. To date, these sources have largely not been sufficiently addressed and continue to pose serious risks to human health and the environment.

Reducing lead exposure often requires different policy and regulatory approaches, and a comprehensive examination of lead management across sectors and countries can help identify effective actions. Adopting a holistic perspective across sources can help identify the primary drivers of exposure, increase awareness among policymakers, and allow for comprehensive and sustainable strategies.

A multi-sectoral approach can also allow lead management to be linked with broader development objectives, to help leverage additional expertise and resources. This consultation aims to promote collaboration among Asia-Pacific governments and relevant stakeholders, and Mr. Bernaudat encouraged active participation in the discussion, that could inspire innovative strategies and trigger continued

communication and information exchange on the topic at the regional level to protect public health and the environment from the dangers of lead exposure.

3. Setting the Scene

Ms. Emily Nash, Lead (Pb) Management Consultant for UNEP, provided an overview of lead exposure sources by sector based on current information available for the Asia-Pacific Region. Presentation slides are available in Appendix A.

She began by referencing the UNICEF and Pure Earth report, The Toxic Truth, noting that an estimated **one in three children globally** has blood lead levels exceeding 5 micrograms per deciliter—the reference value established by WHO. This widespread exposure, she emphasized, is not limited to high-profile sources like petrol or paint, but is increasingly linked to **diverse, often overlooked pathways**.

Focusing on the Asia-Pacific region, Ms. Nash presented **comparative data** illustrating geographic disparities in exposure levels, with South Asia showing higher averages than East and Southeast Asia. She stressed the **cumulative health burden** from lead exposure, including neurodevelopmental impairment in children, cognitive delays, behavioral disorders, cardiovascular risks, and premature mortality. In total, lead exposure is estimated to contribute to **close to one million deaths annually in the region**.

To support the webinar's goal of promoting a multisectoral approach, Ms. Nash structured her analysis by **sector**, linking sources of lead contamination to responsible stakeholders:

- In **transport and energy**, she highlighted the global elimination of leaded petrol as a major public health success. However, lead-acid batteries (ULABs), which account for 86% of lead use in the economy, continue to pose serious risks—particularly in **informal or sub-standard recycling operations** that lack environmental and occupational safeguards.
- In **mining and smelting**, Ms. Nash noted that lead exposure arises both from primary lead mining and mining for other metals like gold and zinc. Improper smelting practices can release lead through **air, water, and solid waste**, particularly in regions lacking adequate pollution controls.
- The **electronics sector** was cited as a growing source of risk due to improper disposal and informal e-waste recycling. Despite the recyclability of materials, Ms. Nash noted that low rates of environmentally sound management of e-waste result in lead contamination and occupational exposure.
- For **food and agriculture**, she identified intentional **adulteration** of spices with lead chromate as a major regional issue, particularly in South Asia. Ms. Nash also mentioned **background contamination** of food crops from lead-containing soil, often near industrial zones, which contribute to dietary lead intake.
- Regarding **consumer products**, she provided evidence of elevated lead in metal and ceramic cookware, cosmetics, and traditional cultural powders. Of note was the lack of comprehensive data across Asia-Pacific to quantify the full scope of these risks—underscoring the need for national surveillance and product testing programs.
- In the **paint sector**, Ms. Nash pointed to persistent use of lead in paints across many countries in the region. She highlighted the current **patchwork of policies** in the region, with many countries lacking enforceable standards. Evidence of the continued availability of lead paint in countries with regulations underscores the importance of strong enforcement.

- On **drinking water**, she noted that regional data is sparse. Some evidence suggests lower average contamination in East and Southeast Asia compared to other LMICs, but **localized cases of lead plumbing and contamination** have been identified, highlighting the need for systematic monitoring.

Ms. Nash concluded by reflecting on the implications of this sectoral diversity: lead exposure profiles often involve multiple overlapping sources that vary by geography, culture, and infrastructure. She emphasized that this complexity necesitates **a multisectoral policy response** that actively coordinates across the various ministries and stakeholders, as well as integrated strategies that are tailored to local conditions.

Her presentation laid the groundwork for the subsequent panels by framing lead exposure not only as a health issue but also as a **governance, development, and equity challenge**—requiring data-driven planning, community engagement, and institutional alignment.

Dr. **Indu Bhushan**, Chair of the **India Working Group on Lead Poisoning** and Distinguished Fellow at the Pahle India Foundation, delivered a compelling presentation on the evolving landscape of lead poisoning prevention in India. His remarks served as a case study on the **challenges and progress in national lead management**, especially within a large, diverse federal structure. Presentation slides are available in Appendix A.

Dr. Bhushan began by emphasizing that India lacks nationally representative data on blood lead levels (BLL), which has historically rendered the issue invisible to policymakers. This invisibility, he argued, leads to a vicious cycle: without data, there is little political commitment; without political commitment, no programs are developed; and without programs, no new data is collected. He contrasted India's situation with neighboring countries like Bhutan and Bangladesh, which have already conducted national lead surveys and established multisectoral coordination mechanisms.

Despite these challenges, Dr. Bhushan noted **recent signs of positive momentum** in India. The National Centre for Disease Control (NCDC) has taken the lead in addressing lead exposure through its broader **biomonitoring program on chemical toxicants**, which includes lead. Importantly, India is now establishing a national reference laboratory to standardize blood lead level testing, as there are currently no uniform BLL standards.

India is also in the process of developing a **central data portal** under the National Biomonitoring Program to consolidate findings and enhance surveillance. Alongside this, an Innovation Hub is being created to promote new technologies—such as affordable, portable testing devices—for both BLL and environmental lead detection.

Dr. Bhushan highlighted the role of **civil society, academia, and think tanks** in bridging data and policy gaps. Institutions across India are now participating in research and community-level blood lead assessments. These partnerships have helped document exposure risks and drive awareness among policymakers.

He introduced the **India Working Group on Lead Poisoning**, established in 2023 with Pahle India Foundation as its secretariat. The group comprises researchers, former government officials, civil society organizations, and public health experts. So far, it has held five active meetings and agreed on several strategic priorities:

- **Developing a model** for lead poisoning response, which includes BLL monitoring, source identification, awareness, and state-level solutions.
- **Integrating lead surveillance into national health surveys**, to ensure systematic, large-scale data collection and building awareness among healthcare providers

- **Engaging political leadership**, including efforts to encourage India's Prime Minister to speak on lead poisoning through public channels.

Dr. Bhushan also spoke about innovations under exploration, such as the use of sweat patches for non-invasive BLL monitoring. He highlighted growing collaboration with the **Indian Council of Medical Research (ICMR)** and other agencies to expand research and product development.

At the organizational level, Pahle India Foundation is actively supporting:

- **Advocacy** with national and state governments and research dissemination
- **Work with states** on BLL and source studies, including collaboration with All India Institutes of Medical Sciences
- **Develop Standard Operating Procedures (SOPs)** for testing and a **playbook for 11 ministries**—including health, environment, commerce, and industry—outlining specific roles and recommended actions.
- **Capacity building** within NCDC

Dr. Bhushan's intervention underscored that India, despite current gaps, is **moving decisively toward a coordinated, evidence-based approach**, particularly at the state level.

4. Panel discussion – Country Representatives

Ms. Paun introduced the first of two panel discussions, where three country representatives shared their experiences with lead management approaches and challenges at the country level in the Asia-Pacific region. Presentations are included in Appendix B.

Mr. Kinley Dorjee, a Research Officer at Bhutan's Ministry of Health, delivered a concrete example of a national, data-driven intervention against lead exposure. His presentation centered on **Bhutan's 2024 National Blood Lead Survey** and accompanying **source assessment**—an initiative that positioned Bhutan as a regional leader in identifying and tackling lead contamination with high granularity and local relevance.

Mr. Dorjee began by explaining that Bhutan's efforts were shaped by a recognition that no national data previously existed on lead exposure, and that assumptions based on global literature might overlook unique, culturally embedded exposure sources. In 2024, Bhutan carried out a **nationwide assessment** across all districts, testing a broad array of household items for lead content. This included:

- Cookware and kitchen utensils,
- Paints and pigments,
- Spices and food containers,
- Religious objects, including blessed pills (locally called *jinlab*),
- Water taps and storage containers.

Mr. Dorjee noted that the survey's approach—testing items in direct contact with the human body, particularly hands, mouths, and food surfaces—was instrumental in identifying exposure risks. Out of 2,418

items tested, about 44% had detectable lead, and 30% exceeded international safety thresholds. One of the most notable findings was that "blessed pills," used widely in Bhutan for spiritual healing and ingestion during religious rituals, contained lead levels well above safety limits. These pills, which are considered sacred and are consumed by children and adults alike, had never before been studied for lead contamination. The discovery was significant not just for Bhutan, but as an example of how culturally specific practices can be overlooked by global surveillance efforts.

This **source-focused methodology** allowed Bhutan to uncover practical and tailored entry points for public health action.

Mr. Dorjee highlighted several key lessons and principles from Bhutan's experience:

- No one-size-fits-all solution exists. Lead sources differ by country and must be identified through **localized risk assessments** rather than assumptions based on international trends.
- Countries must **test what people are actually using and consuming in daily life**. Bhutan's success was due in part to its focus on locally relevant products and behaviors.
- **Cross-sectoral coordination is critical**. Mr. Dorjee emphasized that lead exposure is not only a health sector issue. Effective response requires collaboration across customs, trade, public health, and regulatory bodies, as well as UN agencies and philanthropies. Bhutan's initiative involved not just laboratories and ministries, but community leaders and traditional healers.
- **Policy and regulatory alignment must follow data**. He called for countries to align regulatory efforts (import regulations, market inspections) with evidence generated by health screenings.

Mr. Dorjee also emphasized that in a globalized world, **lead exposure is no longer a localized threat**. Contaminated goods and environmental toxins can cross borders easily, making regional and international cooperation essential. He warned that even if one country eliminates domestic lead sources, exposure may still occur through imported goods or informal markets. This underlined the importance of shared strategies and harmonized regulations.

Mr. Dorjee noted that global lead poisoning causes substantial **economic losses** at the global level, disproportionately affecting low- and middle-income countries, and he framed lead poisoning as a **development and equity issue**.

Mr. Dorjee closed with a powerful call to action: Countries must adopt a **"whole-of-government and whole-of-society approach"**, and international donors must recognize that developing countries do not lack will—but often lack technical and financial support. Bhutan's example shows that with coordinated effort, meaningful reductions in exposure can be achieved, even with limited resources. He highlighted a mutli-pronged approach of prevention, awareness among healthcare providers and the public, and remediation.

Ms. Amelia Rahmanutisa, Senior Environmental Impact Management expert from the Ministry of Environment and Forestry of Indonesia, delivered a presentation focused on **Indonesia's policies and practices for managing used lead-acid batteries (ULABs)**. Her intervention provided detailed national regulations, highlighting the strengths, gaps, and future needs in hazardous waste management—particularly as it relates to lead.

She began by outlining Indonesia's comprehensive **legal and regulatory framework** governing ULABs, which are classified as hazardous and toxic waste (B3 waste) under national law. The management of ULABs is governed by a suite of legal instruments. Ms. Rahmanutisa clarified that **Indonesia differentiates between industrial and household ULABs**, applying distinct regulatory pathways:

- **Industrial ULABs** fall under permitting requirements from the Ministry.
- The collection and transportation steps for **household ULABs** do not require permits, but the ULABs still must be routed to authorized collection and treatment facilities.

A central feature of Indonesia's system is the **"cradle-to-cradle" approach** to waste management, encouraging industry to make use of wastes.Any unusable residues from recycling must be safely disposed of in designated hazardous waste landfills.

