



## A LEAD-SAFE Future for India

Invest in Protecting Over 230 Million  
Children from Lead Poisoning

India represents the greatest opportunity in the world to reduce the global burden of lead poisoning. Because of its population size, industrial growth, and widespread exposure sources, investments in India can generate outsized returns for global public health, economic development, and child wellbeing.

### India is uniquely positioned for success:

- **National and state governments are increasingly prioritizing environmental health and pollution control.**
- **Regulatory momentum is growing around food safety, recycling, and industrial compliance.**
- **Civil society and research institutions are deeply engaged.**
- **Proven interventions exist and can be scaled.**

Pure Earth's recent recognition through **The Audacious Project**, a collaborative funding initiative housed at TED, marks a pivotal moment for the global lead poisoning movement. The Audacious Project validates both the urgency of the crisis and the opportunity to solve it at scale. Pure Earth has spent decades identifying practical, scalable solutions that reduce exposure rapidly and cost-effectively. With catalytic investments, countries, like India, can dramatically reduce lead exposure, strengthen regulatory systems, and protect future generations.

### Magnitude and Impact Across India

Millions of children across India are exposed to dangerous levels of lead through multiple pathways—including spices contaminated with lead chromate, unsafe cookware, battery recycling, industrial emissions, cosmetics, paints, and consumer products. The consequences are profound: reduced IQ, impaired neurological development, cardiovascular disease, lower lifetime earnings, and diminished national economic growth.

Of the estimated one billion children<sup>1</sup> worldwide with elevated blood lead levels (BLLs) of  $\geq 5$  micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ),<sup>2</sup> over **232 million** are estimated to be in India, more than any other country. This represents more than 50% of all children in India.<sup>3</sup> The scale of lead exposure has far-reaching developmental and economic consequences across the subcontinent, such as:

- Indian children under five have lost over **154 million IQ points** due to lead exposure.<sup>4</sup>
- An estimated **652,830 deaths** in India are linked to lead exposure, on an annual basis.<sup>5</sup>
- **23 states** in India exceed the 5  $\mu\text{g}/\text{dL}$  blood lead level threshold. Bihar, Uttar Pradesh, Madhya Pradesh, Jharkhand, Chhattisgarh, and Andhra Pradesh account for 40% of India's population, with average BLLs above 7  $\mu\text{g}/\text{dL}$ .<sup>6</sup>

- India’s estimated annualized GDP loss from reduced economic productivity and lifetime earnings from childhood lead exposure is estimated at **US\$236 billion**, equivalent to more than 5% of its GDP.<sup>7</sup>

At this scale, lead exposure is eroding India’s developmental progress, disproportionately affecting the poorest and most vulnerable, particularly children in informal settlements, families using contaminated spices or cookware, and communities near battery recycling operations.

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## Key Sources of Lead Exposure in India

While the phasing out of leaded petrol resulted in a consistent decline in lead contamination in the developed world, India has seen an increase in deaths caused by lead exposure since 1990.<sup>8</sup> Lead sources in India are diverse—some visible, others less so. Pure Earth has conducted multiple source assessments in different regions of the country, including households and communities. The most common sources of contamination include:

- **Consumer products**—cookware, spices, food, and cosmetics.
- **Household and environmental sources** such as lead-based paint, soil, water.
- **Occupational health risks** such as recycling of used lead acid batteries.

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## How We’re Tackling the Issue: Our Footprint in India

Pure Earth is working closely with central and state governments to scale proven interventions to reduce lead exposure, strengthen public health systems, and protect children and future generations. With our office centralized in New Delhi, we have been active in India since 2006. Our reach spans the country including the states of Bihar, Maharashtra, Tamil Nadu and Jharkhand.

At the heart of our model is a belief in government leadership, institutional strengthening, and systemic

change. Our work encompasses blood lead surveillance, source exposure identification, and source-specific solutions.

- **In Bihar**, we conducted BLL surveys in 2023 across 8 districts. The results showed that more than 90% of children in urban Bihar and more than 80% of children in rural Bihar have BLLs above 5 µg/dL.<sup>9</sup> A home-based source assessment identified spices as a key contaminant, with more than 40% of all samples exceeding the > 10 ppm limit set by the Food Safety and Standards Authority of India. Turmeric had the highest lead levels with 47% of samples being above the provided threshold. We are now advancing solutions, including strengthening food safety systems, and piloting supply chain and market-based solutions with the Department of Health, Food & Safety and Department of Agriculture.
- **In Tamil Nadu**, we conducted BLL surveys in 2024 among children and pregnant women. The results showed that 39% of children and 20% of pregnant women had BLLs above 5 µg/dL.<sup>10</sup> Home-based assessments found that 78% of metal cookware exceeded lead limits. This was further validated through institutional testing of cookware and food, and a supply-chain analysis to trace the origins of lead in cookware sources.