Ms. Rahmanutisa presented a **flow diagram of the ULAB management process**, explaining that:

- Waste generators (e.g., industries or households) either dispose of ULABs directly or through collection points.
- Waste must be transported by licensed B3 transporters.
- All ULAB processing—whether recycling or disposal—must take place in **permitted hazardous waste facilities**, monitored by the Ministry.

Ms. Rahmanutisa noted an implementation challenge: the geographic concentration of ULAB treatment facilities on Java Island. Java hosts all of the licensed recycling plants, while other islands—including Sumatra, Kalimantan, Sulawesi, and Papua—have only collection infrastructure, forcing ULABs to be transported long distances for treatment.

To support oversight and transparency, Indonesia has developed an **online reporting system.** This platform is used by industry actors to log ULAB flows and compliance information. Annual evaluations are conducted by the Ministry, and the results are made publicly available.

On the matter of **import and export of ULABs**, Ms. Rahmanutisa emphasized that:

- The import of ULABs is prohibited Indonesia has ratified the Basel Convention, and any export of hazardous waste must follow Basel Convention's prior informed consent (PIC) procedures. However, no export applications for ULABs have been received to date.

Ms. Rahmanutisa also identified several **key challenges and priorities** for Indonesia:

- **Strengthening institutional synergy** across government agencies to improve coordination in ULAB regulation and enforcement
- **Conducting studies** on alternative ULAB management technologies that can be deployed locally
- Promoting **preventive strategies** before batteries reach disposal

Her intervention provided a **well-documented example** of how a large and decentralized country is approaching management of ULABs through regulation and digital oversight.

Next, **Ms. Daneth Phann**, Vice Chief of the Department of Hazardous Substances Management at Cambodia's **Ministry of Environment**, presented an overview of Cambodia's recent efforts to tackle lead exposure, especially through **market surveillance, regulatory development, and battery recycling reform**. Her presentation focused on three key areas: (1) market surveys of paint and toys, (2) progress on drafting lead-related regulations, and (3) the current status of used lead-acid battery (ULAB) recycling in the country.

Ms. Phann began by discussing two case studies undertaken by the Ministry to assess lead levels in commonly used consumer goods:

- The first study involved testing **enamel paint samples** purchased in Phnom Penh for lead content using a portable XRF.
- 93% exceeded the U.S. reference limit of 90 parts per million (ppm) for lead in paint, posing a threat **to** public health, particularly for children.

The second market survey examined **toy samples**—both branded and unbranded—also collected from various popular markets in Phnom Penh. The toys were tested for eight different heavy metals, including lead.

- Results showed that 78% of the toys contained one or more heavy metals, including lead, often in amounts exceeding international safety guidelines.
- These findings reinforced concerns about the lack of regulation and testing of imported consumer goods, especially those intended for children.

Both case studies served as strong justification for the government's next step: developing **national regulations to manage lead in consumer products**.

Ms. Phann then outlined the **status and scope of Cambodia's draft regulation** on lead in paint. This regulation, currently under internal review, aims to:

- Prohibit the import, production, sale, and distribution of paint products that contain lead levels exceeding 90 ppm, aligning with international best practices.
- Require that all imported or domestically produced paint undergo laboratory testing to verify lead content.
- Stipulate that testing must be conducted either by a Ministry of Environment-accredited laboratory or another institution officially recognized by relevant Cambodian authorities.
- Oblige manufacturers and importers to cooperate with government officials during inspections, monitoring, and verification processes.

Ms. Phann explained that this draft regulation is rooted in a **precautionary approach** to prevent widespread exposure and protect vulnerable populations, especially children. Its enforcement will target both the formal and informal markets, where substandard products often circulate.

The final component of Ms. Phann's presentation focused on Cambodia's **ULAB recycling practices**, which to date are largely informal.

She described the typical ULAB recycling process in informal settings:

- Batteries are dismantled manually.
- Lead paste and components are melted in open furnaces using charcoal, without ventilation systems or emission controls.
- Waste and residue, including lead-contaminated slag and separators, are often dumped or burned, resulting in direct soil, air, and water pollution.

This situation has created significant occupational and environmental risks, particularly for workers, nearby communities, and children.

Despite these challenges, Ms. Phann emphasized that Cambodia is **actively working to transition from informal to formal ULAB recycling,** through government initiatives and the involvement of industry The Ministry of Environment and its partners are developing:

- A national summary report on lead battery recycling practices,
- Pilot interventions and capacity-building programs with the private sector,
- And a framework for regulating ULAB collection, transport, and treatment under a more structured licensing regime.

While formal recycling infrastructure is limited at present, there is growing recognition among stakeholders—including local businesses—of the need to invest in environmentally sound management of batteries.

5. Panel discussion – International Organizations and Civil Society Representatives

Ms. Paun introduced the second panel discussion, which included representatives from international organizations and civil society. Presentations are included in Appendix C.

Mr. Jeiel Guarino, Global Lead Paint Elimination Campaigner at the **International Pollutants Elimination Network (IPEN)**, delivered a practical intervention focused on the global movement to eliminate lead in paint. Drawing from IPEN's work in over 130 countries, Mr. Guarino offered both a **strategic framework and a call to action**, centered on the pivotal role of civil society in lead exposure prevention.

He began by highlighting the alliances IPEN has built at different levels (regionally, nationally and internationally) and among various stakeholders, including civil society, governmental agencies (health and environment), doctors, toxicologists, and industry champions.

By collaborating with IPEN, local NGOs have gained access to experts and strengthened their campaign. IPEN supports the implementation of paint studies, the development of effective messaging for lead paint laws, and liaising with industry. Mr. Guarino emphasized that despite global progress in reducing lead use, **many countries still lack legally binding lead paint standards** or have weak enforcement mechanisms. He shared recent findings from IPEN-coordinated studies, showing that in several countries—including in Asia-Pacific—paint samples continue to test well above the international benchmark of 90 parts per million (ppm). Some samples exceeded 10,000 ppm, posing an immediate risk to public health.

He outlined three **key ingredients for successful lead paint elimination**:

1. **Regulation -** Mr. Guarino stressed that legislation is foundational and that voluntary commitments are not sufficient. Binding regulations create a permanent **level playing field**, incentivizing all manufacturers and importers to reformulate at the same pace. They also provide a legal basis for enforcement and market surveillance. A regional standard for the ASEAN region may help countries currently without laws harmonize their regulations.

2. **Industry Engagement and Reformulation -** Mr. Guarino highlighted that industry can act even in the absence of governmental controls. With laboratory and technical support from industry associations and larger manufacturers, SMEs can transition to lead-free alternatives.

3. **Stakeholder Mobilization -** Mr. Guarino emphasized the importance of cooperation between industry and regulators, and highlighted the opportunity for the paint industry to demonstrate their values and commitment to safe products. Successful campaigns also involve civil society, the healthcare sector, media, consumers, and other stakeholder groups.

Mr. Guarino's intervention served as a **clear and urgent call to action**. It underscored the unique role of civil society in driving change, the feasibility of reformulation, and the enormous public health returns of implementing and enforcing strong lead paint laws.

Mr. Mushtaq Memon, Regional Subprogram Coordinator for Chemicals and Pollution Action at UNEP, provided an **overview of UNEP's global and regional efforts to support countries in addressing lead exposure**. He began by highlighting one of UNEP's most significant achievements: the **global phase-out of leaded gasoline**, which was accomplished under the Partnership for Clean Fuels and Vehicles. This milestone set the stage for broader efforts to eliminate lead from other sources, particularly in **consumer products and industrial processes**.

Mr. Memon emphasized UNEP's leadership, alongside the World Health Organization (WHO), in **co-chairing the Global Alliance to Eliminate Lead Paint (GAELP)** since 2011. Through this alliance, UNEP has developed a suite of technical resources, including model law guidance, compliance and enforcement frameworks, and reformulation guidelines aimed at assisting countries in drafting and implementing lead paint regulations. He noted UNEP's direct engagement with small and medium-sized enterprises (SMEs) to support the reformulation of lead-based paints, ensuring that safer alternatives are accessible and economically viable.

Addressing the issue of **used lead-acid batteries (ULABs)**, Mr. Memon described UNEP's work, which reflects UNEP's broader commitment to promoting **environmentally sound management of hazardous waste streams**.

Mr. Memon also underscored the importance of a **multi-sectoral approach to lead management**, advocating for coordinated action among environment ministries, health authorities, customs agencies, and international partners. He highlighted UNEP's role as a **founding member of the Partnership for a Lead-Free Future, launched in September 2024**, which aims to eliminate childhood lead poisoning through global collaboration and national action.

Regionally, UNEP has been active in **supporting countries across Asia-Pacific**. In Bangladesh, UNEP worked with local and international partners to develop a national strategy and action plan for ULAB management. In Cambodia, UNEP is assisting with market surveys of lead in consumer products, the development of a national lead paint law, development of an initial assessment report on ULAB and awareness building. A new project in India, supported by the Global Environment Facility (GEF), will focus on ULAB management as well.

Mr. Memon also referenced UNEP's work in Africa as a model for cross-regional learning. This includes support for the Economic Community of West African States (ECOWAS) in adopting a regional regulation mandating lead paint ban, as well as direct engagement with paint manufacturers to promote reformulation. Regarding the ULAB sector, UNEP supported the development of the G*uidance Manual for Policymakers and Regulators for the Environmentally Sound Management of Waste or Used Lead Acid Batteries in Africa.*

Looking ahead, Mr. Memon outlined UNEP's priorities for **continued support in Asia-Pacific**. These include helping countries enact and enforce lead paint laws, conducting baseline assessments of lead exposure sources, and strengthening regional coordination and information sharing. He concluded by highlighting the **Asia-Pacific Regional Forum on Health and Environment,** co-hosted by UNEP and WHO and suppported by the Asian Development Bank, as a key platform for advancing multi-sectoral collaboration on chemicals and waste, including lead exposure. Mr. Memon reaffirmed UNEP's commitment to supporting member states and stakeholders in their efforts to eliminate lead risks and safeguard public health.

Mr. Abheet Solomon, Senior Advisor for Environment within UNICEF's Climate, Environment, Energy, and Disaster Risk Reduction Programme Group, delivered an **intervention focused on the activities of the Partnership for a Lead-Free Future**. He began by emphasizing the statistic that one in three children worldwide have elevated blood lead levels, with most affected children living in low- and middle-income countries. Mr. Solomon stressed that no level of lead exposure is safe for children, and the Asia-Pacific region faces particularly high exposure risks.

Mr. Solomon highlighted the **multifaceted nature of lead exposure**, noting that children are often exposed to multiple sources simultaneously. He underscored the importance of country-specific approaches, as lead sources vary significantly between and within countries. To address this, UNICEF and its partners launched the **Partnership for a Lead-Free Future at the 79th UN General Assembly in 2024**. This initiative, supported by UNEP, WHO, the World Bank, and USAID, aims to **eliminate childhood lead poisoning by 2040** through coordinated global and national efforts.

The partnership promotes country-led strategies, focusing on both consumer products and industrial sources such as used lead-acid battery management, and aims to accelerate the development and implementation of lead-related policies. Mr. Solomon described UNICEF's role in hosting the partnership's secretariat and facilitating collaboration among UN agencies, international financial institutions, and NGOs.

Mr. Solomon encouraged participants to explore the partnership's resources, including a **toolkit available at leadfreefuture.org**, which offers guidance on developing national strategies and implementing whole-of-government approaches. He also highlighted regular calls with member countries and mapping of existing lead activities to track and coordinate efforts, as well as the maintenance of a roster of technical expertise among partner organizations.

Finally, Mr. Solomon shared UNICEF's programmatic work, including national surveys and surveillance efforts. He cited recent studies in Georgia and Bhutan, where high percentages of children were found to have elevated blood lead levels. A major ongoing survey in Bangladesh is testing 9,000 children and 4,500 pregnant women for heavy metals, including lead, under leadership of the government; there will be a follow-up study on lead exposure sources. UNICEF also supports the rollout of WHO's clinical guidelines and works to strengthen stewardship by Ministries of Health in coordinating lead mitigation efforts.

He concluded by reaffirming UNICEF's commitment to accelerating action, emphasizing that children deserve a lead-free future and that coordinated, multi-agency efforts are essential to achieving this goal.

Dr. Virunya Bhat, Technical Officer for Chemical Safety and Health at the World Health Organization (WHO), provided an **overview of WHO's ongoing initiatives to combat lead poisoning**. She began by highlighting the **upcoming International Lead Poisoning Prevention Week**, now in its 13th year. This global awareness campaign has seen growing participation, with **over 100 events in 52 countries** and 99 million social media impressions in the previous year. Dr. Bhat noted the strong engagement from the Asia-Pacific region and encouraged continued momentum.

She reiterated WHO's co-leadership of the **Global Alliance to Eliminate Lead Paint (GAELP)** and emphasized the importance of legally binding lead paint bans, which remain absent in more than half of countries worldwide. Dr. Bhat also referenced **WHO's evidence-based treatment guidance**, including the action level of 5 micrograms per deciliter for blood lead levels; WHO is exploring how this guidance can be updated or adapted to reflect country-level contexts.

Dr. Bhat stressed the role of different ministries in **responding to lead exposure**, highlighting that preventive actions often fall outside the purview of health ministries. She advocated for strong interministerial coordination and emphasized the critical role of the health sector in both diagnosing and treating lead poisoning. Surveillance and screening of vulnerable populations were identified as key components of an effective response.

Finally, she underscored the importance of **public awareness and communication** in all aspects of lead mitigation and emphasized that preventing environmental releases of lead is essential to protecting human health. Her intervention reinforced WHO's commitment to supporting countries as they work to address lead exposure from multiple facets.

6. Closing Remarks

A participant from Pakistan reiterated the interconnected and global nature of various lead exposure sources and highlighted the fact that lead from unregulated ULAB recycling feeds into other value chains (including, for example, jewelry for children).

Ms. Mihaela Paun concluded the webinar by expressing sincere gratitude to all panelists and participants for their active engagement and valuable contributions, especially those joining from different time zones. She emphasized the importance of continued collaboration and dialogue to advance lead exposure reduction efforts across the Asia-Pacific region and beyond.

In summarizing the key takeaways from the session, Ms. Paun highlighted the strong emphasis placed throughout the webinar on **prevention**—particularly the need to prevent the trade and import of lead-containing products and waste, especially in countries lacking the capacity to manage them safely. She reiterated the importance of understanding the **transboundary nature of lead exposure** and the need for a **whole-of-government and whole-of-society approach**, as well as a **global strategy to address the issue comprehensively**.

Ms. Paun also underscored the value of **national and subnational data** in identifying diverse sources and levels of exposure, which can vary significantly across and within countries. She stressed that multi-stakeholder and multi-sectoral coordination is essential for effective lead management, and that **collaboration between governments and industry** is equally critical, particularly in addressing industrial sources of lead.

She closed by encouraging all stakeholders to remain connected and committed to the shared goal of minimizing and ultimately eliminating lead exposure, reinforcing the collective responsibility to protect public health and the environment.

7. Key Takeaways

The consultation discussions yielded the following key takeaways:

1. **Prevention as a Priority**

   A strong emphasis was placed on preventive measures to reduce lead exposure. This includes preventing the trade and import of lead-containing products and waste, especially in countries where there is limited infrastructure to manage them.

2. **Whole-of-Government and Whole-of-Society Approach**

   Multiple speakers stressed the importance of adopting a comprehensive approach that involves all sectors of government and society. Relevant ministries include health, environment, customs, trade, and education. Furthermore, beyond government actors, effective lead management can involve coordinated action among civil society, international organizations, academia, and the private sector. Country presentations demonstrated how such collaboration can drive policy development, enforcement, and public awareness.

3. **Global and Regional Coordination**

   Lead exposure is a transboundary issue. Participants highlighted the need for a globally coordinated strategy, supported by regional platforms and international partnerships such as the Partnership for a Lead-Free Future. Cross-border collaboration is essential to address shared risks. The support of international partners is critical for enabling countries to scale up data collection, regulation, and reformulation of hazardous products.

4. **Data-Driven Action**

   The importance of national and subnational data was repeatedly emphasized. Countries need robust surveillance systems and biomonitoring to characterize blood lead levels, understand contributing sources, and tailor interventions accordingly.

5. **Tailored National Strategies**

   There is no one-size-fits-all solution. Countries must identify their own lead exposure sources—whether from paint, spices, cookware, or religious items—and develop context-specific strategies for mitigation.

6. **Industry Engagement and Regulation**

   Several interventions underscored the need for strong regulatory frameworks and enforcement. Coordination between governments and industry is important, particularly in reformulating lead-containing products and managing industrial sources such as used lead-acid batteries.

7. **Public Awareness and Communication**

   Raising awareness among communities, health workers, and policymakers is critical. Campaigns like WHO's International Lead Poisoning Prevention Week and national outreach efforts were highlighted as effective tools for mobilizing action. Organizations like IPEN and local academic partners can play catalytic roles in research, advocacy, and stakeholder engagement.

Appendices

A. Presentations: Setting the scene
B. Presentations: Country representatives panel
C. Presentations: International organization and civil society representatives panel

Appendix A: Presentations, Setting the scene

Setting the scene: Overview of lead exposure sources in the Asia-Pacific Region

Emily Nash, Lead Management Expert, Knowledge and Risk Unit, Chemicals and Health Branch, Industry and Economy Division

10 July 2025

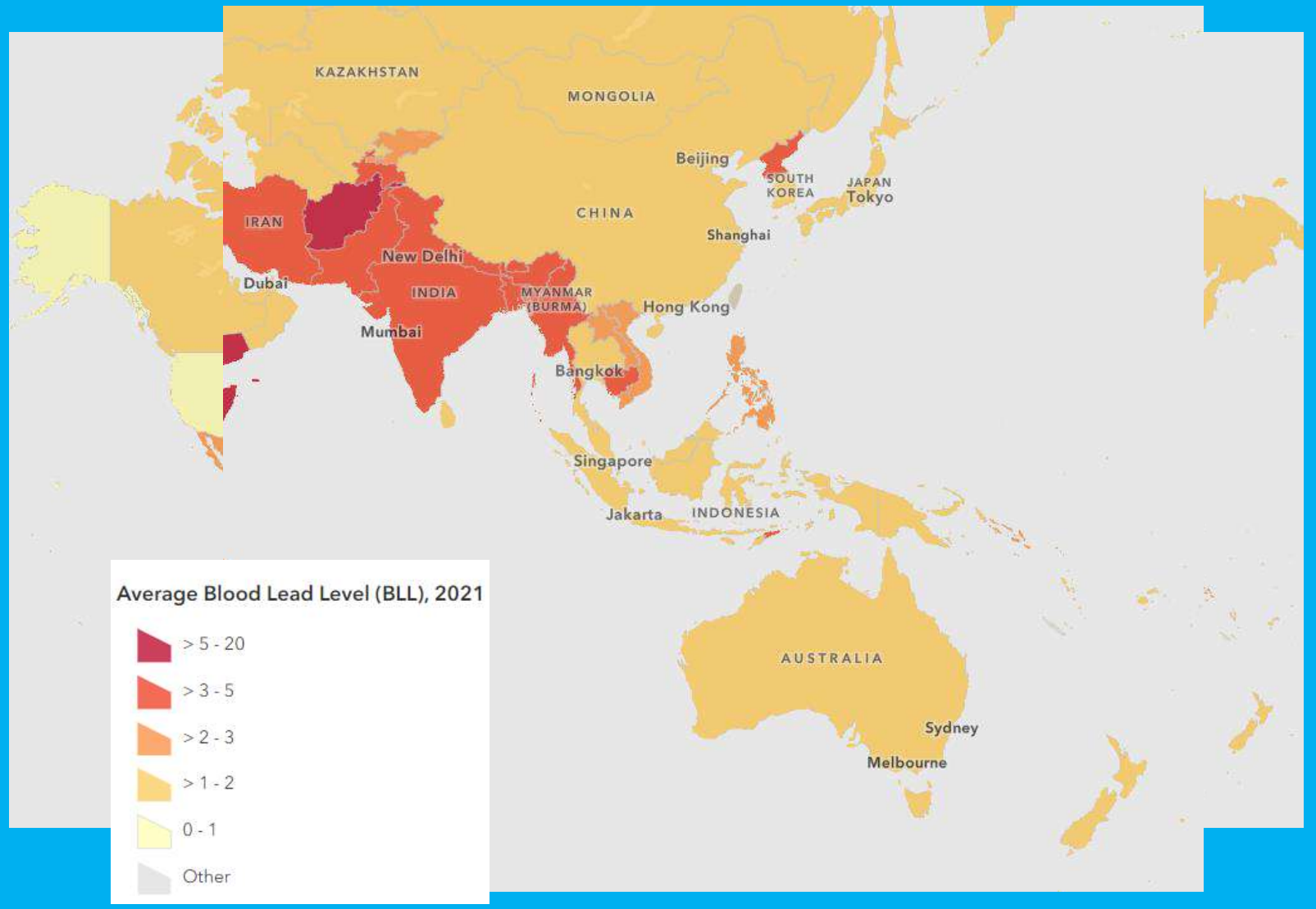
Lead exposures in LMICs and the Asia-Pacific Region

- 1 in 3 children have BLLs above 5 µg/dL[1]
- 94% of the disease burden (years of healthy life lost) occur in LMICs[1]

- 6.2 µg/dL for South Asia - highest regional average[2]
- 3.4 µg/dL for East Asia and Pacific

- Socioeconomic implications: cost due to IQ loss 3.5% of GDP for South Asia; 1.7% for East Asia and Pacific[2]

- Nearly 1 million deaths across region (IHME 2021)