This data has formed the basis for manufacturer sensitisation, with a focus on supporting certification of informal manufactures, across five clusters in the state, in partnership with the Bureau of Indian Standards (BIS).

- **In Maharashtra**, a five-year partnership with the Government of Maharashtra, Ministry of Health, and Vital Strategies, is working to improve data related to BLL and source identification, strengthen awareness among health care professionals, and institutionalize a surveillance and response mechanism within health systems. A state-representative blood lead survey and home-based assessment have been completed, and results are forthcoming.
- **Across India**, we have identified and assessed more than 500 contaminated sites under the Toxic Site Identification Program (TSIP). In Patna (Bihar), we addressed contamination from an informal battery recycling unit near an elementary school, conducting soil and blood lead assessments, a community education program, and soil capping to prevent further exposure. In Vellore (Tamil Nadu), we tackled legacy contamination from a smelting facility located next to a school—implementing drainage, paving, cleaning of the school and surrounding homes, and blood lead monitoring.

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## Multisectoral Engagement to Drive Action

Addressing lead exposure requires coordinated action across sectors and different levels of government. Pure Earth India is working closely with the government and other key stakeholders to catalyze policy change, strengthen regulatory systems and embed lead mitigation within existing government programs.

We are working in close collaboration with the Ministry of Health and Government of India on the recently launched National Biomonitoring Programme on Chemical Toxins, providing technical assistance and support. We aim to collaborate with the Pollution Control Board and the Ministry of Environment, Forest, and Climate Change to continue remediation activities across five states and support development of government remediation capacity.

In 2023, the India Working Group (IWG) on Lead Poisoning was established, which includes experts from health, policy, governance and execution, science and research, media and communications, industry and social impact. Pure Earth India is an active member of the IWG, which meets quarterly to advocate on the most pressing and feasible actions to reduce lead exposure in India.

## WHERE WE'RE HEADING

### A Bold, Ambitious Vision for a Lead-free India

Pure Earth India is at a pivotal moment, moving from foundational evidence-building to interventions embedded within government systems. Our expansion is guided by Pure Earth's proven **5-Phase Approach**, with the goal of protecting India's next generation from lead poisoning.



## PURE EARTH'S

### 5-Phase Approach:

- 1 Reveal the Crisis** by implementing nationally representative BLL surveys revealing the true prevalence, severity, and distribution of exposure.
- 2 Pinpoint Exposure Sources** by conducting in-depth exposure source assessments to understand how people are getting poisoned.
- 3 Reduce Exposure** by targeting mitigation efforts on the most critical sources of exposure.
- 4 Mobilize Collective Will** by educating communities, policymakers, peer organizations, and funders on the health and economic toll of lead; and
- 5 Build Durable Systems** by embedding policies and practices into routine government operations, including national BLL monitoring, training health workers, and strengthening enforcement capacity, to ensure sustained reduction of lead exposure over time.

Over the next five years, our work will focus on using the evidence we have built across multiple states to drive intervention at scale—testing and deploying mitigation strategies across multiple exposure sources, from spice adulteration and cookware contamination to battery recycling and industrial emissions. At the same time, we are working to embed blood lead monitoring and exposure counselling into routine national and state health surveillance, institutionalizing a system for counselling families to safeguard them.

India's lead burden demands a national response, and we are committed to advocating for it at the highest levels of government, working toward a national Lead-Free India initiative that brings together diverse stakeholders across community, industry, and government.

Looking ahead, we are deepening our work in existing geographies and strengthening our role as a regional hub for South Asia. Over the next two years, we will expand into Madhya Pradesh, Gujarat, Karnataka, Assam and Rajasthan. Additionally, we will support country expansion initiatives into Nepal and Bhutan and contribute to a concerted regional response to lead poisoning across the subcontinent.



## Our Expansion Across India



Pure Earth will support the governments of **Madhya Pradesh, Gujarat, Assam, Rajasthan, and Karnataka** with statewide lead source identification, remediation, and mitigation. We will help develop state-led mitigation agendas and the institutional systems needed to sustain them.