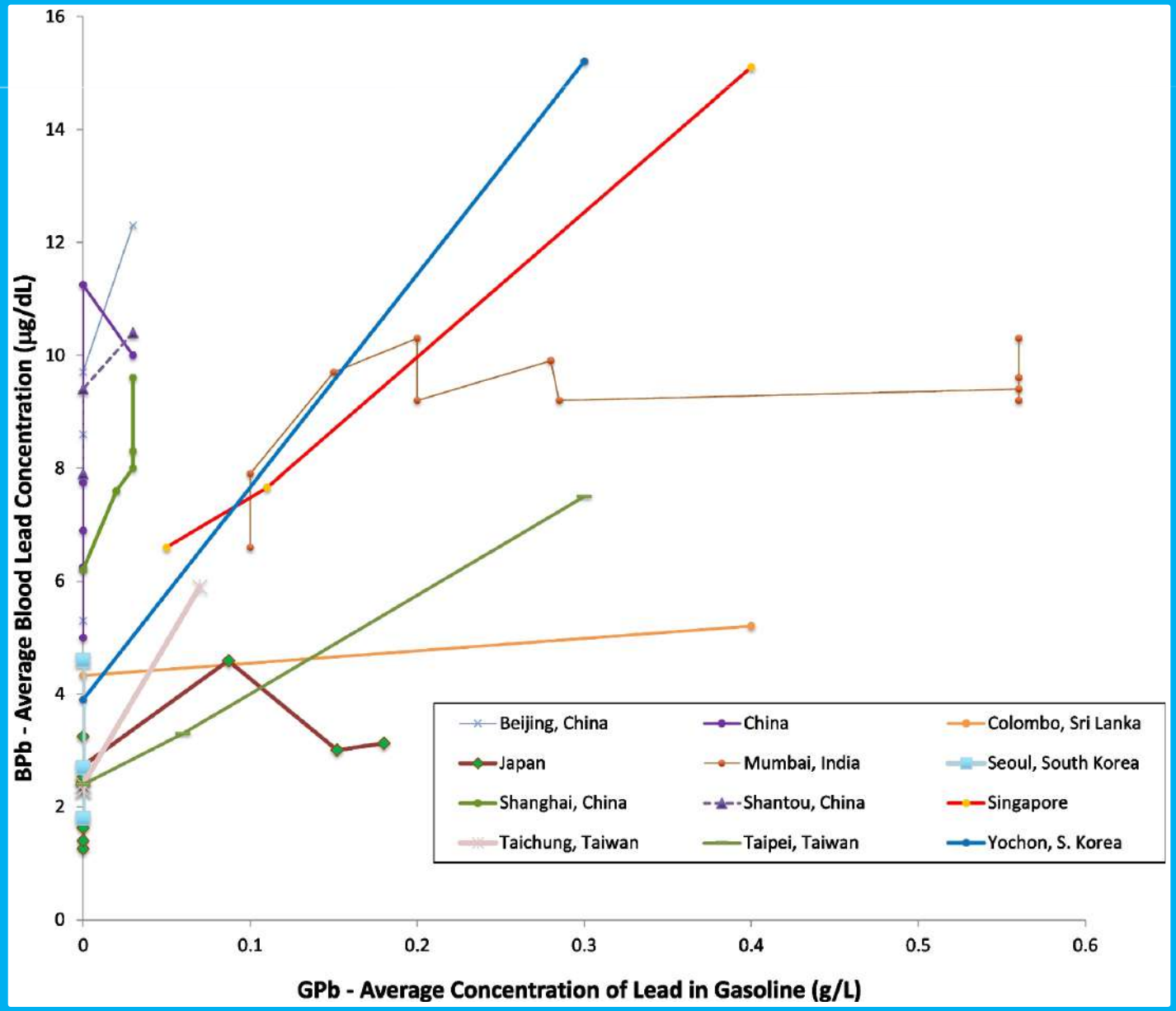
IHME, Leadpollution.org

Global Lead Exposure Sources by Sector

Energy and Transportation

Legacy of leaded petrol

- Some countries in region were early adopters of leaded petrol bans; in others, use continued until 2016
- Reductions in population-level blood leads observed in available datasets[3]
- Lead can remain in soil and act as reservoir of exposure[4]



Angrand et al., 2022

Energy and Transportation

Lead-acid battery manufacturing and recycling

- ~86% of lead in the global economy used in LAB[5]
- Applications:
  - Vehicles are the largest sector using LABs
  - Followed by energy infrastructure for telecommunications and data networks
  - Component of renewable energy power systems
- LABs are highly recyclable but process requires tight environmental controls

Larry C. Price/Pure Earth

Mining and Smelting

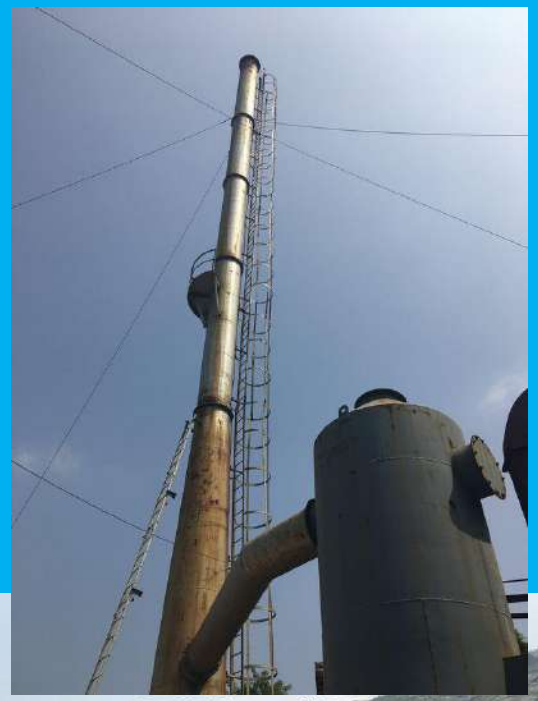
Lead mining

- Lead is highly recyclable but globally 4.5 million tons still mined annually[6]
  - Top two lead-producing countries are China and Australia (~54%)

Other metals

- Zinc, copper, tin, gold
- Exposure to lead dust while working with ore and widespread environmental contamination

Mining and Smelting



Toxics Link

Smelting

- Required for primary lead from mining, as well as recycled lead
- Process of heating lead ore or recycled lead and adding reducing agents
- Can release lead particles into air and hazardous solid waste (slag), affecting workers and surrounding communities
- Ranges from formal facilities to very informal open-air set-ups

Electronics

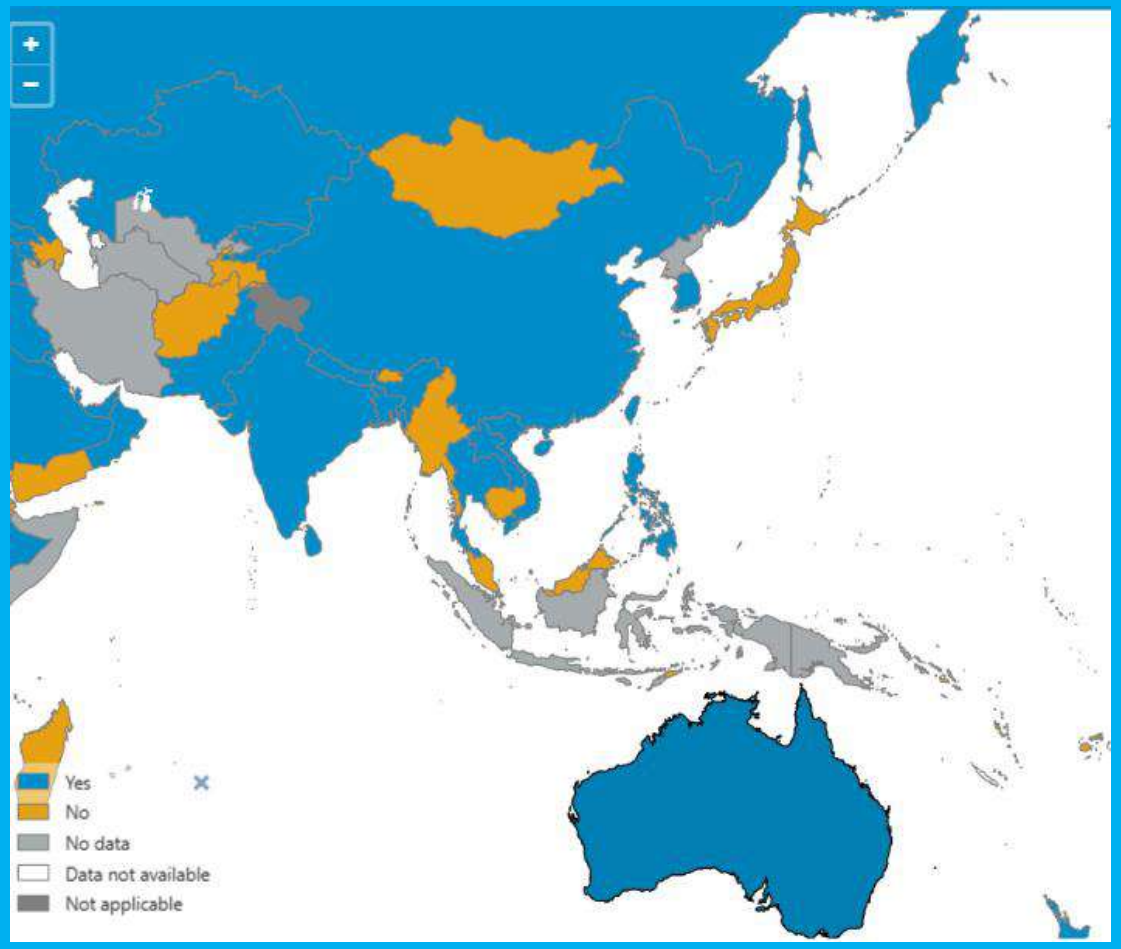
Electronic waste management

- Globally, 22% of the e-waste formally collected and recycled[7]; 12% in Asia
- E-waste contains valuable reusable materials, but releases contains toxic components
- Potential for lead exposure at sites of informal recycling or discard of electronic goods
- Occupational and community-level risks
- Growing number of countries in region with e-waste regulations

Infrastructure/Construction – Paint

Lead-based paint

- Globally 48% of countries have lead paint laws (January 2024)
- Continued availability of paint with lead concentrations above 90 ppm in region, including in countries with laws enacted[8]



WHO Global Health Observatory

Infrastructure/Construction – Drinking water

Nora Tam

- Limited information available at regional level
- Instances of contaminated surface and groundwater sources
- Recent systematic review among LMICs - possibly lower occurrence of elevated lead levels in drinking water in East and Southeast Asia compared to other regions[9]

Food and Agriculture

Adulteration with lead pigments

- In South Asia, turmeric adulterated with lead compounds[10]
- Available data has not yet identified this as a major issue in other parts of the region
- Recent instance of lead pigment added to children's food[11]

Agricultural soil contamination

- Limited data at regional level on lead in content in food
- Potential for soil contamination from industrial sources (mining, recycling)
- Studies have highlighted concerns about contribution of dietary sources to overall lead burden and lead levels in specific food items (vegetables, rice)[12, 13, 14]

Getty Images

Consumer Products - Cookware

Pure Earth

Metal cookware

- Growing data on lead in metal cookware, particularly inexpensive aluminum items
- Lead present in scrap metal used for production
- Risk of lead exposure through leaching
- Proportion of items containing lead above 100ppm ranged from 24-100% across 7 countries in S Asia and SE Asia[8]

Ceramic cookware

- Lead may be present in glazes and decorative paints applied to ceramic ware
- In Pure Earth Rapid Market Screening, proportion of items containing lead above 90 ranged from 0-71% in S Asia and SE Asia[8]
- Need for additional research into the risk of leaching

Consumer Products – Cosmetics and cultural powders

Kajal, Kohl, and Surma

- Extremely high concentrations of lead identified in traditional eyeliner
- Common in South Asia and other global regions, with strong cultural significance[15]
- Limited but growing data on use and blood lead impacts, especially among children

Cultural powders or pills

- Sindoor, kumkum
- Jinlab

Implications for Lead Exposure Management

- Documented lead exposure severity differs dramatically across the region
- Lead exposure sources are diverse
- Some sources are limited geographically to hot spots, while others may affect a larger proportion of the population
- Populations may face multiple exposure sources simultaneously

Complexity of lead exposure scenarios underlines the important role of coordinated, multi-faceted approaches

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Thank you

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www.unep.org

PAHLÉ INDIA FOUNDATION
PUTTING INDIA FIRST TO MAKE INDIA FIRST

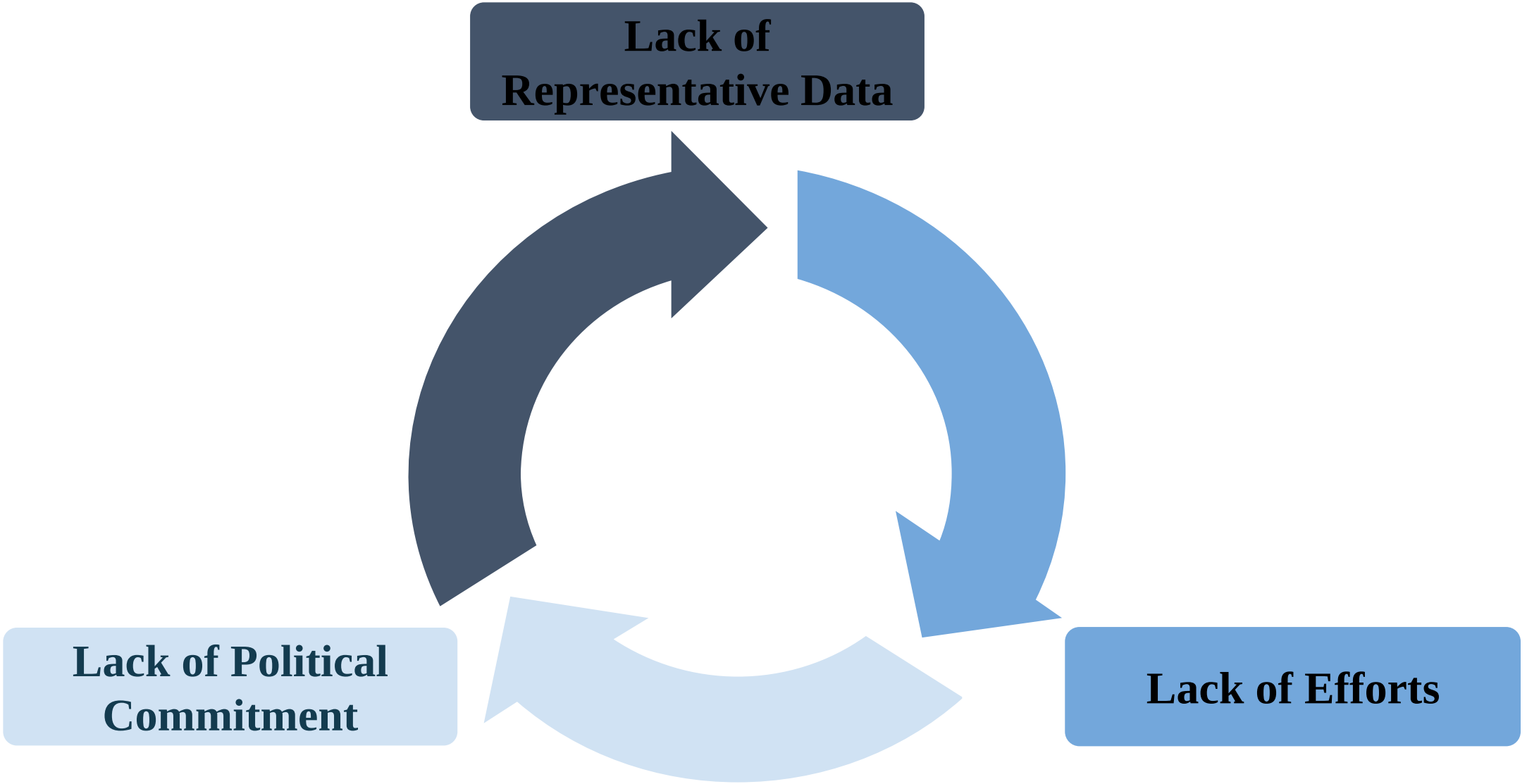
i-LEAD
India-Lead Elimination Action Partnership
Promoted by Pahle India Foundation

Coordinated Multi-sectoral Lead Management Approaches

Dr Indu Bhushan

10th July, 2025

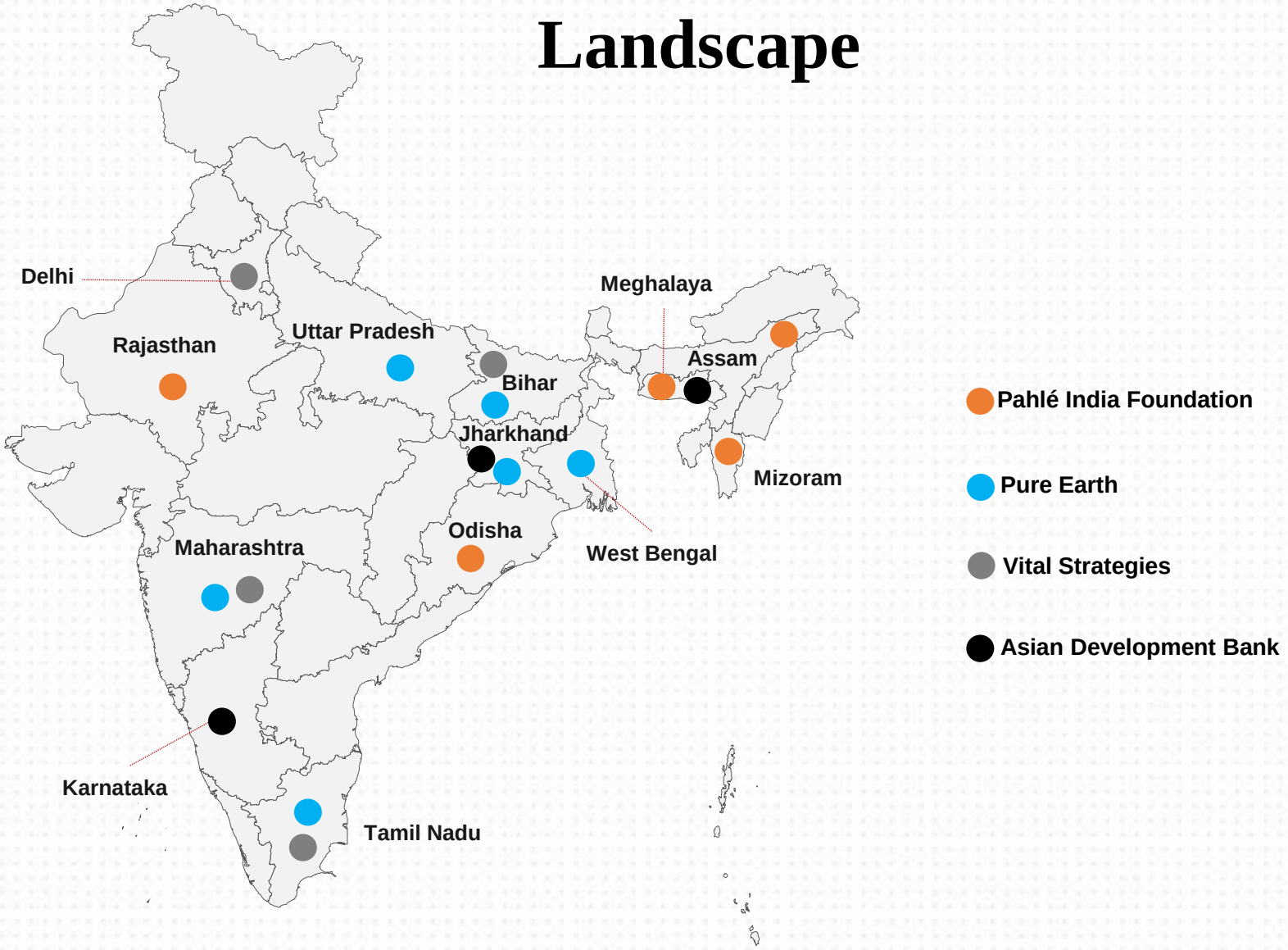
Policy Challenges



India’s Growing Response to Lead Exposure

- The **National Centre for Disease Control (NCDC)** anchors the **National Biomonitoring Programme for Chemical Toxicants (NBPCT)** to develop a national system for detecting, reporting, and responding to chemical exposures.
- The **Directorate General of Health Services (DGHS)**, Government of India, has directed the establishment of a National Reference Laboratory to standardize the **Blood Lead Reference Value (BLRV)** in India.
- Development of the **IHIP portal** is underway to enable data entry for biological and environmental sample testing under the National Biomonitoring Programme.
- An **Innovation Hub** is being formed to develop and validate indigenous, affordable technologies for assessing chemical toxicants in biological and environmental samples.
- Studies by academic institutions, think tanks, research bodies, and NGOs across India are **assessing blood lead levels (BLL) and environmental sources** drives the evidence generation momentum.
- Several partner agencies like Pure Earth, Vital Strategies, Pahlé India Foundation (PIF) and ADB are supporting states—for instance, PIF is conducting a lead exposure assessment in Meghalaya.

Organisational Mapping of India's Current Lead Poisoning Landscape



India Working Group (IWG) on Lead Poisoning

The India Working Group on Lead Poisoning was established on June 1, 2023, with the Pahlé India Foundation (PIF) serving as the Secretariat. As of now, five high-level meetings have been held between September 2023 and November 2024.

Key Issues

- Partners proposed a five-step model-BLL testing, source analysis, targeted action, awareness, and state-led solutions, integrated with platforms like Ayushman Bharat.
- Emphasis on aligning with national surveys (e.g., NFHS), addressing provider knowledge gaps, and using platforms like Mann ki Baat for public messaging.
- Discussed low-cost tools like NIOH's sweat patch and stressed collaboration with bodies like ICMR and UNICEF for research and scale-up.
- A shift towards a life-course approach was seen, integrating lead mitigation with national development goals; experts advocated for long-term monitoring (e.g., bone lead testing) and highlighted international models like Mexico's.

Recommendations from IWG Meetings

1.Health Systems Integration

1.Targeted Testing and Source Mapping

1.Standardization and Data Management

1.Capacity Building and Research

1.Policy and Regulatory Action

1.Communication and Public Engagement

1.Financing and Partnerships

1.Localized Action Plans

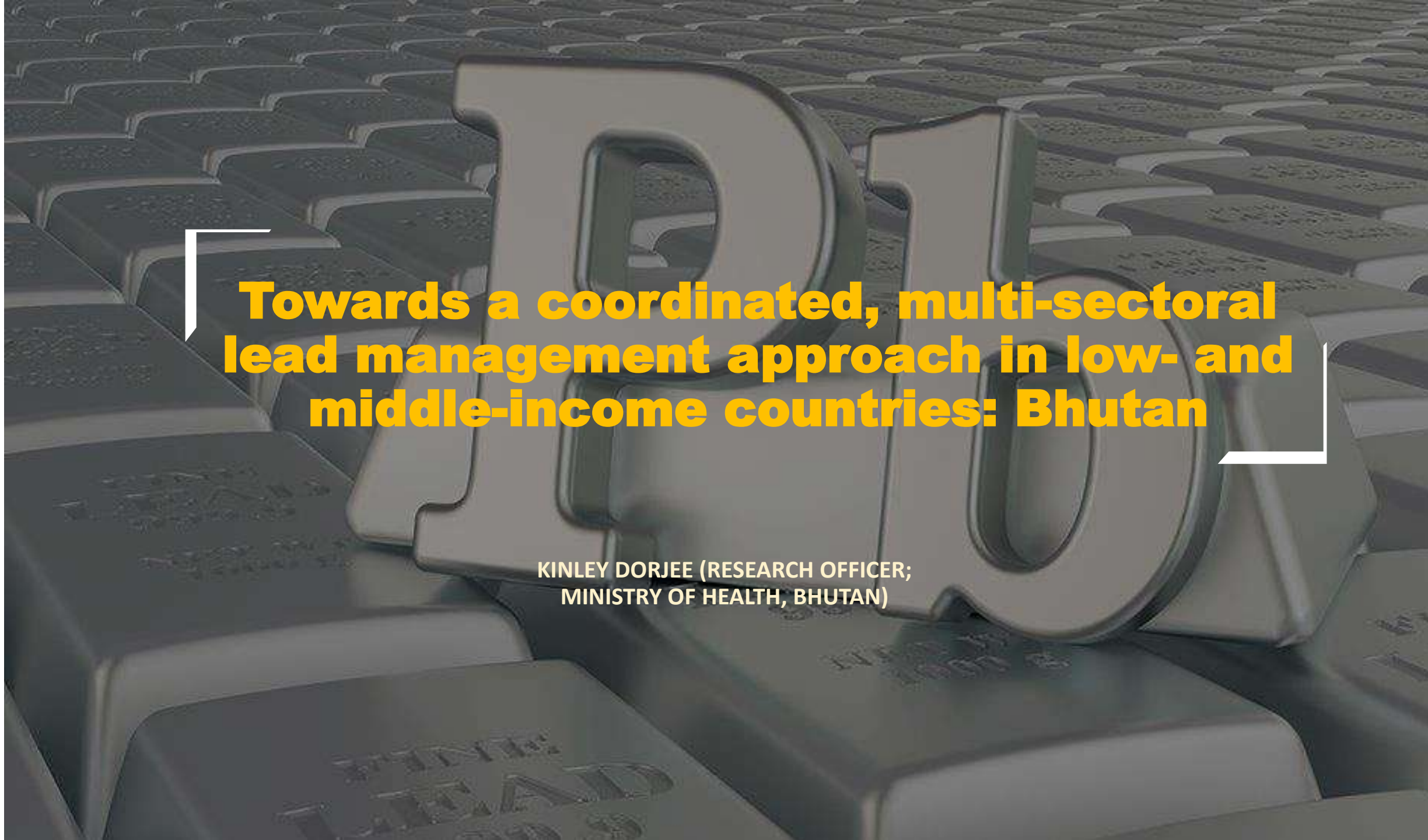
Key Initiatives of i-LEAP/Pahlé India Foundation

India-Lead Elimination Action Partnership (i-LEAP) is an initiative by Pahlé India Foundation, to tackle the pressing issue of lead poisoning.