Pure Earth's India office will also serve as a South Asia regional hub, extending our model to Nepal and Bhutan through lab capacity, source identification, exposure counseling, and scaled mitigation efforts.

## Transformational Funding Opportunity

Pure Earth's **Audacious Project** provides a historic opportunity to combat global lead poisoning at scale by protecting over 500 million children in at least 20 low- and middle-income countries. This expansion is built upon 25 years of field experience, working with governments, and strategic funding partners, including Coefficient Giving, Takeda Pharmaceuticals, and the Clarios Foundation. Now, with anchor commitments from Bloomberg Philanthropies and the Audacious Project totaling \$128M of a \$154M initiative, Pure Earth is moving forward with full implementation. While The Audacious Project provides a foundation—accelerating the field's capacity to act—the scale of the challenge in India demands additional partnerships. We see this critical moment as a point to educate, align, and act

with our current and future partners in India.

This is one of the most cost-effective child health and development interventions available today. Catalytic investments now can unlock government co-financing, attract additional philanthropic support, and establish durable systems that continue protecting children long after initial funding ends.

From the remaining \$26 million gap, we request \$10-20 million to support our work in India. All contributions will be multiplied many times over through The Audacious Project, a TED funding initiative bringing together some of the world's most influential philanthropists to fund bold, proven solutions.

INVESTMENT:  
2026–2033

**\$154M**  
TOTAL PROGRAM

**\$128M\***  
SECURED

**\$26M**  
GAP

\*Anchor Funding Commitments: Bloomberg Philanthropies and the Audacious Project

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## Pure Earth Partners and Stakeholders Across India

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### NATIONAL GOVERNMENT PARTNERS

Ministry of Health and Family Welfare  
Ministry of Environment, Forest,  
and Climate Change  
NITI Aayog (National Institution  
for Transforming India)  
National and State Pollution Control Boards  
Food Safety and Standards Authority  
of India (FSSAI)

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### STATE GOVERNMENT PARTNERS

Bureau of Indian Standards, Tamil Nadu  
Directorate of Medical and  
Rural Health Services,  
Department of Health, Tamil Nadu  
Food and Safety,  
Department of Health, Bihar  
Directorate of Horticulture,  
Department of Agriculture, Bihar  
State Health System Resource Center,  
Department of Health and  
Family Welfare, Maharashtra



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## Our Commitment to Impact and Sustainability

We integrate lead mitigation into national health and regulatory systems so that countries can sustain impact long after our support ends. Our work strengthens protections for women and children—particularly during pregnancy, but also across the life course. We exit when governments and local partners can sustain progress, indicated by: BLL decline, with at least a 20% reduction; national systems are in place to monitor, prevent, and clinically respond to lead poisoning; governments allocate sustained funding and coordinate action across sectors; and when enforceable standards limit lead in consumer products and the environment. This approach ensures lasting health gains, stronger maternal and child outcomes, and scalable impact.

### END NOTES

1. Ages 0-19 years old
2. UNICEF & Pure Earth (2020). *The Toxic Truth*.
3. IHME (2023). *Global Burden of Disease Study 2023 (GBD 2023) Lead Exposure Estimates 1990-2023*.
4. World Bank (2019). UNICEF & Pure Earth (2020). *The Toxic Truth*.
5. IHME (2023). *Global Burden of Disease Study 2023 (GBD 2023) Lead Exposure Estimates 1990-2023*.
6. CSIR-NITI Aayog. *Assessment of Lead Impact On Human And India's Response*, 2022.
7. Attina, T.M., Trasande, L., "Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries", (*Environmental health perspectives* 121, No. 9, 2013)
8. Institute for Health Metrics and Evaluation (IHME). (2018). *GBD Compare - Data Visualizations*.
9. Yi Lu et al. *Assessment of prevalence of elevated blood lead levels and risk factors among children and pregnant women in Bihar, India*, *Environmental Research*, Volume 259, 2024, 119528, ISSN 0013-9351. (<https://www.sciencedirect.com/science/article/pii/S0013935124014336>)
10. Pimplé Y, Vinayagamoorthy N, Lu Y, Kushwaha M, Balakrishnan K, Sankar S, Selvan AS, Aadhisha, Mehta S, Kass D. *Childhood Blood Lead Surveillance in Tamil Nadu*. Vital Strategies, New York, NY. April 2025.