01	**Policy Advocacy, Communication and Awareness Initiatives**	Developing a Communication Package on Chemical Toxicants, including lead exposure.
02	**Working with Several States to Develop Lead Exposure Mitigation Strategy**	Meghalaya, Mizoram, Assam, Odisha, Rajasthan, 7 AIIMS.
03	**Development of SOPs and Protocols for Testing Chemical Toxicants**	Biological Samples: Human blood samples and Environmental Samples: Water, air, and soil.
04	**Capacity Building**	Developed 11 Ministry Playbooks and providing techno-managerial support on surveillance, lab strengthening, supply chain and capacity building to NCDC through TSU.

THANK YOU!

Appendix B: Presentations, Country representatives panel



Towards a coordinated, multi-sectoral lead management approach in low- and middle-income countries: Bhutan

KINLEY DORJEE (RESEARCH OFFICER;
MINISTRY OF HEALTH, BHUTAN)

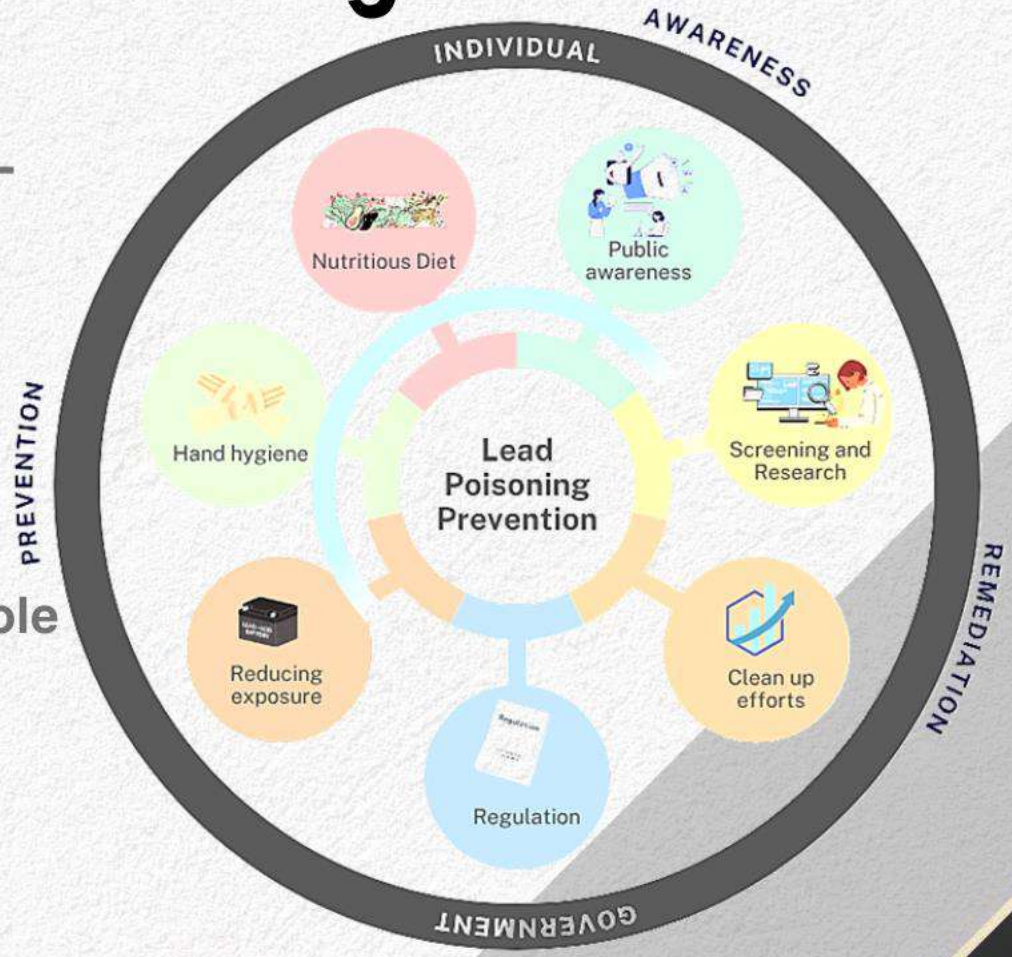
Tracking the Source of Lead (lessons from Bhutan)

- **No One-Size-Fits-All Solution: U**nique sources and pathways.
- **Tailored Assessments Needed: C**ontext-specific tools and data from household items, industrial goods, soil, water, and food sources.
- **Cross-Sectoral Coordination is Critical:** Effective assessment needs collaboration across sectors
- **Strong Policies and Systems Must Align:** From enforcing import standards to health screenings and market surveillance, every sector must play its part.

Each nation will have specific sources and challenge that demands tailored assessment and response - what works for one won't work for another.

Prevention of Lead Poisoning

- Global community must initiate a mulit-pronged approach for
  - Prevention
  - Awareness
  - Remediation



- At the country level, it should be a Whole of a Government-Whole of a Society Approach

What We Must Do

- Build **country-specific strategies**
- Invest in **national capacities**
- Promote **cross-border collaboration**

Global Risks, Shared Consequences

THANK YOU

Kementerian Lingkungan Hidup/
Badan Pengendalian Lingkungan Hidup

HAZARDOUS WASTE MANAGEMENT POLICY IN INDONESIA
USED LEAD-ACID BATTERIES (ULAB)
(*Used Lead Acid Batteries* – ULAB)

Direktur Pengelolaan Limbah B3 dan Non B3

DIRECTORATE FOR HAZARDOUS WASTE AND NON HAZARDOUS WASTE MANAGEMENT
MINISTRY OF ENVIRONMENT / ENVIRONMENTAL MANAGEMENT AGENCY

Law Number 11 Of 2020
Job Creation

Law Number 32 Of 2009
Concerning Environmental Protection And Management

Government Regulation Number 22 Of 2021
Concerning The Implementation Of Environmental Protection And Management

Regulation Of The Minister Of Environment And Forestry Number 6 Of 2021
Procedures And Requirements For The Management Of Hazardous And Toxic Waste

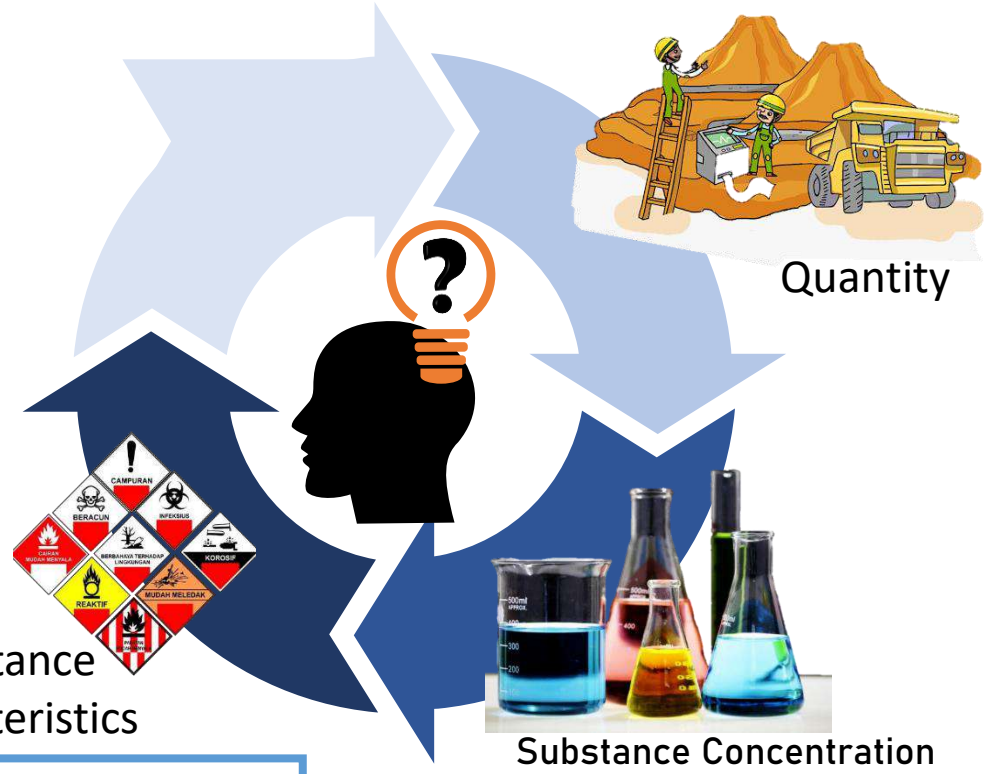
Government Regulation Number 27 Of 2020
Concerning The Management Of Specific Waste

Regulation Of The Minister Of Environment And Forestry Number 9 Of 2024
Concerning The Management Of Waste Containing Hazardous Substances And Hazardous Waste

Government Regulation Number 22 Of 2021

Hazardous Waste (B3) Management

The activities are regulated under Articles 275–449
Including: reduction, storage, transportation, utilization, treatment, disposal, and dumping
Types of hazardous waste (B3) are listed in **Annex IX**
Based on Annex IX of Government Regulation No. 22 of 2021
Requires **Technical Approval**
Technical approval is integrated into **Environmental Approval**
Refers to **MoEF Regulation No. 6 of 2021**



Hazardous Waste ULAB Codification

Annex IX Of Government Regulation Number 22 Of 2021

Tabel 1.
List Of Hazardous Waste From Non-Specific SourcesT

Hazardous Waste Code: A102d
Included In Table 1: List Of Hazardous Waste From Non-Specific Sources
Hazard Category: 1
Description: Used Batteries / Accumulators
Specific Waste From Used Batteries; Codification According To Annex IX Is A102d

CRADLE TO GRAVE → **CRADLE TO CRADLE**

Hazardous Waste Generator (Producer)

Subsequent Waste Manager

Identification Of Generated Hazardous Waste (LB3)

Temporary Storage Of Hazardous Waste (LB3)

Technical Specifications Of Temporary Storage Facility (TPS)

Waste Storage Duration At TPS In Accordance With Government Regulation Number 22 Of 2021

Hazardous Waste Recordkeeping And Reporting Of Storage Activities As Well As Further Waste Management

- Utilized/Treated/Disposed Internally Within The Factory (With Technical Approval And Environmental Feasibility Certificate)
- Hazardous Waste Collector With Technical Approval And Environmental Feasibility Certificate (SLO)
- Hazardous Waste (B3) Utilizer/Processor/Landfiller With Technical Approval And Environmental Feasibility Certificate (SLO)

Quantity Of Hazardous Waste (LB3) Generated

Manifest System

Quantity Of Hazardous Waste (LB3) Utilized / Treated / Landfilled

Waste Management Regulation

Source Of Waste → Household Waste Segregation → Transportation → Temporary Storage Drop Box → Transportation → TPSSS-B3 → Licensed Hazardous Waste (LB3) Collector → Licensed Hazardous Waste (LB3) Transporter → Licensed Hazardous Waste (LB3) Processor / Exporter

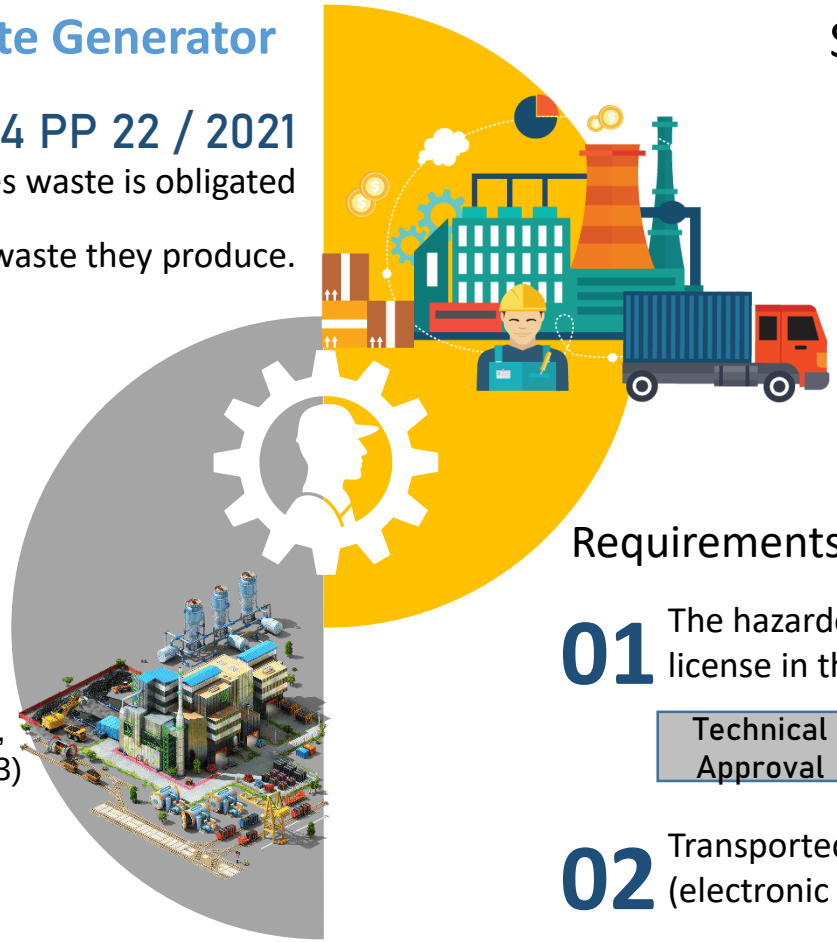
Hazardous Waste Management Regulation

Hazardous Waste Generator

Pasal 274 PP 22 / 2021

Every person who generates waste is obligated

to manage the waste they produce.



Mandatory actions include

01 Hazardous Waste Identification

02 Hazardous Waste Storage

- For activities requiring SPPL, the hazardous waste (B3) storage standards are integrated into the Business Identification Number (NIB); and/or
- For activities requiring AMDAL or UKL-UPL, the technical details of hazardous waste (B3) storage are included in the Environmental Approval (Persetujuan Lingkungan / PL)

03 Recording and Reporting

Subsequent Waste Manager

If the hazardous waste generator:

1. is unable to comply with the time limit for hazardous waste (B3) storage; and/or
2. is unable to carry out its own utilization, treatment, or disposal activities

Requirements:

01 The hazardous waste (B3) manager must have a business license in the field of hazardous waste management

Technical Approval → Letter for Proper Operation → Operation Permit

02 Transported by a licensed transporter and using Festronik (electronic manifest system)

The principles of Reduce, Reuse, and Recycle will provide both economic and environmental benefits :

Reducing the use of raw materials | Reducing the need for landfill | Preventing pollution | Reducing project costs | Increasing business opportunities | Demonstrating commitment

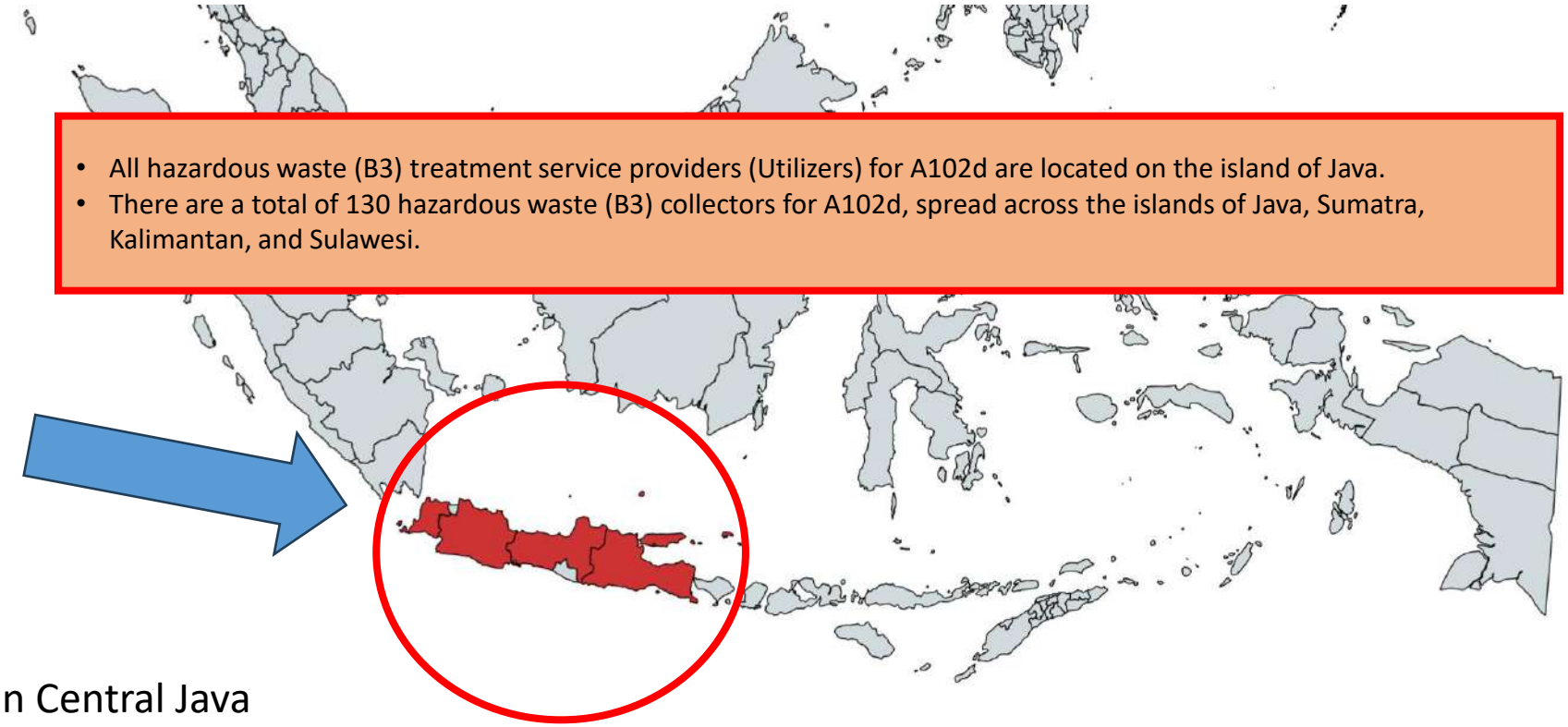
Quantity & Managers of Hazardous Waste B3 A102d

Quantity received
55.726,65 ton

Managers :

1. PT Indra Eramulti
2. PT Muhtomas
3. PT Trigunapratama Abadi
4. PT Non Ferindo Utama
5. PT Bintangmas Cahaya
6. PT Global Enviro Nusa
7. PT PPLi (Residu – Lanfill)
8. PT DOWA (Residu - landfill)

Distribution Map of Hazardous Waste (B3) Managers – A102d



- All hazardous waste (B3) treatment service providers (Utilizers) for A102d are located on the island of Java.
- There are a total of 130 hazardous waste (B3) collectors for A102d, spread across the islands of Java, Sumatra, Kalimantan, and Sulawesi.

On going → PT.Karaba in Central Java

Source: SPEED 2024 (Period: July 2024 – May 2025)

Facilities for Guidance and Consultation

The Ministry of Environment (KLH) may provide guidance either through two-way or one-way communication, using consultation menus, guidance books, and FAQs as supporting tools

Hazardous Waste Movement

The Ministry of Environment (KLH) can monitor the movement and flow of hazardous waste (B3), which also serves as a requirement for economic activities in accountable hazardous waste transportation transactions through the use of electronic manifest

Hazardous Waste (B3) Database

Hazardous waste (B3) data in Indonesia can be accessed quickly through various infographics and distribution maps

MONITORING

The Ministry of Environment (KLH) can conduct online monitoring and obtain the performance data of hazardous (B3) and non-hazardous waste management from companies

- The Need To Strengthen Synergy Among Institutions In ULAB Management
- There Is A Need For Studies On Other ULAB-Containing Waste Management Technologies That Can Be Applied In Indonesia Without Neglecting Environmental Aspects
- Preventive Measures Are Better Than Disposal

Waste Import Provisions

Article 29 Paragraph (1) Of Law Number 18 Of 2008 On Waste Management:

Letter a: It Is Prohibited To Bring Waste Into The Territory Of Indonesia
Letter b: It Is Prohibited To Import Waste
Article 69 Paragraph (1) Of Law Number 32 Of 2009 On Environmental Protection And Management:

Letter c: It Is Prohibited To Introduce Waste Originating From Outside The Territory Of The Republic Of Indonesia Into The Environmental Media Within The Republic Of Indonesia
Letter d: It Is Prohibited To Introduce Hazardous Waste Into The Territory Of The Republic Of Indonesia

ULAB (Used Lead-Acid Batteries) Cannot Be Imported!!!

EXPORT

❖**Ratifikasi Konvensi Basel melalui Keppres Nomor 61 Tahun 1993**:

Indonesia's Interest In Ratifying The Basel Convention Is To Prevent The Country From Becoming A Dumping Ground For Waste; Support The Enforcement Of Law Number 32 Of 2009 Article 69 Regarding The Prohibition Of Hazardous Waste Imports; Encourage The Strengthening Of Environmentally Sound Management (ESM) Capacity Through Improved Hazardous Waste Management Technologies; And Provide A Legal Basis For Indonesia’s Role As Both A Hazardous Waste Exporting Country And A Transit Country.

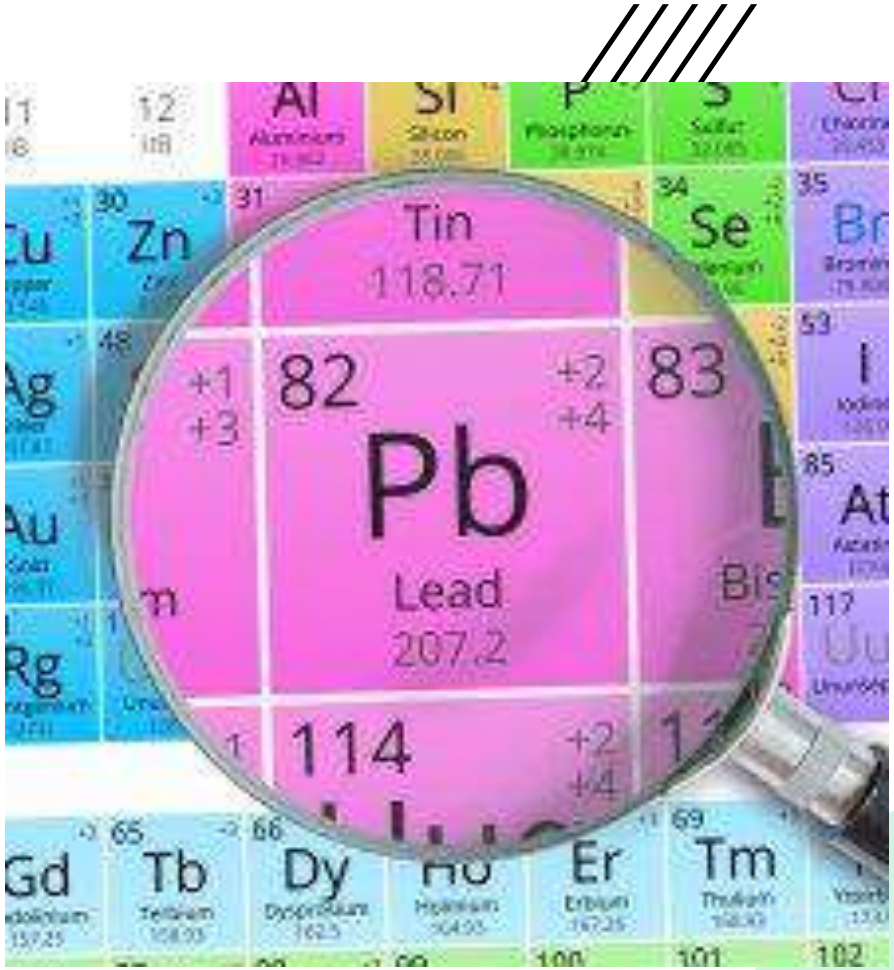
Kementerian Lingkungan Hidup/
Badan Pengendalian Lingkungan Hidup

Thank You

DIREKTORATE OF HAZARDOUS AND NON-HAZARDOUS WASTE MANAGEMENT
MINISTRY OF ENVIRONMENT / ENVIRONMENTAL CONTROL AGENCY

Jalan D.I. Panjaitan Kav. 24, Kebon Nanas, Jakarta 13410,
Telp. 021-5704 501/04 Ext. 4112, Fax. 021-5790 2750; Indonesia – Kotak Pos 6505

STATUS OF LEAD (Pb)



CONTENTS

- MARKET SURVEY
- STATUS OF THE DRAFT REGULATION
- STATUS OF LEAD ACID RECYCLING

MARKET SURVEY

	ENAMEL PAINTS	TOY SAMPLES
OBJECTIVE	Assess the amount of Lead and compare the Lead concentration in each color of enamel paint	Detect the presence of Heavy metals in toys imported from neighboring countries and circulated in marts located in Phnom Penh
METHODOLOGY	45 enamel paints in 9 different colors randomly collected from 3 different construction material supply sites in Phnom Penh using NITON XL3t XRF Analyzer	A total of 60 samples of toys were randomly collected from marts in three different locations in Phnom Penh, of which 29 samples of branded toys and 31 samples of branded toys. It should also be noted all the branded toy samples are products made in China and imported in Cambodia. These samples were screening using the NITON XL3t XRF Analyzer.
RESULT AND DISCUSSION	Average concentration of Lead (Pb) contained in each color of a total of 45 enamel paint samples, including 42 enamel paint samples with an average concentration of Lead (Pb) exceeding the permissible limit as set in the United States standard (Pb= 90ppm).	The toy samples collected at 3 marts in Phnom Penh contain the presence of 8 major Heavy metals, as stated in the above study, of which the sample containing 78% of Heavy metals. In accordance with the US standard, we found that 3 samples were with Lead, Cadmium (Cd) above 3, a sample of Chromium (Cr) above the limit, 01 sample had a Lead (Pb) concentration above the limit, and 2 samples had an Antimony concentration (Sb) above the limit.
CONCLUSION AND RECOMMENDATION	Enamel paints circulating in the Phnom Penh market contain Lead (Pb) concentration exceeding the limit, which can affect the health and well-being of people at all ages, especially children.	According to the result of the study, the toy samples collected at the 03 marts in Phnom Penh contain the presence of 08 major Heavy metals, as stated in the above study, of which the sample containing 78% of Heavy metals.
	Based on the result of this study, there may be a strong justification for adopting regulations to prohibit the production, import, export, distribution, sale, and use of paint products with	In accordance with US standard, we found that 2 samples had a concentration of Cadmium (Cd) above 03, a sample of Chromium (Cr) above the limit, 01 sample had a Lead (Pb) concentration above the limit,

DRAFT REGULATION ON LEAD MANAGEMENT IN PAINT

- This draft prokas aim to regulate the management of Lead in paint products that are imported, manufactured, and distributed on the market to protect public health, biodiversity, and the environment in the Kingdom of Cambodia.
- This draft prokas has 14 Prakas and 3 Annexs.
- The key provision in this Prakas is : imported, manufactured, and distributed paint products must have a Lead level not exceeding 90ppm of dry weight.
- The Lead level analysis report in paint must be issued by a laboratory of the Ministry of Environment or a laboratory recognized by the Ministry and competent institutions of the Kingdom of Cambodia.
- Person who import or manufacture paint must cooperate with competent officials of the Ministry of Environment in inspecting, verifying, monitoring, and assessing the Level of Lead (Pb) in paints in which are imported or manufactured in their warehouses.

LEAD ACID BATTERY RECYCLING

Informal Recycling

- The operation of the ULABs is conducted manually. The waste from Lead bearing was positioned on the ground adjacent to the smelting furnace. The battery casings are directed to the milling machine, while the leftover materials, including the plate separators, are accumulated in a heap for incineration.

- The waste containing Lead is melted outdoors without any ventilation and extraction systems, utilizing a small, rudimentary melting furnace. Charcoal is added to the Leaded scrap as it is loaded into the melting furnace to facilitate the reduction of certain components of the battery paste (Lead oxide) into metallic Lead (Lead bullion). Although this method is basic, it forms the foundation of **“Smelting”,** where reducing agents are combined with Leaded scrap to yield metallic Lead. The inclusion of Charcoal enhance the recovery level from the contents of the scrap battery.

LEAD ACID BATTERY RECYCLING

Formal Recycling

- Lead-acid battery recycling in Cambodia is transitioning from informal practices towards a more formalized system, driven by government initiatives and private sector participation. The challenges remain, there is a clear direction toward a safer and more sustainable battery management.

- The recycling of Lead-acid batteries in Cambodia is evolving from informal methods to a more structured system, propelled by government initiatives and involvement from the private sector. Although challenges persist, there is a distinct movement towards safer and more sustainable management of batteries.

THANKS FOR YOUR ATTENTION

Appendix C: Presentations, International organization and civil society representatives panel

Partnership for a Lead-free Future

unicef | for every child

Goal

End childhood lead poisoning by 2040*

Vision

A world in which all children grow up free from lead exposure

Mission

1. Champion country-led efforts to end widespread childhood lead poisoning in low- and middle-income countries, including the generation of action plans to phase out lead from consumer products and to ensure safer industrial stewardship of lead.
2. Accelerate the development, adoption, and enforcement of lead mitigation standards and policies by providing a platform for exchange of successful practices and strategies, awareness campaigns and public outreach materials, resources, and technical assistance.
3. Foster key partnerships between government, industry, donors, philanthropies, civil society organizations, and other key stakeholders within and across countries to facilitate equitable and sustained progress toward a lead-free future.

END CHILDHOOD LEAD POISONING

PARTNERSHIP FOR A LEAD-FREE FUTURE

* Every child has a blood lead level below 5 *μg*/dl, and progressively reducing levels “closer to zero” below that point

Partnership for a Lead-free Future:
Benefits to partner governments

unicef | for every child

Access up-to-date guidance, tools and other global assets to support country action towards a lead-free future

Toolkit to End Childhood Lead Poisoning, Resource Webinars, Expert Videos

Learn from other countries making progress on the issue and share your progress with them. Influence global policy setting and prioritization to address the issue.

Quarterly calls with member countries, Comprehensive mapping of existing lead activities

Access technical assistance to help resolve bottlenecks in implementation of country plans. Flag implementation gaps.

Roster of available technical experts, Connections to implementing partners

END CHILDHOOD LEAD POISONING
PARTNERSHIP FOR A LEAD-FREE FUTURE

Learn more and join: leadfreefuture.org

WHO action on exposure to lead as a global public health priority

Virunya Bhat, WHO Chemical Safety and Health Unit, Geneva, Switzerland (bhatv@who.int)

Towards a coordinated, multi-sectoral lead management approach in low- and middle-income countries: Consultations in Asia-Pacific region - 10 July 2025

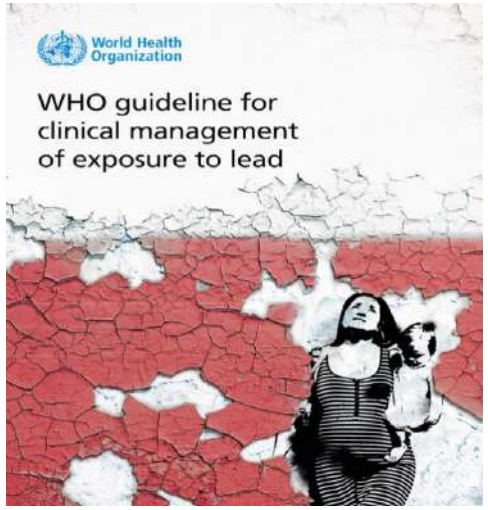
Highlights of recent WHO work on lead

https://www.who.int/campaigns/international-lead-poisoning-prevention-week/2024

- In 2024, 104 events in 52 countries with social media reaching 99M impressions
- 19–25 October 2025

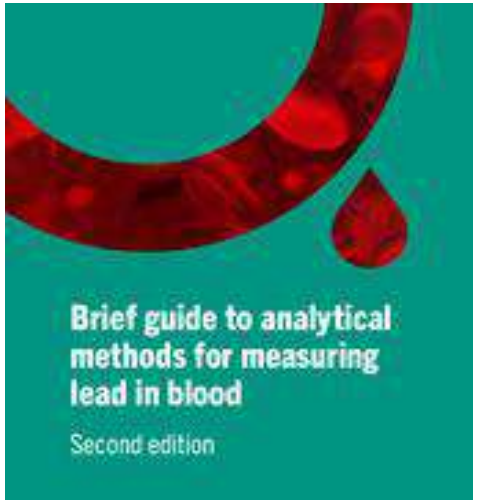
https://www.who.int/initiatives/global-alliance-to-eliminate-lead-paint

- GAELP Partners - 122
- Lead paint laws – 48% countries



https://www.who.int/publications/i/item/9789240037045

- Evidence-based treatment guidance
- Action level – 5ug/dL



https://iris.who.int/handle/10665/333914

- Brief overview of commonly used methods for analytical measurement of BLL

https://agora.unicef.org/course/info.php?id=39366

- Lead and children's health module
- Free online course launched March 2024

Multisectoral response at country level is vital

- WHO's coordination is multi-faceted and includes coordination with health sector in and outside of ministries of health, as most actions to **prevent and mitigate against lead poisoning** fall outside of the ministries of health
- WHO urges all governments to implement **legally-binding** comprehensive bans on the production, import, sale and use of lead-based paints
- **Holistic approach** critical – exposure from concurrent different sources including water, consumer products, workplace
- Enhance **screening and surveillance** of exposed populations – including vulnerable populations – diagnosis and treatment
- Public awareness and communication
- Preventing environmental releases prevents human exposures